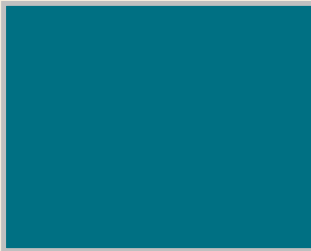


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Rising to the Challenge

**RESULTS FROM A SCORECARD ON LOCAL HEALTH SYSTEM PERFORMANCE
2012**



THE COMMONWEALTH FUND COMMISSION ON A HIGH PERFORMANCE HEALTH SYSTEM

MARCH 2012



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THE COMMONWEALTH FUND, among the first private foundations started by a woman philanthropist—Anna M. Harkness—was established in 1918 with the broad charge to enhance the common good.

The mission of The Commonwealth Fund is to promote a high performing health care system that achieves better access, improved quality, and greater efficiency, particularly for society's most vulnerable, including low-income people, the uninsured, minority Americans, young children, and elderly adults.

The Fund carries out this mandate by supporting independent research on health care issues and making grants to improve health care practice and policy. An international program in health policy is designed to stimulate innovative policies and practices in the United States and other industrialized countries.

COVER PHOTOS

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ABSTRACT The first-ever *Scorecard on Local Health System Performance* provides U.S. communities with comparative data to assess the performance of their health care systems, establish priorities for improvement, and set achievement targets. It tracks 43 indicators spanning four dimensions of health system performance: access, prevention and treatment, costs and potentially avoidable hospital use, and health outcomes. The findings show clearly that where you live matters for health care access and care experiences. Comparing all 306 local health care areas, known as hospital referral regions, in the United States, the report finds that access, quality, costs, and health outcomes all vary significantly from one local community to another, often with a two- to threefold variation in key indicators between leading and lagging communities. The top-performing areas are concentrated in the Upper Midwest and Northeast. Yet, ample opportunities exist for health system improvement in all communities.

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About the Authors

David C. Radley, Ph.D., M.P.H., is senior analyst and project director for The Commonwealth Fund's Health System Scorecard and Research Project, a team based at the Institute for Healthcare Improvement in Cambridge, Mass. Dr. Radley and his team develop national, state, and substate regional analyses on health care system performance and related insurance and care system market structure analyses. Previously, he was associate in domestic health policy for Abt Associates, with responsibility for a number of projects related to measuring long-term care quality and evaluating health information technology initiatives. Dr. Radley received his Ph.D. in health policy from the Dartmouth Institute for Health Policy and Clinical Practice. He holds a B.A. from Syracuse University and an M.P.H. from Yale University.

Sabrina K. H. How, M.P.A., is a former senior research associate for The Commonwealth Fund's Health System Scorecard and Research Project, a team based at the Institute for Healthcare Improvement in Cambridge, Mass., with responsibilities for developing and producing national, state, and substate regional analyses on health care system performance. She also served in this capacity at The Commonwealth Fund in New York from 2006 until July 2010, when the project team was created. Previously, Ms. How was a program associate for the Fund's former Health Care in New York City and Medicare's Future programs. Prior to joining the Fund in 2002, she was a research associate for a management consulting firm focused on the health care industry. Ms. How holds a B.S. in biology from Cornell University and an M.P.A. in health policy and management from New York University.

Ashley-Kay Fryer is a former research associate for The Commonwealth Fund's Health System Scorecard and Research Project, a team based at the Institute for Healthcare Improvement in Cambridge, Mass., with responsibilities for developing and producing national, state, and substate regional analyses on health care system performance. She provided research and writing support for the ongoing series of national and state scorecard reports and new health care market analyses and supported the work of the team. Ms. Fryer joined the Fund in June 2009 as the program assistant for Health System Quality and Efficiency. Upon graduation from Harvard College in 2008, she worked at J. P. Morgan Chase as an investment banking equity sales analyst. Ms. Fryer graduated cum laude

from Harvard College with a B.A. in a self-designed major, "The Determinants of Population Health," and a minor in health policy.

Douglas McCarthy, M.B.A., is senior research adviser to The Commonwealth Fund and the Institute for Healthcare Improvement (IHI) in Cambridge, Mass., where he conducts qualitative research on state and local efforts to promote health system transformation. He supports The Commonwealth Fund's Health System Scorecard and Research Project team at IHI. His 25-year career has spanned research, policy, operations, and consulting roles for government, corporate, academic, and philanthropic organizations. He has authored or coauthored numerous publications, including a series of 50 case studies of high-performing organizations and initiatives and *A Chartbook on the Quality of Health Care in the United States* (written with Sheila Leatherman), named by AcademyHealth as one of 20 core books in the field of health outcomes. Mr. McCarthy received his bachelor's degree with honors from Yale College and a master's degree in health care management from the University of Connecticut. During 1996–1997, he was a public policy fellow at the Hubert H. Humphrey School of Public Affairs at the University of Minnesota.

Cathy Schoen, M.S., is senior vice president at The Commonwealth Fund, a member of the Fund's executive management team, and research director of the Fund's Commission on a High Performance Health System. Her work includes strategic oversight of surveys, research, and policy initiatives to track health system performance. Previously Ms. Schoen was on the research faculty of the University of Massachusetts School of Public Health and directed special projects at the UMass Labor Relations and Research Center. During the 1980s, she directed the Service Employees International Union's research and policy department. Earlier, she served as staff to President Carter's national health insurance task force. Prior to federal service, she was a research fellow at the Brookings Institution. She has authored numerous publications on health policy and insurance issues, and national/international health system performance, including the Fund's 2006 and 2008 National Scorecards on U.S. Health System Performance and the 2007 and 2009 State Scorecards, and coauthored the book *Health and the War on Poverty*. She holds an undergraduate degree in economics from Smith College and a graduate degree in economics from Boston College.

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Preface

The Commonwealth Fund Commission on a High Performance Health System is pleased to introduce the *Scorecard on Local Health System Performance, 2012*. Building on the Commission's series of State and National Scorecards, this *Local Scorecard* aims to provide communities with comparative data to assess the performance of local health care systems and with current information on local areas' progress toward achieving systems and models of health care that meet their residents' needs.

The 2012 *Local Scorecard* examines variation across 306 areas throughout the country on key indicators of health care access, prevention and treatment, potentially avoidable hospital use and costs, and population health. By enabling local communities to compare themselves with others on important aspects of their health care systems, we hope to motivate local areas to establish improvement priorities and set targets, building action toward achieving higher performance across the entire nation.

The *Local Scorecard* documents widespread variations between local health care areas across the country on core measures of health system performance. The report shows that, although it shouldn't, where a person lives matters. Strong

geographic patterns of performance persist and the range of variation among local areas is wide not only across the country but also, in many cases, within the same state. Important cross-cutting findings emerge that illustrate that multiple dimensions of health system performance are interrelated.

This report is particularly timely as the nation moves toward implementing the major reforms embodied in the Affordable Care Act. The law provides important opportunities and tangible examples around which communities can organize to achieve better health system performance and drive our nation to providing better and more affordable care. Successful improvement and health system reform efforts require stakeholders at all levels to adopt a coherent, systemic approach toward care delivery. National and state policies need to be capable of targeting areas with the greatest need, and of remaining flexible to local circumstances.

The *Local Scorecard* shows that select local areas across the country have demonstrated what is achievable, making a compelling case that high performance should be within reach for all communities. We need to grasp the opportunity by aiming higher and rising to the challenge of providing the best possible health system for our people.

David Blumenthal, M.D.
Chairman

Stuart Guterman
Executive Director

The Commonwealth Fund Commission on a
High Performance Health System

Executive Summary

People in the United States, regardless of where they live, deserve the same opportunities to lead long, healthy, and productive lives. Achieving that goal means that all communities should receive the very best from their local health care systems. Yet this new *Scorecard on Local Health System Performance* finds that where one lives has a major impact on the ability to access health care and the quality of care received. Comparing the 306 local health care areas, known as hospital referral regions, in the United States, the report finds wide variations on key indicators of health system performance. Access to care, quality of care, costs, and health outcomes all vary significantly from one local community to another, both within larger states and across states. There is often a two- to threefold variation on key indicators between leading and lagging communities. The 30 top-performing local areas include communities in the Northeast, Midwest, and a few West Coast communities—with these leading areas often doing well on multiple indicators and dimensions of care. Yet while pockets of excellence exist, there are ample opportunities for health system improvement in all communities, even among the leaders.

The *Local Scorecard* aims to provide communities with comparative data to assess the performance of their health care systems, establish priorities for improvement, and set achievement targets. It tracks 43 indicators spanning four dimensions of health system performance, including: access, quality, costs and potentially avoidable hospital use, and health outcomes. Indicators were defined using the latest data available, generally from 2008–2010, and therefore represent a baseline for assessing the impact of national reforms. For each indicator, the *Local Scorecard* assesses health system performance in local areas and compares their performance against benchmark levels achieved in the nation's highest-performing communities. Overall performance ranking then depends on performance on the indicators aggregated by dimension. (See

Appendix A3 for a complete list of local areas, organized by state, with summary performance ranks and relative performance by dimension.)

The findings show that local health system performance is linked across all dimensions—with better access to care associated with higher quality and better outcomes. This interconnectedness underscores the need for health insurance, payment, and delivery system reforms to improve care experiences and outcomes, while at the same time slowing cost growth. Looking to the future, the Patient Protection and Affordable Care Act of 2010 (Affordable Care Act) offers states and local health systems new resources and expanded authority for such a whole-system approach, with the potential to stimulate and support delivery and public health system innovations. Success at the local level will ultimately depend on communities and providers—aided by strong leadership and collaboration—setting goals and taking action to achieve them.

As the nation continues to rebound from the recent economic recession and states contend with often severe budget constraints, the burden of rising health care costs increasingly falls on local businesses and families. There is a pressing need to support local efforts to extract better value from the health system while safeguarding access and affordability. Unsurprisingly, the *Local Scorecard* finds that high-poverty communities typically face problems accessing quality care that are more severe than those faced by high-income communities. Strategically targeting resources to the poorest communities will likely be necessary to reduce barriers to progress and improve health for the most vulnerable populations.

HIGHLIGHTS AND KEY FINDINGS

Where people live matters: it influences their ability to access care as well as the quality of care they receive.

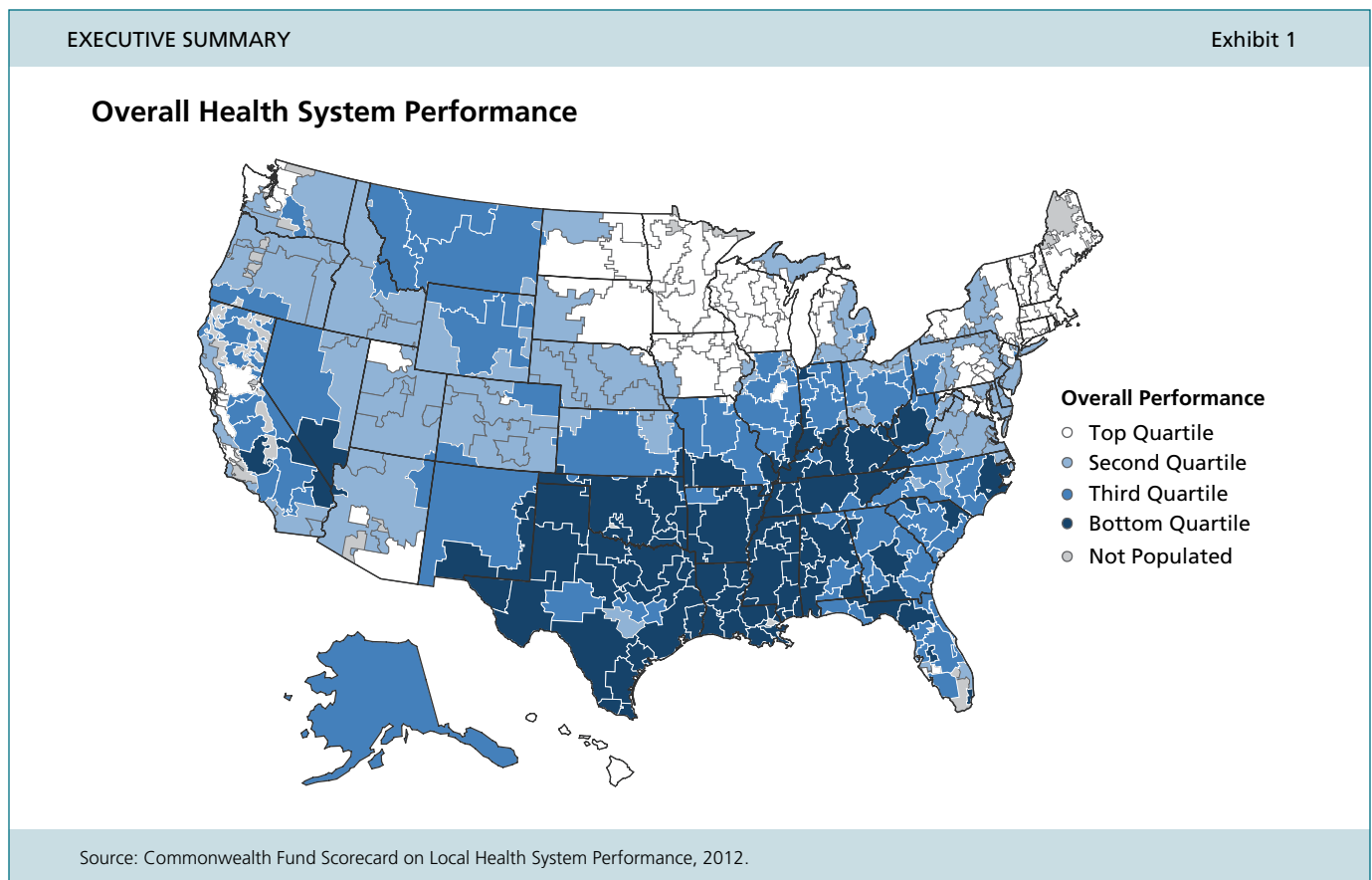
Local areas vary in the provision of health care that is easily accessible, effective, safe, well coordinated, and focused on maximizing population health outcomes

(Exhibit 1). On some key indicators of performance, there was a twofold or greater spread between the local areas grouped in the top 10 percent of the performance distribution versus the bottom 10 percent (Exhibit 2). The gaps between the best- and worst-performing areas were even wider.

- The percentage of uninsured adults ages 18 to 64 ranged from a low of about 5 percent in several areas of Massachusetts to more than half in the two areas in Texas with the highest uninsured rates. In all communities, children were more likely than adults to have insurance coverage, largely because of federal and state policy attention, though there were places where more than 20 percent of children lacked coverage.
- The rate of potentially preventable deaths before age 75 from causes amenable to health care in the area with the highest (worst) rate was more than three times as high as in the area with the

lowest (best) rate (169.0 vs. 51.5 deaths per 100,000 population).

- The proportion of older adults who received recommended preventive care was more than twice as high in the best-performing area than in the worst-performing area (59% vs. 26%). Yet even in areas with the highest rates, too few adults age 50 and older received all recommended preventive care services, such as screening for cancer.
- The incidence of unsafe medication prescribing was also highly variable across local areas. The rate among Medicare beneficiaries was four times higher in Alexandria, La., than in the Bronx and White Plains, N.Y. (44% vs. 11%, respectively).
- Between the top 10 percent and bottom 10 percent of areas, there was nearly a twofold difference in hospital admission rates for



List of 43 Indicators in Scorecard on Local Health System Performance

Dimension and Indicator	Range of Hospital Referral Region Performance					Top Three Local Areas (in alphabetical order)*
	Best HRR	Top 90th Percentile	All-HRR Median	Bottom 10th Percentile	Worst HRR	
ACCESS						
1 Percent of adults ages 18–64 insured	94.6	87.5	80.2	71.8	46.8	Boston, MA; Springfield, MA; Worcester, MA
2 Percent of children ages 0–17 insured	98.8	96.3	93.8	87.2	79.8	Boston, MA; Springfield, MA; Worcester, MA
3 Percent of adults reported no cost-related problem seeing a doctor when they needed to within the past year	95.3	90.7	85.3	80.3	66.9	Appleton, WI; Bloomington, IL; Minot, ND
4 Percent of at-risk adults visited a doctor for routine checkup in the past two years	94.9	90.4	85.2	78.4	67.4	Bloomington, IL; Columbus, GA; Newport News, VA
5 Percent of adults visited a dentist, dental hygienist, or dental clinic within the past year	88.4	77.9	69.7	59.7	41.7	Arlington, VA; Aurora, IL; Bridgeport, CT
PREVENTION & TREATMENT						
6 Percent of adults with a usual source of care	93.0	88.8	82.4	74.2	58.7	Buffalo, NY; Johnstown, PA; Lancaster, PA; Rochester, NY
7 Percent of adults age 50 and older received recommended screening and preventive care	58.8	50.8	44.2	37.5	26.0	Arlington, VA; Manchester, NH; Worcester, MA
8 Percent of adult diabetics received recommended preventive care	69.1	55.7	45.5	36.5	26.9	Duluth, MN; Manchester, NH; Marshfield, WI
9 Percent of Medicare beneficiaries received at least one drug that should be avoided in the elderly (1)	11.4	17.9	25.0	36.2	44.0	Bronx, NY; East Long Island, NY; White Plains, NY
10 Percent of Medicare beneficiaries with dementia, hip/pelvic fracture, or chronic renal failure received prescription in an ambulatory care setting that is contraindicated for that condition (1)	9.5	15.3	19.7	26.2	30.6	Portland, ME; Rochester, MN; Santa Cruz, CA
11 Percent of patients hospitalized for heart failure who received recommended care (2)	99.7	97.5	94.7	89.6	77.2	Hudson, FL; Lynchburg, VA; Victoria, TX
12 Percent of patients hospitalized for pneumonia who received recommended care (2)	99.3	96.9	95.1	92.2	74.1	Clearwater, FL; Hudson, FL; Kettering, OH; San Luis Obispo, CA; Traverse City, MI
13 Percent of surgical patients received appropriate care to prevent complications (2)	99.3	97.4	96.2	93.5	88.0	Hudson, FL; Kettering, OH; Newport News, VA
14 Percent of hospitalized patients given information about what to do during their recovery at home	88.5	86.2	82.6	79.1	73.8	Dubuque, IA; Ogden, UT; Provo, UT
15 Percent of patients reported hospital staff always managed pain well, responded when needed help to get to bathroom or pressed call button, and explained medicines and side effects	70.9	67.1	63.2	59.0	52.8	Petoskey, MI; Rochester, MN; Traverse City, MI; Wichita Falls, TX
16 Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart attack (3)	12.1	14.4	15.6	16.9	20.2	Elyria, OH; Hackensack, NJ; Traverse City, MI
17 Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart failure (3)	8.5	9.9	11.4	12.8	14.8	Blue Island, IL; Munster, IN; Panama City, FL
18 Risk-adjusted 30-day mortality among Medicare patients hospitalized for pneumonia (3)	9.4	10.6	11.8	13.2	15.8	Allentown, PA; Cedar Rapids, IA; Great Falls, MT
19 Percent of home health care patients whose ability to walk or move around improved (4)	60.7	56.7	53.4	48.7	45.9	Gainesville, FL; Ogden, UT; Provo, UT
20 Percent of home health care patients whose wounds improved or healed after an operation (4)	92.4	90.3	88.0	85.3	79.3	Lake Charles, LA; Santa Rosa, CA; Tallahassee, FL
21 Percent of high-risk nursing home residents with pressure sores (5)	4.8	7.9	10.9	14.8	20.8	Mason City, IA; St. Cloud, MN; San Luis Obispo, CA
22 Percent of long-stay nursing home residents who were physically restrained (5)	0.4	1.5	3.3	6.8	13.6	Amarillo, TX; Tacoma, WA; Topeka, KS; Wausau, WI
23 Percent of long-stay nursing home residents who have moderate to severe pain (5)	0.4	2.2	3.6	5.2	11.1	New Brunswick, NJ; Paterson, NJ; Spartanburg, SC; Takoma Park, MD
24 Percent of Medicare decedents with a cancer diagnosis without any hospice or who enrolled in hospice in the last three days of life	30.1	46.6	55.6	64.2	84.4	Bend, OR; Salem, OR; Sun City, AZ

Dimension and Indicator	Range of Hospital Referral Region Performance					
	Best HRR	Top 90th Percentile	All-HRR Median	Bottom 10th Percentile	Worst HRR	Top Three Local Areas (in alphabetical order)*
POTENTIALLY AVOIDABLE HOSPITAL USE & COST						
25 Hospital admissions among Medicare beneficiaries for ambulatory care-sensitive conditions, per 100,000 beneficiaries	1,535	4,045	6,184	7,919	9,611	Bend, OR; Ogden, UT; Salem, OR
26 Readmissions within 30 days of discharge as percent of all admissions among Medicare beneficiaries	12.5	15.1	17.7	20.5	24.8	Bend, OR; Ogden, UT; Rapid City, SD
27 Potentially avoidable emergency department visits among Medicare beneficiaries, per 1,000 beneficiaries	129	162	197	236	294	Everett, WA; Grand Junction, CO; Santa Cruz, CA
28 Percent of long-stay nursing home residents hospitalized within six-month period	6.3	11.9	20.0	28.3	36.7	Bend, OR; St. Cloud, MN; Sun City, AZ
29 Percent of first-time nursing home residents readmitted within 30 days of hospital discharge to the nursing home	9.4	15.8	20.6	25.7	30.9	Grand Falls, MT; Ogden, UT; Rapid City, SD
30 Percent of home health care patients with a hospital admission	19.3	22.4	26.6	32.2	46.8	Idaho Falls, ID; Ogden, UT; Provo, UT
31 Medicare imaging costs per enrollee	\$110	\$189	\$288	\$443	\$638	Grand Junction, CO; Lebanon, NH; Minot, ND
32 Total Medicare (Parts A & B) reimbursements per enrollee (6)	\$5,089	\$6,432	\$7,952	\$9,687	\$15,813	Anchorage, AK; Grand Junction, CO; Honolulu, HI
33 Total reimbursements per commercially insured enrollee ages 18–64 (6)	\$2,014	\$2,801	\$3,314	\$4,006	\$5,068	Buffalo, NY; Honolulu, HI; Rochester, NY
HEALTHY LIVES						
34 Potentially preventable mortality, deaths per 100,000 population (7)	51.5	71.6	91.3	128.7	169.0	Boulder, CO; Everett, WA; Grand Junction, CO
35 Breast cancer deaths per 100,000 female population	17.0	22.6	28.9	38.8	48.9	McAllen, TX; San Jose, CA; Santa Barbara, CA
36 Colorectal cancer deaths per 100,000 population	6.8	16.9	22.8	32.6	39.0	McAllen, TX; San Jose, CA; Santa Barbara, CA
37 Infant mortality, deaths per 1,000 live births	3.3	4.9	6.8	9.4	14.4	San Francisco, CA; Santa Rosa, CA; Victoria, TX
38 Percent of live births with low birth weight	4.9	6.0	7.5	9.9	13.2	Anchorage, AK; Dubuque, IA; Everett, WA; Santa Cruz, CA
39 Suicide deaths per 100,000 population	4.2	8.2	15.4	23.4	49.1	East Long Island, NY; Hackensack, NJ; Newark, NJ; Ridgewood, NJ; White Plains, NY
40 Percent of adults who smoke	6.2	12.6	19.0	24.2	30.9	Provo, UT; San Mateo, CA; Santa Barbara, CA
41 Percent of adults ages 18–64 who are obese (BMI ≥ 30)	15.3	23.8	29.5	35.7	45.6	Boulder, CO; Bridgeport, CT; San Francisco, CA
42 Percent of adults ages 18–64 who have lost six or more teeth because of tooth decay, infection, or gum disease	2.8	5.9	10.1	16.4	28.0	Austin, TX; Boulder, CO; St. Cloud, MN
43 Percent of adults ages 18–64 report fair/poor health, 14 or more bad mental health days, or activity limitations	17.9	23.5	29.5	35.8	42.0	Appleton, WI; Bloomington, IL; Sioux City, IA

* As a result of ties, more than three local areas may be listed.

(1) Metric forms part of the score reflecting potentially inappropriate prescribing among elderly Medicare beneficiaries.

(2) Metric forms part of the score reflecting receipt of recommended hospital care.

(3) Metric forms part of the score reflecting hospital mortality.

(4) Metric forms part of the score reflecting quality of home health care.

(5) Metric forms part of the score reflecting quality of nursing home care.

(6) Total Medicare per-person spending estimates include payments made for hospital (part A) and outpatient (part B) services. Estimates exclude extra payments to support graduate medical education and treating a disproportionate share of low-income patients; adjustments are made for regional wage differences. Commercial spending estimates, generated from a sophisticated regression model, include reimbursed costs for health care services from all sources of payment, including the health plan, enrollee, and any third-party payers, incurred during 2009. Outpatient prescription drug charges are excluded, as were enrollees with capitated plans and their associated claims. Commercial spending estimates were adjusted for enrollee age and sex, the interaction of age and sex, partial-year enrollment, and regional wage differences.

(7) Data for this indicator come from county-level 2005–07 NVSS-M data files, aggregated to the HRR level, for most HRRs. Estimates for the Anchorage, AK, and Honolulu, HI, HRRs represent state-level data and are compiled from years 2006–07.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

ambulatory care–sensitive conditions such as pneumonia and diabetes among Medicare beneficiaries (4,045 vs. 7,919 admissions per 100,000 beneficiaries), and a sixfold difference between the area with the highest and lowest admission rates (1,535 vs. 9,611 admissions per 100,000 beneficiaries).

There are strong geographic patterns of performance, though the patterns vary by dimension.

Overall, local areas in the Northeast and Upper Midwest often ranked in the top quartile of health system performance, whereas places with the lowest performance were concentrated in the South, particularly within the Gulf Coast and south-central states (Exhibit 1).

- The highest- and lowest-ranking local health care areas have varied populations (by size), with small and large regions at both ends of the performance distribution (Exhibit 3).
- Areas in the Northeast tended to have strong performance on measures of access and prevention and treatment, but at times lagged other parts of the country on measures of potentially avoidable hospital use and cost.
- The majority of local health care areas in the Upper Midwest and West scored in the top performance quartile on measures of potentially avoidable hospital use and cost.

For many performance indicators, there is dramatic variation among local areas in the same state.

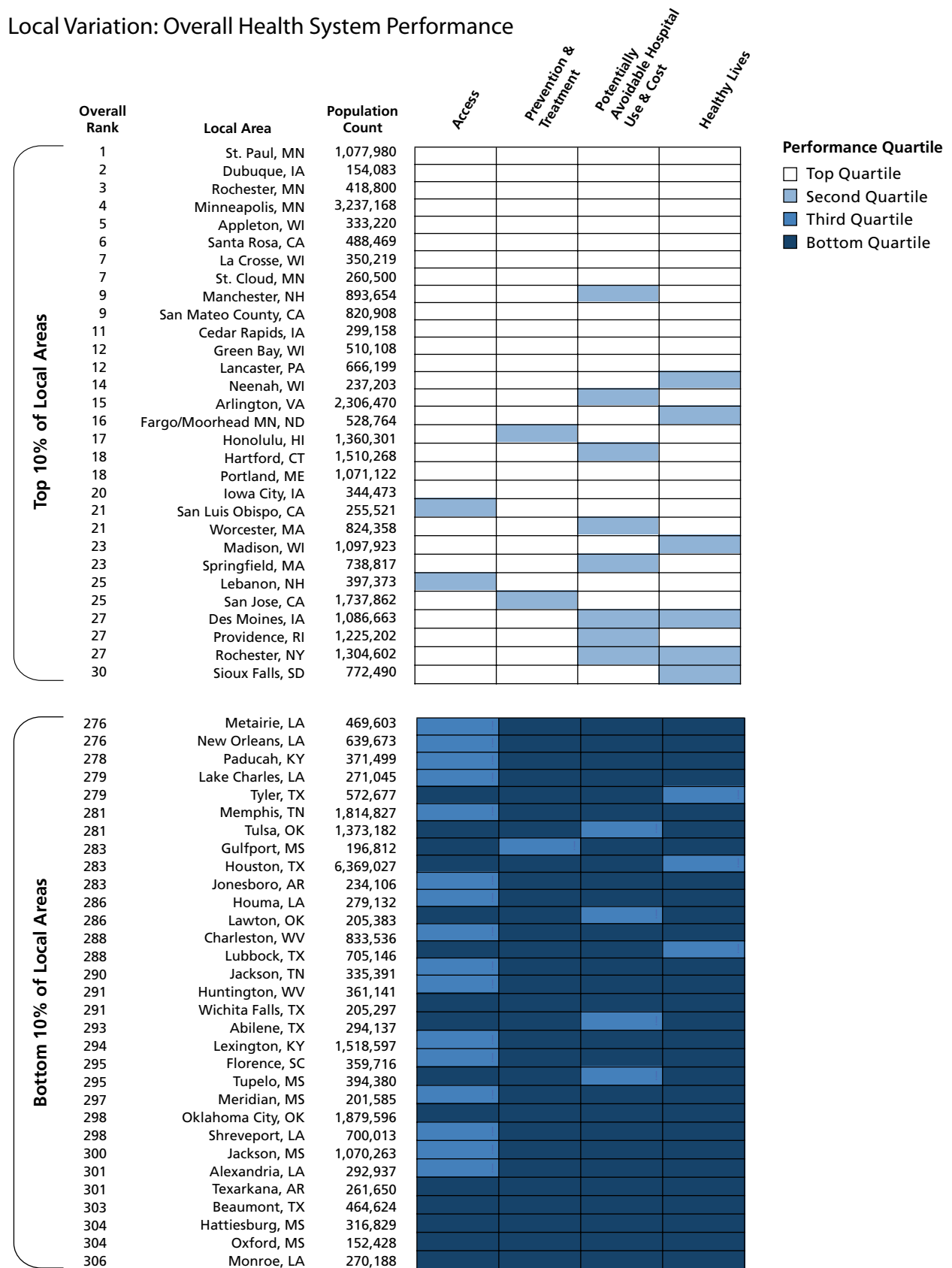
Health system performance in states with large and varied populations can differ from one community to another, even though they share state policies and borders. Intrastate variations demonstrate that local attributes drive health system performance and also show that local provider and community action, as well as state policies, can support improvement in areas of greatest need.

- In 10 states, there was a 10-percentage-point-or-greater difference between the area with the highest rate of insurance coverage for adults ages 18 to 64 and the area with the lowest rate of coverage for this population.
- Whether people with diabetes receive effective tests for managing their disease and preventing complications is also associated with where they live within a state. For example, within Kentucky alone, there was a 27-percentage-point difference between the best and worst areas on this measure of chronic care (61% in Covington vs. 34% in Lexington).
- Patients hospitalized for heart failure may or may not get all evidence-based treatment, depending where they receive care. Intrastate differences in rates of effective heart failure treatment reached more than 10 percentage points in nine states.
- In Florida, Illinois, Indiana, and Michigan, there was nearly a 20-percentage-point difference between the local health care areas with the highest and lowest rates of hospitalization among nursing home residents.

Spending among commercially insured and Medicare populations varies considerably across local areas. But patterns of regional variation are often inconsistent between the two populations.

Both Medicare spending and private insurance spending per enrollee vary widely across local areas. Excluding two outliers for Medicare with very high spending, there is a two-and-a-half-fold difference between the local areas with the lowest and highest per-enrollee spending rates for both Medicare and commercially insured (ages 18–64) populations. The lowest Medicare and private insurance spending areas had per capita costs that were 30 percent to 40 percent below average (all-area median), and spending in the highest-cost areas was more than 50 percent

Local Variation: Overall Health System Performance



Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

above average. However, Medicare and commercially insured spending patterns were often inconsistent. Although private and Medicare spending in some areas tracked each other—relatively low on both or high on both—there were areas of the country where spending rates were relatively high for Medicare but low for the commercially insured population, and other areas in which private spending per enrollee was relatively high and Medicare spending relatively low. The inconsistency in spending patterns between the Medicare and commercially insured populations points to the need for a better understanding of local market dynamics as well as care patterns in the underlying delivery systems.

This analysis takes advantage of a rich set of insurance claims for people enrolled in employer-sponsored plans in 2009. Despite representing about 36 million covered individuals nationally, these data can fluctuate in smaller regions from year to year as the representative employer mix and annual benefit designs change. Along with variations in Medicare and private spending, this underscores the pressing need for all-payer databases that enable the tracking of total health care costs at the community level, examination of the sources of variation, and development of efforts to improve and track total costs and affordability over time.

Leading local areas often perform consistently well on multiple indicators across dimensions of performance.

The local areas that scored in the top quartile of overall health system performance often performed well on multiple indicators and across dimensions. In fact, many of the top-ranked places performed in the top quartile on each of the four dimensions (Exhibit 3). A confluence of factors likely contributes to better performance in these areas, including efforts to expand health insurance coverage, state and community leadership, supportive policy, and a culture of collaboration and improvement. In

contrast, areas in the bottom quartile of overall health system performance lagged relative to leaders on multiple indicators of performance. Overall performance in these areas was pulled down by high uninsured rates for adults and children, low rates of recommended preventive care and treatment, and poor health outcomes. The 10 percent of communities that performed worse overall (about 30 areas) tended to struggle on each dimension (Exhibit 3).

Still, we find exceptions in all regions of the country. There were no regions where every community demonstrated strong performance across all indicators. Moreover, there were many cases where local areas in the lowest-performing regions achieved high levels of performance on certain indicators, even ranking in the top half of the distribution on a dimension. Learning about these places can offer insights for other communities, particularly those facing similar health system or resource constraints.

Multiple dimensions of health system performance are interrelated.

Across local health care areas, strong relationships between core dimensions of health system performance were evident: better access was associated with higher quality; better access and higher quality with improved health outcomes; and poor access and lower quality with higher rates of potentially avoidable hospital admissions and higher overall costs. These cross-dimensional findings underscore the need for policymakers and community leaders to focus on population health and take a whole-system view to improve performance.

- The leading local areas in the access dimension were also leaders in the prevention and treatment dimension. In local areas with higher rates of insurance among adults, individuals were also, unsurprisingly, more likely to have a usual source of care and receive preventive care.

- Areas where people reported having better access to care tended to have lower rates of death from causes potentially preventable with timely, effective health care. Further, residents of these areas were more likely to report better health-related quality of life.
- Better quality of care, as measured by prevention and treatment indicators, was also associated with lower rates of potentially preventable deaths. People in places that ranked in the top quartile of the prevention and treatment dimension were less likely to die from causes that were potentially preventable with timely and effective health care than those living in places that fell in the bottom quartile on this dimension.
- Close analysis of specific indicators provides insight as to how deficiencies in access and quality contribute not only to poor outcomes, but also to inefficient care, as measured by potentially avoidable hospital use. For example, hospital admission rates among nursing home residents were lower in communities where fewer nursing home residents developed pressure sores (a preventable injury), suggesting there is a common pathway to improve both the quality and efficiency of care.

Health system performance in the nation's largest cities is highly variable.

About 40 percent of the U.S. population lives in the local health care areas representing the country's largest cities. These regions are also home to many of the nation's leading academic hospitals and major health care systems—providing referral centers for a global community as well as residents of the United States. The *Local Scorecard* finds substantial performance variation across cities.

- Having a large and diverse population does not necessarily lead to poor health system

performance. Among the nation's largest urban areas, Boston, Minneapolis and St. Paul, the San Francisco Bay area (Alameda County, San Mateo County, and San Francisco), Seattle, and Arlington, Va., all scored in the top quartile for overall health system performance.

- Cities' performance on individual indicators varied, with some exceeding benchmark performance and many other cities lagging.
- In most of the largest cities, 30-day readmission rates, potentially avoidable hospitalization rates for ambulatory care-sensitive conditions, and per capita Medicare spending (taking into account differences in local wages and costs of graduate medical education) were high relative to the median rate for all local areas in the country.

Socioeconomic factors, particularly high poverty rates, are associated with some aspects of health system performance, but not all. There are significant variations within areas with low levels of poverty as well as within areas with high poverty levels.

Local areas with high poverty rates tended to have poorer access, lower rates of preventive care, and higher rates of potentially avoidable hospital admissions and readmissions. High rates of poverty were also associated with poor health outcomes, especially those for which timely access to care and population health interventions can make a positive difference. Yet dividing local areas into relative high- or low-income groups, the *Local Scorecard* finds significant variation in performance within both types of communities. On prevention and treatment as well as other dimensions, high-income communities were not always in the top half of the performance distribution and low-income communities were not always in the bottom half. The way local health care

systems are organized and care is delivered makes a difference.

- Overall, communities with the highest rates of poverty had among the highest uninsured rates and lowest rates of preventive care, pulling down their overall performance rankings. These areas also tended to have higher rates of potentially preventable deaths and higher rates of disability and poor health. Among these at-risk communities, the association between poor access and poor health outcomes was particularly notable and highlights the importance of national and state policies that can ensure equitable access to care as a foundation for health system performance.
- There was considerable variation among high- and low-income areas on two dimensions: prevention and treatment, as well as potentially avoidable hospital use and cost. Some high-income communities performed below what might be expected, given their resources, and some low-income communities performed better than might be expected. Notably, several relatively high-income communities were in the bottom half of the performance distribution on these two dimensions, and several low-income communities were in the top quartile or top half.

There is room for improvement in all local areas.

While top and bottom local areas often performed consistently across dimensions, no local areas ranked consistently at the top or bottom on all indicators of performance. And for some indicators, such as preventive care for adults and patients' assessment of care experiences in hospitals, even the top rates fell below what we know is achievable in the highest-performing care systems. Approximately 66 million people live in the local health care areas that score in the lowest performance quartile overall, and many

would benefit from even modest improvements in their local health system. Raising performance levels in these areas to benchmarks already achieved by some communities would yield substantial returns for the nation's health care system.

If all communities reached the performance levels achieved by the highest-performing 1 percent of local health care areas, we might expect the following gains:

- Over 30 million more adults and children would have health insurance coverage—reducing the number of uninsured by more than half.
- More than 9 million adults over age 50 would receive effective, evidence-based preventive care, including cancer screenings and immunizations.
- There would be approximately 1.5 million fewer hospitalizations and readmissions among chronically ill Medicare patients, nursing home residents, and people with a recent hospitalization. This would mean billions of dollars in potential savings annually for the Medicare program.
- About 1.3 million fewer Medicare beneficiaries would receive an unsafe and inappropriate prescription medication.

These are ambitious targets for all local areas. But by aiming high, there is the potential for substantial gains, especially if leaders succeed in raising the bar.

SUMMARY AND IMPLICATIONS

The *Local Scorecard's* evidence of wide variation in health system performance across local areas and within states points to the need for strategic improvement efforts in each community, supported by state and federal policies and resources. Building on The Commonwealth Fund's assessments of health system performance at the national and state levels, the *Local Scorecard* finds wide variation across all four dimensions of performance, based on 43 indicators that were available across the country.

These comparative data represent a baseline leading up to national reforms enacted in 2010. Thus, the *Local Scorecard* offers a starting point from which to assess changes over time, as federal reforms unfold and states begin to use new authority and resources provided by the Affordable Care Act. At the same time, state policy leaders can use it as a tool to target interventions to the communities with the greatest need and most to gain.

This report underscores the importance of looking locally—beyond national and state averages—for opportunities to improve care experiences, improve population health, and achieve more-affordable health care systems that deliver high-quality care and lower costs. Findings also point to the need for multidimensional strategic approaches to health system improvement that avoid focusing on just one factor to the exclusion of others. While national and state policies provide resources and help to structure markets that promote improvements in health system performance, real and sustained progress hinges on engagement and collaborative action at the local level.

A framework for local health system improvement.

Changes to health care provider payment, new health information technologies, more robust performance measurement and data systems, and health system infrastructure investments enacted in recent national health care legislation are leverage points that can accelerate and support local health system improvement. Moving forward, however, requires multiple stakeholders—Medicare, Medicaid, private insurers, state policymakers, community health leaders and providers, and local businesses—to align incentives with a shared will and vision. Action is needed at national, state, and local levels to ensure that health care is affordable, of high quality, and responsive to population needs.

The federal government has set the stage for improvement in states and communities across the country via the insurance, payment, and delivery

systems reforms embodied in the Affordable Care Act. Key reforms include:

- taking steps to reduce the number of uninsured and improve access for millions across the country, reforms that will lay the foundation for local improvement efforts focused on enhancing patients' care experiences, promoting better health for all, and addressing cost concerns;
- granting new authority to both Medicare and state Medicaid programs, enabling these public insurance payers to form new partnerships with local health systems that support reorganization of local delivery models and realignment of incentives to lower costs and improve quality;
- investing in new information systems to inform and support clinicians in delivering safer, higher-quality care; and
- investing in primary care and public health initiatives that will encourage use of preventive care and help avoid hospitalizations by connecting patients with targeted community resources.

The Affordable Care Act further provides state governments with new authority and resources to support state-level policies and initiatives to improve performance. States can reduce unwarranted variations within state borders and improve health system performance for all communities by focusing on insurance expansions, information systems, oversight of quality and safety, and policies to address concerns in areas with the greatest need. For example, the Affordable Care Act will reduce the number of uninsured in all states by supporting Medicaid enrollment expansion and providing new premium assistance to help make sure insurance is affordable for low- and middle-income families. Starting in 2014, new state-run insurance exchanges and insurance standards that prohibit charging more based on health conditions will make it easier for people to sign up and stay covered.

With federal and state insurance reforms paving the way for improved access to care, providers and other community stakeholders, as well as state officials, will be able to focus on improvement to systems of care and population health, including payment changes that hold care systems accountable for outcomes and costs. The newly established Center for Medicare and Medicaid Innovation will serve as a resource for states, health systems, providers, and private payers interested in testing and implementing new payment and care models, locally, that reward innovation, high quality, and efficient care delivery over the volume of services provided. Such action can support initiatives in communities across the country to enhance primary care and reduce avoidable hospital admissions and readmissions.

With insurance expansions, better information systems, and new resources available, communities have opportunities to achieve better health system performance, so long as they are engaged participants, rather than observers, as state and national policies unfold. The substantial variation across communities documents the potential of local action to make a difference. Local action will require:

- strong leaders, including medical care providers, who can clearly articulate improvement goals and motivate stakeholders to act;
- willingness to innovate and take advantage of opportunities, such as those provided by the Center for Medicare and Medicaid Innovation, to develop new models of care;
- collaboration among stakeholders within and outside the local health care delivery system;
- a sense of obligation to and accountability for broadly defined community needs that take into account, but are distinct from, the needs of local health care providers; and
- strategic use of data and measurement to assess local performance, inform action, and monitor the progress of improvement initiatives.

National health care system reforms, newly available resources, and expanded state authority can help set the stage for communities to assume greater accountability for improving patient experiences, lowering costs, and achieving better health for all of their residents.

The *Local Scorecard* takes an important first step toward understanding community-level variations in health system performance and identifying opportunities for improvement. The “starter set” of performance indicators it introduces represents a new measurement framework for those stakeholders most attuned to local needs, one that could motivate the development of explicit, locally appropriate health system improvement goals.

We acknowledge that some of the data used in this analysis are not as robust in all communities as we might like; clearly there is a pressing need for better data on health care outcomes, sources of costs, and performance variation at the local level. For that reason, we encourage stakeholders to identify improvement opportunities in their local area and initiate their own performance measurement activities, rather than emphasizing the specific rankings reported here. This report is an important step forward, but it raises as many questions as it answers, and highlights the need to assess changes over time and understand the factors contributing to variations in performance.

Federal and state policies have the potential to support improvement in all the nation’s communities. But ultimately it is up to health care systems, community leaders, and health policy officials to rise to the challenge of improving performance to meet the current and future health and health care needs of the people they serve.

INTRODUCTION

Health care is local—most Americans receive health care services near their home or work. Within this local context, health care is influenced by providers with unique practice styles, and carried out in organizations with distinct cultures, for patients with particular health needs. While many of the policies that influence the organization and delivery of care are crafted at the federal and state levels, the policies are implemented locally and informed and shaped by local circumstances. A comprehensive understanding of health system performance must thus include local as well as state and national perspectives.

As local providers, community leaders, and policymakers confront the challenges of meeting their populations' health needs and achieving high-quality and affordable care systems, there needs to be a way to assess local health system performance and identify

areas for improvement. Benchmarks drawn from the top range of local performance provide achievable targets and focus attention on opportunities to close the gap with top-performing regions. High-performing local delivery systems have achieved rapid rates of improvement by comparing their performance with others, setting targets to improve, and aligning care teams to achieve shared goals. Research also shows that high-performing regions have benefited from strong local leadership, collaboration focused on population outcomes, and making deliberate choices about the way health care is organized and delivered locally.¹

This *Scorecard on Local Health System Performance* builds on a series of national and state scorecards developed by the Commonwealth Fund Commission on a High Performance Health System.² It examines performance at local market levels, looking at variations across 306 local health care areas. The goal

WHAT IS A HOSPITAL REFERRAL REGION?

Hospital referral regions (HRRs) are areas that represent regional markets for tertiary medical care. The construct was developed by the Dartmouth Atlas of Health Care projectⁱ and has been widely used in health service research and policy analysis, including by the Institute of Medicine (IOM),ⁱⁱ Medicare Payment Advisory Commission (MedPAC),ⁱⁱⁱ the Government Accountability Office (GAO),^{iv} and the Congressional Budget Office (CBO).^v

HRRs are 306 mutually exclusive regions, constructed by aggregating the residential zip codes from which Medicare beneficiaries traveled for major cardiovascular and neurological surgical procedures. Each local referral region has at least one hospital where these complex surgical procedures are performed. The HRR names reflect the location (city or town) where the referral hospital is physically located. The regions are meant to represent travel and referral patterns and thus do not align to political (county, state) boundaries and sometimes cross state borders.

HRRs have varied populations, ranging from about 126,000 to 9.9 million residents; about a third of HRRs have populations over 1 million residents. Many of the HRRs with the largest populations are relatively small geographic areas. As a result, many of the nation's largest

cities cannot easily be seen on the maps printed in this report. We have included a short chapter in this report, along with two exhibits, focusing on the largest metropolitan areas.

For more information on HRRs and examples of their use in health care policy, see:

- ⁱ Appendix on the Geography of Health Care in the United States, Abstracted from the 1996 edition of the Dartmouth Atlas of Health Care, available at: <http://www.dartmouthatlas.org/downloads/methods/geogappdx.pdf>.
- ⁱⁱ <http://iom.edu/Activities/HealthServices/GeographicVariation.aspx>.
- ⁱⁱⁱ MedPAC, "Report to the Congress: Variation and Innovation in Medicare," March 2003; and M. Miller, "Report to the Congress (Testimony): Reforming the Delivery System—Statement of Mark Miller," Sept. 16, 2008.
- ^{iv} GAO, "Report to Congressional Requesters—Health Care Price Transparency: Meaningful Price Information Is Difficult for Consumers to Obtain Prior to Receiving Care (report # GAO-11-791)," Sept. 2011.
- ^v CBO, "Geographic Variation in Health Care Spending," Feb. 2008.

of the analysis is to inform policy and community action to ensure that everyone in the United States, regardless of where they live, has access to high-quality, efficient care.

The *Local Scorecard* includes 43 performance measures grouped into four dimensions: access to care, prevention and treatment, potentially avoidable hospital use and cost of care, and the ability to live long and healthy lives (referred to as “healthy lives”) (Exhibit 2). The analysis examines the range of variation across local regions throughout the country as well as within states, since these local areas share a common state policy environment. Performance is assessed relative to what has already been achieved by top-performing communities.

The unit of analysis used in the *Local Scorecard* is the hospital referral region (HRR), a construct widely used in health services research to represent a regional market for complex medical care. HRRs are organized around tertiary care hospitals and represent travel patterns for patients receiving complicated surgeries. Referral areas are often not correlated with political jurisdictions or natural collections of providers and other stakeholders that could take action to address local health system concerns. As communities become increasingly accountable for their own health system performance, there is nothing preventing them from redefining their “community” and drawing their own borders for more accurate local representation. (For more information on HRRs, see box on page 21.) Throughout this report, HRRs are generally referred to as “local areas.”

The *Local Scorecard* can be used for benchmarking performance, which may help identify community initiatives, health system actions, and policies that can improve population health and result in better care experiences and more efficient care. It is also a single source for a broad range of data on local health system performance. The report and accompanying online data center provide tools for community leaders, health care professionals, and policymakers to assess local performance and set benchmarks to motivate improvement (see box below). For some communities, this *Local Scorecard* will be among the first sources of local health system data. For others, the *Local Scorecard* will supplement ongoing measurement activities. Even in communities with sophisticated analytic capabilities, the *Local Scorecard* offers the potential to track change over time with comparisons to other communities and to national, state, and peer-community benchmarks. (See box on next page for *Local Scorecard* methodology.)

This *Local Scorecard* provides a framework for local health system performance measurement. By necessity, the indicators selected for inclusion are incomplete and should be considered a “starter set” of performance measures upon which local health system leaders are encouraged to build so they might better meet their own reporting needs. In this way, we hope that it can be used by communities to inform and motivate more comprehensive performance measurement activities. By highlighting far-reaching variations in health system performance, the *Local Scorecard* raises as many questions as it answers,

ACCESS LOCAL SCORECARD ONLINE TOOLS

This report summarizes results of the *Local Scorecard* and presents overall hospital referral region (HRR) performance on each of the four dimensions of health system performance. Appendix A3 at the end of this report presents overall quartile performance for all 306 HRRs. *Local Scorecard Data Tables* that display data and specific HRR-level rates for each indicator, including supplementary

demographic and market characteristic data, can be accessed from the Commonwealth Fund Web site at www.commonwealthfund.org/Maps-and-Data/State-Data-Center/Local-Scorecard.aspx. The Web site also provides local area performance profiles that enable comparison of HRRs and display summary information on quartile performance.

SCORECARD METHODOLOGY

The *Scorecard on Local Health System Performance, 2012*, tracks 43 performance metrics in each of 306 mutually exclusive local health care regions across the country. Health system performance is evaluated in four dimensions:

- **Access** includes insurance coverage for adults and children and three indicators of access and affordability of care.
- **Prevention and treatment** includes 19 indicators that measure the quality of ambulatory care, hospital care, long-term care, post-acute care, and end-of-life care.
- **Potentially avoidable hospital use and cost** includes six indicators of hospital care that might have been prevented or reduced with appropriate care, follow-up care, and efficient use of resources, as well as three measures of the spending on medical care by Medicare and private insurance.
- **Healthy lives** includes 10 indicators that assess the degree to which people are able to enjoy long and healthy lives.

Several design principles guided development of the *Local Scorecard*:

Geography: The unit of analysis used in the *Local Scorecard* is the hospital referral region (HRR). HRRs are regions created by the Dartmouth Atlas of Health Care project and represent regional markets for tertiary medical care. Every HRR is anchored by a city that has at least one medical center that serves as a referral hospital for tertiary care. (For more information, see box on page 21.)

Performance Metrics: Indicators were selected to span the health care system, with each representing an important aspect of care that is sensitive to health care system performance. To be included, all indicators had to be available at the local area level. The indicators build on the data used in the *National Scorecards* and *State Scorecards* and include some new indicators that have recently become available. Because indicators had to be measured the same way in all areas and available in national databases, the *Local Scorecard* does not include important sources for local information, such as state all-payer claims databases, or other data available in some but not all parts of the country. For some metrics, higher values represent better performance (e.g., the percentages of adults and children who have insurance); for others, lower values represent better performance (e.g., hospital readmission rates, potentially avoidable emergency department visits, and mortality).

Data Sources: Most indicators draw from publicly available data sources, including government-sponsored surveys, registries, publicly reported quality indicators, vital statistics mortality data, and administrative databases. The most current data available were used in this report, generally from 2008–2010, though this did vary somewhat by indicator. [Appendix B](#) provides additional detail on the data sources and time frames.

Data Preparation: Many data sources used in this analysis do not report at the HRR level. It was therefore necessary to crosswalk substate data from the level reported to the HRR. For example, counties do not map directly to HRRs, so we used a crosswalk file developed by the U.S. Postal Service and the Department of Housing and Urban Development to disaggregate county-level data to zip code-level estimates, and then we aggregated the zip code-level data to HRRs using a crosswalk file available from the Dartmouth Atlas project.

Scoring and Ranking Methodology: The scoring method used in the *Local Scorecard* involves several steps. First, we derived a ratio for each indicator comparing the local area rate to a benchmark, the top 1 percent of areas. Where higher rates would indicate a move in a positive direction, we divided the area rate by the benchmark. Where lower rates would indicate a positive direction (e.g., mortality), we divided the benchmark by the area rate. The top ratio (best) was set to 100 percent for scoring purposes.

We then averaged the ratio scores for metrics within each of the four performance dimensions to calculate a dimension summary score for each local area. Local areas were then rank-ordered based on their dimension summary score. Dimension ranks were then averaged to derive an overall performance score. The exhibits group local areas into quartiles for each dimension and overall performance. Additional data is provided online by indicator and dimension.

The *Scorecard on Local Health System Performance, 2012*, represents a first step toward developing a comprehensive assessment of local health system performance and should be viewed as a starter set of measures. Because this is a first edition, the *Local Scorecard* went through a beta testing period during which it was presented to two local areas (St. Louis, Mo., and Asheville, N.C.), where community stakeholders provided feedback on technical details of the report and accompanying online benchmarking tools. The authors would like to thank these stakeholders for their constructive guidance and feedback on strengthening the report so that it may better help communities engage in local health system performance improvement efforts.

identifying new opportunities for improvement and learning.

In the sections that follow, we present the *Local Scorecard* results, organized by four dimensions of performance. At the end of each of these sections are exhibits depicting the overall top and bottom 10 percent of HRRs by dimension, as well as performance quartiles for individual indicators. We also summarize variations across a selection of the nation's largest cities, focusing on certain cross-dimensional patterns, to ensure that adequate attention is afforded to these important population centers. (In some exhibits, HRRs representing large cities are difficult to distinguish, and cities' performance is not always highlighted as key indicators are discussed throughout the report.) We then examine variations among communities with high or low rates of poverty, relative to high-income areas. Throughout, we provide examples of communities that have achieved high performance, or have taken an innovative approach to integrating health system and community priorities, to illustrate the range of possibilities when building high-performing local health systems.

Appendix A to this report provides additional local area performance data. [Appendix A1](#) lists a selection of HRRs that are either notably similar or divergent based on relative spending in their Medicare and commercially insured populations. [Appendix A2](#) consists of summary information on select indicators for the nation's largest metropolitan areas by census region. [Appendix A3](#) provides the overall performance and dimension quartiles for all 306 local areas, organized alphabetically by state. [Appendix B](#) describes the indicators, years, and data sources for the *Local Scorecard*.

The report's conclusion focuses on cross-cutting themes and the potential national gains if all local areas could reach benchmarks set by the top-performing areas on key indicators. As observed

in both the national and state scorecards, the wide performance variations found among local areas point to substantial opportunities to improve. As illustrated in Exhibit 2, there is a wide range of performance on almost every indicator between the top group and bottom group of local areas.

ACCESS

Access to health care is the foundation and hallmark of a high performance health system. The foremost factor in determining whether people can pay for and access the care delivery system when needed is having insurance that covers essential care. In the midst of declining health insurance coverage prior to enactment of federal insurance reforms and rising health care costs, lack of affordable access to care in many local areas presents a major barrier to living a long and healthy life. Inadequate access also contributes to higher costs of care and waste: it causes people without insurance who are sick or injured to delay treatment; it encourages reliance on high-cost care in hospital emergency departments; and it results in duplication of services and failure to follow up on test results or seek preventive care.

The *Local Scorecard* includes five indicators in the access dimension (see [Appendix B](#) for more detailed indicator descriptions, time frames, and data sources):

- rates of insurance coverage for adults;
- rates of insurance coverage for children;
- proportion of adults who reported they went without care because of cost;
- proportion of older and/or sicker adults who had a routine checkup in the past two years; and
- proportion of adults who had a dental visit within the past year.

The *Local Scorecard* finds significant gaps and variability in access to care across local health care

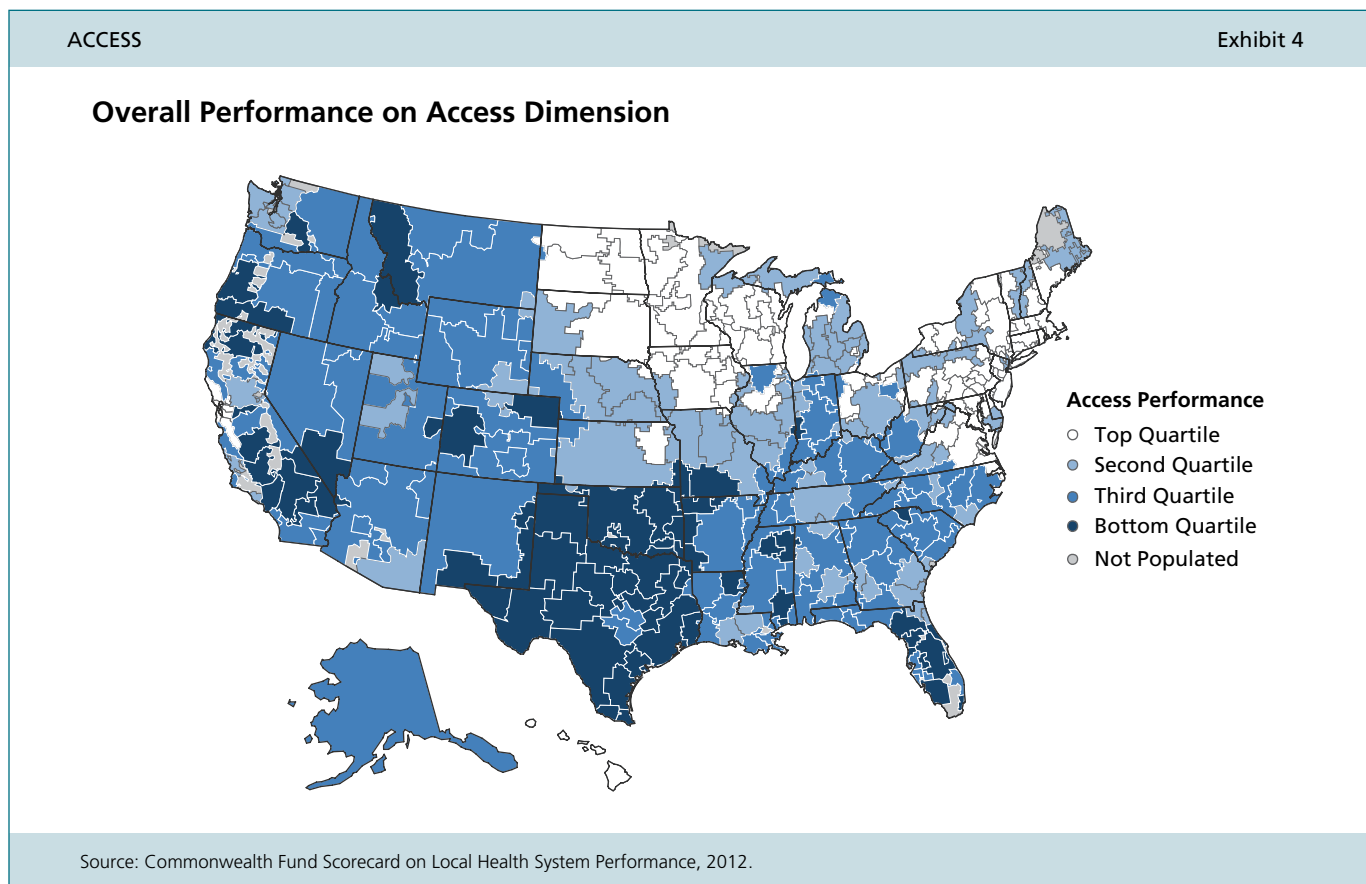
markets throughout the country. Intrastate variation on access measures is also notable. The leading areas in terms of access to care—concentrated in the Northeast and Upper Midwest—generally performed well on all five access measures (Exhibits 4 and 10). The top-performing 30 local areas included all or most of Connecticut, the District of Columbia, Iowa, Massachusetts, Minnesota, New Hampshire, and Rhode Island. In addition, Minnesota, northeastern Wisconsin, Bloomington, Ill., and part of the Detroit metropolitan area also stood out as top performers in the Upper Midwest. Owing to their high rates of uninsured residents, areas in the South and West had generally low rankings across all five measures of access.

Health Insurance Coverage

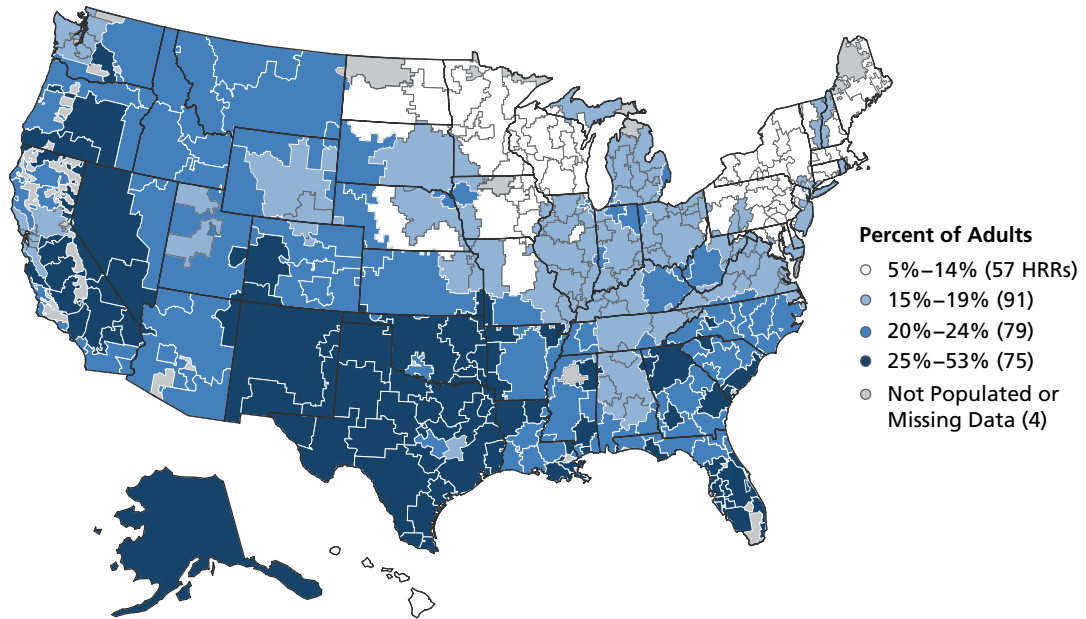
The number of people without health insurance has increased steadily over the last decade, reflecting the rising costs of health care and health insurance,

coupled with stagnant incomes and rising unemployment.³ American workers were particularly hard hit by the economic recession of 2008–09, during which 5 million lost employment-based health insurance.⁴ On average, one of five adults ages 18 to 64 lacked health insurance coverage in 2009–10. The percentage of nonelderly adults without insurance varied more than twofold between the 10 percent of local areas with the lowest rates of uninsured and the 10 percent of areas with the highest rates. There was a tenfold gap between the two local areas with the lowest and highest uninsured rates (Exhibit 5).

All three of the local areas in Massachusetts, the only state where residents are required to have insurance coverage, had adult uninsured rates near 5 percent—the lowest rates in the country. Uninsured rates were also low in Rochester, Minn. (9%), and in Dubuque and Iowa City, Iowa (7% and 9%, respectively). In contrast, from 30 percent to more than half of adults were uninsured in the 10 percent



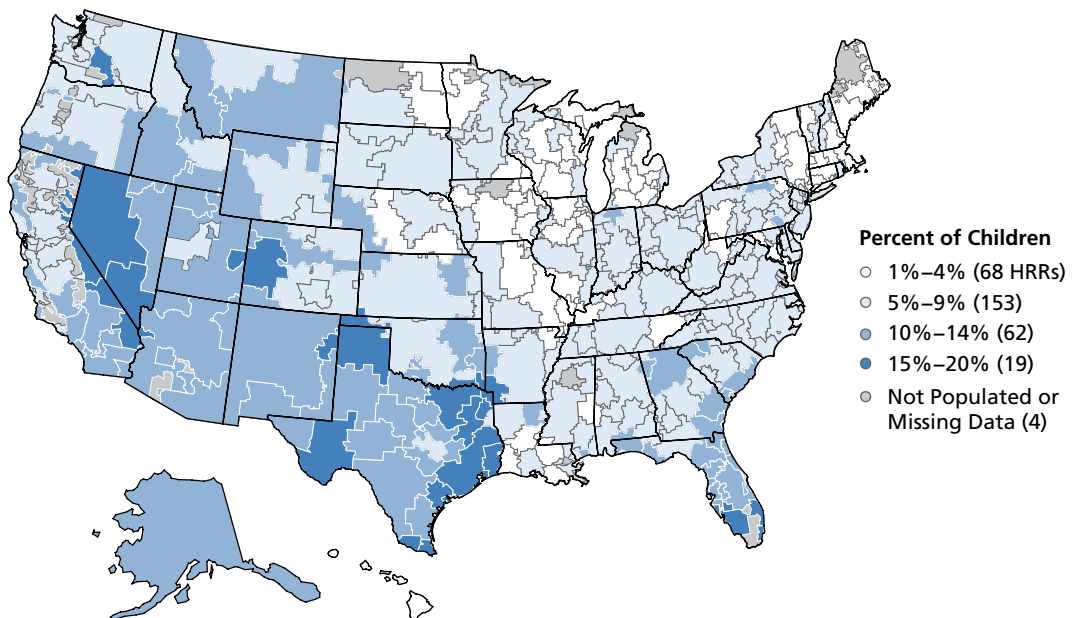
Percent of Adults Ages 18–64 Uninsured, 2009–2010



HRR = hospital referral region.
Data: U.S. Census Bureau, 2009–10 American Community Survey.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Percent of Children Ages 0–17 Uninsured, 2009–2010



HRR = hospital referral region
Data: U.S. Census Bureau, 2009–10 American Community Survey.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

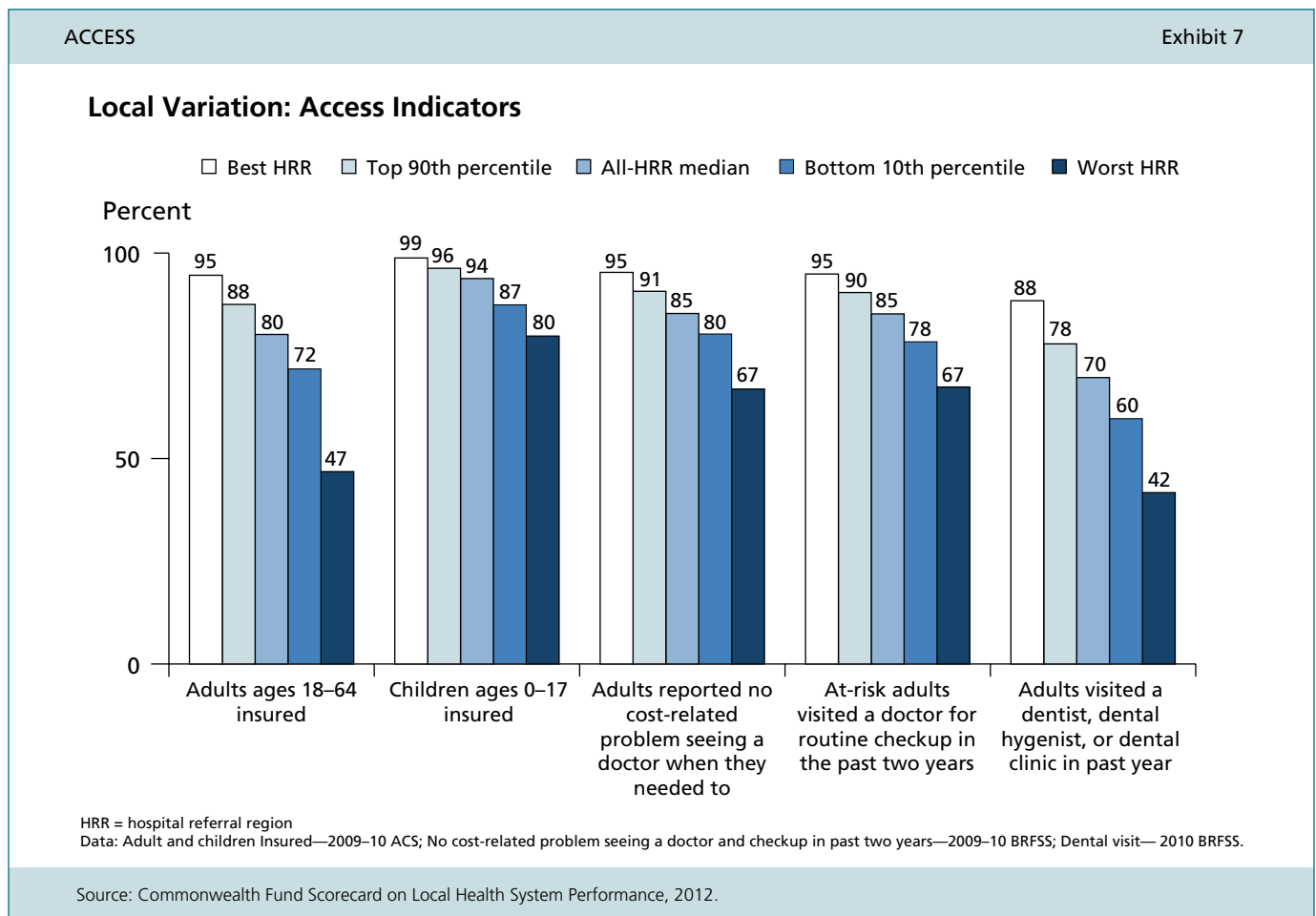
of areas with the highest rates. These areas include local health care markets in Arkansas, California, Florida, Louisiana, Texas, and Washington State. More than half of adults lacked coverage in two health care markets in Texas (53% in McAllen and 52% in Harlingen).

In states with large populations, the likelihood of nonelderly adults having insurance differed, depending on the part of the state in which they lived. In 10 states, there was a 10-percentage-point-or-greater difference between the community with the lowest proportion of uninsured adults and the community with the highest proportion. For example, there was a 34-percentage-point difference in the proportion of uninsured adults between the best and worst areas within all of Texas (19% in Bryan vs. 53% in McAllen). Similarly, more than 30 percent of adults in Los Angeles, Calif., were uninsured, compared with 15 percent in San Francisco.

About 155 million people live in local health care areas where 20 percent or more of residents lack insurance—about half of all local areas.

Compared with adults, uninsured rates were lower among children (Exhibit 6). In three-quarters of localities across the country, less than 10 percent of children under age 18 were uninsured in 2009–10. The low number of uninsured children can be attributed to federal and state policies that cover low- and moderate-income families. In particular, investments in the Children’s Health Insurance Program, enacted in 1997, as well as Medicaid support to states, have largely protected coverage for children, even during recessions.

Still, the risk of being uninsured as a child remains uneven across the country, as shown by a 20-percentage-point gap between the local areas with the highest and lowest uninsured rates (Exhibit 7).



The uninsured rates among children were lowest for the three local areas in Massachusetts, followed closely by Grand Forks, N.D., La Crosse, Wis., and Marquette, Mich.—all communities where 2 percent or less of children are uninsured. Local areas with the highest uninsured rates among children clustered in Florida, Nevada, and Texas. There were three areas—all in Texas—where one of five children was uninsured.

Meanwhile, local areas in Arkansas, California, Louisiana, and Pennsylvania had some of the highest uninsured rates for children, despite also having some of the lowest rates within specific areas. For example, 4 percent of children in Jonesboro, Ark., were uninsured, compared with nearly 15 percent in Texarkana.

Cost Barriers and Physician Visits

Having insurance helps reduce cost barriers to receiving care, but it does not guarantee that individuals will receive appropriate care when necessary and be adequately protected from financial burdens in the event of an illness. Among the insured and uninsured alike, higher premiums plus higher out-of-pocket costs are putting working families' budgets under stress across the country.⁵ The proportion of adults who reported that they did not seek care because of cost was lowest in local areas in the Upper Midwest (Iowa, Minnesota, North Dakota, and parts of Illinois and Wisconsin) and Northeast (Connecticut, Massachusetts, and parts of New York and Pennsylvania) as well as Honolulu, Hawaii. In these places, fewer than 10 percent of adults reported that they could not see a doctor because of cost in 2009 and 2010. At the same time, more than 20 percent of adults in parts of Florida, Georgia, Louisiana, Mississippi, and Texas and in California's Central Valley (Fresno, Stockton, and Modesto) reported they did not pursue care because of its cost. There is a strong association between lacking insurance and

forgoing care because of cost, such that areas with the highest uninsured rates among nonelderly adults also tended to have the highest proportion of adults who did not seek care because of cost, and vice versa.⁶

Older adults and those in poor health benefit from having regular contact with a primary care provider who will monitor their medical concerns. The *Local Scorecard* finds wide variation across local areas in the proportion of at-risk adults (adults age 50 or older, in fair/poor health, or with selected chronic diseases) who did not visit a doctor for a routine checkup in a two-year period (Exhibit 7). The proportion of at-risk adults who did not see a doctor ranged from one of 10 in the 10 percent of local areas with the best performance—primarily located in the Northeast and South Atlantic region and parts of Louisiana—to one of five in the 10 percent of areas with the worst performance.

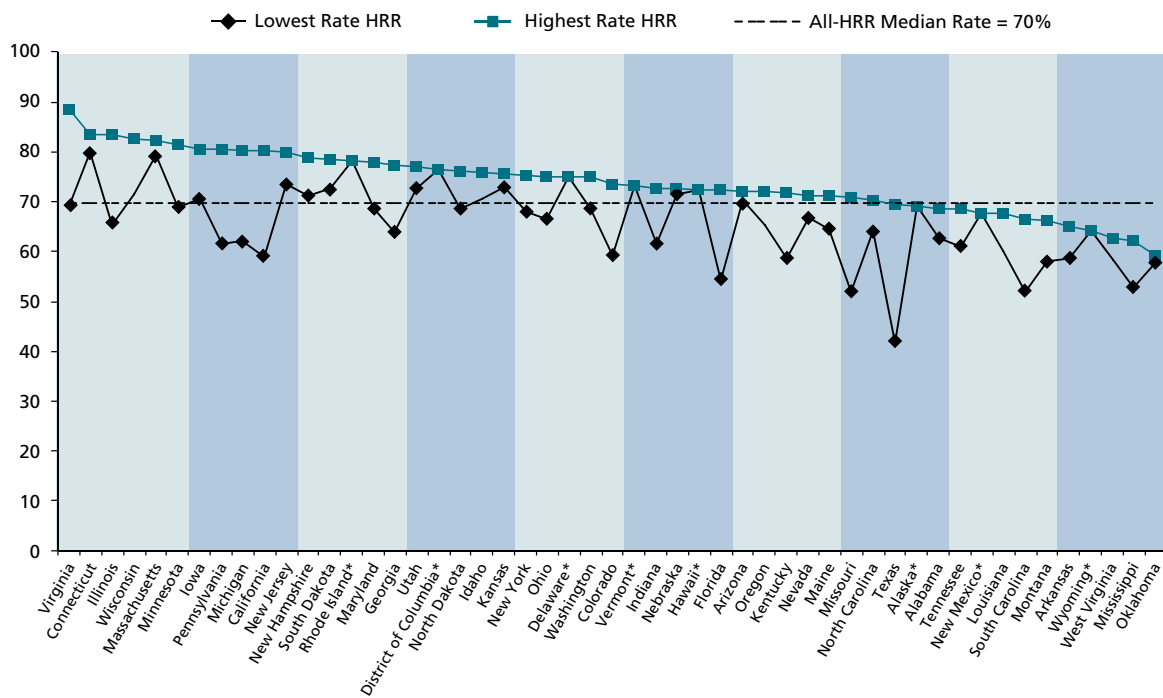
Dental Visits

Oral health is an important component of general health and quality of life. Poor oral health not only may cause pain and suffering, it may also lead to reduced productivity.⁷ Preventive dental care, including annual dental visits, is necessary for optimal oral health.⁸ Yet in half of the areas examined in the *Local Scorecard*, 30 percent of adults did not have a dental visit in the past year (Exhibit 7). There were only 14 local areas—mostly small pockets in the Upper Midwest—where less than 20 percent of adults reported not visiting the dentist in the past year. Areas with the highest rates of forgone dental care tended to be in the South, in West Virginia, and in parts of Colorado, Missouri, and Montana, where 40 percent to 50 percent of adults did not visit a dentist in the past year. In three places—all in Texas—more than half of adults did not have a recent dental visit.

As with other access indicators, there was a great deal of variation in access to dental care within states

Dental Visit in Past Year, 2010: Highest and Lowest Rate Local Areas in Each State

Percent of adults who visited a dentist, dental hygienist, or dental clinic within the past year



*These states have only one HRR based within the state.
HRR = hospital referral region
Data: 2010 BRFSS.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

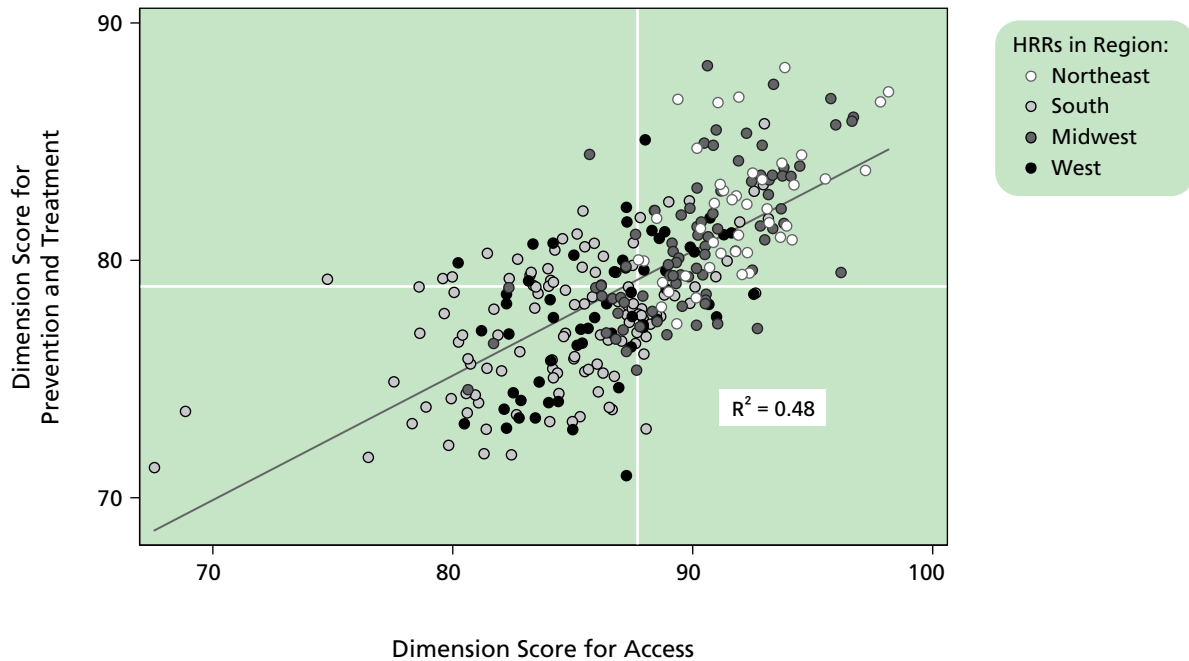
with larger populations and multiple local health care areas (Exhibit 8). In 15 states, the in-state spread between the best- and worst-performing local areas was greater than 10 percentage points, reaching nearly 30 percentage points in Texas.⁹ California, Georgia, Michigan, and Pennsylvania had local areas in which dental visit rates were within the top and bottom quartiles of performance. This extensive variation can be seen even within a metropolitan area. In northeastern Illinois, 83 percent of adults in Aurora reported having had a recent dentist visit, compared with 71 percent to 74 percent in the neighboring areas of Hinsdale, Joliet, and Melrose Park and up to only 68 percent in the surrounding areas of Blue Island, Chicago, and Evanston. Such local disparities

demonstrate that all states can work to improve care for everyone, regardless of where they live.

Access Promotes Quality

Across local areas, better access to care and higher rates of insurance are closely associated with better quality of care, as measured by prevention and treatment indicators (Exhibit 9). In areas where more people are insured and able to access care, individuals were also more likely to report having a provider whom they consider to be their usual source of care, and they were more likely to receive recommended preventive care and high-quality hospital care. Two of every three local areas in the top quartile of the access dimension also rank in the top quartile of regions on the prevention and treatment dimension (discussed

Performance in the Access and Prevention & Treatment Dimensions Is Related



HRR = hospital referral region

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

below). In fact, areas with low levels of insurance tend to demonstrate worse prevention and treatment performance—a relationship that has been observed before at the community level.¹⁰ These findings indicate that high uninsured rates undermine the quality of care in entire communities.

Nationally, the Patient Protection and Affordable Care Act of 2010 (Affordable Care Act) will go a long way toward closing coverage gaps, ensuring that Americans have access to affordable and comprehensive health insurance, and, in turn,

improving the quality of care that all receive. (See “Implications,” page 72, for more on the impact of the Affordable Care Act.) While the health reform legislation also has the potential to stimulate and support broader transformation of health care delivery, ultimately such fundamental change will require action at the community and health system levels. The Healthy San Francisco initiative is one example of how local action has improved access to care in one of the country’s largest and most diverse cities (see box on next page).

HEALTHY SAN FRANCISCO: PROVIDING UNIVERSAL ACCESS TO PRIMARY CARE

San Francisco falls within the top quartile of the access dimension in the *Local Scorecard*. Its strong performance may be attributed in part to the fact that, in 2007, San Francisco became one of the first local governments in the country to provide affordable access to health care to uninsured, working-age adults. San Francisco's innovative program redesigned the health care safety net to emphasize primary care and prevention and to provide health care access regardless of city residents' employment or immigration status. The program was created based on the recommendations of a Universal Healthcare Council convened by the mayor and comprising local stakeholders including health care industry, business, labor, philanthropy, and research representatives.

Operated by the San Francisco Department of Public Health, Healthy San Francisco (HSF) does not offer insurance, but rather gives participants access to a primary care "medical home" to coordinate their care. When they enroll, participants select a medical home from among a network of public health department clinics, a consortium of community health clinics, and some private providers. The program also provides inpatient care, specialty care, urgent and emergency care, mental health care, substance abuse services, laboratory services, radiology, and pharmaceuticals.

Over 100,000 uninsured residents have been served by HSF since its inception. The program's current enrollment of 45,000 (plus 10,000 in a related federally funded program called SF PATH) reaches 85 percent of the estimated 64,000 uninsured adult residents of San Francisco. Income eligibility for the program has expanded over time, though most participants have low incomes.

HSF participation is generally free for two-thirds of participants who have family incomes below the federal

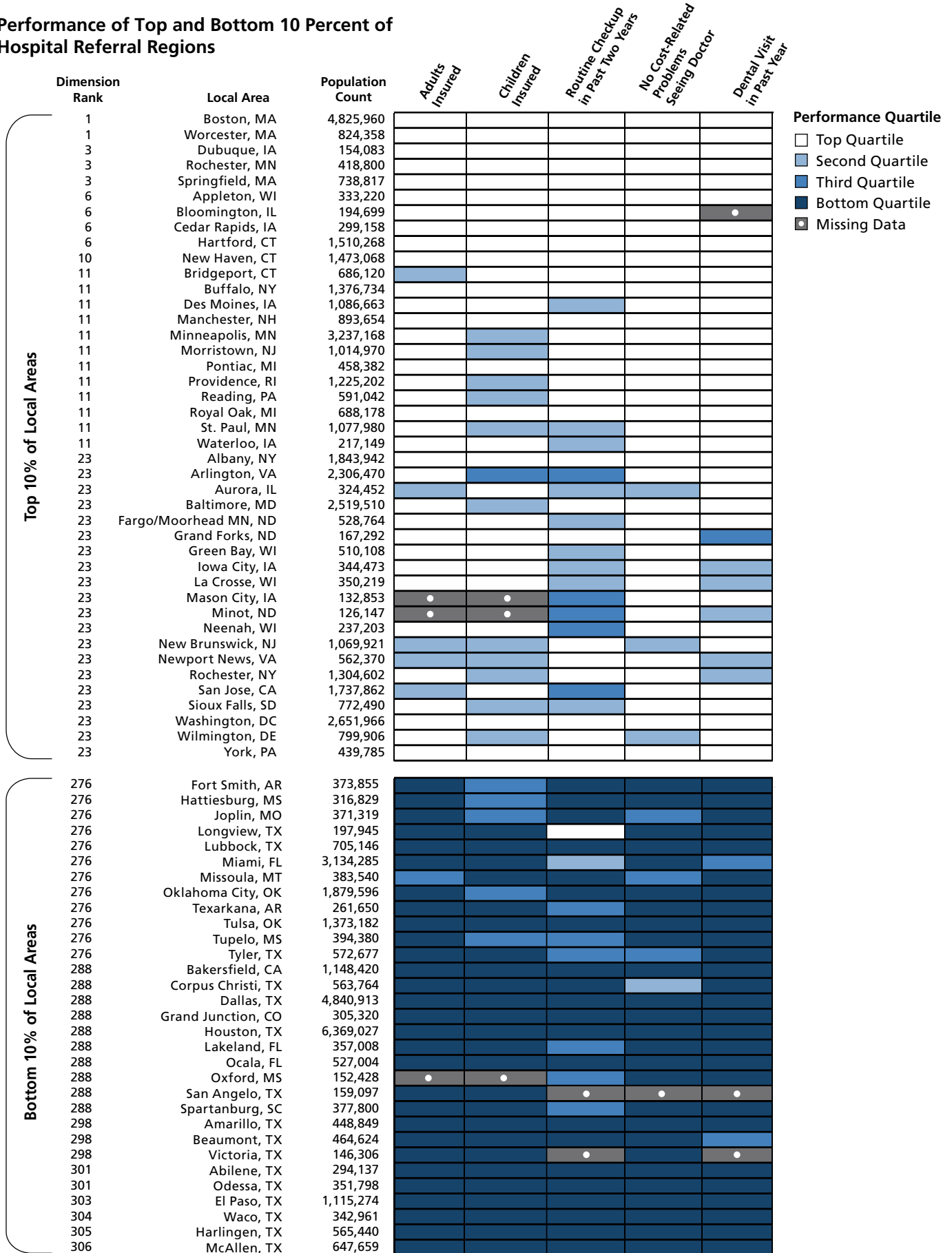
poverty level. Other participants pay fees on a sliding scale, ranging from \$60 to \$450 per quarter, depending on family income and household size, plus copayments such as \$10 for a primary care visit and \$200 for a hospital stay. Local employers may pay for eligible workers to enroll in HSF, which satisfies their obligation under San Francisco's Health Care Security Ordinance to spend a minimum amount on employees' health care. In 2010–11, HSF expenditures were \$272 per participant per month, about half of which comes from the city and county of San Francisco. Other revenue sources include a federal Medicaid waiver program, employer contributions, participant fees, and charity.

An evaluation of HSF found that participants are very satisfied with their access to care and make less frequent use of the emergency department over time as they receive routine care from a primary care medical home. The evaluators also found evidence that HSF may be contributing to reductions in avoidable hospitalizations at the city's safety-net hospital, San Francisco General.

HSF estimates that about 60 percent of its participants may gain insurance coverage under provisions of the federal Affordable Care Act to be implemented in 2014, leaving a sizable population who will continue to benefit from the program. Other local governments may look to San Francisco as a model for redesigning the safety net to provide well-coordinated primary care to their residents.

For more information, see: C. McLaughlin, M. Colby, E. Taylor et al., *Evaluation of Healthy San Francisco: Summary Brief* (Princeton, N.J.: Mathematica Policy Research, Aug. 2011); Healthy San Francisco, *Annual Report to the San Francisco Health Commission for Fiscal Year 2010–11*, www.healthysanfrancisco.org.

Performance of Top and Bottom 10 Percent of Hospital Referral Regions



Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

PREVENTION AND TREATMENT

Patients rely on their health care providers to deliver timely, high-quality care and anticipate that their care will be well coordinated among providers as well as responsive to their needs. Yet too often patients' expectations are not met, in part because of fragmented and poorly coordinated care.¹¹ The organization of local health care systems, including how providers work across settings to care for patients, influences clinical quality as well as patients' experiences. While health care is influenced by payment and regulatory policy at the federal and state levels, it is delivered locally. Frontline practitioners and local health care leaders can promote the delivery of high-quality care through collaboration, coordination, and the adoption of evidence-based and patient-centered care practices (see box below).

The *Local Scorecard* includes 19 indicators in the prevention and treatment dimension that assess care delivered in physicians' offices, hospitals, nursing homes, and patients' homes, including (see [Appendix B](#) for more detailed indicator descriptions, time frames, and data sources):

- **Ambulatory care:** having a regular care provider; receipt of recommended preventive care; diabetic patients' receipt of chronic disease care; and two measures of safe medication prescribing.
- **Hospital care:** recommended care processes for patients with heart failure and pneumonia; recommended care processes to prevent surgical complications; patients' care experience during hospitalization and at discharge; and death

MINNESOTA'S TWIN CITIES: AT THE EPICENTER OF COLLABORATION THAT PROMOTES HIGHER-QUALITY CARE

The Minneapolis and St. Paul referral regions are among the few local areas that rank in the top quartile of performance across all *Local Scorecard* dimensions. Health care providers in the Twin Cities are often in the vanguard of broader statewide efforts to promote higher-performing and more organized forms of health care delivery. The local health care environment is characterized by non-profit health plans and physician-led group practices that have developed trust to collaborate on areas of common concern while competing in the marketplace. Among several coalitions that have formed over the past two decades to work on health system performance measurement and improvement, two stand out: the Institute for Clinical Systems Improvement and Minnesota Community Measurement.

The Institute for Clinical Systems Improvement (ICSI) was established in 1993 by three leading health care delivery organizations in response to pressure from employers to demonstrate greater value for money invested in health care. The group initially focused on developing the scientific groundwork for evidence-based medicine. Its role expanded over time to hosting educational and collaborative improvement initiatives among a growing roster of medical group members and health plan sponsors across the state. Recent initiatives target systemwide transformation that requires multi-stakeholder solutions and common approaches, such as improving the treatment of depression in primary care and avoiding unnecessary high-tech diagnostic imaging.

Minnesota Community Measurement (MNCM) is a collaboration among health plans, medical groups, consumers, and employers to promote common measurement of provider performance. Using ICSI guidelines and clinical data supplied by providers, MNCM measures and reports comparative "HealthScores" for over 700 medical groups and clinics across the region. MNCM is used by medical groups and clinics to improve patient care, by employers and patients to obtain information about the cost and quality of services, and by health plans in pay-for-performance programs. Reported results include: a tripling in the number of people receiving all five elements of optimal diabetes care since the measure was first reported; a 24-percentage-point increase in the childhood immunization rate since 2006; and a gain of 4,000 hypertensive patients with blood pressure under control over four years.

Together, these collaborations provide both the accountability and the infrastructure for improvement—two necessary components for attaining a higher-performing local health system. Their experience serves as a model for other communities that are seeking to achieve similar results.

For more information, visit www.icsi.org and www.mncm.org. See: "Minnesota: Land of 10,000 Collaborations," in G. Moody and S. Silow-Carroll, *Aiming Higher for Health System Performance: A Profile of Seven States That Perform Well on The Commonwealth Fund's 2009 State Scorecard* (New York: The Commonwealth Fund, Oct. 2009).

within 30 days of hospitalization for heart attack, heart failure, or pneumonia.

- **Long-term care, post-acute care, and end-of-life care:** functional improvement and wound care among home health patients; three measures of care quality in nursing homes; and timely use of hospice care at the end of life.

Overall, local areas in New England and the Upper Midwest tended to perform better on these indicators than areas in other parts of the country, often ranking in the top quartile (Exhibit 11). Despite such patterns for the dimension as whole, there were no local areas that consistently ranked at the top of the distribution across all 19 indicators. Even in the best-performing local areas, there are opportunities to improve. Quality of care was variable across indicators and health care settings, with areas that perform strongly on this dimension at times falling in the bottom half, and even the bottom quartile, of performance on

specific indicators (Exhibit 17). Similarly, pockets of relatively high performance are evident among local areas with the lowest overall performance on the prevention and treatment dimension.

Such variable performance across different indicators in this dimension suggests that local areas may face unique challenges in particular care settings, and/or that factors that influence the quality of care may differ across care settings. In cases where improvement requires strategies focused on specific conditions, populations, or care settings, local communities can look to peers that perform well on relevant indicators to identify practices associated with success.

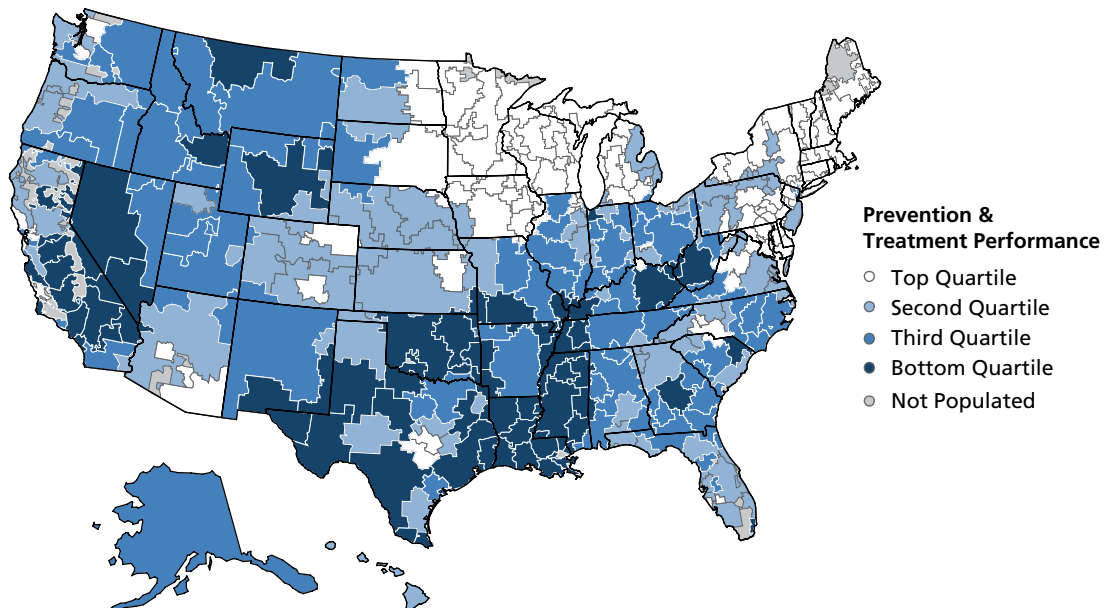
Quality of Care in Ambulatory Settings

Performance on measures of ambulatory care varied widely among local areas, particularly compared with their performance on measures of care received in

PREVENTION & TREATMENT

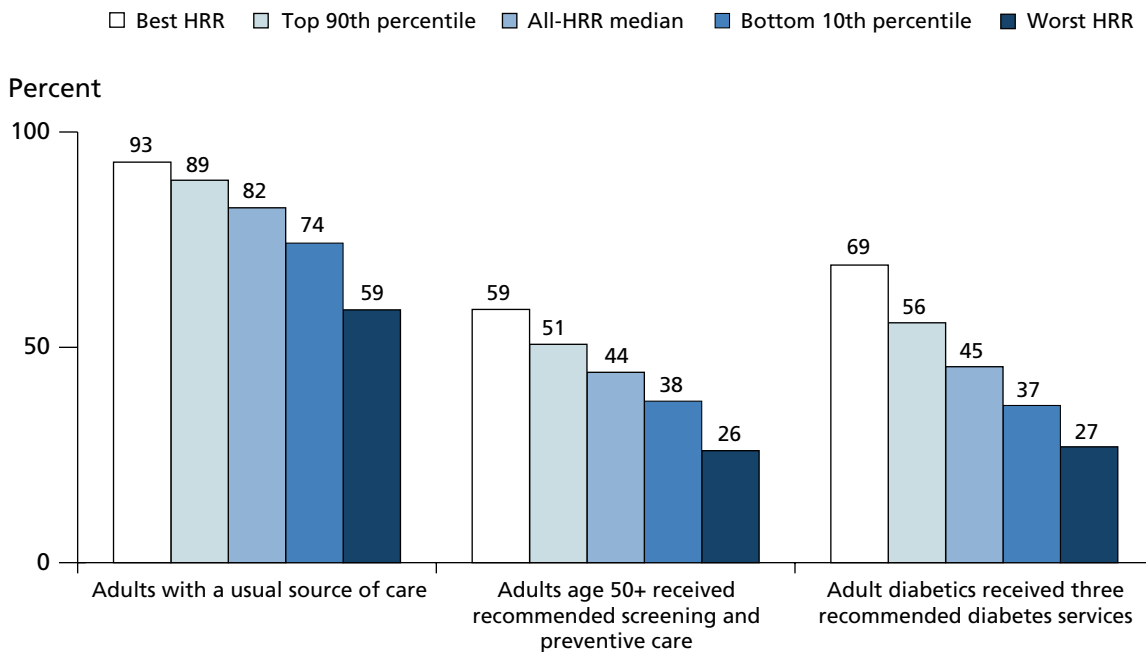
Exhibit 11

Overall Performance on Prevention & Treatment Dimension



Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Local Variation: Usual Source of Care and Preventive Care



HRR = hospital referral region.

Data: Adults with usual source of care—2009–10 BRFSS; Adults received preventive care—2008 & 2010 BRFSS; Adult diabetic recommended care—2008–10 BRFSS.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

hospitals, nursing homes, and home health settings. Notably, there are sophisticated, comprehensive, and patient-focused public reporting campaigns targeting the quality of care in hospitals, nursing homes, and home health settings, but there is not a similar reporting effort for ambulatory care facilities.

Usual Source of Care

When patients have a relationship with a regular care provider, the provider is better able to deliver timely care informed by knowledge of patients' medical histories and preferences and to coordinate care across providers and settings. In 2009–10, the proportion of adults with a usual source of care ranged from less than 74 percent to at least 89 percent between bottom- and top-performing communities (Exhibit 12). The highest local rates were found in small clusters within the Northeast and Upper Midwest, specifically western New York, central Pennsylvania,

eastern Massachusetts, and Manchester, N.H., in addition to western Michigan and Urbana, Ill. Anchorage, Alaska, and areas within California, Florida, Nevada, and Texas had the lowest rates. In Texas, rates in McAllen (59%), Harlingen (62%), and El Paso (67%) were the lowest in the nation, while 85 percent of adults in nearby Corpus Christi reported having a usual source of care—a 26-percentage-point gap between the worst and best local areas within the state.

There is a strong and positive association between the proportion of adults in a local area with health insurance and the proportion who report having a regular place to obtain care.¹² Having insurance coverage as well as a usual source of care is instrumental in getting needed health care services, including preventive care. Yet the variation in performance evident within states indicates that the local context also matters.

Receipt of Recommended Preventive Care and Chronic Care

Across all local health care areas, there are major shortfalls in the delivery of recommended preventive care to adults and in the delivery of basic services to help prevent complications for those with diabetes. The proportion of adults age 50 and older who received age- and gender-appropriate cancer screenings and vaccinations is low across all local areas (Exhibit 12). The proportion of older adults who received all recommended preventive care was more than twice as high in the best-performing area (59%) as in the worst-performing (26%) area; the gap remains wide between the top and bottom 10 percent of areas (51% vs. 38%). These differences are staggering, but more concerning is that even in the best-performing area (Arlington, Va.), just three of five (59%) adults age 50 and older received recommended preventive care services. In the remaining top 10 percent of local areas, preventive care rates were a little more than 50 percent. The lowest rates of screenings and vaccinations among older adults (reaching as low as 26%) were found in Texas and pockets of California, Illinois, Mississippi, and Idaho.

Effectively managing patients with diabetes requires periodic blood glucose testing and screening for diabetic foot ulcers and diabetic retinopathy. Although these are relatively simple tests to administer, there is nearly a threefold difference in the proportion of diabetic adults who received all three recommended services between the best-performing local area (69% in Marshfield, Wis.) and the worst-performing local area (27% in Idaho Falls, Idaho) for which data are available (Exhibit 12).¹³ Delivery of these diabetic services was most frequent in several areas within Iowa, Minnesota, New Hampshire, North Dakota, and Wisconsin—states where integrated delivery systems and multispecialty group practices such as the Marshfield Clinic have made chronic care management a core competency.¹⁴ In contrast, little more than one-third of adults with

diabetes received such services in the bottom 10 percent of local areas, predominantly found in the southern states of Kentucky, Louisiana, Mississippi, South Carolina, Texas, and West Virginia as well as parts of New Jersey and Pennsylvania.

Both preventive and diabetic care rates were widely variable within states. For both measures, the spread between the best- and worst-performing local areas within a state was greater than 15 percentage points in many states. For example, diabetic patients in Covington, Ky., were nearly two times more likely to get appropriate care for their disease (61%) than their counterparts in Lexington (34%) and Owensboro (35%).

Safe Use of Prescription Drugs

Patient injuries from medications can result from drug side effects, human errors, or system-level failures to safely prescribe and monitor medication use. Factors that may precipitate unsafe medication use—especially in the community, where the majority of care is delivered—include use of multiple prescriptions, inadequate monitoring of high-risk drugs, and gaps in coordination of care.¹⁵ Elderly patients, in particular, are twice as likely as people under age 65 to have adverse events associated with drugs and almost seven times as likely to be hospitalized as a result.¹⁶ The *Local Scorecard* includes two measures of prescription safety, each taking advantage of recently available Medicare Part D prescription drug claims data: 1) the proportion of Medicare beneficiaries who received at least one drug that should be avoided in the elderly, and 2) the proportion of Medicare beneficiaries with dementia, hip/pelvic fracture, or chronic renal failure who received a prescription in an ambulatory care setting that is contraindicated for that condition.

Performance on both indicators varied substantially across regions, with strong regional patterns evident. For use of high-risk drugs among Medicare beneficiaries in 2007, the areas with the greatest safety concerns

were in the southern states along the Gulf Coast as well as Arkansas, Oklahoma, Tennessee, and in Georgia and the Carolinas (Exhibit 13).

Prescription, and use, of high-risk drugs among the elderly was most common in Alexandria, La. (44%), where the rate was four times higher than in the Bronx borough of New York City and the nearby city of White Plains—the areas with the lowest rates (11%). Similarly, there was a threefold variation in the percentage of beneficiaries with one of three underlying conditions (dementia, hip/pelvic fracture, or chronic renal failure) who were prescribed any drug that is contraindicated for that condition—from 10 percent to more than 30 percent across all local health care areas.

Hospital Care

Receipt of Recommended Hospital Care

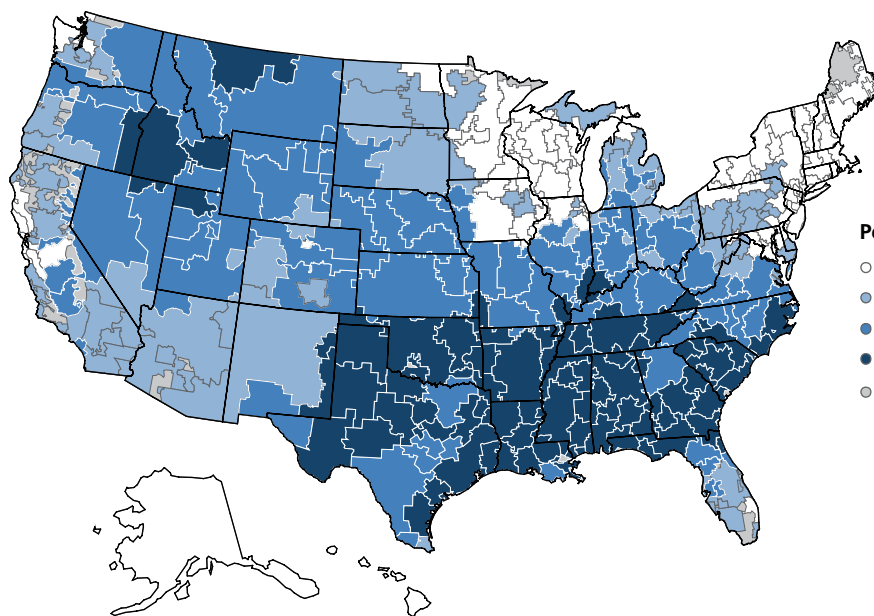
In recent years, hospitals, nursing homes, and home health care agencies have demonstrated marked

improvement in many treatment practices and patient outcomes for which data are collected and publicly reported.¹⁷ Most notably, public reporting through the Centers for Medicare and Medicaid Services (CMS) Hospital Compare program has promoted adoption of evidence-based care for patients hospitalized with heart attacks, heart failure, and community-acquired pneumonia and for patients requiring surgery. By 2009, many hospitals had achieved full compliance, with 100 percent of patients receiving recommended care for the three reported conditions. The *Local Scorecard* found near-perfect scores in many local areas on the provision of recommended care to heart failure patients (greater than 99% in Victoria, Texas, Hudson, Fla., and Lynchburg, Va.) and pneumonia patients (99% in Hudson, Fla., and Traverse City, Mich.) in addition to care designed to prevent surgical complications (99% in Hudson, Fla., and Kettering, Ohio) (Exhibit 14).¹⁸ Despite high achievement

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Exhibit 13

Prescription of Potentially Unsafe Medications, 2007



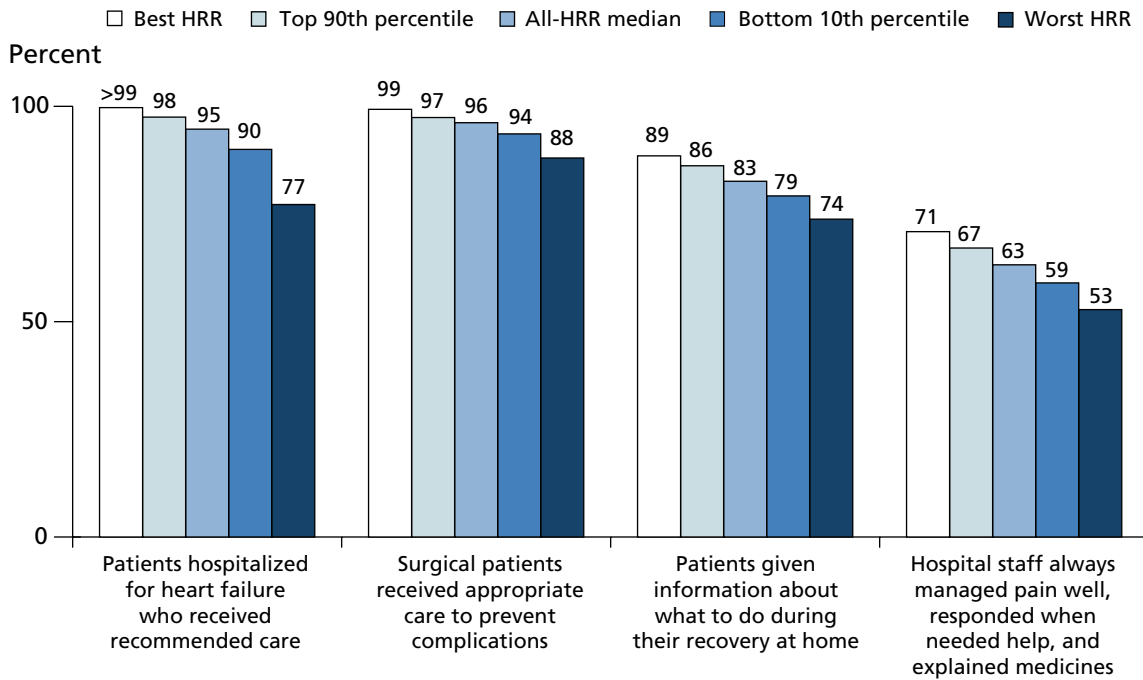
Percent of Beneficiaries

- 11.4%–20.6% (78 HRRs)
- 20.7%–24.9% (75)
- 25.0%–30.6% (78)
- 30.7%–44.0% (75)
- Not Populated

HRR = hospital referral region
Data: 2007 Medicare Part D 5% Data.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Local Variation: Hospital Care Processes and Responsiveness to Patients



HRR = hospital referral region.
Data: 2010 CMS Hospital Compare.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

in some places, other areas lag. For example, less than 80 percent of heart failure patients received all evidence-based clinical care in Bend, Ore., and Grand Forks, N.D. Moreover, intrastate differences in rates of effective heart failure treatment exceeded 10 percentage points in nine states.¹⁹

In comparison to condition-specific care processes, local rates of surgical patients receiving proven treatments to prevent infections and complications are higher and have a much tighter distribution (Exhibit 14). There has been substantial improvement in this area since 2005, when CMS began collecting and posting hospital-specific performance data on surgical care improvement processes. Still, the bottom-ranked areas lag the top-ranked areas by up to 3 percentage points.

Patients’ Experiences During Hospitalization and at Discharge

While local areas throughout the country are experiencing improvement in the clinical quality of hospital care, results from surveys of recently discharged patients point to areas for improvement (Exhibit 14). Rates of hospitalized patients reporting that they received information on what to do when they left the hospital were far below benchmarks achieved on process-of-care measures. In half of all local areas, more than 17 percent of patients left the hospital without such information. Bottom-ranking areas included places in Mississippi and Florida as well as large metropolitan areas such as Chicago, New York (Manhattan and the Bronx), Newark, N.J., Miami, and Los Angeles. In all of these areas, more than 20 percent of patients were discharged without written instructions about help while at home and

problems that should be monitored. Lack of effective communication puts these patients at risk for missing follow-up care, suffering from complications, and being readmitted to the hospital.

The *Local Scorecard* assesses patients' hospital experiences using a composite measure of how well hospital staff manage pain, respond when patients press a call button or need help going to the bathroom, and explain medicines and their side effects. This measurement strategy is in line with the Affordable Care Act's provision that a hospital's performance on the standard Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey will be linked to new payment incentives beginning in 2013. The *Local Scorecard* finds clear opportunities for all local areas to improve in this area. Between the best- and worst-performing regions, there is an 18-percentage-point difference in rates of patients reporting that staff always provided assistance with pain, medications, and other needs. Even in the top-performing areas, one-third of patients indicated that there were gaps in hospital care. In the areas with the lowest rates, around 53 percent to 59 percent of patients reported that hospital staff were responsive to their needs, compared with 67 percent to 71 percent of patients in the highest-ranked local areas. With policy attention now focused on patients' experiences, we expect to see improvement in future scorecards.

Hospital Mortality

A robust and growing set of evidence-based clinical practice recommendations and targeted hospital quality improvement campaigns has led to greater numbers of patients receiving recommended treatment. Research suggests that the delivery of evidenced-based care in hospitals is associated with lower mortality and other important outcomes.²⁰ Yet adherence to clinical protocols may not be sufficient to reduce mortality if hospitals lack an organizational culture that supports high-quality care, teamwork, and coordination.²¹

The *Local Scorecard* finds a range of performance across local areas on three risk-adjusted, 30-day, all-cause mortality rates among Medicare beneficiaries hospitalized for heart attack, heart failure, and pneumonia during 2006–09 (Exhibit 2). (These rates measure deaths from any cause within 30 days after patients are admitted with one of the principal diagnoses, adjusted for patient risk factors.) Death rates among heart attack patients range from 12 percent to 20 percent across all local areas and from 14 percent to 17 percent between the local areas that ranked in either the top or bottom 10 percent on this measure. Similarly, deaths among Medicare patients hospitalized for heart failure ranged from 9 percent in Munster, Ind., Blue Island, Ill., and Panama City, Fla., to 15 percent in Bradenton, Fla., and Idaho Falls, Idaho; death rates for pneumonia ranged from 9 percent in Cedar Rapids, Iowa, Great Falls, Mont., and Allentown, Pa., to 16 percent in Columbus, Ga., and Houma, La.

We also observed intrastate variation on these mortality measures, with several neighboring communities having as much as a five-percentage-point difference in mortality rates for any one of these conditions. Several local areas in the Great Lakes region stand out for having low mortality rates for all three conditions: Elyria, Ohio, Evanston and Hinsdale, Ill., Munster, Ind., and Traverse City, Mich. Consistent attention to ensure that hospital staff follow best practices across all conditions would benefit patients.

Long-Term Care, Post-Acute Care, and End-of-Life Care

Given the aging population and increase in the number of people living with disabilities, it is important to ensure that those in need of long-term care and support receive high-quality services across all settings of care—including nursing home and home health care—thereby maximizing their independence and well-being. The *Local Scorecard*

considers six measures of quality in post-acute care and long-term care settings: two measures of home health care performance, three measures of performance in nursing homes, and one measure of hospice use at the end of life.

We find that relative performance on these indicators often diverges from patterns observed for hospital or ambulatory care. Strong performance on hospital quality measures does not always correspond with similar performance on home health and nursing home quality indicators, further highlighting the need for attention to health care quality across settings.

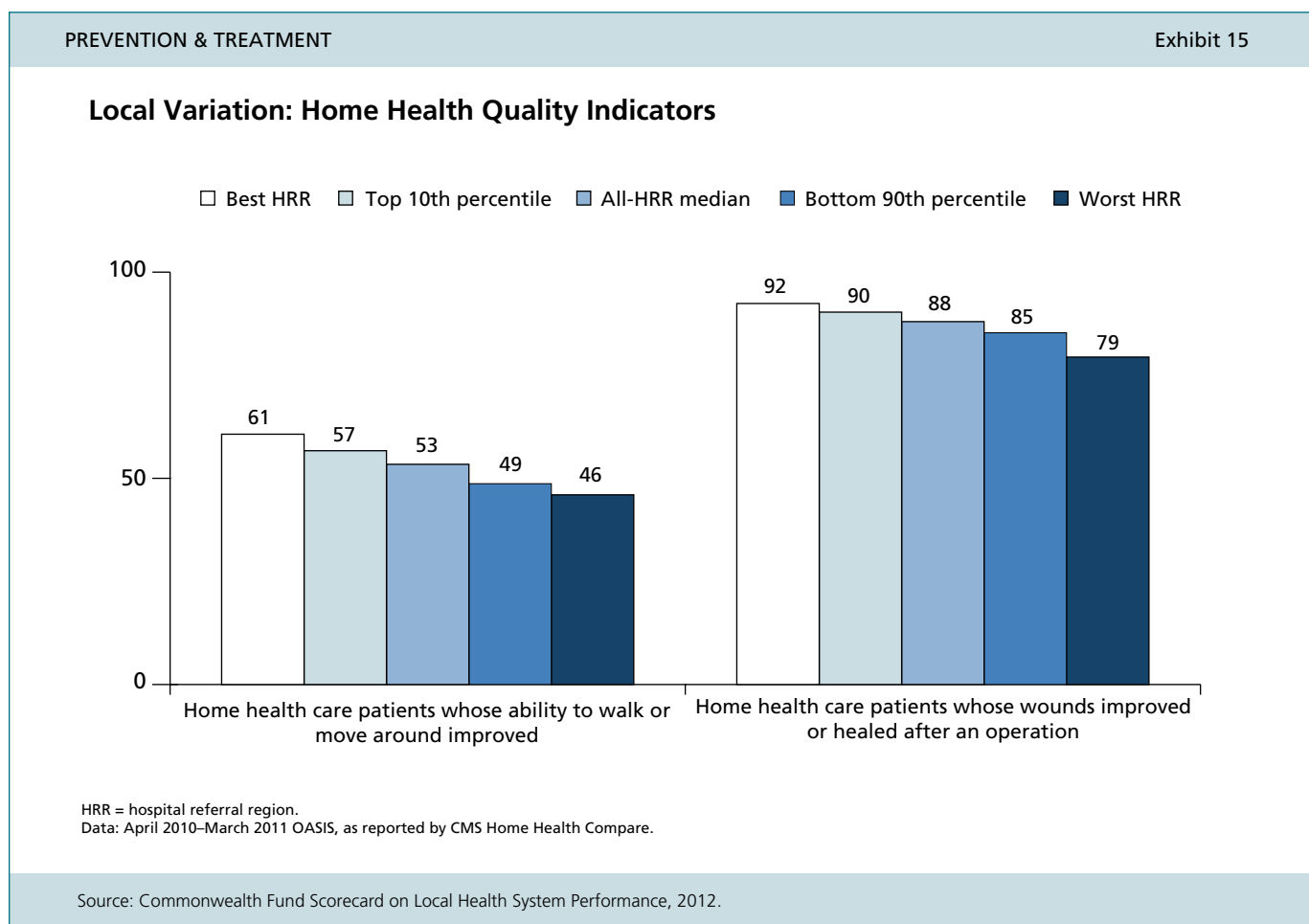
Quality of Care Among Home Health Care Patients

Two measures used in the *Local Scorecard* to assess quality of home health care include: 1) home health care patients whose ability to walk or move around improved, an outcome targeting patients' quality-of-

life, and 2) home health care patients whose wounds improved or healed after an operation, an outcome for which the chances of success can be improved with evidence-based treatment, good communication, and coordination between home health care providers and the patient's primary care provider.²²

Communities across the nation have a long way to go to improve the quality of life and functional ability among home health patients. The ability to walk or move improved for only six of 10 home health care patients in the best area, compared with less than five of 10 such patients in the bottom-ranked areas (Exhibit 15). There are strong geographic patterns of performance on this indicator, with top-performing areas located primarily in the South Atlantic region and Utah, and poorly performing regions clustering in the West and Midwest.

The proportion of home health patients whose surgical wounds healed after hospital discharge was



much higher than the proportion of patients with functional gains across all local areas (Exhibit 15). There was little variation between the 10 percent of local areas ranked at the top and bottom of this indicator (90% vs. 85%, respectively). Patterns of geographic variation were similar for both indicators of home health quality.

Quality of Care Among Nursing Home Patients

Quality deficits have been repeatedly documented in nursing homes throughout the United States and concerns around the quality of care in nursing homes remain widespread.²³ Examining three indicators to assess quality of care administered to nursing home residents—percentage of long-stay nursing home residents who had pressure sores, were physically restrained, or who had moderate to severe pain—reveals that performance continues to vary across the country, although statewide averages have improved in recent years (Exhibit 2). Strong performance on one nursing home quality indicator does not necessarily predict strong performance on either of the other two indicators. In fact, only four local areas scored in the top quartile on all three indicators (Birmingham, Ala., Harrisburg, Pa., Manchester, N.H., and Rochester, Minn.).

Rates of high-risk nursing home residents with pressure sores vary from a low of less than 8 percent in the top-performing 10 percent of local areas to a high of more than 20 percent in Chicago, Ill., and Metairie, La. Top-performing areas on this indicator tended to be located in the Midwest and West. Pressure sores were most common among nursing home residents in areas of Louisiana and large metropolitan areas, including Chicago, Houston, Los Angeles, Miami, New York, and Newark, N.J. While the Midwest performed well as a region, Illinois stands out as a poor performer relative to its neighbors, with 12 of its 13 areas performing in the bottom half of local areas across the nation.

Poor quality of care provided in nursing homes, including the failure to prevent pressure sores, puts residents at risk and can result in costly use of hospital resources. Research has found that patients admitted from a nursing home to a hospital were more than five times more likely to have a preexisting pressure ulcer on admission than those admitted from another setting (usually home).²⁴ There is a strong and positive correlation between the incidence of new pressure sores among long-stay nursing home residents and hospital admissions among nursing home residents (discussed below) (Exhibit 16).

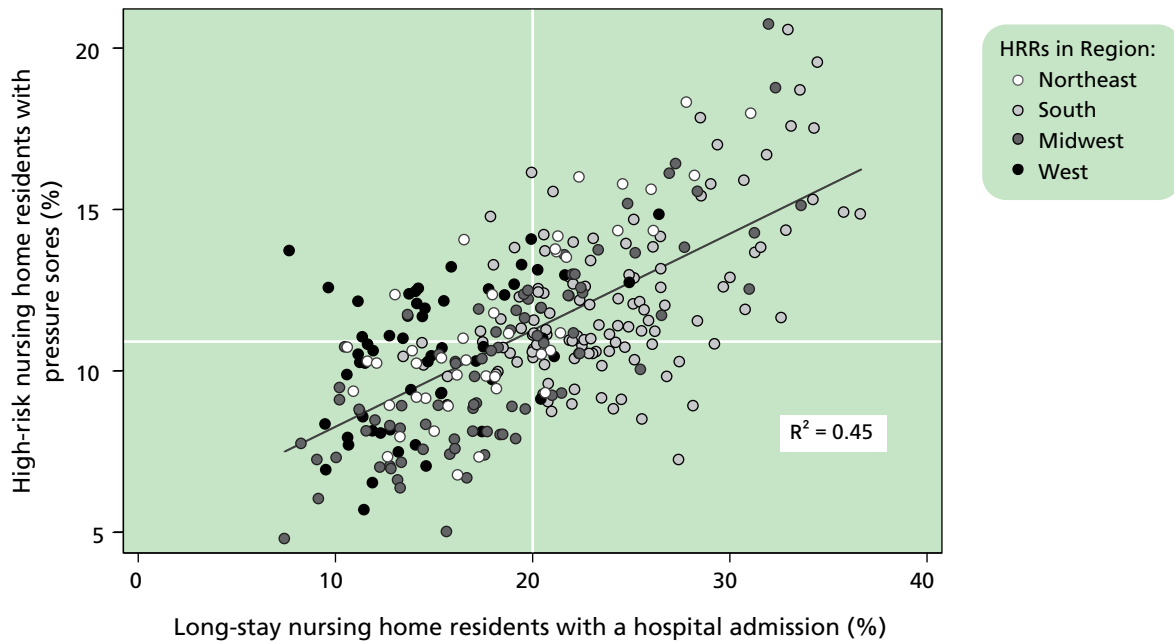
Rates of long-stay nursing home residents who were physically restrained have a narrow distribution across the country, ranging from less than 2 percent in top-performing local areas to between 7 percent and 14 percent in the worst-performing areas. Areas that perform poorly on this indicator are primarily located in California, Florida, and Louisiana; though even in California and Florida some local areas perform better than the average for the country, once again indicating the importance of local practices.

The proportion of long-stay nursing home residents who reported having moderate to severe pain ranges from about 2 percent among top-ranked areas to between 5 percent and 11 percent among bottom-ranked areas. Patterns of geographic spread are different for this indicator than those observed for the other two nursing home quality indicators, with the best-performing regions concentrated in the Middle and South Atlantic regions. A relatively high proportion of nursing home residents reported moderate to severe pain in areas of Ohio, Oregon, and Utah.

Hospice Care

Hospice care aims to improve quality of life for individuals with a terminal illness and prognosis that is less than six months. The hospice benefit in Medicare includes coverage for skilled nursing,

Nursing Home Pressure Sores and Admission to Hospital from Nursing Homes



HRR = hospital referral region.

Data: Residents with pressure sores—2008-09 MDS, as reported by CMS Nursing Home Compare; Residents with hospital admission—2008 MEDPAR, MDS.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

counseling, pain medications, home health services, short-term inpatient services, and bereavement related to terminal illness.²⁵ While evidence is mixed as to whether hospice care reduces overall resource utilization and costs near the end of life, there is little doubt that hospice care provides patients and their families with physical, social, spiritual, and emotional support.²⁶ Some preliminary literature suggests that hospice may actually extend life beyond the initial prognosis.²⁷ For hospice to achieve these goals, it should be initiated as part of advanced planning for end-of-life care. Hospice of only a few days' duration prior to death is of more limited benefit.

The percentage of Medicare decedents with a cancer diagnosis who were enrolled in hospice for three or more days prior to death was highly variable across local health care markets, ranging from 70 percent in the best-performing area, Salem, Ore., to 16 percent in the worst-performing area, Bronx, N.Y. In Bend, Ore., Cedar Rapids, Iowa, Chattanooga, Tenn., and Sun City, Ariz., more than 60 percent of elderly cancer decedents received hospice for at least three days prior to death. Though patients' preferences for care at the end of life vary, the wide variation among local areas indicates that it is possible for local areas to do a better job engaging their populations in advanced care planning.

Performance of Top and Bottom 10 Percent of Hospital Referral Regions

Performance Quartile

- Top Quartile
- Second Quartile
- Third Quartile
- Bottom Quartile
- Missing Data

- Adult Usual Source of Care
- Adult Preventive Care
- Diabetic Preventive Care
- Inappropriate Prescription Among Elderly (1)
- Hospital Quality (2)
- Hospital 30-Day Mortality (3)
- Patient-Centered Hospital Care
- Home Recovery Discharge Instructions
- Home Health Quality (4)
- Nursing Home Quality (5)
- Medicare Cancer Decedents with Late or No Hospice

Dimension Rank	Local Area	Population Count	Adult Usual Source of Care	Adult Preventive Care	Diabetic Preventive Care	Inappropriate Prescription Among Elderly (1)	Hospital Quality (2)	Hospital 30-Day Mortality (3)	Patient-Centered Hospital Care	Home Recovery Discharge Instructions	Home Health Quality (4)	Nursing Home Quality (5)	Medicare Cancer Decedents with Late or No Hospice
Top 10% of Local Areas	1	Manchester, NH	893,654										
	1	Wausau, WI	189,109										
	3	Bangor, ME	398,446										
	3	Boston, MA	4,825,960										
	3	Cedar Rapids, IA	299,158										
	3	Lancaster, PA	666,199										
	3	Neenah, WI	237,203										
	3	Portland, ME	1,071,122										
	3	Worcester, MA	824,358										
	10	Appleton, WI	333,220										
	10	Arlington, VA	2,306,470										
	10	Dubuque, IA	154,083										
	10	Rochester, MN	418,800										
	14	Boulder, CO	286,366										
	14	Grand Rapids, MI	1,175,042										
	14	Lebanon, NH	397,373										
	14	Marshfield, WI	371,943										
	14	Mason City, IA	132,853										
	14	St. Cloud, MN	260,500										
	14	Traverse City, MI	231,931										
	21	Des Moines, IA	1,086,663										
21	Green Bay, WI	510,108											
21	La Crosse, WI	350,219											
21	Madison, WI	1,097,923											
21	Minneapolis, MN	3,237,168											
21	New Haven, CT	1,473,068											
21	Petoskey, MI	177,769											
21	Providence, RI	1,225,202											
21	Rochester, NY	1,304,602											
21	Springfield, MA	738,817											
21	St. Paul, MN	1,077,980											
21	Waterloo, IA	217,149											
Bottom 10% of Local Areas	273	Beaumont, TX	464,624										
	273	Fort Smith, AR	373,855										
	273	Fresno, CA	1,244,368										
	273	Harlingen, TX	565,440										
	273	Houma, LA	279,132										
	273	Houston, TX	6,369,027										
	273	Jackson, TN	335,391										
	273	Las Vegas, NV	2,075,263										
	273	Lawton, OK	205,383										
	273	Lubbock, TX	705,146										
	273	Memphis, TN	1,814,827										
	273	Paducah, KY	371,499										
	273	Palm Springs/Rancho Mirage, CA	590,216										
	273	Reno, NV	753,253										
	273	Santa Barbara, CA	439,848										
	273	Tulsa, OK	1,373,182										
	273	Tupelo, MS	394,380										
	290	Abilene, TX	294,137										
	290	Alexandria, LA	292,937										
	290	Bakersfield, CA	1,148,420										
	290	Casper, WY	194,084										
	290	Jackson, MS	1,070,263										
	290	Lafayette, LA	622,943										
	290	Los Angeles, CA	9,874,390										
	290	Meridian, MS	201,585										
	290	Oklahoma City, OK	1,879,596										
	290	San Bernardino, CA	2,995,146										
290	Stockton, CA	592,259											
301	El Paso, TX	1,115,274											
301	Hattiesburg, MS	316,829											
301	Monroe, LA	270,188											
301	Oxford, MS	152,428											
305	Idaho Falls, ID	239,146											
305	McAllen, TX	647,659											

(1) Quartile ranking is based on an average of 2 metrics: 1) Percent of Medicare beneficiaries received at least one drug that should be avoided in the elderly; 2) Percent of Medicare beneficiaries with dementia, hip/pelvic fracture, or chronic renal failure received prescription in an ambulatory care setting that is contraindicated for that condition.
 (2) Quartile ranking is based on an average of 3 metrics: 1) Percent of patients hospitalized for heart failure who received recommended care; 2) Percent of patients hospitalized for pneumonia who received recommended care; 3) Percent of surgical patients received appropriate care to prevent complications.
 (3) Quartile ranking is based on an average of 3 metrics: 1) Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart attack; 2) Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart failure; 3) Risk-adjusted 30-day mortality among Medicare patients hospitalized for pneumonia.
 (4) Quartile ranking is based on an average of 2 metrics: 1) Percent of home health care patients whose ability to walk or move around improved; 2) Percent of home health care patients whose wounds improved or healed after an operation.
 (5) Quartile ranking is based on an average of 3 metrics: 1) Percent of high-risk nursing home residents with pressure sores; 2) Percent of long-stay nursing home residents who were physically restrained; 3) Percent of long-stay nursing home residents who have moderate to severe pain.

POTENTIALLY AVOIDABLE HOSPITAL USE AND COST

Health care in the United States is often inefficient and more expensive than necessary. There are many reasons for this, including: the fact that dominant payment models reward volume over quality and pay for treating sick patients, not keeping populations healthy; care is often fragmented and poorly coordinated across different settings; and pricing for health care services is incoherent, chaotic, and lacks transparency.²⁸

The *Local Scorecard* focuses on important indicators of efficient care that profile variations in use of expensive resources and the costs of care across local markets (see [Appendix B](#) for more detailed indicator descriptions, time frames, and data sources). Specifically, it measures:

- **Potentially avoidable hospital use:**
 - hospital admissions for ambulatory care-sensitive conditions;

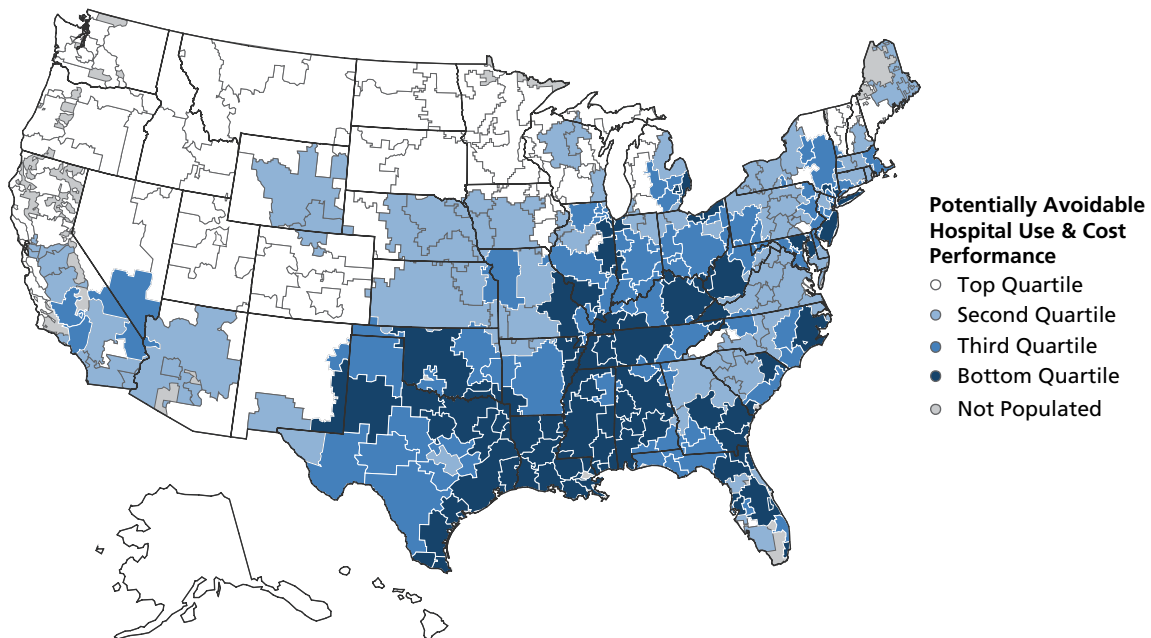
- all-cause readmissions within 30 days of a hospital discharge and 30-day readmissions among persons discharged to a nursing home (short-stay nursing home admissions);
 - hospitalization rates among long-stay nursing home residents and users of home health care; and
 - potentially avoidable visits to the emergency department among Medicare beneficiaries.
- **Per-person spending**, including total hospital and physician costs for Medicare and privately insured populations, and spending for imaging tests among Medicare beneficiaries.

A more comprehensive assessment of health system efficiency would also consider indicators of inappropriate care, waste, administrative spending, and investments in public health. Unfortunately, such measures are not systematically available at the local level at this time. Higher spending is not

POTENTIALLY AVOIDABLE HOSPITAL USE & COST

Exhibit 18

Overall Performance on Potentially Avoidable Hospital Use & Cost Dimension



Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

GRAND JUNCTION, COLORADO: COMMUNITY COLLABORATION TO REDESIGN HEALTH CARE DELIVERY

As public and private purchasers of health care seek greater value, health systems are striving to develop models for controlling costs and improving the quality of care. Grand Junction, a relatively isolated rural community on the western slope of Colorado, is often cited as an example of how local physicians, hospitals, payers and health officials can work together to develop an innovative community-oriented approach for financing and delivering health care. In this *Local Scorecard*, the Grand Junction referral region (which encompasses several other western slope communities) ranks in the top quartile on eight measures of potentially avoidable hospital use and cost for Medicare beneficiaries.

The foundation for Grand Junction's approach was laid in the early 1970s when local physician leaders created the nonprofit Rocky Mountain Health Plans. They were motivated in part by concern that low Medicare and Medicaid reimbursements might destabilize health care access and financing. The health plan worked with the Mesa County Independent Practice Association (IPA) to design a payment system that promotes access to primary care by pooling financing from public and private payers to set uniform reimbursement rates for providers, regardless of the patient's coverage. A portion of physicians' fees are set aside in a shared risk pool that is paid out if the IPA meets its annual budget. Physician peer review committees use cost and quality profiles to offer feedback to individual doctors on how well they are meeting group norms.

Grand Junction also made large investments in developing a health information exchange and supporting regional governance structures to improve care. In 2004,

after winning a lawsuit against the state for Medicaid underpayments, the Mesa County IPA and Rocky Mountain Health Plans agreed to contribute \$2.5 million to build the exchange. The availability of shared clinical data and electronic messaging at the point of care helps ensure that physicians have the information they need—such as hospital discharge summaries, medication lists, and laboratory results—to coordinate care for their patients while avoiding duplication of services and preventing patient harm. The exchange also enables the creation of disease registries to track whether patients are receiving recommended care.

Other ingredients of Grand Junction's approach include the regionalization of tertiary care services, a free clinic for the uninsured that helps avoid unnecessary emergency room use, community service organizations that meet social services needs, a prenatal care program for low-income women that helps avoid adverse birth outcomes, and a robust palliative care and hospice program that offers patient-centered options for care at the end of life. Physician leadership and collective community action among various institutions appear to promote the common interest in Grand Junction.

For more information, see: L. M. Nichols, M. Weinberg, and J. Barnes, *Grand Junction, Colorado: A Health Community That Works* (Washington, D.C.: New America Foundation, Aug. 2009); M. Thorson, J. Brock, J. Mitchell et al., "Grand Junction, Colorado: How a Community Drew on Its Values to Shape a Superior Health System," *Health Affairs*, Sept. 2010, 29(9):1678–86; T. Bodenheimer and D. West, "Low-Cost Lessons from Grand Junction, Colorado," *New England Journal of Medicine*, Oct. 7, 2010 363(15):1391–93.

always an indicator of inefficiency, particularly if it contributes to better patient outcomes or reflects a sicker population and complex health care needs. At the same time, higher spending also does not indicate better outcomes, and we know that there are often more effective and efficient ways to meeting population health needs. There is broad evidence of inefficient, duplicative, wasteful, or potentially excessive care within the United States as well as international comparisons that find that higher spending is not systematically related with better outcomes.²⁹

Overall, as illustrated in Exhibit 18, areas in the Pacific Northwest, Colorado, Utah, the Upper Midwest, and northern New England performed best in the dimension of potentially avoidable hospitalization and cost (see box above on Grand Junction, Colo.); areas in southern California and south-central states (eastern Texas, Louisiana, Mississippi, Arkansas, and Alabama) tended to be in the bottom half of the distribution, owing to relatively high rates of hospital admissions and higher costs. Geographically, the areas in the top performance quartile occupy much of the western part of the country, but these regions account for

about 55 million residents. By contrast, there are 94 million residents in the regions in the top quartile for the access dimension, 88 million in the top quartile for the prevention and treatment dimension, and 99 million in the top quartile for healthy lives.

Performance varied across indicators within this dimension (Exhibit 23). Among the 10 percent of local areas that performed the best, none scored in the top quartile for all indicators. The gap between the best- and worst-performing areas was wide, resulting in a threefold-or-higher difference between the very best and worst local areas for many key indicators.

Potentially Avoidable Use of Hospitals

Effective, accessible primary care and strong disease management in ambulatory care settings can help avert certain hospital admissions and readmissions, which are often costly relative to ambulatory care as well as stressful for patients and families. Among vulnerable populations, including nursing home residents and people receiving home health care, hospitalizations and readmissions can often be prevented with careful hospital discharge, strong transitional care, and close monitoring for signs of clinical decline.

Hospital Admissions for Ambulatory Care–Sensitive Conditions

Hospitalization for ambulatory care–sensitive (ACS) conditions—such as diabetes, heart failure, and asthma—may be avoidable with appropriate, timely, and well-coordinated primary care. The rate of hospital admissions for ACS conditions among Medicare beneficiaries varies dramatically across local areas of the country (Exhibit 2). There is a sixfold difference between the area with the lowest rate (1,535 admissions per 100,000 Medicare beneficiaries in Ogden, Utah) and the area with the highest rate (9,611 per 100,000 in Monroe, La.). There is a twofold spread between the 10 percent of areas with the lowest rate of ACS hospital admissions

(4,045 admissions per 100,000 beneficiaries) and the 10 percent of places with the highest rates (7,919 admissions per 100,000 beneficiaries).

There are distinct geographic patterns. With few exceptions, all areas in the western United States have relatively low rates of ACS admissions. Meanwhile, areas with the highest rates of ACS admissions were predominantly in the South, particularly in parts of Alabama, Kentucky, and Louisiana, and also include the metropolitan areas of Chicago, Miami, and Pittsburgh.

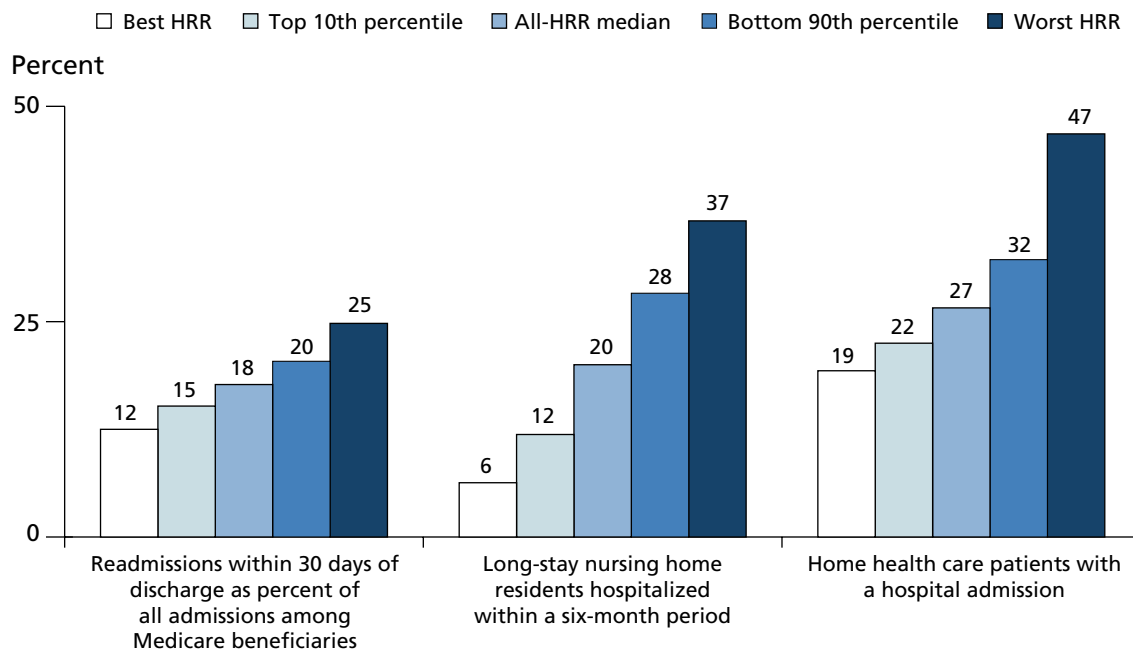
Hospital Readmissions

Readmission rates within 30 days of a hospital discharge and hospital use among recipients of long-term care (nursing home and home health) also vary widely across local health care markets (Exhibit 19). In half of all local areas, 18 percent or more of all Medicare beneficiaries returned to the hospital within 30 days of their initial discharge. Readmission rates averaged about 15 percent in the best-performing areas, compared with 20 percent in the worst-performing areas. Readmission rates were high, 22 percent or more, in many major urban areas including: Baltimore; Chicago, New York (Manhattan and the Bronx), Newark, N.J., Detroit, and Miami. Meanwhile, 30-day readmission rates were lowest in Utah, Idaho, parts of California, Colorado, Oregon, and South Dakota. Of the 98 local health care areas with a million or more residents, less than one of five had 30-day readmission rates lower than 17 percent.

Where a Medicare beneficiary lives within a state also seems to influence their likelihood of being readmitted following an initial hospital stay. Within Illinois, there was a 10-percentage-point difference in 30-day readmission rates among Medicare beneficiaries between Chicago (25%) and Bloomington (15%); 10 states had an area in both the top and bottom performance quartile on this measure.

Readmission to a hospital within 30 days of discharge and potentially avoidable hospitalization for

Local Variation: Potentially Avoidable Hospital Admissions



HRR = hospital referral region.
 Data: Readmissions within 30 days of discharge—2008 Medicare claims as reported by IOM; long-stay nursing home residents hospitalized—2008 MEDPAR, MDS; Home health care patients with hospital admission—April 2010–March 2011 OASIS as reported by CMS Home Health Compare.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

ACS conditions are both markers for similar types of system failure—poorly coordinated care, poor access, and weak primary care. Our findings confirm those of a recently published study demonstrating that regions that do poorly in one area tend to do poorly in the other.³⁰

Hospital Admissions and Readmissions from Post-Acute Care

Frequent hospitalizations and readmissions among nursing home residents can provide a marker for poor-quality care in the nursing home. Earlier, we presented a strong correlation between the occurrence of pressure sores and hospital admissions among long-stay nursing home residents (Exhibit 16). The churning of nursing home patients in and out of hospitals also signals potentially suboptimal inpatient care and discharge planning.

There was a sixfold difference between the two areas with the highest and lowest rates of hospitalization during a six-month period among long-stay nursing home residents (6% in Bend, Ore., vs. 37% in Texarkana, Ark.). Even looking at the groups of local areas that ranked in the top and bottom 10 percent, there is more than a twofold difference (Exhibit 19). The range of performance was also wide for rates of rehospitalization among short-stay nursing home residents—those who were newly discharged to a nursing home and back again in 30 days.

Meanwhile, rates of hospital admission among home health patients were high across all local health care areas, with around one-third to nearly half of all home health patients being hospitalized in local areas that ranked in the bottom 10 percent (Exhibit 19). Interestingly, many areas in the Northeast—particularly in Connecticut, western

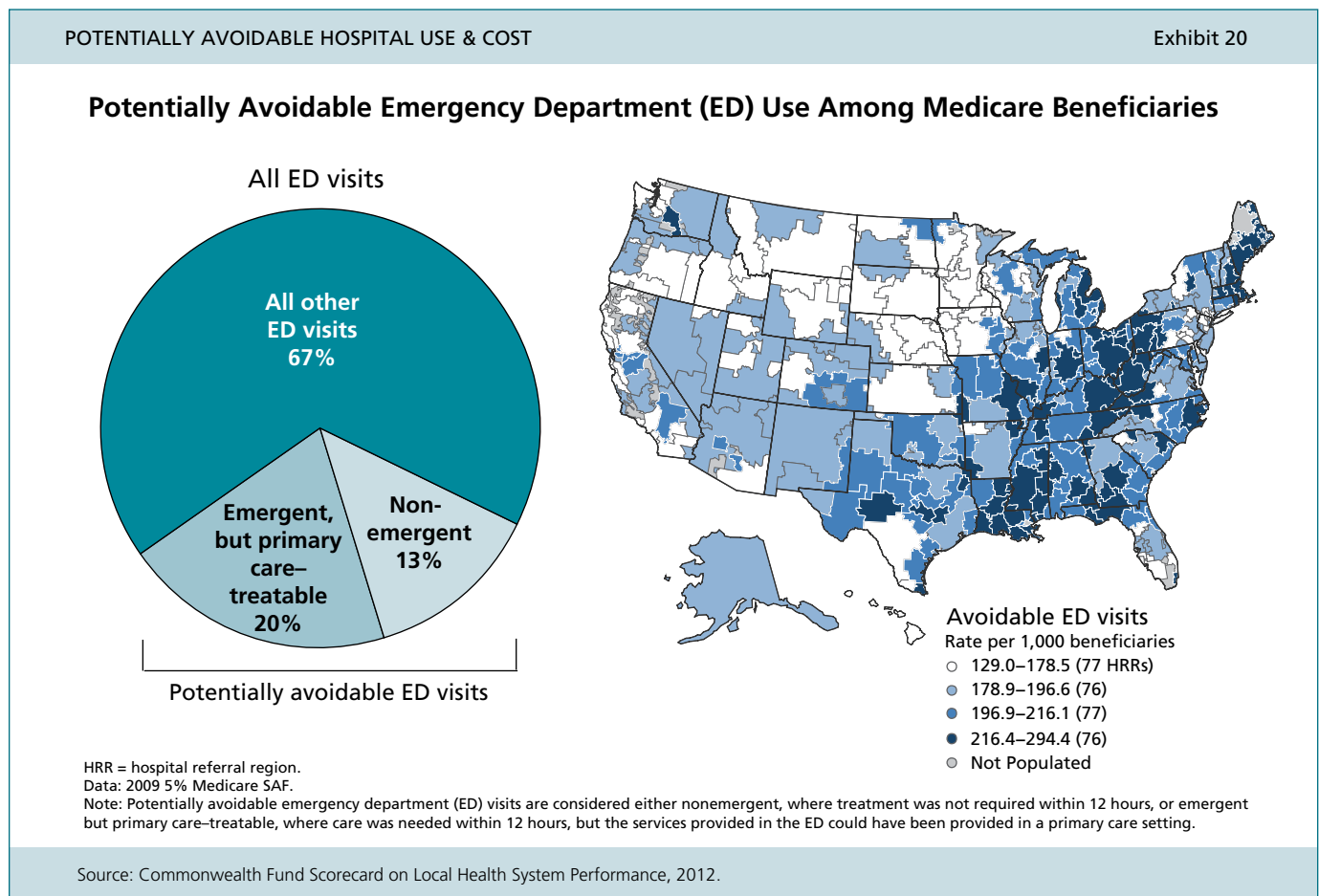
Massachusetts, and upstate New York—tend to have lower-than-average hospitalization rates among nursing home residents but have the highest (worst) rates of hospitalization among persons receiving home health care. In Florida, Illinois, Indiana, and Michigan, there was nearly a 20-percentage-point difference between the local health care areas with the highest and lowest rates of hospitalization among nursing home residents. These findings point to an opportunity for learning across health care settings and for community-wide commitment to improving care transitions.

Potentially Avoidable Emergency Department Use Among Medicare Beneficiaries

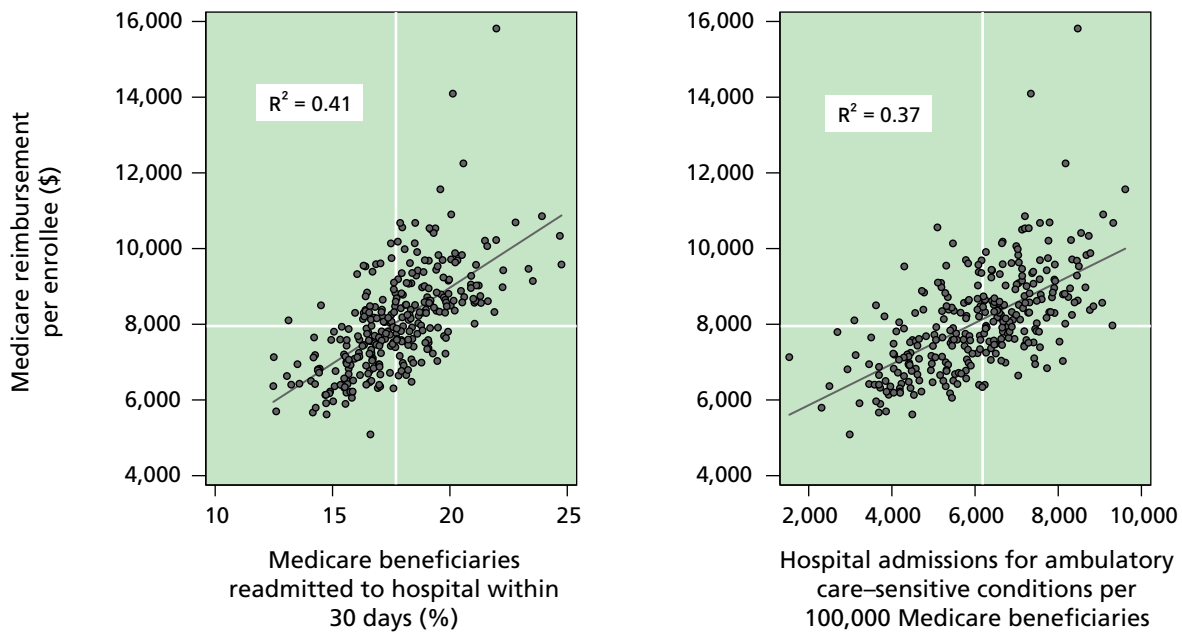
The *Local Scorecard* introduces an important new indicator to the scorecard series: the frequency of potentially avoidable emergency department (ED) use among Medicare beneficiaries (Exhibit 20).³¹ Increasingly, EDs serve as the primary source of

health care for people who lack adequate access to primary care services.³² EDs are often used as a substitute for primary care when people have difficulty accessing primary care, either because they lack insurance coverage, cannot find a primary care physician who will see them, or are seeking care outside of traditional business hours. Yet care received in an ED is more expensive than care provided in other settings and is not well suited for addressing preventive care or chronic conditions underlying many acute exacerbations that result in an ED visit. The *Local Scorecard* finds that one of three ED visits among Medicare beneficiaries is likely avoidable, either because it was for a nonemergent condition or an urgent condition that could have been safely treated in a primary care setting.

The rate of potentially avoidable ED use among Medicare beneficiaries ranged from 129 visits per 1,000 beneficiaries in Santa Cruz, Calif., to 294 visits per



Hospitalizations for Potentially Avoidable Hospital Admissions and 30-Day Readmissions, by Medicare Reimbursement



Note: Each dot represents one of 306 hospital referral regions.
 Data: Medicare reimbursement and Medicare beneficiaries readmitted to hospital—2008 Medicare claims as reported by IOM; ACS hospital admissions—2009 5% Medicare SAF.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

1,000 beneficiaries in Kingsport, Tenn. Multiple local areas in Louisiana, Maine, Massachusetts, Mississippi, Tennessee, and West Virginia had the highest rates of potentially avoidable ED use. These findings demonstrate the need for federal and state policy to strengthen the primary care workforce, direct resources to underserved areas, and create incentives for the design of more robust systems for after-hours primary care and urgent care, including those with strong links to primary care community practices.

Costs of Care

The *Local Scorecard* tracks total Medicare fee-for-service spending per beneficiary for hospital (Part A) and physician (Part B) benefits, adjusted for variations in wage levels, and excluding extra payments for medical education and treating a disproportionately high share of low-income people. Defined in this way, average per capita Medicare payment rates should vary

mainly by the volume and mix of services delivered to Medicare patients in each local area. Despite standardization in pricing and payment methods, total Medicare reimbursements per capita varied threefold (Exhibit 2). Average payments ranged from a low of \$5,089 in Honolulu to a high of \$15,813 in Miami. There is a 50 percent difference in per capita spending between the 10th and 90th percentiles (\$6,432 vs. \$9,687). Costs tended to be higher in the East and South than in the Midwest and West. We observed similar geographic patterns for per capita Medicare spending for diagnostic imaging services.

There are only modest associations between per capita Medicare spending and measures of quality.³³ However, the *Local Scorecard* finds that high rates of either ACS admissions or readmissions are associated with higher Medicare spending (Exhibit 21). The large variation in spending, lack of association to better-

quality care, and strong link to potentially avoidable hospital use suggest that there are opportunities to improve patient experiences and lower costs.³⁴

Spending among the age-18-to-64 commercially insured population also varied considerably across local areas, based on data from employer-sponsored plans. For this indicator, the *Local Scorecard* used claims data for privately insured populations, excluding spending on prescription medications and adjusting for local wage differences to make the data more comparable to Medicare.³⁵ Based on these adjusted data, there is wide variation in private insurance spending per enrollee, with the highest-cost areas (Charleston and Huntington, W.V., at \$5,068 and \$5,042, respectively, and Wausau and Marshfield, Wis., at \$4,893 and \$4,800) roughly two to two-and-a-half times the

lowest-cost areas (Honolulu, Hawaii, at \$2,014, and Buffalo and Rochester, N.Y., at \$2,228 and \$2,319, respectively). Comparing all areas to the median per-enrollee spending rate, private insurance spending for the working-age population ranged from 39 percent below the all-area median to 53 percent above the median. There was a 47 percent difference between per-enrollee spending among the lowest-cost 10 percent of local areas and the highest-cost 10 percent of areas.

Overall, as Exhibit 22 illustrates, the range of variation across the country for per-enrollee commercial spending was compressed at the upper portion of the distribution compared with per-beneficiary Medicare spending. However, this was mainly because of two areas—McAllen, Texas, and Miami, Fla.—that

Commercially Insured and Medicare Spending per Enrollee, Relative to U.S. Median Spending for Each Population

Commercial Spending

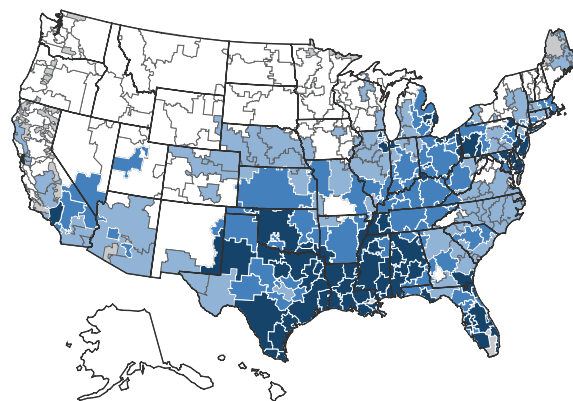
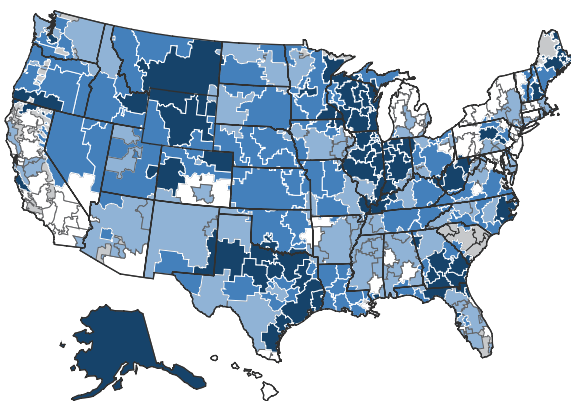
Expressed as ratio to median commercial spending

- 0.61–0.89 (71 HRRs)
- 0.90–0.99 (79)
- 1.00–1.09 (80)
- 1.10–1.53 (71)
- Not Populated or Missing Data (5)

Medicare Spending

Expressed as ratio to median Medicare spending

- 0.63–0.89 (81 HRRs)
- 0.90–0.99 (72)
- 1.00–1.09 (75)
- 1.10–2.00 (78)
- Not Populated



HRR = hospital referral region.

Data: Commercial – 2009 Thomson Reuters MarketScan Database, analysis by M.Chernew, Harvard Medical School. Medicare – 2008 Medicare claims as reported by IOM.
 Note: Ratio values lower than 1.0 indicate lower than median spending, ratio values higher than 1.0 indicate higher than median spending. Median spending is determined separately for the commercially insured (ages 18–64) and Medicare populations (age 65 and older).

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

were outliers for Medicare spending, with rates nearly double the median Medicare spending level. All other areas with higher-than-median Medicare spending were at most about 50 percent higher, similar to the range of variation for private spending.

Notably, however, the geographic patterns of variation were often inconsistent between Medicare and commercial spending (Exhibit 22). Although there are areas that are relatively high- or low-cost for both Medicare and private insurance, many areas either have relatively high Medicare and relatively low commercial spending, or relatively low Medicare spending and relatively high commercial spending. The often inconsistent pattern mirrors previous studies comparing commercial and Medicare spending.³⁶

Based on comparisons of 2009 spending rates per person for the commercially insured population (ages 18–64) and spending patterns in 2008 for the Medicare population, there were:

- 35 areas with similar relative spending levels between their Medicare and commercially insured populations, including 16 areas where per-enrollee spending rates were in the lowest-cost quartile for both populations and 19 areas in the highest-cost quartiles for both populations;
- 25 local areas in the lowest-cost quartile for per-enrollee commercial spending but in the highest-cost quartile for per-beneficiary Medicare spending; and
- 21 local areas in the highest-cost quartile for per-enrollee commercial spending but in the lowest-cost quartile for per-beneficiary Medicare spending.

[Appendix A1](#) lists these 81 areas by name in each of these four groupings. The other referral regions were in the middle two quartiles of the spending range for both Medicare and private insurance spending per person.

Often inconsistent patterns in relative spending between an area's privately insured under-65

population and its Medicare population likely reflect either variations in underlying care patterns for the two populations or price variations among private payers that reflect local market dynamics—or some combination of both. In general, younger, privately insured individuals with employer-sponsored coverage are healthier and have higher income than Medicare beneficiaries living in the same area, and thus they may be cared for by a different mix of providers. Variation in private spending will also reflect differences in benefit design and health plan networks. Prices paid by private insurers also tend to vary more substantially than those paid by Medicare and can vary depending on local insurers' bargaining power relative to providers. Recent studies, for example, indicate that the relative market share held by dominant providers and commercial insurance firms matters. In more-concentrated provider markets, prices paid by private insurers tend to be higher.³⁷

These complex patterns of per-person spending variation underscore the need for robust information systems, including all-payer databases, that will help us understand total spending and underlying care patterns and costs at the local community level. Commercial spending data used for this analysis comes from a rich set of health insurance claims for individuals enrolled in employer-sponsored plans in 2009. Despite representing about 36 million covered individuals nationally, these data can fluctuate in smaller regions from year to year as the representative employer mix and annual benefit designs change. The data also primarily represent the experience of employees in larger firms and are somewhat less representative of the spending patterns of small employers and people who buy insurance directly. The data also miss Medicaid spending, since these data are not yet available at the local level. As local providers and communities strive for better patient care experiences, better outcomes, and lower costs, they will need to have an accurate and complete understanding of local health care spending patterns.

Performance of Top and Bottom 10 Percent of Hospital Referral Regions

Performance Quartile

- Top Quartile
- Second Quartile
- Third Quartile
- Bottom Quartile
- Missing Data

- Medicare Admissions for Ambulatory Care-Sensitive Conditions
- Medicare 30-Day Readmissions
- Medicare Potentially Avoidable Emergency Department Visits
- Nursing Home Admissions
- Nursing Home 30-Day Readmissions
- Home Health Care Admissions
- Total Medicare Reimbursements per Enrollee
- Medicare Imaging Costs
- Total Commercial Reimbursements per Enrollee

Dimension Rank	Local Area	Population Count	Medicare Admissions for Ambulatory Care-Sensitive Conditions	Medicare 30-Day Readmissions	Medicare Potentially Avoidable Emergency Department Visits	Nursing Home Admissions	Nursing Home 30-Day Readmissions	Home Health Care Admissions	Total Medicare Reimbursements per Enrollee	Medicare Imaging Costs	Total Commercial Reimbursements per Enrollee
Top 10% of Local Areas	1	Honolulu, HI	1,360,301	Top	Top	Top	Top	Top	Top	Top	Top
	2	Ogden, UT	488,280	Top	Top	Top	Top	Top	Top	Top	Top
	3	Boise, ID	882,040	Top	Top	Top	Top	Top	Top	Top	Top
	3	Grand Junction, CO	305,320	Top	Top	Top	Top	Top	Top	Top	Top
	3	Rapid City, SD	218,020	Top	Top	Top	Top	Top	Top	Top	Top
	3	Santa Rosa, CA	488,469	Top	Top	Top	Top	Top	Top	Top	Top
	7	Salem, OR	326,508	Top	Top	Top	Top	Top	Top	Top	Top
	7	Salt Lake City, UT	1,998,814	Top	Top	Top	Top	Top	Top	Top	Top
	9	Bend, OR	218,854	Top	Top	Top	Top	Top	Top	Top	Top
	9	Idaho Falls, ID	239,146	Top	Top	Top	Top	Top	Top	Top	Top
	11	La Crosse, WI	350,219	Top	Top	Top	Top	Top	Top	Top	Top
	11	Provo, UT	597,216	Top	Top	Top	Top	Top	Top	Top	Top
	13	Medford, OR	433,410	Top	Top	Top	Top	Top	Top	Top	Top
	13	Neenah, WI	237,203	Top	Top	Top	Top	Top	Top	Top	Top
	13	Santa Barbara, CA	439,848	Top	Top	Top	Top	Top	Top	Top	Top
	16	Fargo/Moorhead MN, ND	528,764	Top	Top	Top	Top	Top	Top	Top	Top
	16	Missoula, MT	383,540	Top	Top	Top	Top	Top	Top	Top	Top
	16	Portland, OR	2,678,718	Top	Top	Top	Top	Top	Top	Top	Top
	16	San Luis Obispo, CA	255,521	Top	Top	Top	Top	Top	Top	Top	Top
	16	Santa Cruz, CA	271,146	Top	Top	Top	Top	Top	Top	Top	Top
	21	Duluth, MN	340,489	Top	Top	Top	Top	Top	Top	Top	Top
	21	San Mateo County, CA	820,908	Top	Top	Top	Top	Top	Top	Top	Top
	21	Traverse City, MI	231,931	Top	Top	Top	Top	Top	Top	Top	Top
	24	Albuquerque, NM	1,667,755	Top	Top	Top	Top	Top	Top	Top	Top
24	Appleton, WI	333,220	Top	Top	Top	Top	Top	Top	Top	Top	
24	Eugene, OR	699,687	Top	Top	Top	Top	Top	Top	Top	Top	
24	Everett, WA	659,750	Top	Top	Top	Top	Top	Top	Top	Top	
24	Minot, ND	126,147	Top	Top	Top	Top	Top	Top	Top	Top	
24	Muskegon, MI	278,538	Top	Top	Top	Top	Top	Top	Top	Top	
24	Redding, CA	351,283	Top	Top	Top	Top	Top	Top	Top	Top	
Bottom 10% of Local Areas	277	Charleston, WV	833,536	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Detroit, MI	1,797,778	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Florence, SC	359,716	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Gary, IN	539,247	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Harlingen, TX	565,440	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Hattiesburg, MS	316,829	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Houston, TX	6,369,027	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Joliet, IL	691,166	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	277	Lexington, KY	1,518,597	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	286	Corpus Christi, TX	563,764	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	286	Gulfport, MS	196,812	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	286	Lake Charles, LA	271,045	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	286	Manhattan, NY	5,107,497	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	Beaumont, TX	464,624	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	Blue Island, IL	804,980	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	Bronx, NY	1,381,167	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	Houma, LA	279,132	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	Huntington, WV	361,141	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	Metairie, LA	469,603	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	New Orleans, LA	639,673	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	290	Shreveport, LA	700,013	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	298	Baton Rouge, LA	942,799	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	298	Chicago, IL	2,684,751	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
	298	Miami, FL	3,134,285	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
298	Munster, IN	306,130	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	
298	Texarkana, AR	261,650	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	
303	Alexandria, LA	292,937	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	
303	Lafayette, LA	622,943	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	
303	Monroe, LA	270,188	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	
303	Slidell, LA	193,826	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

HEALTHY LIVES

The overarching goal of any health care system is to help people lead long, healthy, and productive lives. Managing the health of a community requires collaboration across professional disciplines as well as aligned efforts by federal, state, and local policymakers. At a time when heart disease, cancer, and diabetes account for the majority of premature deaths in the United States, states and local communities are looking for comprehensive approaches that emphasize prevention and better management of chronic conditions, as well as public health initiatives that address population risk factors. These include policies and programs intended to stem the rise of obesity, curb smoking, and promote healthy lifestyles, while ensuring the delivery of preventive services and effective care for chronic conditions.

The *Local Scorecard* examines 10 indicators to gauge how well local areas strengthen opportunities for achieving optimal health and quality of life for their residents (see [Appendix B](#) for more detailed indicator descriptions, time frames, and data sources). These include:

- potentially preventable mortality;
- breast cancer and colorectal cancer mortality;
- infant mortality and low birth weight;
- suicides;
- adult smoking and obesity;
- tooth loss related to poor oral health; and
- poor health-related quality of life.

In assessing these health outcomes, the *Local Scorecard* does not dismiss the complex nature of geographic differences in health. A community's ability to achieve positive health outcomes reflects the dynamic interaction of multiple determinants of health both outside and inside the health care system. Therefore, the *Local Scorecard* aims to identify important targets for improvement, with the understanding that effective interventions often

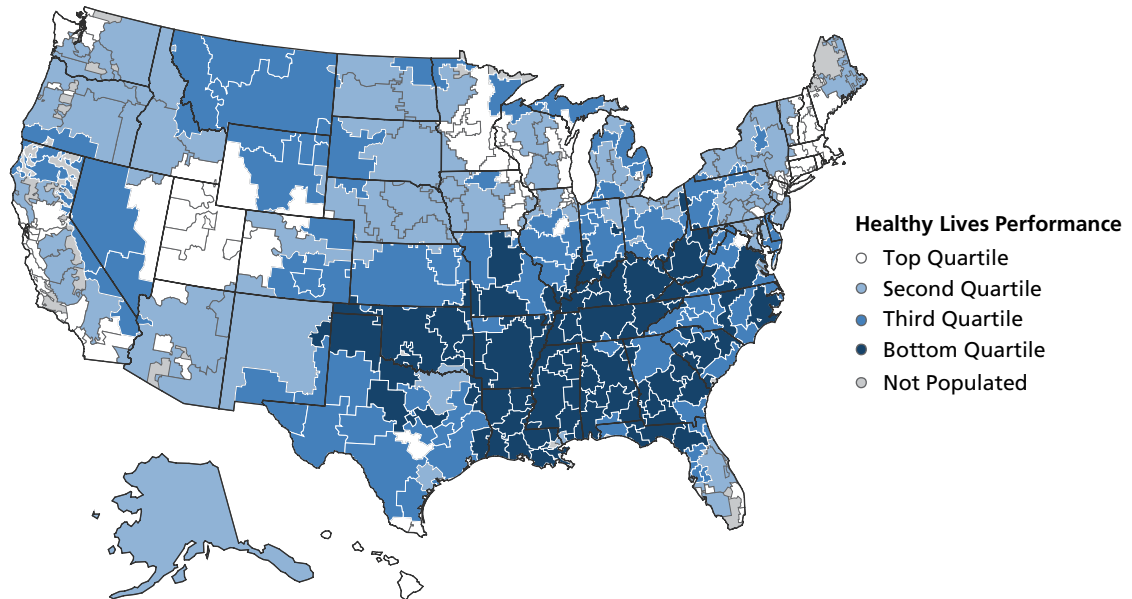
require comprehensive approaches that address broader social and public health risk factors as well as the overall health care system.

The *Local Scorecard* finds large variations in mortality and other healthy lives indicators both across and within states, including distinct regional patterns (Exhibit 24). Specifically, the top 10 percent of local areas were concentrated in the West and included parts of the San Francisco Bay area and coastal regions of California, Boulder, Colo., Ogden and Provo, Utah, and Everett and Seattle, Wash. Several areas in the Northeast were also among the top performers, including those in Connecticut, eastern Long Island, and White Plains, N.Y., as well as the New Jersey regions surrounding the New York metropolitan area. In the Midwest, St. Paul, Minn., and Elgin, Ill., stood out among the leaders. In fact, St. Paul ranked in the top quartile on all 10 healthy lives indicators, as did the best local area on this dimension, San Jose, Calif. Top performers on the dimension overall did not necessarily do well across all of the healthy lives indicators, with several falling in the bottom half of performance on rates of low-birthweight infants and poor health-related quality of life (Exhibit 29). Regions that scored the lowest on the healthy lives dimension overall were largely in the South; in general, these areas scored in the bottom quartile for nearly all of the indicators, with the exception of suicide (see box on Columbia, S.C., on next page).

Potentially Preventable Mortality

The *Local Scorecard* defines premature deaths (also called mortality amenable to health care) as deaths before age 75 caused by disease complications or conditions that are potentially preventable with timely and effective care, such as bacterial infections, certain screenable cancers, diabetes, heart disease, stroke, asthma, and surgical complications. A recent cross-national comparison finds the United States ranks last among 16 high-income countries on

Overall Performance on Healthy Lives Dimension



Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

COLUMBIA, S.C.: BUILDING COLLABORATIONS TO PROMOTE POPULATION HEALTH

Challenges to health are evident across the five regions of South Carolina examined in the *Local Scorecard*, all of which perform relatively poorly on the Healthy Lives dimension. In the state's capital city of Columbia, for example, nearly a quarter of adults are uninsured, one-third of adults are obese, and the infant mortality rate is relatively high (10 deaths per 1,000). To address these challenges, Columbia's leaders are creating an infrastructure to improve the health of their local population in collaboration with the Rippel Foundation's Organizing for Health project. This effort builds on the state's commitment to improving health care delivery through participation in the Institute for Healthcare Improvement's 100,000 Lives Campaign and similar initiatives, which has evolved to a broader focus on the Triple Aim of health, costs, and care.

The Healthy South Carolina Campaign operates under the principle that to improve care and population health, leaders in health care delivery, the health insurance sector, and the community must work across boundaries. In early 2011, Organizing for Health convened a "South Carolina Vision Team" comprising stakeholders such as the South Carolina Hospital Association, the Department of Health, and Blue Cross Blue Shield of South Carolina. The team

identified core leaders, who then engaged in discussions with more than 1,000 community members from churches, schools, community clinics, and the University of South Carolina. Through one-on-one meetings, strategy sessions, and assemblies, community members identified health problems facing Columbia residents and possible solutions to address them. The outcome was a strategic campaign to promote population health and redefine the Columbia health system, focusing on one Columbia zip code with particularly high needs.

The Healthy South Carolina Campaign's current goal is to train 300 local leaders to focus on spreading out across Columbia to help individuals and neighbors develop wellness programs and policies. The campaign is expected to spread to additional communities in South Carolina and beyond, and may serve as a model to other communities that are looking to build the will to enact change. The Organizing for Health action-research team is capturing lessons learned from Columbia's experience so that similar campaigns can be built in communities across the country.

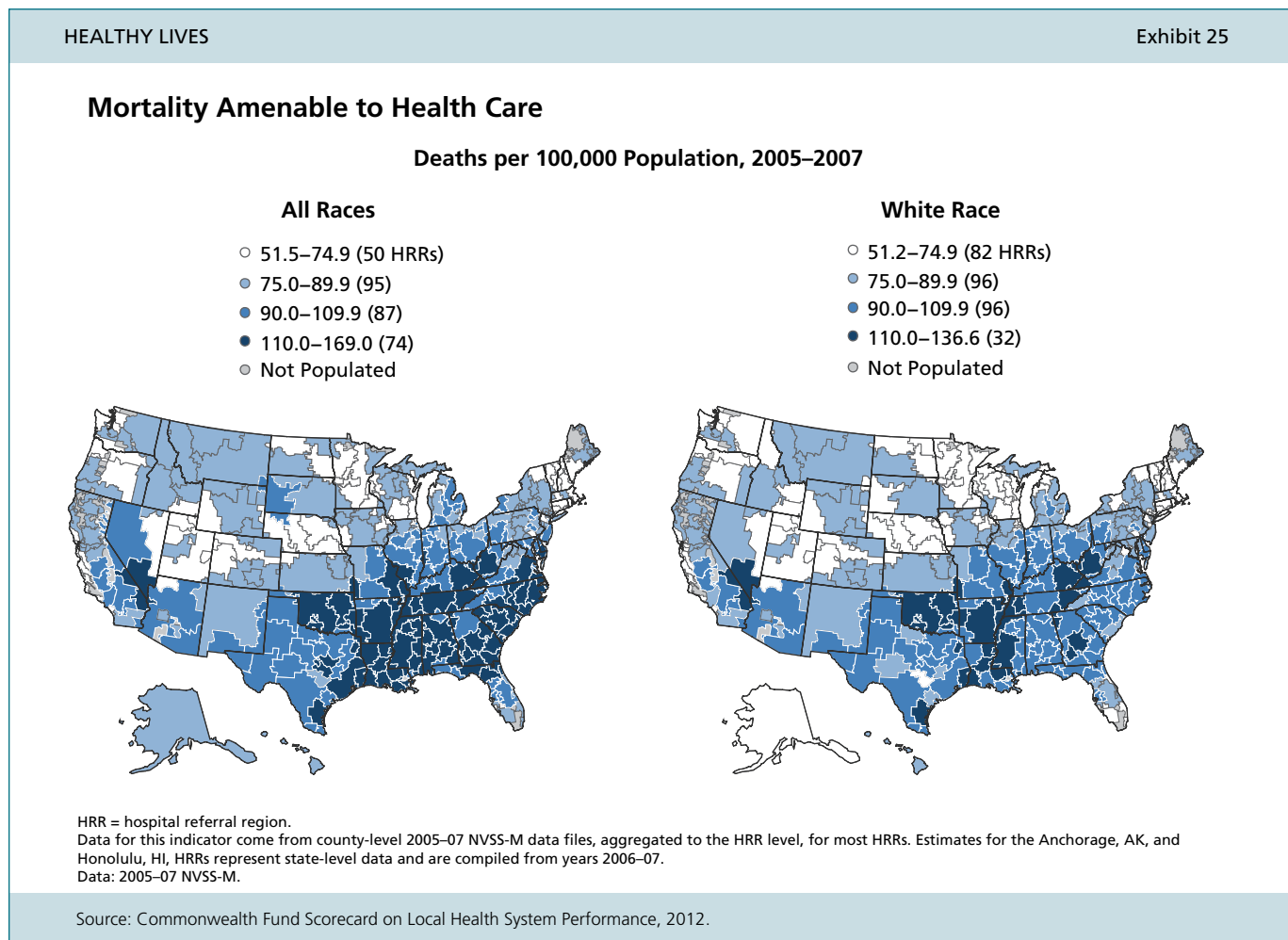
For more information, see: <http://rippelfoundation.org/2011/organizing-for-health/healthy-south-carolina/>.

potentially preventable deaths and that the U.S. rate of improvement (decline in death rates) lagged other countries between 1997–98 and 2006–07.³⁸ Analyses prepared for this *Local Scorecard* find that deaths from conditions amenable to health care vary dramatically across communities in the United States—with a more than threefold range between communities with the lowest and highest premature death rates (Exhibit 25).

Pockets of the West, Midwest, and Northeast had the lowest rates of potentially preventable deaths under age 75. In 2005–07, the best-performing local health care areas had a death rate from preventable causes of less than 72 per 100,000 population, compared with the all-HRR median rate of 91 deaths per 100,000; these areas were located in New England, Minnesota, Nebraska, and Utah, in addition to parts of California, Colorado, Iowa, North Dakota, Oregon, Washington,

and Wisconsin. Everett, Wash., had the lowest rate of potentially preventable mortality in the country (52 deaths per 100,000), followed by Boulder and Grand Junction, Colo. (53 to 55 deaths per 100,000). Only four local areas were below 60 deaths per 100,000 population. Still, these low rates (when standardized to the European standard population) are on par with the national average in the best-performing countries, including France (55 per 100,000), Australia (57 per 100,000), and Italy (60 per 100,000).

Rates of mortality amenable to health care were highest in the South—reaching levels that were more than double those in the top-performing local areas. Nearly all health care regions in Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, South Carolina, and Tennessee had rates at or above 110 deaths per 100,000, as did large parts of Georgia, North Carolina, and West Virginia. In five local health



care areas, rates were above 150 deaths per 100,000 (Baton Rouge, La.; Columbus, Ga.; Jackson, Miss.; Memphis, Tenn.; and Meridian, Miss.).

Wide geographic variation in preventable mortality rates is also associated with variations in sociodemographic composition across communities, particularly with the percentage of the population that is black. Local areas with relatively high proportions of black residents tend to experience among the highest rates of premature deaths from conditions that are potentially preventable with timely and effective health care. Yet the *Local Scorecard* also finds wide variation across local areas when looking at premature mortality among whites only—with more than a two-and-a-half-fold spread across local communities (Exhibit 25). More important, the areas with higher rates of premature death for all racial and ethnic groups also tend to have high rates of premature death among whites, indicating that local health systems are failing everyone in those communities. The persistent variation suggests that the health care system, not just race and ethnic makeup, contributes to the observed local-level variation.

Cancer Deaths

Despite increased efforts at the national level to promote cancer screenings and early diagnosis and treatment, the spread of breast and colorectal cancer death rates across communities is wide. Based on data aggregated across multiple years up to 2005, breast cancer mortality rates ranged from 17 to 23 per 100,000 females in the top 10 percent of local areas with the lowest death rates, primarily located in Arizona, California, and Florida, as well as in Honolulu.³⁹ Age-adjusted breast cancer mortality rates in these areas were half those in the worst-performing areas. More than 40 per 100,000 females died of breast cancer in large parts of the South as well as the Dakotas and Montana. Likewise, rates of colorectal cancer varied twofold, ranging from less than 17 per 100,000 in the best-performing local

areas to between 33 and 39 per 100,000 in the worst-performing local areas.

The likelihood of dying from cancer differed drastically depending on where one lives within a state. For example, the breast cancer mortality rate in Colorado varies from 23 per 100,000 females in Fort Collins to 29 per 100,000 in Grand Junction, reaching 39 per 100,000 in Greeley. In North Carolina, deaths from breast cancer were 41 per 100,000 females in Greenville, considerably higher than in Asheville (32 per 100,000), Charlotte (26 per 100,000), and Hickory (22 per 100,000).

Rates of death from breast cancer and colorectal cancer were highly correlated across local areas. Communities in California, Arizona, and Florida, in addition to the local areas of Honolulu, Seattle, and McAllen, Texas, have the lowest mortality rates for both cancers. Meanwhile, high rates of both breast cancer and colorectal cancer deaths were evident in local health care areas within the Dakotas, Georgia, Missouri, Montana, North Carolina, Texas, and Virginia. These findings emphasize the need for more widespread screenings and follow-up services to detect cancer at earlier and more treatable stages. In particular, strategies should focus on improving detection and treatment among underserved communities.

Infant Mortality and Low Birth Weight Babies

Infant mortality rates are an important indicator of health system performance because they are associated with maternal health, access to and quality of medical care, socioeconomic conditions, and public health practice.⁴⁰ Variation in infant mortality rates is extensive, varying fourfold across local areas from 3.3 to 14.4 deaths per 1,000 live births. In the 10 percent of communities with the lowest mortality, rates were around four to five deaths per 1,000 live births—not that low compared with other high-income countries. Finland, Iceland, Japan, Sweden, and Norway all achieve rates of less than four infant deaths per 1,000

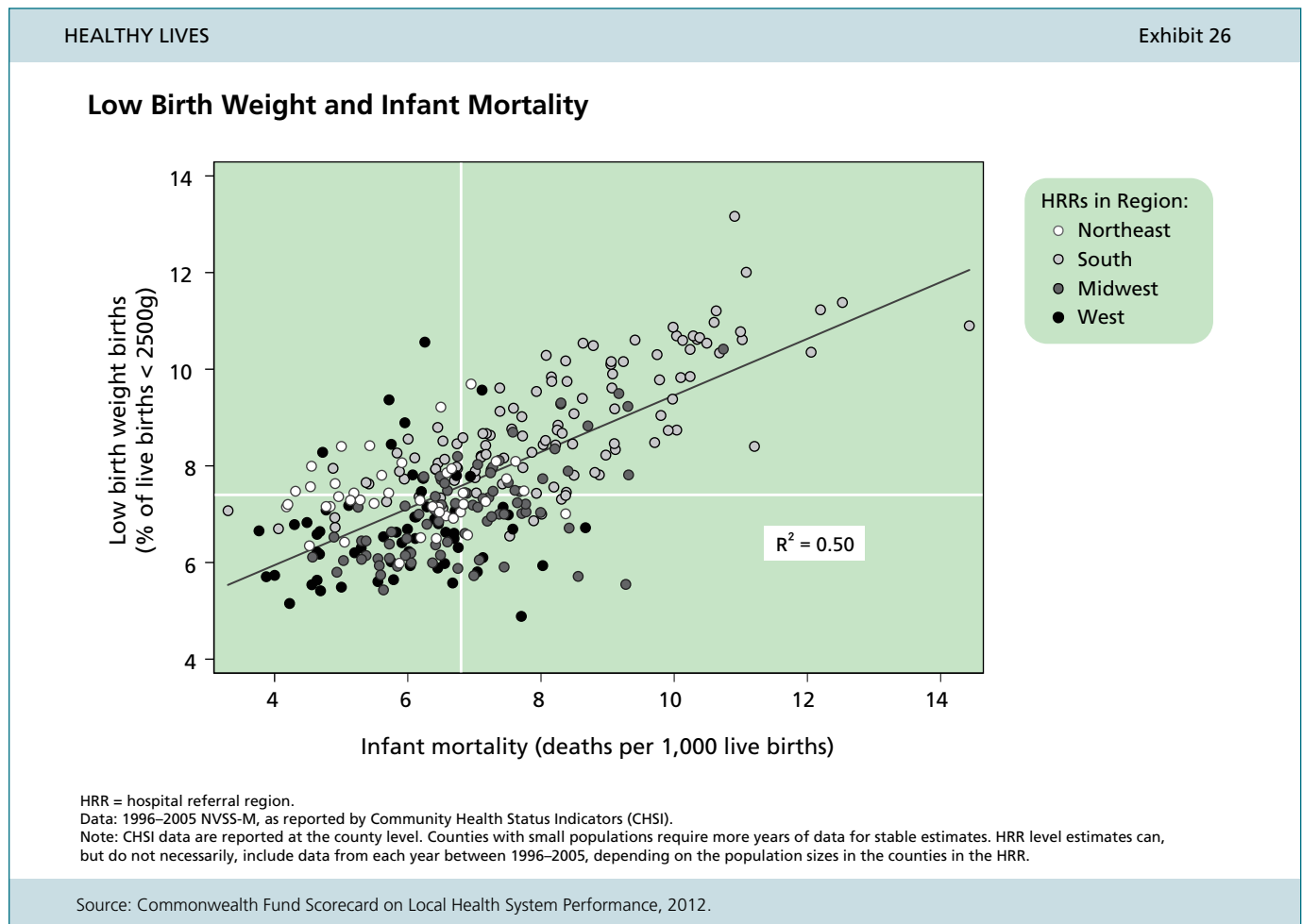
live births on average for the entire nation.⁴¹ Only three communities in the U.S. had less than four infant deaths per 1,000 live births (San Francisco and Santa Rosa, Calif., and Victoria, Texas).

Local areas with the lowest infant mortality rates were clustered in New England and within California, Colorado, Iowa, Minnesota, and New Jersey. McAllen and Harlingen, Texas, also had among the lowest infant death rates; both areas have large Hispanic populations, a sociodemographic group associated with low infant mortality.⁴² Rates were highest in many parts of the South, with as many as 13 to 14 infant deaths per 1,000 births. The highest infant death rates were in Alabama, Georgia, Mississippi, South Carolina, northwest Florida, eastern North Carolina, and parts of Louisiana and Tennessee. One place in the Midwest—Dearborn, Mich.—also ranked in the bottom.

Notably, across local health care areas there is a strong correlation between the number of low birth weight infants (infants born weighing less than 2,500 grams) and infant mortality rates. The percentage of infants born under 2,500 grams varied nearly threefold, from 4.9 percent to 13.2 percent. The association between low birth weight and infant mortality underscores the importance of promoting healthy pregnancies to maximize the likelihood of full-term births and healthy child development (Exhibit 26).

Suicides

Lives lost from suicide are a major public health concern, particularly with rates on the rise since 1999. Age-adjusted suicide rates vary from a low of four to eight per 100,000 population in the 10 percent of local areas with the lowest suicide rates, to a high of



23 to 49 per 100,000 in the 10 percent of areas with the highest rates. For one area, Anchorage, Alaska, there were nearly 50 suicides per 100,000 population. The next highest suicide rate was 39 per 100,000 in Bismarck, N.D.

Regional patterns reveal that suicide rates are lowest in the Northeast, particularly in Connecticut, Massachusetts, New Jersey, New York, and Rhode Island. Only two local areas in the Northeast had higher rates than the national median on this indicator (Wilkes-Barre, Pa., and Lebanon, N.H.). Outside of the Northeast, suicides were also low in Tacoma Park, Md., and the metropolitan areas of Chicago, Los Angeles, and San Jose, Calif. In addition to Anchorage, Alaska, suicide rates are highest in North and South Dakota and the Mountain states of Colorado, Montana, Nevada, and Wyoming. The rate of death from suicide correlates poorly with other indicators in the healthy lives dimension. Suicide rates are relatively high among many of the regions that perform well overall in the dimension, and relatively low among areas that perform poorly in this dimension overall (Exhibit 29).

In 11 states, suicide rates varied more than twofold across communities within the state. Such disparate outcomes highlight the important role that communities play in tailoring suicide prevention efforts around local needs and strengths.

Smoking and Obesity

Smoking and obesity contribute to high rates of preventable deaths and pose serious threats to people's quality of life and health. Nonetheless, smoking and obesity rates can be reduced through population-based approaches to care that are focused on disease prevention and health promotion and take into account the economic and social conditions in communities.

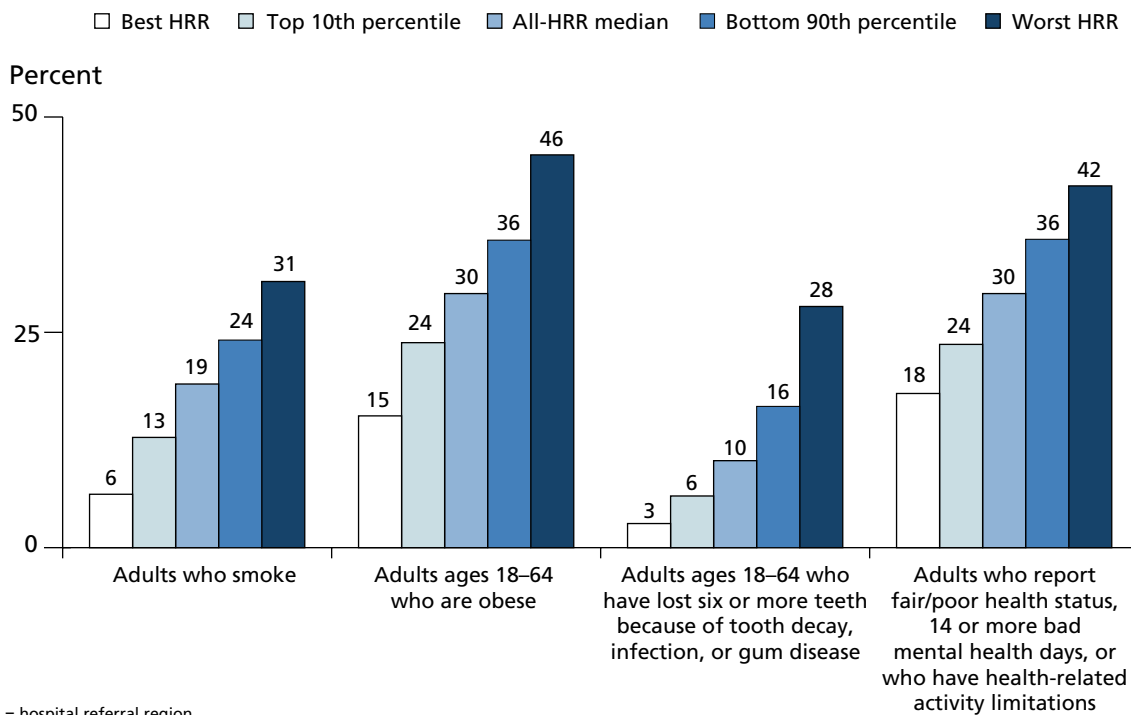
While the prevalence of adult smoking has declined over the past decade, there was a fivefold difference in the reported rate of cigarette use among

adults across local areas in 2009–10. Rates ranged from a low of 6 percent in Provo, Utah, to 31 percent in Beaumont, Texas (Exhibit 27). The highest proportions of smokers were concentrated in the South. Specifically, smoking rates among adults were 25 percent or more in nearly all local areas in West Virginia and parts of Arkansas, Georgia, Kentucky, Louisiana, Mississippi, Texas, and Virginia. In the Northeast, several areas in Pennsylvania reported rates this high. In the quartile of regions with the lowest smoking rates, the proportion of adults who smoked ranged between 6 percent and 16 percent. Only 10 areas had rates lower than 10 percent, most of which were located in California and Utah.

The prevalence of adult smoking also varies greatly within states, suggesting that some communities may be in greater need of smoking prevention programs and local regulatory policies than others. For instance, although California reports among the lowest area-specific adult smoking rates, the rate in Redding (23%) is three times higher than the best rate in California, San Mateo County (8%). Similarly, less than one of 10 adults smoke in Dubuque, Iowa, which is about half the rate for adults in Mason City (23%). In eight states, intrastate variation in smoking rates exceeded 10 percentage points.

As with smoking, preventing obesity and lowering obesity rates are national health priorities. In half of all local areas, at least 30 percent of adults are obese (defined as having a body mass index of 30 or higher), putting them at increased risk for diabetes, hypertension, stroke, and heart disease. Obesity rates exceed 30 percent in most age and sex groups.⁴³ Notably, regional patterns of adult obesity closely resemble rates of mortality from conditions that are amenable to health care, with the lowest rates in areas of the West and New England and the highest in the South. In 2009–10, the variation among the percentage of adults ages 18 to 64 who were obese across local areas was wide and startling, ranging from a low of 15 percent in Boulder, Colo.,

Local Variation: Healthy Lives Indicators



HRR = hospital referral region
Data: 2009-10 BRFSS.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

to three times this rate in Amarillo, Texas (46%) (Exhibit 27). Only eight areas (including San Francisco and the surrounding local health care areas as well as Bridgeport, Conn., White Plains, N.Y., and Arlington, Va.) had an adult obesity rate lower than 20 percent. Large parts of the eastern south-central states of Alabama, Tennessee, and Mississippi and the western south-central states of Arkansas, Louisiana, and Texas had adult obesity rates exceeding 35 percent. Yet several local areas throughout California, Illinois, Michigan, and Pennsylvania rivaled these rates. Intrastate variation was largest in California, Illinois, and Virginia.

Oral Health

Good oral health is an integral component of general well-being; when oral health is neglected, disability and poor quality of life can result.⁴⁴ In 2009-10, rates of nonelderly adults who lost six teeth or more from

tooth decay, infection, or gum disease ranged from less than 3 percent in Austin, Texas, and Boulder, Colo., to more than 25 percent in several areas of Tennessee (Jackson, Johnson City, and Knoxville) (Exhibit 27). Moreover, variation within states was also high. Unmet health needs for dental care based on reports of significant tooth loss were particularly high in eastern south-central states, but within these states there were communities doing better than the rest. At the same time, states that had some of the lowest local rates of poor oral health (less than 5%), such as Texas, California, and Virginia, also had areas where rates of tooth loss were three times as high (15%).

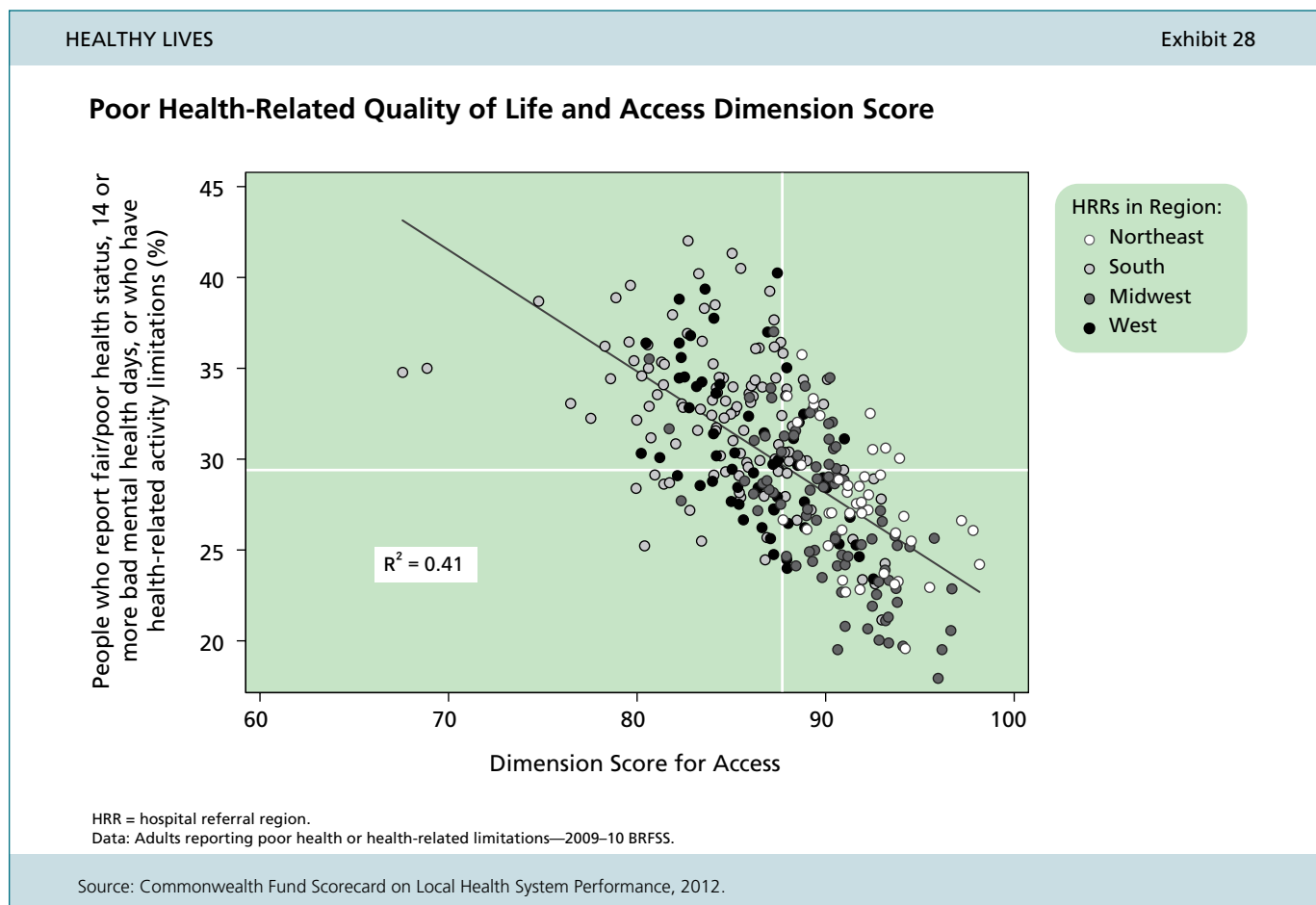
Health-Related Quality of Life

The *Local Scorecard* assesses health-related quality of life using a composite indicator that captures the prevalence of nonelderly adults who reported fair or

poor health, 14 or more mentally unhealthy days in the past month, or activity limitations related to health problems. This information can help communities identify unmet health needs and gauge the community burden of disease and disability. Performance across local areas varied widely on this indicator: between 18 percent and 24 percent of people reported having poor health-related quality of life in the areas with the lowest rates, and between 36 and 42 percent of people reported poor health-related quality of life in the areas with the highest rates (Exhibit 27). Reports of poor health-related quality of life were lowest in the midwestern states of Iowa, Illinois, Minnesota, North Dakota, South Dakota, and Wisconsin, as well as parts of the Northeast. Places with the highest reports

of unhealthy quality of life were concentrated in the south-central region, especially within West Virginia, Kentucky, and Tennessee. Several areas in California, Florida, Oregon, and Texas also reported very high rates of poor health and well-being.

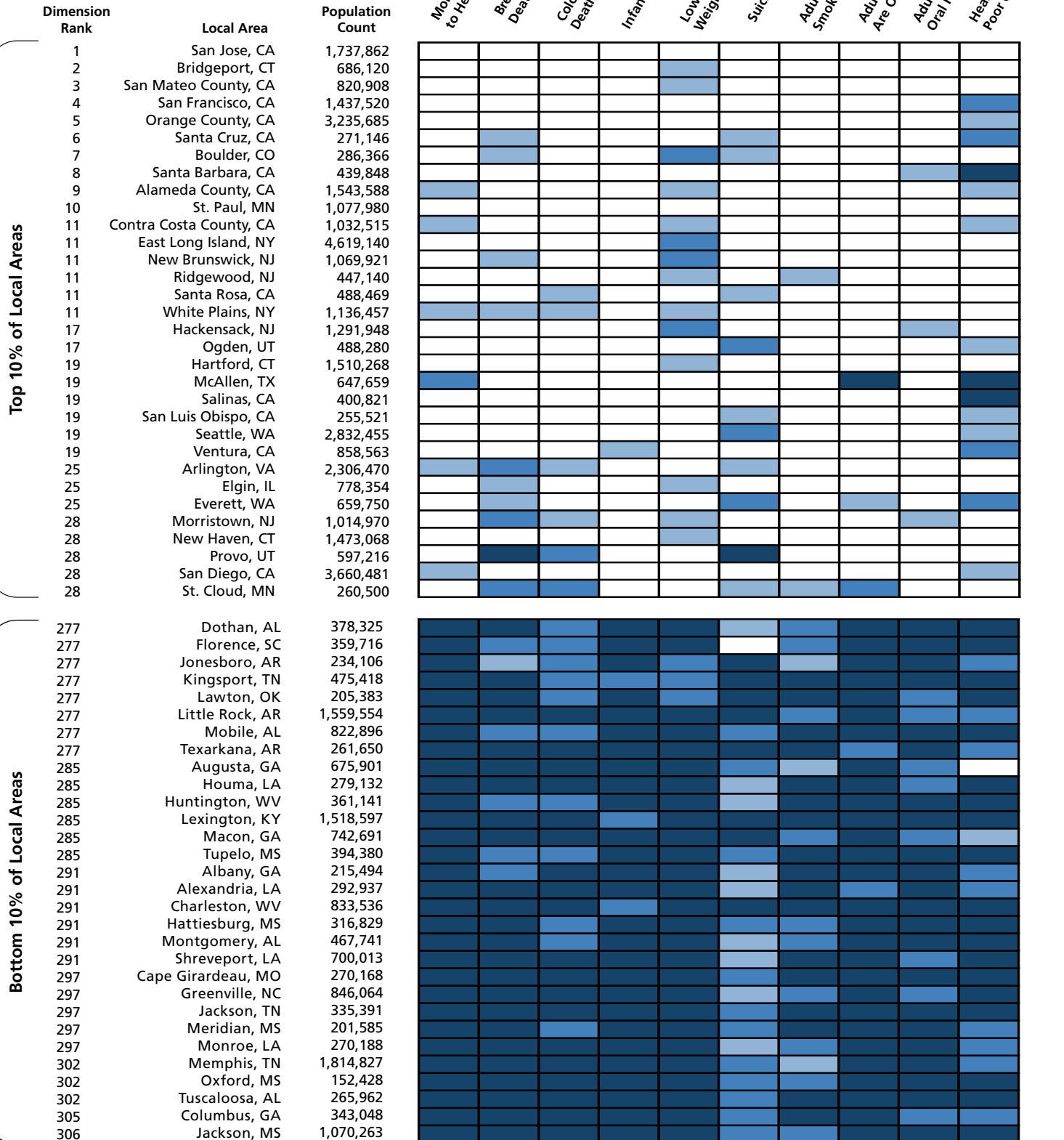
Across local areas, there is a strong association between health-related quality of life and overall access to care, underscoring the important relationship that access to care seems to have with health and disease burden (Exhibit 28). Communities in which people reported better access to care, including having health insurance, tended to report better health-related quality of life and areas with poor access were more likely to have people who reported worse health-related quality of life.



Performance of Top and Bottom 10 Percent of Hospital Referral Regions

Performance Quartile

- Top Quartile
- Second Quartile
- Third Quartile
- Bottom Quartile



Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

HEALTH SYSTEM EXPERIENCE IN THE NATION'S LARGEST METROPOLITAN AREAS

Large cities are the nation's population centers and an important source of innovation and production. Many large cities are also home to the nation's most well-known hospitals and health care systems. This section of the *Local Scorecard* focuses on the urban areas that include the 10 largest cities and major urban areas in geographic regions across the country (see box for selection criteria). Nearly 40 percent of the U.S. population lives in the health care areas representing these 45 local areas, highlighting the important role of cities in driving health system performance for the entire nation. These cities have sizeable and often diverse populations and neighborhoods, and efforts to improve health system performance will likely require closer analysis than was possible in this *Local Scorecard* to build a rich understanding of the sources of variation and needs of subcommunities and neighborhoods (see box on Chicago's South Side).

Health system performance across the 45 local areas that make up this selection of metropolitan areas was highly variable. Only seven local areas representing the largest metropolitan areas performed in the top quartile overall: Boston, Minneapolis and St. Paul, San Francisco and neighboring San Mateo County, Seattle, and Arlington, Va. Of these seven areas, only Minneapolis and St. Paul scored in the top performance quartile across all four dimensions (Exhibit 30). More than half of the HRRs

representing these metropolitan areas scored below the all-HRR median overall. As illustrated in Exhibit 30, performance also varied by dimension, with some urban areas doing relatively well in one dimension but poorly in others.

Not only is there wide variation between cities, but even within large metropolitan areas, local regions experience diverse performance across indicators of access, prevention and treatment, avoidable hospital use and cost, and healthy lives (Exhibit 30).

- In the Chicago area, for example, Evanston and Melrose Park perform in the top half of all regions across the country, and even score in the top quartile of prevention and treatment and healthy lives. By contrast, neighboring Chicago and Blue Island perform in the bottom half of all local areas overall, and in the bottom quartile for avoidable hospital use and cost. Within this local area, deaths from causes potentially preventable with timely and effective health care range from 77 per 100,000 in Melrose Park to 117 per 100,000 in Chicago.
- In the District of Columbia area, performance on indicators of avoidable hospital use and cost is variable, with Arlington, Va., performing in the second-highest quartile, Washington, D.C., performing in the third quartile, and Baltimore, Md., performing in the bottom quartile.

Other findings from among this selection of the nation's largest metropolitan areas, including data

FOCUS ON SELECTED METROPOLITAN AREAS

This section of the *Local Scorecard* highlights health system performance in selected local areas that include major metropolitan areas from around the country. To ensure geographic representation, cities were chosen if they were: a) one of the 10 largest metropolitan statistical areas (MSAs) by population in 2010, or b) if the urban area was one of the key population centers in each census division.

There is not a one-to-one match between hospital referral regions (HRRs), called local areas in this report, and

MSAs. We thus selected the 45 HRRs that best approximated the metropolitan areas selected for comparison. The discordance between HRRs and MSAs also results in population estimates that differ from MSA-specific estimates. Note that HRR-level data were not combined to derive MSA-level summary statistics. Rather, we simply report the HRRs that approximate each MSA separately. For more information on how HRRs are defined, see page 21.

for specific indicators within each dimension, can be found in [Appendix A2](#), with comparisons to the performance of the top 10 percent of all local areas. Highlights include:

- Uninsured rates for adults ranged from 40 percent in Miami to 6 percent in Boston; uninsured rates for children ranged from 17 percent in Houston and Miami to just 2 percent in Boston.
- In five cities, Boston, Baltimore, Washington, D.C., and Arlington and Raleigh, Va., at least half of adults age 50 and over received

recommended preventive care; in the Bronx (N.Y.), Chicago (including the local area for Blue Island), Los Angeles, Memphis, and San Antonio, less than 40 percent of older adults received recommended preventive care.

- In most of the largest cities, hospital 30-day readmission rates, potentially avoidable hospitalization for ambulatory care-sensitive conditions, and per capita Medicare spending (even after standardization for the local wage index and adjustments for graduate medical education) were high relative to the median rate for all local areas in the country.

CHICAGO'S SOUTH SIDE: IDENTIFYING COMMUNITY ASSETS AND PRIORITIES TO STUDY AND IMPROVE URBAN HEALTH

Many of the nation's large metropolitan areas, including Chicago, perform variably across *Local Scorecard* dimensions and face unique difficulties in providing quality health care to a diverse population. Chicago's South Side is home to seven of the city's eight poorest communities and faces many challenges to good health—unemployment, crime, and prevalent chronic diseases—that are common to other urban areas of the country. But the South Side also possesses assets, among them a history of community organizing and numerous secular and faith-based community organizations, that can help to address these challenges.

To help realize the opportunity for improved health, the University of Chicago Medical Center is partnering with a variety of community collaborators including clergy, physicians, social workers, employers, nurses, community leaders, and students to establish a sustainable community health research infrastructure known as the South Side Health and Vitality Studies (SSHVS). Through the initiative, which is funded in part by a federal grant from the National Institute on Aging, researchers and community members are identifying community assets and priorities for research that will generate knowledge about the changing health status of South Side residents, as well as the health impact of interventions and social trends, such as the increasing use of digital communications technologies.

Community-based organizations on the South Side benefit from this collaboration by gaining access to information and expertise with which to help advance their work in the community. For example, the SSHVS is supporting one faith-based community group's study of the impact of community gardens on community health. Likewise, the SSHVS Asset Census Project employs local students to

collect health and other data in 13 neighborhoods; health care providers and residents can use this information to identify resources in their community.

The medical center's Urban Health Initiative also supports the South Side Healthcare Collaborative (SSHC), which brings together more than 30 community health centers and free clinics with five local hospitals to help South Side families and patients establish a relationship with a regular doctor to prevent and better manage chronic disease and thereby reduce unnecessary emergency department (ED) visits. For example, patient advocates in the medical center's ED have linked 4,000 patients with diabetes to a primary care "medical home" through the SSHC network. Four community health centers in the network are participating with two University of Chicago clinics in a multifaceted diabetes disparities initiative involving culturally tailored interventions and community partnerships to support patients in their efforts to manage their condition and improve their nutrition.

These initiatives may serve as models that other academic medical centers can emulate to produce actionable knowledge to inform health, health policy, and health investments in their regions.

For more information, visit <http://uhi.uchospitals.edu>. See also: S. T. Lindau, J. A. Makelarski, M. H. Chin et al., "Building Community-Engaged Health Research and Discovery Infrastructure on the South Side of Chicago: Science in Service to Community Priorities," *Preventive Medicine*, March–April 2011 52(3–4):200–7; M. E. Peek, A. E. Wilkes, T. S. Roberson et al., "Early Lessons from an Initiative on Chicago's South Side to Reduce Disparities in Diabetes Care and Outcomes," *Health Affairs*, Jan. 2012 31(1):177–86.

The Health System Experience in Select Cities[†]

Local Area		Population Count	Overall	Access	Prevention & Treatment	Potentially Avoidable Hospital Use & Cost	Healthy Lives
NORTHEAST							
MA	Boston	4,825,960					
NY	New York City Area	Bronx	1,381,167				
		Manhattan	5,107,497				
PA	Pittsburgh	2,913,805					
	Philadelphia Area	Camden, NJ	2,826,905				
		Philadelphia	4,186,372				
MIDWEST							
IL	Chicago Area	Blue Island	804,980				
		Chicago	2,684,751				
		Evanston	939,064				
		Melrose Park	1,263,506				
MI	Detroit	1,797,778					
MN	Minneapolis	3,237,168					
	St. Paul	1,077,980					
MO	St. Louis	3,418,466					
OH	Cincinnati	1,666,017					
WEST							
AZ	Phoenix	3,250,646					
CA	Los Angeles Area	Orange County	3,235,685				
		Los Angeles	9,874,390				
	San Diego	3,660,481					
	San Francisco Bay Area	Alameda County	1,543,588				
		San Mateo County	820,908				
	San Francisco	1,437,520					
CO	Denver	2,811,835					
OR	Portland	2,678,718					
WA	Seattle	2,832,455					
SOUTH							
AL	Birmingham	2,300,344					
DC	District of Columbia Area	Arlington, VA	2,306,470				
		Baltimore, MD	2,519,510				
		Washington, DC	2,651,966				
FL	Fort Lauderdale	2,821,280					
	Miami	3,134,285					
	Tampa Area	Clearwater	492,609				
		St. Petersburg	423,910				
		Tampa	1,369,627				
GA	Atlanta	6,235,550					
LA	New Orleans	639,673					
NC	Charlotte	2,463,839					
	Durham	1,369,067					
TN	Raleigh	2,042,645					
	Memphis	1,814,827					
TX	Nashville	2,784,531					
	Dallas	4,840,913					
TX	Fort Worth	2,174,455					
	Houston	6,369,027					
	San Antonio	2,716,484					

Performance Quartile

- Top Quartile
- Second Quartile
- Third Quartile
- Bottom Quartile

[†] Local regions were selected for inclusion if they approximated the largest metropolitan statistical areas (MSAs) by population per census regions based on April 1, 2010, United States Census Data. Please note that referral areas do not exactly match with MSAs and population estimates between these two geographic areas may differ. The Manhattan area includes Manhattan, Brooklyn, and Staten Island.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

- Per-person spending for commercially insured and Medicare populations tends to diverge in most large cities, meaning relative spending is either higher than average for Medicare and lower than average for privately insured, or vice versa. In several cities, the differences are dramatic. For example, in Fort Lauderdale, Fla., per-person commercial spending is about 13 percent below the all-HRR median (for per-enrollee private insurance spending), and Medicare spending is about 33 percent higher than the all-HRR median per capita Medicare spending rate.
- Rates of preventable death for conditions amenable to health care were higher than the national median in almost all of the cities profiled here, though in five local areas (Minneapolis, St. Paul, San Francisco, San Mateo County, and Boston) potentially preventable death rates were among the lowest in the nation.

Urban Area Performance on Cost and Potentially Avoidable Hospital Use

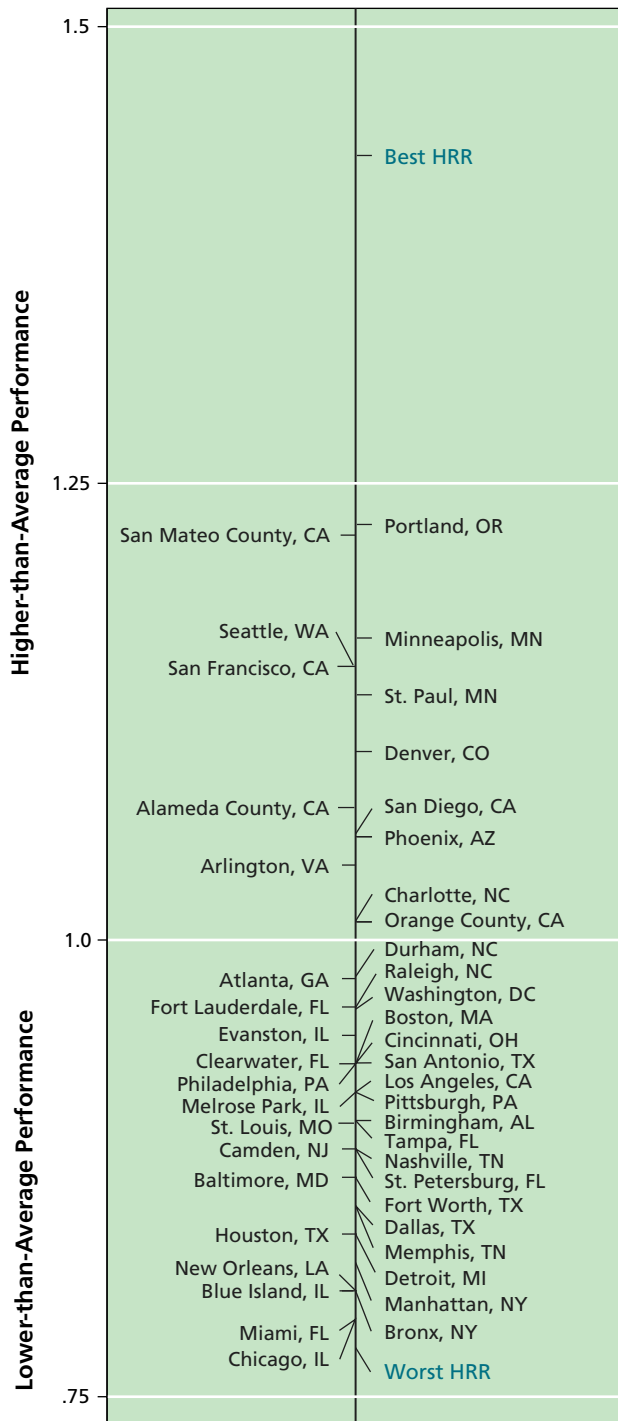
For large urban areas, health care costs present particular challenges, as cities stretch their budgets to support safety-net clinics and hospitals for lower-income and uninsured residents, pay their share of state Medicaid programs, and at the same time meet education and other pressing needs. Potentially avoidable hospital use and cost comprise several aspects of health system performance, in addition to per capita spending, that offer potential targets for improving performance while lowering costs. These include several whole-system measures—such as readmission rates, potentially avoidable hospital admissions, and a measure of primary care access that is captured in avoidable emergency department use—that indicate the potential to reduce costs through stronger care coordination and primary care.

In the majority of large cities, performance in this dimension was lower than the national average, signaling either higher per capita spending and/or more frequent potentially avoidable hospital use (Exhibit 31). Indeed, in several areas, performance was 20 percent worse than the national average. Still, in 11 of the 45 local areas in this selection of large cities, performance was substantially higher than average—with potentially avoidable hospital and emergency department use and other cost indicators averaging nearly 23 percent below the national average in Portland, Ore., and San Mateo County, Calif., and 13 percent to 17 percent below the national average in Minneapolis, St. Paul, Seattle, and San Francisco. Top-performing urban areas had generally lower-than-average Medicare spending per person (standardized for input prices) and more efficient use of hospital resources. Several large urban areas had lower-than-average (all-HRR median) Medicare and private commercial insurance spending per person, including: San Diego, Alameda County, San Mateo County, San Francisco, Seattle, Arlington, Va., Atlanta, and Raleigh. However, across these urban areas, Medicare and commercial spending per person did not always exhibit consistent patterns, with some areas low on commercial spending but high on Medicare, and vice versa (Exhibit 22 and [Appendix A1](#)).

All of the urban areas that did well on this dimension overall, with the exception of Arlington, Va., and Charlotte, N.C., are in the western part of the country, thus repeating the general pattern observed across the United States. However, even among top-performing cities, performance in this important dimension was substantially lower than the best rates achieved across all local areas (represented by the marker at the top of Exhibit 31 denoting Honolulu, Hawaii).

Large cities face challenges that smaller places often do not. Their populations tend to be more varied in their socioeconomic and demographic mix.

Performance on Potentially Avoidable Hospital Use and Cost in the Nation's Largest Metropolitan Areas Relative to the National Average



Note: Each HRR's potentially avoidable hospital use and cost dimension summary score was divided by the all-average dimension summary score for all HRRs. A value of 1.0 indicates average performance in this dimension, values lower than 1.0 indicate lower-than average performance, and values higher than 1.0 indicate higher-than-average performance.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

They are more likely to have multiple large providers competing for market share, which can affect the continuity and coordination of care. The cost of doing business tends to be higher (measures of cost used here do attempt to standardize this across regions), and environmental factors, like pollution and a lack of green spaces, can affect underlying levels of disease.

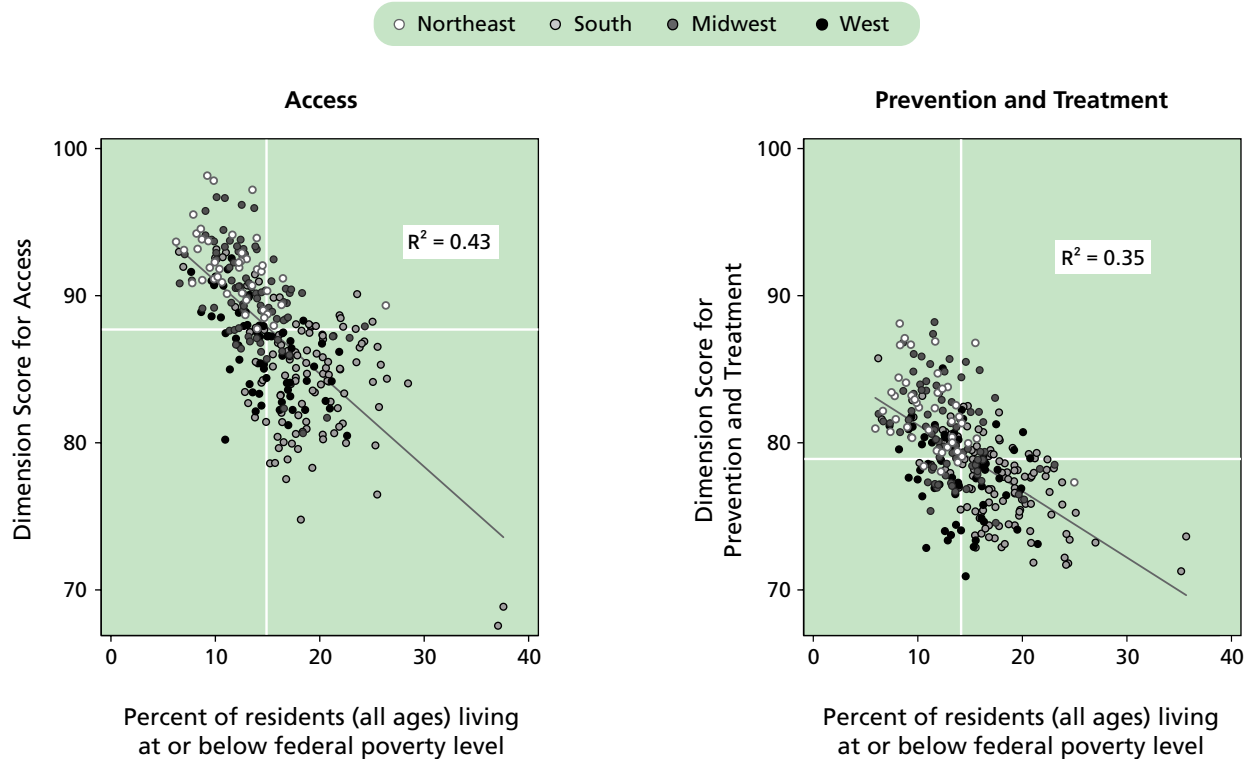
Finally, it is important to recognize that improvement and reform efforts in large cities may be more challenging than in smaller areas, since it may be difficult to identify a single stakeholder capable of organizing across the multiple communities within large cities. This makes it even more crucial to focus on areas of performance that are lagging and present the greatest opportunities to improve. There are examples to be found across the country, including in Chicago's South Side, where the University of Chicago Medical Center is collaborating with community leaders to study, monitor, and improve community health in one of the region's most vulnerable neighborhoods (see box on page 63).

POVERTY, INCOME, AND GEOGRAPHIC VARIATIONS IN HEALTH SYSTEM PERFORMANCE

Across the country, high poverty rates are associated with some aspects of health system performance, but not all. The *Local Scorecard* finds significant performance variations among areas that have low rates of individuals and families living in poverty, as well as among areas with high poverty rates. In all dimensions of performance, some communities stand out for achieving performance levels that are higher than expected, given the socioeconomic circumstances of their residents.

Local areas with very high poverty rates are concentrated in the bottom half and lowest quartile of overall performance. In these local areas, people are most likely to be uninsured, to go without care because of cost, and to lack a regular source of care,

Performance Is Lower in Places with a Higher Proportion of Residents Living in Poverty



Note: Each dot represents one of 306 hospital referral regions.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

as reflected by their poor performance on the access dimension overall (Exhibit 32). We also find that these high-poverty areas often rank lower on the prevention and treatment dimension—perhaps not surprising, given that affordable access is essential for receipt of timely care. Similarly, areas with very high poverty rates tended to have worse health outcomes and quality of life, including higher rates of infant mortality and premature deaths from complications of disease that could have been prevented with timely, effective care and community health initiatives. However, there is a substantially weaker association between an area’s poverty burden and most indicators within the potentially avoidable hospital use and cost dimension.⁴⁵

As noted above, getting preventive services and timely, high-quality care depends greatly on having

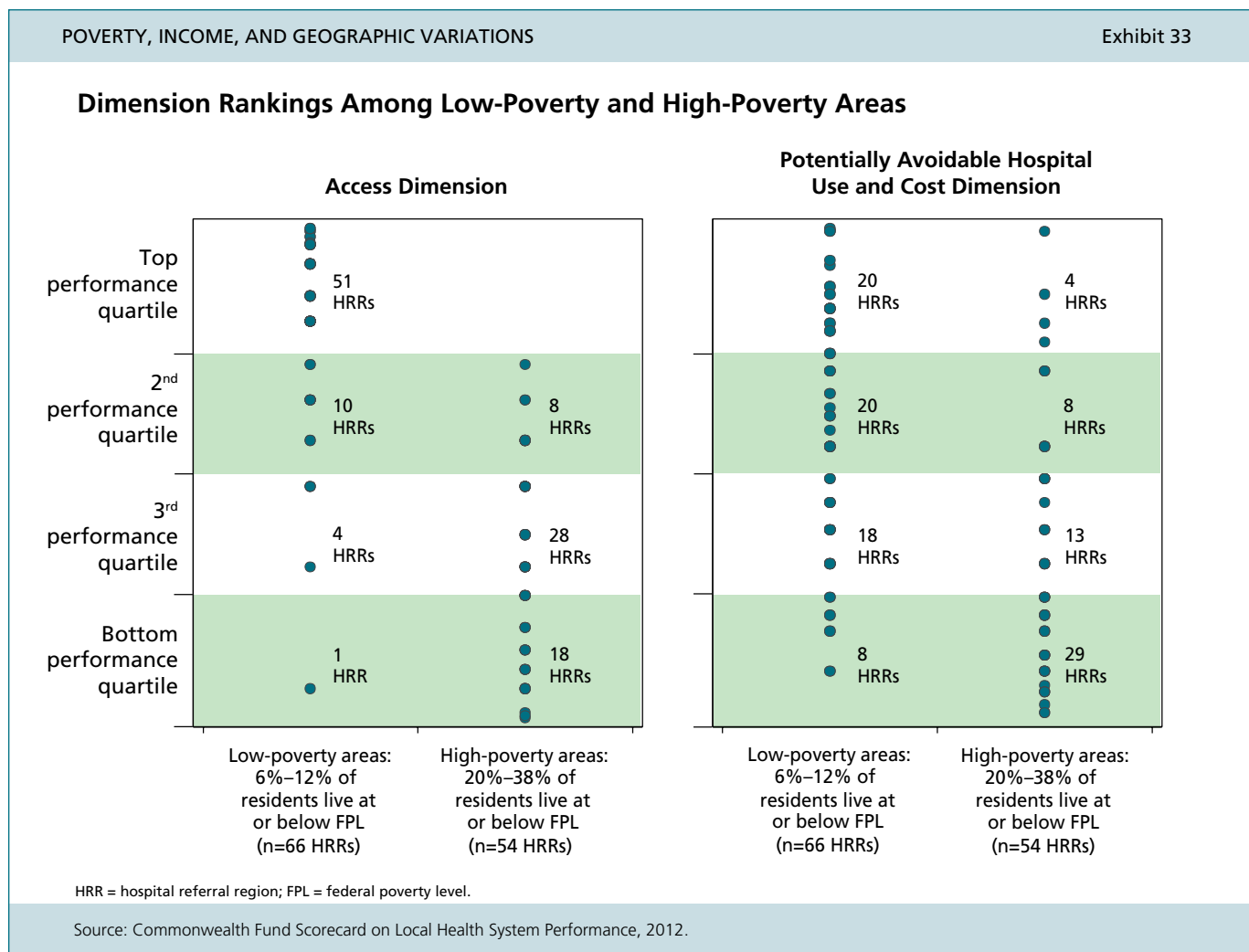
health insurance coverage and affordable access to care (Exhibit 9). In high-poverty communities where there are substantial gaps in access, federal and state policymakers have an opportunity to lay a strong foundation for health system improvement by ensuring both equitable access and the availability of adequate resources, thus enabling local care delivery systems to care for those who gain insurance coverage in the future.

Areas with high poverty rates also tended to have higher rates of potentially preventable deaths and higher rates of poor health and disability. As illustrated in Exhibit 28, communities with relatively worse access to care were more likely to have worse outcomes and poor health-related quality of life. The association between poor access and poor health outcomes is particularly notable in high-poverty

areas, and highlights the significant potential for improvement through expanded access to care and strengthened ties to primary care. Improving health in these low-income communities also will require community-wide approaches that target areas with high rates of disease or disability and align delivery system improvement efforts with population health interventions to ensure a healthy and safe environment.⁴⁶

The *Local Scorecard* recognizes that poverty is a factor of health system performance, but it is far from the only one that matters. If we look at only those areas with relatively low rates of poverty (with 6% to 12% of residents living at or below the federal poverty level) and those with high rates of poverty (with 20% to 38% of the population at or below the federal poverty level), we find that variation exists

within both of those groups (Exhibit 33). While it is clear that, on the access dimension, low-poverty areas generally rank at the top and high-poverty areas rank at the bottom, there are notable exceptions. Moreover, the pattern is less strong on indicators of potentially avoidable hospital use and cost, where we find that performance varies within low-poverty areas as much as it does within high-poverty areas. Many areas with low poverty rates rank in the bottom half (i.e., have lower rates) on indicators of potentially avoidable hospital use and costs, and areas with high poverty rates often fell in the top half. There are high-poverty local areas (those in the quartile with the highest proportion of residents living under 100% or 200% of the federal poverty level) that perform in the top quartile overall, including Muskegon, Mich., Tucson, Ariz., Sarasota, Fla., and Bangor, Maine. And



there are also relatively high-income areas (those in the quartile with the highest proportion of residents living above 400% of the federal poverty level) that perform well below average overall and in at least two dimensions, including: Chicago and Blue Island, Ill., Atlanta, Ga., Kansas City, Mo., Covington, Ky., and Newark, N.J.

These variations, regardless of a population's income level, indicate that the way local health care systems are organized and care is delivered make a difference, particularly in terms of the costs of care and potentially avoidable use of expensive resources. There is also clearly a need for targeting resources to impoverished communities, including through community health initiatives aimed at ensuring equality of opportunity to lead a long, healthy, and productive life. As federal health care payment and delivery system reforms are implemented, there are opportunities to learn from care systems that perform better or worse relative to the income level of the local population.

SUMMARY FINDINGS

The *Local Scorecard* documents widespread variations among local health care areas across the country on core measures of health system performance. Though it should not be the case, where one lives matters: geography influences access to care and the quality of care received. On measures of access to care, prevention and treatment, potentially avoidable hospital use and cost, and living a long, healthy, and productive life, some communities excel while many others struggle.

From our analysis, important cross-cutting findings emerge, many of which parallel findings from the 2007 and 2009 state performance scorecards⁴⁷:

- Strong geographic patterns of performance persist, with a wide range of variation across local health care areas.
- In many states, there is substantial intrastate variation across indicators and dimensions.

- Multiple dimensions of health system performance are interrelated.
- Socioeconomic factors, particularly high poverty rates, are associated with some, but not all, aspects of health system performance. There are significant variations within areas with low levels of poverty as well as within areas with high levels.
- Symptoms of poor care coordination and inefficient use of resources point to opportunities to strengthen primary care, improve quality, and reduce costs.
- Leading local areas perform consistently well on multiple indicators across dimensions of performance, but there is still room to improve in all local areas.

Strong geographic patterns of performance persist, with a wide range of variation across local health care areas.

Local health care areas vary in the provision of health care that is easily accessible, effective, safe, well coordinated, and focused on maximizing population health outcomes. Many areas in the Upper Midwest had consistently strong performance across all four dimensions and for most performance indicators. Communities in New England led the nation on measures of access—driven by Massachusetts' strong policy commitment to ensuring health coverage—but tended to have high costs and high rates of potentially avoidable hospital use. Performance was variable across dimensions in local areas in the West, while areas in the South, particularly along the Gulf Coast, struggled on all dimensions and most indicators.

On some key indicators of performance, there was a twofold-or-greater spread between the local areas grouped in the top 10 percent of the performance distribution versus the bottom 10 percent (Exhibit 2). The gaps between the absolute best- and worst-performing areas were even wider. Geographic

variations repeat the same general patterns seen in the state scorecards. Places in the Northeast and Upper Midwest often ranked in the top quartile of health system performance, whereas places with the lowest performance were concentrated in the South, particularly within the Gulf Coast and south-central states.

As discussed further below, raising performance levels in all local areas to the levels achieved in the highest-performing communities would improve access to care; ensure that millions of people receive effective, evidence-based preventive care; reduce wasteful and inefficient use of hospital resources; and potentially save billions of dollars in health care spending.

In many states, there is substantial intrastate variation across indicators and dimensions.

Local areas within the same state share the same payment, policy, and regulatory environments, yet in many states the gap between the best- and the worst-performing regions is wide. These disparities underscore the importance of local factors—provider practice styles; distinct organizational and community-specific cultures; and patients with varied health needs, health-related behaviors, and expectations—in driving health system performance. Moreover, they emphasize the importance of holding communities accountable for their residents' health and health care.

Variations within Texas were consistently larger than in other states, though regions in Florida, Illinois, Washington, California, and New York also demonstrated a fair degree of variation. While intrastate variations tended to be most apparent in states with large and diverse populations, and with more local areas, there were exceptions. Performance was less variable in both Pennsylvania and Ohio compared with other similarly sized states.

While national and state policy frameworks are crucial leverage points for health system improvement, there is a clear need for a better understanding of the roles and responsibilities of local communities in driving health system performance. Communities and state governments should play complementary roles in supporting improvement in areas of greatest need.

Multiple dimensions of health system performance are interrelated.

Throughout the *Local Scorecard*, we demonstrate synergies between different aspects of health system performance. These cross-dimensional findings underscore the need for policy attention and community action that takes a whole-system perspective.

Better access to care is associated with higher quality, better access and higher quality with improved health outcomes, and poorer access and lower quality with higher rates of potentially avoidable hospital admissions and higher overall costs (Exhibit 9). Analysis of individual indicators provides insight as to how deficiencies in access and quality contribute to poor outcomes and inefficient care. For example, the likelihood of dying from conditions amenable to health care and experiencing poor quality of life because of health reasons tend to be lower in areas that are leaders on measures of access to care, particularly places that have the largest percentages of insured adults and children (Exhibit 28). Areas with high performance in the prevention and treatment dimension also have lower mortality rates from conditions amenable to health care and fewer residents reporting poor quality of life linked to health. Also, hospital admissions for nursing home residents are lower in communities where fewer residents develop new pressure sores—a preventable injury—suggesting that there is a common pathway for improving the quality and efficiency of care (Exhibit 16).

Socioeconomic factors, particularly high poverty rates, are associated with some, but not all, aspects of health system performance. There are significant variations within areas with low levels of poverty as well as within areas with high levels.

Local areas with high poverty rates tend to have poorer access, lower rates of preventive care, higher rates of potentially avoidable hospital admissions and readmissions, and poorer health outcomes—especially those for which timely access to care and population health interventions can make a positive difference. Yet in all four dimensions of performance, high-income communities are not always in the top half of the performance distribution, and low-income communities are not always in the bottom half. The ways in which local health care systems are organized and care is delivered make a difference.

But there are also important synergies between local providers, health systems, and community attributes that extend beyond health care (e.g., opportunities for employment and economic growth, education, and environmental factors, to name a few). Policies that strengthen local educational systems, increase employment opportunities, and ensure safe and healthy environments will likely have spillover effects for the health system, and policies that strengthen community health may enhance the social experience in ways that extend beyond health care.

Symptoms of poor care coordination and inefficient use of resources point to opportunities to strengthen primary care, improve quality, and reduce costs.

The *Local Scorecard* uncovers gaps across local delivery systems that represent failures to provide timely, effective, safe, and efficient health care. Having insurance helps reduce cost barriers associated with receiving care, but it does not guarantee that individuals will have ready access to care, and in the appropriate setting, when needed. About a third of emergency department visits among Medicare beneficiaries, nationally and in most local areas,

potentially could have been avoided with more accessible care, including after-hours primary care. High rates of hospital admissions for conditions sensitive to ambulatory care, readmission to the hospital within 30 days of discharge, and premature death before age 75 all point to fragmented health care systems and inadequate primary care infrastructure.⁴⁸

If the primary care system is not strengthened, the federal health insurance expansions set to roll out over the next few years could contribute to provider shortages and barriers to accessing well-coordinated care. Too often, health care is neither safe, as demonstrated by high rates of dangerous prescribing practices to Medicare beneficiaries, nor patient-centered, as shown by poor care experiences in hospitals and during the end of life. Finally, high smoking, obesity, and suicide rates, as well as poor oral health outcomes in some communities, illustrate the need for well-integrated medical, dental, mental health, and public health interventions to support healthy communities and individuals.

Leading local areas perform consistently well on multiple indicators across dimensions of performance, but there is still room to improve in all local areas.

The local areas that scored in the top quartile often performed well on multiple indicators and across dimensions. In fact, many of the top-ranked places were in the top quartile on each of the four health system performance dimensions. A confluence of factors likely contributes to better performance in these areas, including efforts to expand health insurance coverage, state and community leadership, supportive policy, and a culture of collaboration and improvement.

In contrast, those in the bottom quartile of overall health system performance lagged relative to leaders on multiple indicators of performance. Overall performance in these areas was pulled down by high uninsured rates for adults and children, low

rates of recommended preventive care and treatment, and poor health outcomes. The communities that performed worse overall tended to struggle on each dimension (Exhibit 3).

Despite often consistent performance across dimensions, no local areas ranked consistently at the top or bottom on all indicators. For some indicators, such as preventive care for adults and patient-centered care experiences in hospitals, even the top rates fall below what we know is possible based on levels achieved by top-performing care systems or by other countries. For example, even the areas with the lowest rates of infant mortality are not that low by international standards; in fact, no local health care areas achieved rates that were as low as the average rates reported in countries such as Finland, Iceland, Japan, Norway, and Sweden. In nearly all local areas, about a third of emergency department visits among Medicare beneficiaries were likely avoidable, either because they were for a nonemergent condition or an urgent condition that could have been effectively treated in a primary care setting. This finding demonstrates the need for federal and state policy action to strengthen the primary care workforce, direct resources to underserved areas, and create incentives to build more robust systems for after-hours primary care and urgent care.

Approximately 66 million people live in the local health care areas that score in the lowest performance quartile. Many of these individuals would likely benefit from even modest improvements in their local health system. Improving performance to benchmarks already achieved by some communities would make a substantial difference for the nation.

IMPLICATIONS

Leading local areas across the country demonstrate what is achievable and make a compelling case for all communities that high performance is within reach. Successful health system reform efforts will require national and state policies that target areas with the

greatest need, but that also take into account local circumstances and encourage local innovation and stewardship. Success also will require looking beyond state and national policy frameworks to understand the roles and responsibilities of providers and other local stakeholders in improving health system performance as a matter of broader community action.

Impact of Improved Performance

The *Local Scorecard* measures performance against the best of what has already been achieved in communities across the country. Performance gaps between local areas and these benchmarks are sometimes large—emphasizing that there are great opportunities to improve access to affordable care, save lives, reduce spending, and enhance health and patient care.

Reproducing the high levels of performance achieved in the top 1 percent of local areas would generate substantial gains for the nation as a whole. Exhibit 34 shows the estimated impact in terms of access to care, use of effective evidence-based preventive care, patient safety, and avoidable hospital use if all areas were to raise their performance to these levels; it also shows estimates of the potential savings from improved performance.

If all local areas in the U.S. performed at the levels achieved by the top-performing communities:

- over 30 million more adults and children would have health insurance coverage, reducing the number of uninsured by more than half;
- more than 9 million adults over age 50 would receive effective, evidence-based preventive care, including cancer screenings and immunizations;
- about 1.3 million fewer Medicare beneficiaries would receive an unsafe prescription drug; and
- there would be approximately 1.5 million fewer hospitalizations and readmissions among chronically ill Medicare patients, nursing home residents, and those with a recent hospitalization.

National Cumulative Impact if All Local Areas Achieved Top 1 Percent of Regional Performance

Indicator	If all local areas improved their performance to the level of the best-performing (top 1 percentile) areas for this indicator, then:	
Insured adults	25,565,997	more adults (ages 18–64) would be covered by health insurance (public or private), and therefore would be more likely to receive health care when needed.
Insured children	4,586,316	more children (ages 0–17) would be covered by health insurance (public or private), and therefore would be more likely to receive health care when needed.
Adults with a usual source of care	25,002,702	more adults (age 18 and older) would have a usual source of care to help ensure that care is coordinated and accessible when needed.
Adult preventive care	9,432,924	more adults (age 50 and older) would receive recommended preventive care, such as colon cancer screenings, mammograms, Pap tests, and flu shots at appropriate ages.
Avoidable hospital admissions	883,209 \$6.8 billion	fewer hospitalizations for ambulatory care-sensitive conditions would occur among Medicare beneficiaries (age 65 and older), and dollars would be saved from the reduction in hospitalizations.
Medicare readmissions	463,708	fewer hospital readmissions would occur among Medicare beneficiaries (age 65 and older).
Hospitalization of nursing home residents	140,795 \$1.3 billion	fewer long-stay nursing home residents would be hospitalized, and dollars would be saved from the reduction in hospitalizations.
Inappropriate drug prescribed	1,293,296	fewer Medicare beneficiaries would receive an inappropriately prescribed medication.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Improved access to care, reduced exposure to unsafe medical care, and a strong focus on transitions between care settings could lead to better disease management, fewer complications, better patient experiences, and substantial savings. The Medicare program in particular could save approximately \$8.1 billion per year by reducing potentially avoidable hospital use—with the biggest gain, \$6.8 billion, from reducing hospital admissions for ambulatory care-sensitive conditions, and \$1.3 billion from reducing hospitalizations among Medicare beneficiaries who reside in nursing homes.

These are ambitious targets for all local areas. Yet by aiming high, there is the potential for substantial gains, especially if leaders succeed in raising the bar. For areas at the bottom of the distribution, achieving or surpassing current averages while targeting benchmark rates would amount to major progress in terms of better care experiences, better health, and higher-value care for their populations.

These examples illustrate only a few of the many important opportunities for health system improvement. The gains noted here, as well savings

to the health system, would be contingent on identifying and implementing effective interventions. In some cases, savings may be offset by the costs of the interventions. Still, across areas of the country and over time, these represent substantial value gains for the entire nation.

Harnessing National and State Policy for Local Health System Improvement

Recently passed health care reforms provide many avenues for achieving higher performance within and across local health systems. The Patient Protection and Affordable Care Act of 2010 (Affordable Care Act) and the American Recovery and Reinvestment Act of 2009 provide new tools and resources that enable and support local community action to expand access, improve outcomes, and address cost concerns. Provider payment changes, new information systems, and health system infrastructure investments are leverage points that can accelerate local health system improvement, but only if multiple stakeholders—including Medicare, Medicaid, private insurers, state policymakers, local health care providers, and

community-based health and business groups—are aligned and local leaders have the will and vision to move in new directions.

This report underscores the importance of looking locally—beyond national and state averages—for opportunities to improve care experiences, improve population health, and achieve more affordable health care systems that deliver high-quality care and lower costs. Findings also point to the need for multidimensional strategic approaches to health system improvement that avoid focusing on just one factor to the exclusion of others. While national and state policies provide resources and help to structure markets that promote improvements in health system performance, real and sustained progress hinges on engagement and collaborative action at the local level.

How Federal Action May Help

Recent federal policies, including the Affordable Care Act, pave the way for improved access in all communities and provide important opportunities and frameworks around which communities can organize to achieve better health system performance. For example, the law:

- will drastically reduce the number of uninsured and improve access for millions of people across all areas of the country, providing a foundation from which local improvement efforts can focus on enhancing patient care experiences, achieving better health for all, and addressing cost concerns;
- will reorganize health care delivery and payment through the establishment of accountable care organizations and other mechanisms that reward high-quality, efficient care;
- has already established the Center for Medicare and Medicaid Innovation as a test bed and promoter of new models of service delivery and payment that have the potential to lower cost and improve quality;

- will reduce barriers to preventive care and help avoid hospitalizations by connecting patients with targeted community resources that meet their health-related needs; and
- gives states, as well as federal programs (e.g., Medicare), new authority to partner with local providers and multi-stakeholder groups and work collaboratively to improve health system performance.

The Affordable Care Act goes a long way toward closing health insurance coverage gaps in all parts of the country, thereby ensuring that Americans have access to affordable and comprehensive coverage. Medicaid eligibility will be extended. Premium subsidies will be available for middle- and low-income residents of all communities. Individuals with preexisting conditions will be guaranteed the opportunity to buy coverage. And state-run health insurance exchanges will provide individuals and small firms with a marketplace for choosing and buying health plans, making it easy to sign up and stay covered. New survey data reveal that the law's early provisions are already having a positive impact among young adults ages 19 to 25, who are now able to retain coverage through their parents' employer-sponsored insurance plans.⁴⁹

Other provisions in the Affordable Care Act change how health care is organized and paid for. Health care organizations representing communities across the country have the opportunity to organize themselves into accountable care organizations, which encourage providers to work together more effectively and efficiently to manage and coordinate care for defined populations of Medicare fee-for-service beneficiaries. These organizations will retain any savings that are achieved.

Recent health care laws also make it easier for health care providers to receive bundled payments for episodes of care, thus encouraging providers to work across care settings to coordinate patient services. There are also provisions that increase payment for

primary care, expand coverage for certain preventive care services, encourage the growth of the primary care workforce (particularly in rural areas), and add new funding for public health programs.

The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act, will modernize health data infrastructure and facilitate the use of health information as a catalyst for better continuity of care, improved quality, and greater efficiency. And the most recent scope of work for the nation's quality improvement organizations expands the role these entities play in states and communities across the country, with new responsibilities for population health, community integration, and transitions between care settings.

These federal policies offer rich opportunities for states and local communities alike. Still, states and communities cannot rely on federal action alone. If the nation is to achieve a high-performing health system, they must engage in their own improvement efforts (see box on New Orleans on next page).

Steps That States Can Take to Reduce Intrastate Variations in Performance

States play a critical role in laying the foundation for health system performance among their communities. State policies and regulatory authorities have an impact on insurance coverage and access, health system capacity, payment for health care services, and public health. Despite the shared policy environments that states set for all communities, health system performance is highly variable within most states and across indicators in the four *Local Scorecard* dimensions.

States can improve health care for all residents by taking steps to reduce variation between their own communities on key measures of performance. For example, in Massachusetts, all three local areas have low uninsured rates because of a strong state policy mandating that all residents have coverage—

the only such policy currently implemented in the nation. In many other states, uninsured rates vary substantially between communities. As described above, the Affordable Care Act will reduce the number of uninsured in all states by supporting Medicaid expansion, guaranteeing individuals with preexisting conditions the opportunity to buy coverage, and fostering state-run health insurance exchanges where individuals and small firms can buy plans at affordable rates. As demonstrated in this *Local Scorecard*, by monitoring insurance rates in local health care markets, states will be better able to target outreach to areas in greatest need.

States can also improve access in their communities by leveraging other Affordable Care Act initiatives, including primary care workforce development programs and grants to establish consumer assistance programs that will help people obtain health insurance, resolve disputes with insurance companies, and provide consumer-oriented health care education.

Through public health initiatives, and with support from the Affordable Care Act, states can implement more-robust preventive care and screening programs for their residents, targeting outreach where most needed. The strong ties between health system performance and communities' socioeconomic circumstances indicate that states also have an opportunity to improve health through broader policies that aim to bolster economic development and educational opportunities, particularly in the most vulnerable communities.

States can also reduce unwarranted health system variations between communities by establishing comprehensive health information and measurement infrastructures and standardized performance measurement strategies; in fact, many states have already begun to do this. Information-sharing between care providers can facilitate more streamlined care experiences by enhancing care coordination, thereby reducing fragmentation and duplication of

NEW ORLEANS: REBUILDING A HEALTH SYSTEM THROUGH FEDERAL, STATE, AND LOCAL COLLABORATION

In the aftermath of Hurricane Katrina, an inspiring display of federal, state, and local collaboration emerged to repair New Orleans' health care infrastructure. This effort sought to shift the city's health care delivery system away from large hospitals, where the majority of care was delivered, to community-based primary care practices. Most community-based clinics and the region's two key safety-net hospitals were closed after the 2005 storm, leaving a huge gap in health care access for the city's most vulnerable residents.

When Congress allocated funds in early 2006 to begin restoring New Orleans' health care system, the city and state sought to develop a reliable, community-based primary care system. The secretary of Louisiana's Department of Health and Hospitals, who became the chair of a new Louisiana Health Care Redesign Collaborative, began working with local health care providers, organizations, and community leaders to inform their renovation strategy. Early analysis identified access to primary care, health information exchange, and broader coverage as the key priorities for the redesigned health care system.

By the fall of 2006, the relief effort had established 22 neighborhood primary care clinics that accepted all patients, regardless of their ability to pay. The U.S. Department of Health and Human Services then awarded a \$100 million Primary Care Access and Stabilization Grant to Louisiana in 2007, which covered additional resources for developing a sustainable system of neighborhood health centers. The state chose a local partner, the Louisiana Public Health Institute, to manage this initiative, joining federal and state officials with local partners who were capable of managing the transformation of health care delivery.

Between 2006 and 2008, the number of New Orleans residents with insurance coverage grew, as did the number who had a regular source of care (not including hospitals or clinics). Fewer residents reported that they skipped medications and services because of costs. A recent Commonwealth Fund survey also found that 74 percent of New Orleans patients felt very confident in being able to get high-quality and safe health care when they needed it (compared with 39 percent of a nationwide sample in 2007).

While many residents of Greater New Orleans continue to struggle in Katrina's aftermath, the federal, state, and local collaboration that grew from this crisis has initiated meaningful innovation and improvement in a once-decimated health system. As the Affordable Care Act is implemented in the coming years, local regions and states may draw lessons from New Orleans on how to build federal, state, and local partnerships that promote higher-quality health systems in every community.

For more information, see: R. Rudowitz, D. Rowland, and A. Shartzter, "Health Care in New Orleans Before and After Hurricane Katrina," *Health Affairs* Web Exclusive, Aug. 29, 2006, w393-w496; Kaiser Family Foundation, *New Orleans Three Years After the Storm: The Second Kaiser Post-Katrina Survey, 2008* (Menlo Park, Calif.: Kaiser Family Foundation, Aug. 2008), <http://www.kff.org/kaiserpolls/upload/7789.pdf>; M. M. Doty, M. K. Abrams, S. Mika, S. D. Rustgi, and G. Lawlor, *Coming Out of Crisis: Patient Experiences in Primary Care in New Orleans—Findings from The Commonwealth Fund 2009 Survey of Clinic Patients in New Orleans, Four Years Post-Katrina* (New York: The Commonwealth Fund, Jan. 2010).

services. Secondary analysis of health care data can highlight performance gaps, identify opportunities to improve efficiency by targeting waste (such as potentially inappropriate care, fraud, and abuse), and improve transparency by identifying idiosyncratic practice patterns and pricing strategies.

Still, there are important gaps in data that limit our understanding of certain aspects of health care delivery, particularly those related to the care experiences of commercially insured populations under age 65, and to the quantification of patients' functional status. Recent federal policies encourage increased use of electronic data in health care,

including more widespread use of electronic medical records and better information exchange between providers. Several states have implemented or plan to implement statewide all-payer claims databases, which have great potential to make health care costs more transparent—a necessary step, among others, toward reducing unwarranted spending. Electronic medical records and all-payer claims databases hold immense potential to harvest meaningful insights about health care delivery and population health management.

Although many all-payer claims databases exist because of state policies aimed at improving

transparency and reducing spending, similar initiatives are possible at a local level. In Texas, for example, the Dallas–Fort Worth Hospital Council Education and Research Foundation established a robust all-payer claims database and patient tracking system for the regional area (see box below).

Emerging Roles and Responsibilities for Local Providers and Community Stakeholders

With insurance expansions, better information systems, and newly available resources, communities have multiple opportunities to achieve better health system performance, so long as they are engaged participants, rather than observers, as state and national policies unfold. Local action will require:

- strong leaders who can clearly articulate improvement goals and motivate stakeholders to act;
- collaboration among stakeholders, including providers as well as others from outside the local health care delivery system (e.g., local business coalitions);

- a sense of obligation to broadly defined community needs that include, but are distinct from, the needs of local health care providers;
- thoughtful use of data and measurement to assess local performance and monitor the progress of reform and improvement initiatives;
- use of newly available resources, such as the Center for Medicare and Medicaid Innovation, and authority to test and implement new approaches for delivering and reimbursing health care; and
- rational alignment of incentives.

Many communities are lacking in the infrastructure and resources necessary for coordinated action. But as they work toward developing the capabilities and qualities listed above, national policies can help lay the groundwork for building health systems that deliver better patient experiences, lower costs, and better health for all.

In addition to providing opportunities to partner with Medicare in payment and organizational

DALLAS–FORT WORTH: BUILDING A REGIONAL ALL-PAYER CLAIMS DATABASE

The development of databases that combine billing data from many payers of health care services can help provide a more accurate understanding of the quality and cost of care for a population. Toward this end, the Dallas–Fort Worth Hospital Council Education and Research Foundation developed a Regional Enterprise Master Patient Index (REMPI), which is being used by hospitals and researchers to analyze trends in health care use across the region. REMPI has about 12 years' worth of data and includes more than 8 million inpatient and 15 million outpatient visits.

REMPI offers opportunities for improving both measurement and care. For example, reducing avoidable readmissions has become a focus for many hospitals, especially as the Centers for Medicare and Medicaid Services intends to financially penalize hospitals with high rates of readmissions. However, hospitals on their own cannot accurately measure their patients' readmission rates, since patients may use different hospitals across the region. REMPI enables the measurement of regional readmission rates, enabling one local research team to create a mathematical model to identify patients at high risk for readmission.

Other examples of how REMPI is being used to improve health care delivery include:

- linking data on inpatient and outpatient encounters;
- developing episodic metrics and analytic capability to evaluate chronic illness models;
- tracking infections and other complication rates; and
- calculating distances from hospitals to patients' homes.

Only a few states currently have all-payer claims databases, though many are considering or pursuing their creation. In the absence of state action, local areas may wish to follow the lead of the Dallas–Fort Worth area to create similar regional capacity for improvement.

For more information, see: P. Barr, "Healthcare Market Profile: Dallas–Fort Worth–Arlington—Cutting Readmissions: Index Allows Hospitals to Track High-Risk Patients," *Modern Healthcare*, published online July 25, 2011, <http://www.modernhealthcare.com/article/20110725/SUPPLEMENT/307249981>.

reform initiatives, the Affordable Care Act makes resources available directly to communities through its Community Transformation Grant program. Through this initiative, over \$100 million has been distributed in 61 states and communities in support of efforts to reduce chronic disease, promote healthy lifestyles, reduce health disparities, and reduce downstream spending.⁵⁰ Communities and local organizations are given flexibility in structuring the initiatives, enabling them to devise evidence-based programs that are best suited for their needs.

Of course, many communities have already come together to build robust local health systems, without the assistance provided through the Affordable Care Act. A few examples have been highlighted in this report, such as Grand Junction, Colo., Minneapolis and St. Paul, and San Francisco, where focused community action has improved access to care, reorganized care delivery, and facilitated measurement and quality-reporting programs—setting the bar for what is achievable at the local level.

Identifying a “community” for the purposes of health system improvement is rarely straightforward and requires strong leadership and a willingness by various stakeholders to collaborate as peers. Communities across the country have organized around leading organizations that recognize the value of improving local health and systems of care for the entire community. While these examples provide important learning opportunities, it is often not possible for one community to replicate the experience of others. Fortunately, there are opportunities to learn from, and in some cases take part in, well-established improvement frameworks that can be structured around a community’s unique needs. For example:

- Through the Institute for Healthcare Improvement’s Triple Aim initiative, health care organizations and regionally defined multi-stakeholder groups work collaboratively to achieve the shared goal of improving population health, enhancing patients’ care experiences,

and reducing per capita spending on health care. Formal involvement in the Triple Aim in a Region initiative requires that participants be explicit with their improvement goals, develop a governance structure, measure health system performance, and maintain an active set of improvement projects.⁵¹ The *Local Scorecard* can serve as a measurement framework and data source for communities establishing their own measurement strategies.

- The Aligning Forces for Quality initiative, supported by the Robert Wood Johnson Foundation, seeks to enhance local health systems by improving performance measurement and public reporting of health system data, more actively engaging health care consumers, and supporting quality improvement activities. The initiative operates in selected communities (defined at the state, regional, and local levels) but makes improvement resources broadly available, encouraging others to learn from their experiences.⁵²
- The National Quality Forum (NQF) is a multi-stakeholder collaborative that evaluates and endorses standardized performance measures and tools that can be used in communities across the country. NQF has made new tools available to state and community leaders interested in measuring and improving health care locally. These include the “community alignment” tool and Measure Applications Partnership, both of which aim to enhance health system measurement in local communities.⁵³

CONCLUSION

The *Local Scorecard* finds that where a person lives matters, by influencing one’s ability to access care and the quality of care that is received. While pockets of high performance exist, this analysis highlights gaps in performance across local delivery systems that

should motivate policy action to foster improved performance of health care delivery across the country and within states. By drawing attention to variation among local areas within states on key measures of health system performance, the *Local Scorecard* raises as many questions as it answers. While it highlights an opportunity to learn more about the roles and responsibilities that local communities will have in driving health system performance improvement, it also identifies a desperate need to conduct similar analyses at even smaller geographic units, as part of investigations into the fundamental factors that explain many of the variations described in this report.

Successful health system reform efforts require stakeholders at all levels to adopt a coherent, whole-system approach in which goals and policies are coordinated to achieve high performance in all communities. Most important, policies need to be devised so that they motivate and enable local stewardship, enabling communities to confront their unique challenges and drive toward higher-quality and lower-cost health care. Policies initiated at the federal and state levels have the potential to ensure that all communities have opportunities to improve. It remains to care systems and community leaders to rise to the challenge of meeting their populations' current and future health and health care needs.

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Appendix A1. Similar and Divergent Annual Spending per Enrollee for Commercially Insured (ages 18–64) and Medicare (age 65 and older) Populations, by Hospital Referral Regions

Areas low on commercial and low on Medicare spending: ratio relative to the all-HRR median			Areas low on commercial and high on Medicare spending: ratio relative to the all-HRR median			Areas high on commercial and low on Medicare spending: ratio relative to the all-HRR median			Areas high on commercial and high on Medicare spending: ratio relative to the all-HRR median			
HRR State and Name	Commercial	Medicare	HRR State and Name	Commercial	Medicare	HRR State and Name	Commercial	Medicare	HRR State and Name	Commercial	Medicare	
CA-Chico	0.90	0.88	AL-Montgomery	0.84	1.13	AK-Anchorage	1.19	0.71	FL-Hudson	1.14	1.28	
CA-Redding	0.88	0.81	AL-Tuscaloosa	0.90	1.17	CA-Salinas	1.13	0.86	FL-Jacksonville	1.12	1.19	
CA-Sacramento	0.83	0.79	CA-Los Angeles	0.84	1.22	CA-Santa Cruz	1.15	0.81	FL-Lakeland	1.10	1.14	
CA-San Francisco	0.81	0.81	FL-Bradenton	0.90	1.20	CO-Grand Junction	1.15	0.71	IL-Blue Island	1.14	1.19	
CA-San Luis Obispo	0.76	0.78	FL-Fort Lauderdale	0.87	1.33	GA-Albany	1.31	0.89	IL-Chicago	1.12	1.30	
CA-Santa Barbara	0.87	0.82	LA-New Orleans	0.89	1.24	ID-Idaho Falls	1.18	0.83	IL-Elgin	1.14	1.12	
CA-Santa Rosa	0.80	0.86	MD-Baltimore	0.83	1.37	MN-Duluth	1.21	0.84	IL-Joliet	1.25	1.13	
CO-Colorado Springs	0.89	0.89	MD-Salisbury	0.90	1.14	MN-Rochester	1.22	0.80	IN-Gary	1.23	1.15	
HI-Honolulu	0.61	0.64	MD-Takoma Park	0.79	1.13	MN-St. Cloud	1.17	0.84	IN-Munster	1.23	1.28	
IA-Dubuque	0.85	0.78	MI-Dearborn	0.82	1.29	MT-Billings	1.10	0.80	MS-Gulfport	1.31	1.18	
MI-Traverse City	0.82	0.87	MI-Flint	0.88	1.19	NH-Manchester	1.16	0.89	TX-Beaumont	1.28	1.28	
NY-Rochester	0.70	0.88	MI-Pontiac	0.88	1.20	OR-Medford	1.11	0.74	TX-Corpus Christi	1.12	1.34	
NY-Syracuse	0.78	0.88	MI-Royal Oak	0.83	1.27	SD-Sioux Falls	1.10	0.81	TX-Dallas	1.15	1.26	
VA-Arlington	0.86	0.85	MS-Hattiesburg	0.89	1.15	WA-Tacoma	1.18	0.84	TX-Fort Worth	1.14	1.21	
VA-Newport News	0.88	0.87	NJ-Camden	0.89	1.14	WI-Appleton	1.23	0.85	TX-Houston	1.15	1.25	
VT-Burlington	0.89	0.80	NJ-Newark	0.87	1.15	WI-Green Bay	1.39	0.88	TX-Lubbock	1.21	1.16	
			NY-Bronx	0.78	1.20	WI-La Crosse	1.20	0.75	TX-Tyler	1.19	1.21	
			NY-East Long Island	0.89	1.13	WI-Madison	1.28	0.82	TX-Victoria	1.16	1.20	
			NY-Manhattan	0.89	1.19	WI-Marshfield	1.45	0.87	TX-Wichita Falls	1.27	1.18	
			PA-Johnstown	0.87	1.22	WI-Neenah	1.22	0.89				
			PA-Philadelphia	0.86	1.17	WY-Casper	1.41	0.84				
			PA-Pittsburgh	0.90	1.24							
			PA-Scranton	0.89	1.11							
			TX-Harlingen	0.85	1.54							
TX-McAllen	0.87	1.77										

Note: Areas of low and high spending were determined by whether hospital referral regions (HRRs) fell in the top or bottom quartile on total Medicare (Parts A & B) reimbursements per enrollee or total reimbursements per commercially insured patient ages 18–64. All-HRR medians were defined separately for commercial and Medicare spending.

Data: Medicare reimbursement—2008 Medicare claims as reported by IOM. Commercial spending estimates provided by M. Chernew, Harvard Medical School Department of Health Care Policy, analysis of the Thomson Reuters MarketScan Database. Total per-enrollee spending estimates from a sophisticated regression model include reimbursed costs for health care services from all sources of payment including the health plan, enrollee, and any third-party payers incurred during 2009. Outpatient prescription drug charges are excluded. Enrollees with capitated plans (6.3% of enrollees) and their associated claims are also excluded. Estimates for each HRR were adjusted for enrollees’ age and sex, the interaction of age and sex, partial-year enrollment, and regional wage differences.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A2. The Health System Experience in Select Metropolitan Areas†

	Access Dimension				Prevention & Treatment Dimension		
	Population	Overall Rank	Insured adults (ages 18–64) (%)	Insured children (ages 0–17) (%)	Received recommended screening and preventive care (%)	Patient-reported hospital care* (%)	High-risk nursing home residents with pressure sores (%)
Top 10% of HRRs			87.5	96.3	50.8	67.1	7.9
All-HRR median			80.2	93.8	44.2	63.2	10.9
NORTHEAST							
MA Boston	4,825,960	41	93.7	98.4	53.2	64.7	9.8
NY New York City Area							
Bronx	1,381,167	206	77.5	95.4	39.7	52.8	15.8
Manhattan	5,107,497	127	82.4	95.7	45.9	55.8	16.0
PA Pittsburgh	2,913,805	158	87.1	97.1	44.7	61.3	12.4
Philadelphia Area							
Camden, NJ	2,826,905	126	84.8	94.7	45.6	61.7	14.4
Philadelphia	4,186,372	101	85.5	95.5	48.9	62.4	13.5
MIDWEST							
IL Chicago Area							
Blue Island	804,980	177	75.9	94.6	38.9	61.8	18.8
Chicago	2,684,751	215	75.4	94.4	39.0	57.9	20.8
Evanston	939,064	105	76.5	94.6	40.3	59.0	15.2
Melrose Park	1,263,506	106	80.1	95.6	40.4	62.8	16.4
MI Detroit	1,797,778	189	79.9	95.5	47.7	62.8	13.8
MN Minneapolis	3,237,168	2	88.3	94.0	49.1	62.7	7.3
St. Paul	1,077,980	1	88.6	94.0	48.9	62.2	8.2
MO St. Louis	3,418,466	201	84.6	95.6	44.1	63.0	13.7
OH Cincinnati	1,666,017	132	83.7	95.1	43.8	63.1	10.6
WEST							
AZ Phoenix	3,250,646	121	76.3	87.4	43.7	63.2	10.8
CA Los Angeles Area							
Orange County	3,235,685	143	75.9	89.8	43.2	59.5	12.8
Los Angeles	9,874,390	224	68.9	89.1	37.1	57.9	14.9
San Diego	3,660,481	117	76.1	89.6	41.6	62.1	12.4
San Francisco Bay Area							
Alameda County	1,543,588	70	82.7	94.3	42.1	59.4	14.1
San Mateo County	820,908	10	84.3	95.6	46.4	62.5	8.6
San Francisco	1,437,520	51	84.7	94.5	44.5	60.7	11.9
CO Denver	2,811,835	98	79.7	89.7	46.8	62.4	10.3
OR Portland	2,678,718	78	79.4	92.0	46.1	63.7	10.5
WA Seattle	2,832,455	37	83.3	94.5	49.1	61.1	11.7
SOUTH							
AL Birmingham	2,300,344	252	80.6	94.5	41.2	65.4	9.2
DC District of Columbia Area							
Arlington, VA	2,306,470	15	85.1	93.1	58.8	60.7	14.2
Baltimore, MD	2,519,510	109	85.9	95.2	50.1	61.2	13.7
Washington, DC	2,651,966	82	86.2	95.8	50.8	58.1	12.6
FL Fort Lauderdale	2,821,280	147	69.5	84.4	45.0	58.0	13.4
Miami	3,134,285	254	60.4	83.0	42.0	60.1	15.3
Tampa Area							
Clearwater	492,609	114	74.3	88.9	45.9	59.1	11.1
St. Petersburg	423,910	180	74.3	88.9	45.9	57.8	13.0
Tampa	1,369,627	210	74.2	89.3	49.6	59.0	12.9
GA Atlanta	6,235,550	166	74.2	89.0	49.0	63.5	11.3
LA New Orleans	639,673	276	71.6	92.2	43.0	63.3	17.0
NC Charlotte	2,463,839	161	77.3	91.8	47.5	66.4	10.9
Durham	1,369,067	208	76.2	92.4	46.6	65.2	12.0
Raleigh	2,042,645	208	79.9	92.3	53.7	64.5	12.1
TN Memphis	1,814,827	284	77.6	92.7	37.1	62.7	12.6
Nashville	2,784,531	240	80.9	94.4	41.9	65.3	10.7
TX Dallas	4,840,913	266	69.7	84.1	43.6	62.5	12.2
Fort Worth	2,174,455	244	71.6	85.5	49.0	62.4	11.1
Houston	6,369,027	281	68.3	83.3	40.8	61.8	15.4
San Antonio	2,716,484	242	70.5	87.2	39.3	61.5	10.4

HRR = hospital referral region.

* Percent of patients reported hospital staff always managed pain well, responded when needed help to get to bathroom or pressed call button, and explained medicines and side effects.

** Percent of adults ages 18–64 report fair/poor health, 14 or more bad mental health days, or activity limitations.

*** Ratio values lower than 1.0 indicate lower than national median spending. Ratio values higher than 1.0 indicate higher than national median spending.

Median spending rates were calculated separately for the commercially insured and Medicare populations.

† Local Regions were selected for inclusion if they approximated the largest metropolitan statistical areas (MSAs) by population per census regions based on April 1, 2010, United States Census Data. Please note that referral areas do not exactly match with MSAs and population estimates between these two geographic areas may differ. The Manhattan area includes Manhattan, Brooklyn, and Staten Island.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A2. The Health System Experience in Select Metropolitan Areas† (continued)

	Potentially Avoidable Hospital Use & Cost Dimension				Health Lives Dimension	
	Ambulatory care-sensitive hospital admissions among Medicare beneficiaries (per 100,000)	30-day readmissions among Medicare beneficiaries (per 100,000)	Reimbursements per commercially insured enrollee (ages 18–64) (expressed as a ratio to the all-HRR median***)	Reimbursements per Medicare beneficiary (expressed as a ratio to the all-HRR median***)	Mortality amenable to health care (deaths per 100,000)	Adults with poor health-related quality of life** (%)
Top 10% of HRRs	4,045	15.1	0.85	0.81	71.6	23.5
All-HRR median	6,184	17.7	1.00	1.00	91.3	29.5
NORTHEAST						
MA Boston	7,602	19.8	0.98	1.09	70.9	24.2
NY New York City Area						
Bronx	7,919	24.8	0.78	1.20	118.0	33.3
Manhattan	7,132	23.3	0.89	1.19	98.8	28.5
PA Pittsburgh	8,773	20.2	0.90	1.24	101.6	29.0
Philadelphia Area						
Camden, NJ	6,999	20.9	0.89	1.14	98.5	28.0
Philadelphia	7,134	20.9	0.86	1.17	89.1	27.6
MIDWEST						
IL Chicago Area						
Blue Island	7,724	22.3	1.14	1.19	106.6	28.2
Chicago	8,734	24.7	1.12	1.30	117.2	28.3
Evanston	5,441	19.3	1.06	1.06	90.8	27.5
Melrose Park	6,225	20.2	1.10	1.08	77.0	24.9
MI Detroit	7,792	22.8	0.92	1.34	102.2	32.6
MN Minneapolis	4,615	17.0	1.08	0.84	61.1	22.9
St. Paul	3,693	17.0	1.05	0.86	65.2	19.7
MO St. Louis	7,311	20.5	0.97	1.08	110.9	28.9
OH Cincinnati	7,912	19.0	1.00	1.04	98.1	29.0
WEST						
AZ Phoenix	4,041	17.0	0.99	0.94	95.7	29.3
CA Los Angeles Area						
Orange County	4,756	18.3	0.83	1.05	68.6	27.9
Los Angeles	6,158	20.3	0.84	1.22	93.8	32.8
San Diego	4,437	17.6	0.86	0.95	87.0	28.4
San Francisco Bay Area						
Alameda County	4,035	19.8	0.82	0.91	84.0	28.9
San Mateo County	4,197	15.8	0.97	0.78	65.7	25.3
San Francisco	4,405	18.4	0.81	0.81	66.4	31.1
CO Denver	4,574	16.6	1.06	0.95	68.5	25.6
OR Portland	4,044	15.6	1.02	0.78	74.9	29.7
WA Seattle	3,689	16.4	0.96	0.81	71.9	28.4
SOUTH						
AL Birmingham	7,042	18.4	0.94	1.14	127.0	34.5
DC District of Columbia Area						
Arlington, VA	4,475	17.9	0.86	0.85	79.0	21.2
Baltimore, MD	7,200	23.9	0.83	1.37	101.4	28.9
Washington, DC	5,735	21.3	0.80	1.08	102.1	24.3
FL Fort Lauderdale	5,096	18.0	0.87	1.33	79.1	29.1
Miami	8,470	22.0	0.97	1.99	84.4	28.6
Tampa Area						
Clearwater	5,468	17.5	1.06	1.27	91.4	29.4
St. Petersburg	7,128	19.2	0.99	1.32	91.4	29.4
Tampa	5,781	19.7	0.99	1.22	103.3	33.7
GA Atlanta	5,544	17.7	0.97	0.98	103.2	24.5
LA New Orleans	8,675	19.5	0.89	1.24	134.4	34.0
NC Charlotte	5,885	16.5	1.06	0.95	114.6	29.6
Durham	6,117	19.0	1.02	0.92	120.6	29.8
Raleigh	5,404	18.8	0.97	0.99	127.8	29.3
TN Memphis	7,870	19.4	0.95	1.11	169.0	29.9
Nashville	8,394	19.8	1.08	1.08	113.3	29.9
TX Dallas	7,027	18.1	1.15	1.26	105.7	25.2
Fort Worth	6,666	16.9	1.14	1.21	100.7	28.7
Houston	6,260	18.6	1.15	1.25	115.3	28.4
San Antonio	5,108	17.6	0.99	1.14	101.6	27.2

HRR = hospital referral region.

* Percent of patients reported hospital staff always managed pain well, responded when needed help to get to bathroom or pressed call button, and explained medicines and side effects.

** Percent of adults ages 18–64 report fair/poor health, 14 or more bad mental health days, or activity limitations.

*** Ratio values lower than 1.0 indicate lower than national median spending. Ratio values higher than 1.0 indicate higher than national median spending. Median spending rates were calculated separately for the commercially insured and Medicare populations.

† Local Regions were selected for inclusion if they approximated the largest metropolitan statistical areas (MSAs) by population per census regions based on April 1, 2010, United States Census Data. Please note that referral areas do not exactly match with MSAs and population estimates between these two geographic areas may differ. The Manhattan area includes Manhattan, Brooklyn, and Staten Island.

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A3. Performance Quartiles, by Hospital Referral Region (HRR)

○ = HRR in top 10 percent

HRR	Population	Overall Rank	Overall Performance Quartile	Access & Affordability Performance Quartile	Prevention & Treatment Quartile	Potentially Avoidable Hospital Use & Cost Quartile	Potential to Lead Healthy Lives Quartile
Alabama							
Birmingham	2,300,344	251	4	3	3	4	4
Dothan	378,325	241	4	3	3	3	4
Huntsville	625,541	216	3	2	3	3	3
Mobile	822,896	270	4	3	3	4	4
Montgomery	467,741	209	3	2	2	4	4
Tuscaloosa	265,962	246	4	2	3	4	4
Alaska							
Anchorage	695,370	169	3	3	3	1	2
Arizona							
Mesa	1,167,560	87	2	3	1	2	1
Phoenix	3,250,646	124	2	3	2	2	2
Sun City	310,711	64	1	3	1	2	1
Tucson	1,197,788	69	1	2	1	1	2
Arkansas							
Fort Smith	373,855	275	4	4	4	3	4
Jonesboro	234,106	283	4	3	4	4	4
Little Rock	1,559,554	264	4	3	3	3	4
Springdale	530,794	198	3	4	3	2	3
Texarkana	261,650	301	4	4	4	4	4
California							
Alameda County	1,543,588	64	1	1	3	2	①
Bakersfield	1,148,420	234	4	4	4	3	2
Chico	302,604	180	3	3	4	1	2
Contra Costa County	1,032,515	32	1	1	1	2	①
Fresno	1,244,368	196	3	4	4	2	2
Los Angeles	9,874,390	225	3	4	4	3	1
Modesto	903,461	204	3	3	4	2	2
Napa	275,845	103	2	3	2	1	2
Orange County	3,235,685	142	2	3	4	2	①
Palm Springs/Rancho Mira	590,216	187	3	4	4	1	1
Redding	351,283	165	3	4	2	①	3
Sacramento	2,591,556	61	1	2	2	1	1
Salinas	400,821	116	2	3	4	1	①
San Bernardino	2,995,146	220	3	4	4	2	2
San Diego	3,660,481	116	2	3	3	2	①
San Francisco	1,437,520	50	1	1	3	1	①
San Jose	1,737,862	25	①	①	2	1	①
San Luis Obispo	255,521	21	①	2	1	①	①
San Mateo County	820,908	9	①	1	1	①	①
Santa Barbara	439,848	136	2	3	4	①	①
Santa Cruz	271,146	78	2	3	3	①	①
Santa Rosa	488,469	6	①	1	1	①	①
Stockton	592,259	199	3	4	4	2	1
Ventura	858,563	93	2	2	3	2	①
Colorado							
Boulder	286,366	38	1	2	①	2	①
Colorado Springs	834,107	129	2	3	2	1	3
Denver	2,811,835	98	2	3	2	1	2
Fort Collins	338,249	99	2	2	2	2	1
Grand Junction	305,320	109	2	4	2	①	1
Greeley	359,933	159	3	4	1	1	3
Pueblo	174,390	145	2	3	1	1	3
Connecticut							
Bridgeport	686,120	31	1	①	1	3	①
Hartford	1,510,268	18	①	①	1	2	①
New Haven	1,473,068	44	1	①	①	3	①
Delaware							
Wilmington	799,906	83	2	①	1	3	3
District of Columbia							
Washington	2,651,966	72	1	①	1	3	2

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A3. Performance Quartiles, by Hospital Referral Region (HRR) (continued)

○ = HRR in top 10 percent

HRR	Population	Overall Rank	Overall Performance Quartile	Access & Affordability Performance Quartile	Prevention & Treatment Quartile	Potentially Avoidable Hospital Use & Cost Quartile	Potential to Lead Healthy Lives Quartile
Florida							
Bradenton	288,328	152	2	3	2	2	2
Clearwater	492,609	120	2	2	1	3	2
Fort Lauderdale	2,821,280	137	2	3	2	3	1
Fort Myers	1,160,888	173	3	4	2	2	2
Gainesville	571,855	248	4	4	2	4	4
Hudson	432,273	222	3	4	2	4	3
Jacksonville	1,627,666	218	3	2	3	4	3
Lakeland	357,008	268	4	4	3	3	3
Miami	3,134,285	253	4	4	4	4	1
Ocala	527,004	229	3	4	3	2	3
Orlando	3,614,806	211	3	4	2	4	2
Ormond Beach	417,131	169	3	4	2	2	2
Panama City	219,499	220	3	3	2	3	4
Pensacola	758,331	211	3	3	2	3	3
Sarasota	438,391	75	1	3	1	1	1
St. Petersburg	423,910	181	3	2	3	4	2
Tallahassee	833,327	239	4	3	3	3	4
Tampa	1,369,627	213	3	3	2	4	3
Georgia							
Albany	215,494	228	3	2	3	3	4
Atlanta	6,235,550	166	3	3	2	2	3
Augusta	675,901	216	3	3	3	2	4
Columbus	343,048	204	3	2	3	2	4
Macon	742,691	273	4	3	4	4	4
Rome	294,088	236	4	3	2	3	4
Savannah	856,515	223	3	2	3	4	4
Hawaii							
Honolulu	1,360,301	17	①	1	2	①	1
Idaho							
Boise	882,040	148	2	3	3	①	2
Idaho Falls	239,146	152	2	3	4	①	2
Illinois							
Aurora	324,452	80	2	①	1	3	1
Bloomington	194,699	40	1	①	2	1	1
Blue Island	804,980	181	3	3	2	4	2
Chicago	2,684,751	215	3	3	3	4	2
Elgin	778,354	80	2	1	1	3	①
Evanston	939,064	104	2	2	1	3	1
Hinsdale	508,964	70	1	1	1	3	1
Joliet	691,166	167	3	2	2	4	2
Melrose Park	1,263,506	104	2	2	1	3	1
Peoria	619,810	156	3	1	3	2	3
Rockford	740,786	185	3	3	3	3	2
Springfield	831,233	190	3	2	3	3	3
Urbana	458,198	177	3	2	2	4	3
Indiana							
Evansville	680,710	237	4	3	3	3	4
Fort Wayne	869,335	169	3	3	3	2	2
Gary	539,247	256	4	2	4	4	3
Indianapolis	2,859,721	197	3	3	3	3	3
Lafayette	238,674	190	3	2	3	3	3
Muncie	166,135	213	3	3	2	3	4
Munster	306,130	249	4	3	3	4	3
South Bend	694,050	162	3	3	2	2	3
Terre Haute	182,201	262	4	4	2	4	4
Iowa							
Cedar Rapids	299,158	11	①	①	①	1	1
Davenport	493,287	90	2	2	1	2	2
Des Moines	1,086,663	27	①	①	①	2	2
Dubuque	154,083	2	①	①	①	1	1
Iowa City	344,473	20	①	①	1	1	1

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A3. Performance Quartiles, by Hospital Referral Region (HRR) (continued)

⓪ = HRR in top 10 percent

HRR	Population	Overall Rank	Overall Performance Quartile	Access & Affordability Performance Quartile	Prevention & Treatment Quartile	Potentially Avoidable Hospital Use & Cost Quartile	Potential to Lead Healthy Lives Quartile
Mason City	132,853	44	1	⓪	⓪	1	3
Sioux City	264,896	58	1	1	1	2	2
Waterloo	217,149	48	1	⓪	⓪	2	2
Kansas							
Topeka	453,203	83	2	1	1	2	3
Wichita	1,276,262	154	3	2	2	2	3
Kentucky							
Covington	417,020	193	3	2	1	4	4
Lexington	1,518,597	294	4	3	4	4	4
Louisville	1,755,458	237	4	3	3	3	4
Owensboro	145,362	192	3	2	2	3	4
Paducah	371,499	278	4	3	4	4	4
Louisiana							
Alexandria	292,937	301	4	3	4	4	4
Baton Rouge	942,799	271	4	2	4	4	4
Houma	279,132	286	4	3	4	4	4
Lafayette	622,943	273	4	2	4	4	4
Lake Charles	271,045	279	4	3	4	4	4
Metairie	469,603	276	4	3	4	4	4
Monroe	270,188	306	4	4	4	4	4
New Orleans	639,673	276	4	3	4	4	4
Shreveport	700,013	298	4	3	4	4	4
Slidell	193,826	260	4	3	4	4	2
Maine							
Bangor	398,446	62	1	2	⓪	2	2
Portland	1,071,122	18	⓪	1	⓪	1	1
Maryland							
Baltimore	2,519,510	107	2	⓪	1	4	2
Salisbury	447,761	115	2	2	1	2	3
Takoma Park	927,540	55	1	1	1	3	1
Massachusetts							
Boston	4,825,960	32	1	⓪	⓪	3	1
Springfield	738,817	23	⓪	⓪	⓪	2	1
Worcester	824,358	21	⓪	⓪	⓪	2	1
Michigan							
Ann Arbor	1,384,445	96	2	2	1	3	2
Dearborn	478,858	241	4	3	3	4	4
Detroit	1,797,778	189	3	2	2	4	3
Flint	566,451	164	3	2	2	3	3
Grand Rapids	1,175,042	43	1	2	⓪	1	2
Kalamazoo	669,174	99	2	2	1	1	3
Lansing	702,077	106	2	2	1	3	2
Marquette	199,711	87	2	2	1	1	3
Muskegon	278,538	46	1	2	1	⓪	2
Petoskey	177,769	72	1	3	⓪	1	2
Pontiac	458,382	64	1	⓪	1	4	1
Royal Oak	688,178	72	1	⓪	1	4	1
Saginaw	633,585	148	2	2	2	2	3
St. Joseph	143,979	124	2	2	2	2	3
Traverse City	231,931	53	1	1	⓪	⓪	3
Minnesota							
Duluth	340,489	70	1	2	1	⓪	3
Minneapolis	3,237,168	4	⓪	⓪	⓪	1	1
Rochester	418,800	3	⓪	⓪	⓪	1	1
St. Cloud	260,500	7	⓪	1	⓪	1	⓪
St. Paul	1,077,980	1	⓪	⓪	⓪	1	⓪
Mississippi							
Gulfport	196,812	283	4	4	3	4	4
Hattiesburg	316,829	304	4	4	4	4	4
Jackson	1,070,263	300	4	3	4	4	4
Meridian	201,585	297	4	3	4	4	4
Oxford	152,428	304	4	4	4	4	4

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A3. Performance Quartiles, by Hospital Referral Region (HRR) (continued)

○ = HRR in top 10 percent

HRR	Population	Overall Rank	Overall Performance Quartile	Access & Affordability Performance Quartile	Prevention & Treatment Quartile	Potentially Avoidable Hospital Use & Cost Quartile	Potential to Lead Healthy Lives Quartile
Tupelo	394,380	295	4	4	4	3	4
Missouri							
Cape Girardeau	270,168	250	4	3	4	3	4
Columbia	707,835	195	3	2	3	2	4
Joplin	371,319	267	4	4	4	2	4
Kansas City	2,487,823	160	3	2	2	3	3
Springfield	869,999	244	4	4	4	2	4
St. Louis	3,418,466	200	3	2	3	4	3
Montana							
Billings	586,903	177	3	3	3	1	3
Great Falls	149,383	184	3	3	4	1	3
Missoula	383,540	185	3	4	3	①	3
Nebraska							
Lincoln	581,522	99	2	2	2	2	2
Omaha	1,302,354	113	2	2	2	2	2
Nevada							
Las Vegas	2,075,263	268	4	4	4	3	3
Reno	753,253	200	3	3	4	1	3
New Hampshire							
Lebanon	397,373	25	①	2	①	1	1
Manchester	893,654	9	①	①	①	2	1
New Jersey							
Camden	2,826,905	129	2	1	2	4	2
Hackensack	1,291,948	119	2	2	3	3	①
Morristown	1,014,970	38	1	①	1	2	①
New Brunswick	1,069,921	46	1	①	1	3	①
Newark	1,531,172	167	3	2	3	4	1
Paterson	389,817	113	2	2	2	3	1
Ridgewood	447,140	58	1	1	1	3	①
New Mexico							
Albuquerque	1,667,755	158	3	3	3	①	2
New York							
Albany	1,843,942	57	1	①	1	3	2
Binghamton	375,225	109	2	2	2	1	2
Bronx	1,381,167	200	3	2	3	4	2
Buffalo	1,376,734	54	1	①	1	2	2
Elmira	331,609	129	2	1	2	3	3
East Long Island	4,619,140	93	2	1	1	4	①
Manhattan	5,107,497	121	2	1	2	4	1
Rochester	1,304,602	27	①	①	①	2	2
Syracuse	1,064,220	78	2	2	1	2	2
White Plains	1,136,457	62	1	1	1	4	①
North Carolina							
Asheville	658,967	154	3	3	2	1	3
Charlotte	2,463,839	162	3	3	1	2	3
Durham	1,369,067	209	3	3	3	2	4
Greensboro	617,305	133	2	2	2	2	3
Greenville	846,064	251	4	3	3	4	4
Hickory	302,457	121	2	3	1	1	3
Raleigh	2,042,645	206	3	3	3	3	3
Wilmington	452,640	193	3	2	3	3	3
Winston-Salem	1,130,434	187	3	3	2	3	3
North Dakota							
Bismarck	212,151	58	1	1	2	1	2
Fargo/Moorhead MN	528,764	16	①	①	1	①	2
Grand Forks	167,292	75	1	①	1	1	3
Minot	126,147	93	2	①	3	①	2
Ohio							
Akron	699,542	132	2	1	2	3	2
Canton	638,566	176	3	3	3	2	2
Cincinnati	1,666,017	142	2	2	2	3	3
Cleveland	2,062,819	124	2	1	2	4	2

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A3. Performance Quartiles, by Hospital Referral Region (HRR) (continued)

○ = HRR in top 10 percent

HRR	Population	Overall Rank	Overall Performance Quartile	Access & Affordability Performance Quartile	Prevention & Treatment Quartile	Potentially Avoidable Hospital Use & Cost Quartile	Potential to Lead Healthy Lives Quartile
Columbus	3,018,752	207	3	2	3	3	3
Dayton	1,094,657	160	3	1	3	3	3
Elyria	260,251	145	2	2	1	4	2
Kettering	426,338	85	2	1	1	3	2
Toledo	1,001,957	124	2	1	3	2	2
Youngstown	650,396	219	3	2	3	3	4
Oklahoma							
Lawton	205,383	286	4	4	4	3	4
Oklahoma City	1,879,596	298	4	4	4	4	4
Tulsa	1,373,182	281	4	4	4	3	4
Oregon							
Bend	218,854	133	2	3	3	①	2
Eugene	699,687	116	2	4	2	①	2
Medford	433,410	172	3	4	3	①	3
Portland	2,678,718	77	2	3	2	①	2
Salem	326,508	85	2	3	2	①	1
Pennsylvania							
Allentown	1,225,881	87	2	1	1	3	2
Altoona	294,330	99	2	1	2	2	2
Danville	574,029	64	1	1	1	2	2
Erie	720,894	137	2	2	2	2	3
Harrisburg	1,028,112	51	1	1	1	2	2
Johnstown	221,487	124	2	2	1	3	3
Lancaster	666,199	12	①	1	①	1	1
Philadelphia	4,186,372	91	2	1	1	3	2
Pittsburgh	2,913,805	156	3	1	2	3	3
Reading	591,042	55	1	①	1	2	2
Sayre	200,914	137	2	2	2	2	3
Scranton	323,125	112	2	1	2	3	2
Wilkes-Barre	244,990	137	2	2	2	2	3
York	439,785	32	1	①	1	2	2
Rhode Island							
Providence	1,225,202	27	①	①	①	2	1
South Carolina							
Charleston	1,057,849	203	3	3	2	3	3
Columbia	1,247,630	227	3	3	3	2	4
Florence	359,716	295	4	3	4	4	4
Greenville	905,409	179	3	3	2	2	3
Spartanburg	377,800	234	4	4	2	2	4
South Dakota							
Rapid City	218,020	133	2	2	3	①	3
Sioux Falls	772,490	30	①	1	1	1	2
Tennessee							
Chattanooga	697,320	207	3	3	2	3	4
Jackson	335,391	290	4	3	4	4	4
Johnson City	274,427	233	4	2	3	4	4
Kingsport	475,418	266	4	3	3	4	4
Knoxville	1,382,538	232	4	3	3	3	4
Memphis	1,814,827	281	4	3	4	4	4
Nashville	2,784,531	240	4	2	3	4	4
Texas							
Abilene	294,137	293	4	4	4	3	4
Amarillo	448,849	253	4	4	2	3	4
Austin	1,751,723	121	2	3	1	3	1
Beaumont	464,624	303	4	4	4	4	4
Bryan	268,552	225	3	4	2	3	3
Corpus Christi	563,764	260	4	4	2	4	3
Dallas	4,840,913	264	4	4	3	4	2
El Paso	1,115,274	258	4	4	4	2	3
Fort Worth	2,174,455	245	4	4	3	4	3
Harlingen	565,440	257	4	4	4	4	1
Houston	6,369,027	283	4	4	4	4	3

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix A3. Performance Quartiles, by Hospital Referral Region (HRR) (continued)

○ = HRR in top 10 percent

HRR	Population	Overall Rank	Overall Performance Quartile	Access & Affordability Performance Quartile	Prevention & Treatment Quartile	Potentially Avoidable Hospital Use & Cost Quartile	Potential to Lead Healthy Lives Quartile
Longview	197,945	253	4	4	2	4	4
Lubbock	705,146	288	4	4	4	4	3
McAllen	647,659	258	4	4	4	4	①
Odessa	351,798	272	4	4	4	3	3
San Angelo	159,097	223	3	4	2	3	3
San Antonio	2,716,484	241	4	4	4	3	3
Temple	485,613	173	3	3	1	2	3
Tyler	572,677	279	4	4	4	4	3
Victoria	146,306	263	4	4	3	4	2
Waco	342,961	246	4	4	2	3	4
Wichita Falls	205,297	291	4	4	4	4	4
Utah							
Ogden	488,280	32	1	2	2	①	①
Provo	597,216	91	2	2	3	①	①
Salt Lake City	1,998,814	109	2	3	3	①	1
Vermont							
Burlington	649,705	32	1	1	1	1	2
Virginia							
Arlington	2,306,470	15	①	①	①	2	①
Charlottesville	578,211	97	2	1	1	2	3
Lynchburg	255,346	107	2	2	1	2	3
Newport News	562,370	80	2	①	2	1	2
Norfolk	1,282,033	148	2	1	2	2	3
Richmond	1,732,431	142	2	1	2	2	4
Roanoke	720,819	181	3	2	3	2	4
Winchester	432,252	148	2	2	2	2	3
Washington							
Everett	659,750	32	1	2	1	①	①
Olympia	390,068	145	2	2	3	1	2
Seattle	2,832,455	40	1	2	2	1	①
Spokane	1,519,467	137	2	3	3	1	2
Tacoma	792,935	64	1	2	1	1	2
Yakima	295,895	173	3	4	3	1	2
West Virginia							
Charleston	833,536	288	4	3	4	4	4
Huntington	361,141	291	4	3	4	4	4
Morgantown	402,457	229	3	2	3	3	4
Wisconsin							
Appleton	333,220	5	①	①	①	①	1
Green Bay	510,108	12	①	①	①	1	1
La Crosse	350,219	7	①	①	①	①	1
Madison	1,097,923	23	①	1	①	1	2
Marshfield	371,943	51	1	1	①	2	2
Milwaukee	2,689,850	48	1	1	1	2	1
Neenah	237,203	14	①	①	①	①	2
Wausau	189,109	42	1	1	①	2	2
Wyoming							
Casper	194,084	229	3	3	4	2	3

Source: Commonwealth Fund Scorecard on Local Health System Performance, 2012.

Appendix B1. Local Scorecard: Indicators, Data, and Years

Indicator	Year	Database	Source note
ACCESS			
1 Percent of adults ages 18–64 insured	2009–2010	US Census ACS	Analysis by authors
2 Percent of children ages 0–17 insured	2009–2010	US Census ACS	Analysis by authors
3 Percent of adults reported no cost-related problem seeing a doctor when they needed to within the past year	2009–2010	BRFSS	Analysis by authors
4 Percent of at-risk adults visited a doctor for routine checkup in the past two years	2009–2010	BRFSS	Analysis by authors
5 Percent of adults visited a dentist, dental hygienist, or dental clinic within the past year	2010	BRFSS	Analysis by authors
PREVENTION & TREATMENT			
6 Percent of adults with a usual source of care	2009–2010	BRFSS	Analysis by authors
7 Percent of adults age 50 and older received recommended screening and preventive care	2008 & 2010	BRFSS	Analysis by authors
8 Percent of adult diabetics received recommended preventive care	2008–2010	BRFSS	Analysis by authors
9 Percent of Medicare beneficiaries received at least one drug that should be avoided in the elderly (1)	2007	5% Medicare enrolled in Part D	Analysis by Y. Zhang, University of Pittsburgh
10 Percent of Medicare beneficiaries with dementia, hip/pelvic fracture, or chronic renal failure received prescription in an ambulatory care setting that is contraindicated for that condition (1)	2007	5% Medicare enrolled in Part D	Analysis by Y. Zhang, University of Pittsburgh
11 Percent of patients hospitalized for heart failure who received recommended care (2)	2010	CMS Hospital Compare	Analysis by IPRO
12 Percent of patients hospitalized for pneumonia who received recommended care (2)	2010	CMS Hospital Compare	Analysis by IPRO
13 Percent of surgical patients received appropriate care to prevent complications (2)	2010	CMS Hospital Compare	Analysis by IPRO
14 Percent of hospitalized patients given information about what to do during their recovery at home	2010	HCAHPS (via CMS Hospital Compare)	Analysis by IPRO
15 Percent of patients reported hospital staff always managed pain well, responded when needed help to get to bathroom or pressed call button, and explained medicines and side effects	2010	HCAHPS (via CMS Hospital Compare)	Analysis by IPRO
16 Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart attack (3)	7/2007–6/2010	CMS Hospital Compare	Analysis by IPRO
17 Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart failure (3)	7/2007–6/2010	CMS Hospital Compare	Analysis by IPRO
18 Risk-adjusted 30-day mortality among Medicare patients hospitalized for pneumonia (3)	7/2007–6/2010	CMS Hospital Compare	Analysis by IPRO
19 Percent of home health care patients whose ability to walk or move around improved (4)	4/2010–3/2011	OASIS (as reported by CMS Home Health Compare)	Analysis by authors
20 Percent of home health care patients whose wounds improved or healed after an operation (4)	4/2010–3/2011	OASIS (as reported by CMS Home Health Compare)	Analysis by authors
21 Percent of high-risk nursing home residents with pressure sores (5)	2008–2009	MDS (as reported by CMS Nursing Home Compare)	Analysis by V. Mor, Brown University
22 Percent of long-stay nursing home residents who were physically restrained (5)	2008–2009	MDS (as reported by CMS Nursing Home Compare)	Analysis by V. Mor, Brown University
23 Percent of long-stay nursing home residents who have moderate to severe pain (5)	2008–2009	MDS (as reported by CMS Nursing Home Compare)	Analysis by V. Mor, Brown University
24 Percent of Medicare decedents with a diagnosis of cancer without any hospice or who enrolled in hospice during the last three days of life	2007	Medicare enrollment file and MedPAR	Analysis by V. Mor, Brown University

Appendix B1. Local Scorecard: Indicators, Data, and Years (continued)

Indicator	Year	Database	Source note	
POTENTIALLY AVOIDABLE HOSPITAL USE & COST				
25	Hospital admissions among Medicare beneficiaries for ambulatory care-sensitive conditions, per 100,000 beneficiaries	2009	5% Medicare SAF	Analysis by G. Anderson, Johns Hopkins University
26	Readmissions within 30 days of discharge as percent of all admissions among Medicare beneficiaries	2008	Medicare claims	Analysis by IOM
27	Potentially avoidable emergency department visits among Medicare beneficiaries, per 1,000 beneficiaries	2009	5% Medicare SAF	Analysis by G. Anderson, Johns Hopkins University
28	Percent of long-stay nursing home residents hospitalized within six-month period	2008	MEDPAR, MDS	Analysis by V. Mor, Brown University
29	Percent of first-time nursing home residents readmitted within 30 days of hospital discharge to the nursing home	2008	MEDPAR, MDS	Analysis by V. Mor, Brown University
30	Percent of home health care patients with a hospital admission	4/2010–3/2011	OASIS (as reported by CMS Home Health Compare)	Analysis by authors
31	Medicare imaging costs per enrollee	2008	Medicare claims	Analysis by IOM
32	Total Medicare (Parts A & B) reimbursements per enrollee (6)	2008	Medicare claims	Analysis by IOM
33	Total reimbursements per commercially insured enrollee ages 18–64 (6)	2009	Thomson Reuters MarketScan Database	Analysis by M. Chernen, Harvard Medical School
HEALTHY LIVES				
34	Potentially preventable mortality, deaths per 100,000 population (7)	2005–2007	NVSS-M	Analysis by K. Hempstead, Rutgers University
35	Breast cancer deaths per 100,000 female population (8)	1996–2005	NVSS-M (as reported by CHSI)	Analysis by authors
36	Colorectal cancer deaths per 100,000 population (8)	1996–2005	NVSS-M (as reported by CHSI)	Analysis by authors
37	Infant mortality, deaths per 1,000 live births (8)	1996–2005	NVSS-I (as reported by CHSI)	Analysis by authors
38	Percent of live births with low birth weight (8)	1996–2005	NVSS-I (as reported by CHSI)	Analysis by authors
39	Suicide deaths per 100,000 population (8)	1996–2005	NVSS-M (as reported by CHSI)	Analysis by authors
40	Percent of adults who smoke	2009–2010	BRFSS	Analysis by authors
41	Percent of adults ages 18–64 who are obese (BMI >= 30)	2009–2010	BRFSS	Analysis by authors
42	Percent of adults ages 18–64 who have lost six or more teeth because of tooth decay, infection, or gum disease	2009–2010	BRFSS	Analysis by authors
43	Percent of adults ages 18–64 report fair/poor health, 14 or more bad mental health days, or activity limitations	2009–2010	BRFSS	Analysis by authors

Notes:

- (1) Metric forms part of the score reflecting potentially inappropriate prescribing among elderly Medicare beneficiaries.
- (2) Metric forms part of the score reflecting receipt of recommended hospital care.
- (3) Metric forms part of the score reflecting hospital mortality.
- (4) Metric forms part of the score reflecting quality of home health care.
- (5) Metric forms part of the score reflecting quality of nursing home care.
- (6) Total Medicare per-person spending estimates include payments made for hospital (part A) and outpatient (part B) services. Estimates exclude extra payments to support graduate medical education and treating a disproportionate share of low-income patients; adjustments are made for regional wage differences. Commercial spending estimates, generated from a sophisticated regression model, include reimbursed costs for health care services from all sources of payment, including the health plan, enrollee, and any third-party payers, incurred during 2009. Outpatient prescription drug charges are excluded, as were enrollees with capitated plans and their associated claims. Commercial spending estimates were adjusted for enrollee age and sex, the interaction of age and sex, partial-year enrollment, and regional wage differences.
- (7) Data for this indicator come from county-level 2005–07 NVSS-M data files, aggregated to the HRR level, for most HRRs. Estimates for the Anchorage, AK, and Honolulu, HI, HRRs represent state-level data and are compiled from years 2006–07.
- (8) Data for this indicator come from the Community Health Status Indicators (CHSI) database. CHSI data are reported at the county level. Counties with small populations require more years of data for stable estimates. HRR level estimates can, but do not necessarily, include data from each year between 1996–2005, depending on the population sizes in the counties in the HRR.

Appendix B2. Local Scorecard: Indicator Descriptions and Source Notes

- 1 **Percent of adults ages 18–64 insured:** Authors' analysis of the 2009, 2010 US Census Bureau's American Community Survey (U.S. Census Bureau, 2009, 2010).
- 2 **Percent of children ages 0–17 insured:** Authors' analysis of the 2009, 2010 US Census Bureau's American Community Survey (U.S. Census Bureau, 2009, 2010).
- 3 **Percent of adults reported no cost-related problem seeing a doctor when they needed to within the past year:** Authors' analysis of 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2009, 2010).
- 4 **Percent of at-risk adults visited a doctor for routine checkup in the past two years:** Percent of adults age 50 or older, or in fair or poor health, or ever told they have diabetes or pre-diabetes, acute myocardial infarction, heart disease, stroke, or asthma who visited a doctor in the past two years. Authors' analysis of 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2009, 2010).
- 5 **Percent of adults visited a dentist, dental hygienist, or dental clinic within the past year:** Authors' analysis of 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2010).
- 6 **Percent of adults with a usual source of care:** Authors' analysis of 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2009, 2010).
- 7 **Percent of adults age 50 and older received recommended screening and preventive care:** Percent of adults age 50 and older who have received: sigmoidoscopy or colonoscopy in the last 10 years or a fecal occult blood test in the last two years; a mammogram in the last two years (women only); a pap smear in the last three years (women only); and a flu shot in the past year and a pneumonia vaccine ever (age 65 and older only). Authors' analysis of 2008, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2008, 2010).
- 8 **Percent of adult diabetics received recommended preventive care:** Percent of adults age 18 and older who were told by a doctor that they had diabetes and have received: hemoglobin A1c test, dilated eye exam, and foot exam in the past year. Authors' analysis of 2008, 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2008, 2009, 2010).
- 9 **Percent of Medicare beneficiaries received at least one drug that should be avoided in the elderly:** Percent of Medicare beneficiaries age 65 and older received at least one drug from a list of 13 classes of high-risk prescriptions that should be avoided by the elderly. Y. Zhang, University of Pittsburgh, analysis of 2007 5% sample of Medicare beneficiaries enrolled in stand-alone Medicare Part D plans.
- 10 **Percent of Medicare beneficiaries with dementia, hip/pelvic fracture, or chronic renal failure received prescription in an ambulatory care setting that is contraindicated for that condition:** Y. Zhang, University of Pittsburgh, analysis of 2007 5% sample of Medicare beneficiaries enrolled in stand-alone Medicare Part D plans.
- 11 **Percent of patients hospitalized for heart failure who received recommended care:** Proportion of cases where a hospital provided the recommended process of care for patients with heart failure. The hospital quality measures used to create the indicator were the most current measures listed on the CMS Hospital Compare Web site for each condition during that time. The latest data for 2010 are a composite of four process measures for heart failure: discharge instructions, evaluation of left ventricular systolic dysfunction, angiotensin-converting enzyme inhibitor or angiotensin receptor blocker for left ventricular systolic dysfunction, and smoking cessation advice/counseling. IPRO analysis of 2010 CMS Hospital Compare data (DHHS n.d.).
- 12 **Percent of patients hospitalized for pneumonia who received recommended care:** Proportion of cases where a hospital provided the recommended process of care for patients with heart failure. The hospital quality measures used to create the indicator were the most current measures listed on the CMS Hospital Compare Web site for each condition during that time. The latest data for 2010 are a composite of six process measure for pneumonia: pneumococcal vaccination, blood culture performed in emergency department prior to initial antibiotic received in hospital, smoking cessation advice/counseling, initial antibiotic(s) received within six hours of arrival, initial antibiotic(s) selection, and influenza vaccination. IPRO analysis of 2010 CMS Hospital Compare data (DHHS n.d.).
- 13 **Percent of surgical patients received appropriate care to prevent complications:** Proportion of cases where a hospital provided recommended processes of care to prevent complications among surgical patients. The hospital quality measures used to create the indicator were the most current measures listed on the CMS Hospital Compare Web site for improving surgical care/preventing surgical infections during that time. The latest data for 2010 are a composite of eight process measures: surgery patients on a beta blocker prior to arrival who received a beta blocker during the perioperative period, prophylactic antibiotics within 1 hour prior to surgery, prophylactic antibiotic selection, prophylactic antibiotics discontinued within 24 hours after surgery, cardiac surgery patients with controlled 6 a.m. postoperative blood glucose, surgery patients with appropriate hair removal, surgery patients with recommended venous thromboembolism prophylaxis ordered, and surgery patients received appropriate venous thromboembolism prophylaxis within 24 hours prior to surgery to 24 hours after surgery. IPRO analysis of 2010 CMS Hospital Compare data (DHHS n.d.).
- 14 **Percent of hospitalized patients given information about what to do during their recovery at home:** IPRO analysis of 2010 Hospital Consumer Assessment of Healthcare Providers and Systems Survey data (AHRQ, CAHPS n.d.) retrieved from CMS Hospital Compare (DHHS n.d.).
- 15 **Percent of patients reported hospital staff always managed pain well, responded when needed help to get to bathroom or pressed call button, and explained medicines and side effects:** IPRO analysis of 2010 HCAHPS data retrieved from CMS Hospital Compare (DHHS n.d.).
- 16 **Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart attack:** Risk-standardized, all-cause 30-day mortality rates for Medicare patients age 65 and older hospitalized with a principal diagnosis of heart attack between July 2007 and June 2010. All-cause mortality is defined as death from any cause within 30 days after the index admission, regardless of whether the patient dies while still in the hospital or after discharge. IPRO's analysis of 2010 CMS Hospital Compare data (DHHS n.d.).
- 17 **Risk-adjusted 30-day mortality among Medicare patients hospitalized for heart failure:** Risk-standardized, all-cause 30-day mortality rates for Medicare patients age 65 and older hospitalized with a principal diagnosis of heart failure between July 2007 and June 2010. All-cause mortality is defined as death from any cause within 30 days after the index admission, regardless of whether the patient dies while still in the hospital or after discharge. IPRO's analysis of 2010 CMS Hospital Compare data (DHHS n.d.).
- 18 **Risk-adjusted 30-day mortality among Medicare patients hospitalized for pneumonia:** Risk-standardized, all-cause 30-day mortality rates for Medicare patients age 65 and older hospitalized with a principal diagnosis of pneumonia between July 2007 and June 2010. All-cause mortality is defined as death from any cause within 30 days after the index admission, regardless of whether the patient dies while still in the hospital or after discharge. IPRO's analysis of 2010 CMS Hospital Compare data, (DHHS n.d.).
- 19 **Percent of home health care patients whose ability to walk or move around improved:** Percent of all home health episodes in which a person improved at walking or moving around compared to a prior assessment. Episodes for which the patient, at start or resumption of care, was able to ambulate independently are excluded. Authors' analysis of 4/2010-3/2011 Outcome and Assessment Information Set data as reported by CMS Home Health Compare (DHHS n.d.).
- 20 **Percent of home health care patients whose wounds improved or healed after an operation:** Percent of all home health episodes in which a person's surgical wound is more fully healed compared to a prior assessment. Episodes for which the patient, at start or resumption of care, did not have any surgical wounds or had only a surgical wound that was unobservable are excluded. Authors' analysis of 4/2010-3/2011 Outcome and Assessment Information Set data as reported by CMS Home Health Compare (DHHS n.d.).
- 21 **Percent of high-risk nursing home residents with pressure sores:** Percent of long-stay nursing home residents impaired in bed mobility or transfer, comatose, or malnourished who have pressure sores (Stages 1–4) on target assessment. V. Mor, Brown University, analysis of 2008, 2009 Minimum Data Set as reported by CMS Nursing Home Health Compare (DHHS n.d.).

- 22 **Percent of long-stay nursing home residents who were physically restrained:** Percent of long-stay nursing home residents who were physically restrained daily on target assessment. V. Mor, Brown University, analysis of 2008, 2009 Minimum Data Set as reported by CMS Nursing Home Health Compare (DHHS n.d.).
- 23 **Percent of long-stay nursing home residents who have moderate to severe pain:** Percent of long-stay nursing home residents with moderate pain at least daily or horrible or excruciating pain at any frequency on the target assessment. V. Mor, Brown University, analysis of 2008, 2009 Minimum Data Set as reported by CMS Nursing Home Health Compare (DHHS n.d.).
- 24 **Percent of Medicare decedents with a diagnosis of cancer without any hospice or who enrolled in hospice during the last three days of life:** V. Mor analysis of 2007 Medicare enrollment and Medicare Provider and Analysis Review File data (CMS, MEDPAR 2007).
- 25 **Hospital admissions among Medicare beneficiaries for ambulatory care-sensitive conditions, per 100,000 beneficiaries:** Hospital admissions of fee-for-service Medicare beneficiaries age 65 and older for one of the following 11 ambulatory care-sensitive conditions: short-term diabetes complications, long-term diabetes complications, lower extremity amputation among patients with diabetes, asthma, chronic obstructive pulmonary disease, hypertension, congestive heart failure, angina (without a procedure), dehydration, bacterial pneumonia, and urinary tract infection. Results calculated using AHRQ Prevention Quality Indicators, Version 4.1. G. Anderson, Johns Hopkins University, analysis of 2009 Medicare Standard Analytical Files 5% Inpatient Data (CMS, SAF 2009) from Chronic Condition Warehouse.
- 26 **Readmissions within 30 days of discharge as percent of all admissions among Medicare beneficiaries:** Percent of all hospital admissions among Medicare beneficiaries age 65 and older readmitted within 30 days of an acute hospital stay for any cause. Hospital transfers that involved more than one type of hospital were attributed to the last hospital in the episode. Institute of Medicine analysis of Medicare claims data from 2008, as reported in the Chronic Condition Warehouse (IOM 2011).
- 27 **Potentially avoidable emergency department visits among Medicare beneficiaries, per 1,000 beneficiaries:** Potentially avoidable emergency department visits were those that, based on diagnoses recorded during the visit and the health care services the patient received, were considered to be either nonemergent (care was not needed within 12 hours), or emergent (care needed within 12 hours) but that could have been treated safely and effectively in a primary care setting. This definition excludes any emergency department visit that resulted in an admission, as well as emergency department visits where the level of care provided in the ED was clinically indicated. G. Anderson, Johns Hopkins University, analysis of 2009 Medicare Standard Analytical Files 5% Inpatient Data (CMS, SAF 2009) from Chronic Condition Warehouse, using the New York University Center for Health and Public Service Research emergency department algorithm developed by John Billings.
- 28 **Percent of long-stay nursing home residents hospitalized within six-month period:** Percent of long-stay residents (residing in a nursing home for at least 90 consecutive days) who were ever hospitalized within six months of baseline assessment. V. Mor, Brown University, analysis of 2008 Medicare enrollment data and Medicare Provider and Analysis Review File (CMS, MEDPAR 2008).
- 29 **Percent of first-time nursing home residents readmitted within 30 days of hospital discharge to the nursing home:** Percent of newly admitted nursing home residents (never been in a facility before) who are rehospitalized within 30 days of being discharged to nursing home. V. Mor, Brown University, analysis of 2008 Medicare enrollment data and Medicare Provider and Analysis Review (CMS, MEDPAR 2008).
- 30 **Percent of home health care patients with a hospital admission:** Percent of acute care hospitalization for home health episodes. Authors' analysis of 4/2010–3/2011 Outcome and Assessment Information Set data as reported by CMS Nursing Home Health Compare (DHHS n.d.).
- 31 **Medicare imaging costs per enrollee:** Standardized per capita Medicare costs for imaging. To standardize payment rates, the Institute of Medicine identified the factors that lead to different payment rates for the same service. In general, those factors are adjustments that Medicare makes to account for local wages or input prices, and extra payments that Medicare makes to advance other program goals, such as compensating certain hospitals for the cost of training doctors. IOM then estimated what Medicare would have paid for each claim without those adjustments. Institute of Medicine analysis of Medicare claims data 2008, as reported in the from Chronic Condition Warehouse (IOM 2011).

- 32 **Total Medicare (Parts A & B) reimbursements per enrollee:** Standardized per capita Medicare costs. To standardize payment rates, the Institute of Medicine identified the factors that lead to different payment rates for the same service. In general, those factors are adjustments that Medicare makes to account for local wages or input prices, and extra payments that Medicare makes to advance other program goals, such as compensating certain hospitals for the cost of training doctors. IOM then estimated what Medicare would have paid for each claim without those adjustments. Medicare beneficiaries under age 65 are excluded. Institute of Medicine analysis of Medicare claims data from 2008, as reported in the Chronic Condition Warehouse (IOM 2011).
- 33 **Total reimbursements per commercially insured enrollee ages 18–64:** M. Chernew, Harvard Medical School Department of Health Care Policy, analysis of the Thomson Reuters MarketScan Database. Total per enrollee spending estimates from a sophisticated regression model include reimbursed costs for health care services from all sources of payment including the health plan, enrollee and any third party payers incurred during 2009. Outpatient prescription drug charges are excluded. Enrollees with capitated plans (6.3% of enrollees) and their associated claims are also excluded. Estimates for each HRR were adjusted for enrollees' age and sex, the interaction of age and sex, partial year enrollment, and regional wage differences.
- 34 **Potentially preventable mortality, deaths per 100,000 population:** Number of deaths before age 75 per 100,000 population that resulted from causes considered at least partially treatable or preventable with timely and appropriate medical care (see list), as described in Nolte and McKee (Nolte and McKee, BMJ 2003). Analysis conducted by K. Hempstead at Rutgers CSHP using 2008 mortality data from CDC Multiple Cause-of-Death file and U.S. Census Bureau population data (NCHS, MCD n.d.).

Causes of death	Ages
Intestinal infections.....	0–14
Tuberculosis	0–74
Other infections (diphtheria, tetanus, septicaemia, poliomyelitis)	0–74
Whooping cough	0–14
Measles	1–14
Malignant neoplasm of colon and rectum	0–74
Malignant neoplasm of skin.....	0–74
Malignant neoplasm of breast.....	0–74
Malignant neoplasm of cervix uteri.....	0–74
Malignant neoplasm of cervix uteri and body of uterus.....	0–44
Malignant neoplasm of testis.....	0–74
Hodgkin's disease	0–74
Leukemia	0–44
Diseases of the thyroid	0–74
Diabetes mellitus.....	0–49
Epilepsy.....	0–74
Chronic rheumatic heart disease.....	0–74
Hypertensive disease.....	0–74
Cerebrovascular disease.....	0–74
All respiratory diseases (excluding pneumonia and influenza).....	1–14
Influenza.....	0–74
Pneumonia.....	0–74
Peptic ulcer	0–74
Appendicitis.....	0–74
Abdominal hernia	0–74
Cholelithiasis and cholecystitis	0–74
Nephritis and nephrosis.....	0–74
Benign prostatic hyperplasia.....	0–74
Maternal death	All
Congenital cardiovascular anomalies	0–74
Perinatal deaths, all causes, excluding stillbirths	All
Misadventures to patients during surgical and medical care..	All
Ischaemic heart disease: 50% of mortality rates included	0–74

- 35 **Breast cancer deaths per 100,000 female population:** Authors' analysis of National Vital Statistics System–Mortality Data as reported by Community Health Status Indicators, 1996-2005 (DHHS, CHSI 2009). CHSI reports data at the county level. Depending on the population size in the county, data are aggregated for up to 10 years to derive reliable mortality estimates. Counties with smaller population counts require more years of data. Because HRR-level estimates are aggregated from multiple counties, it is possible that HRR-level estimates contain data for as little as three years and as many as 10 years of aggregation.
- 36 **Colorectal cancer deaths per 100,000 population:** Authors' analysis of National Vital Statistics System–Mortality Data as reported by Community Health Status Indicators, 1996-2005 (DHHS, CHSI 2009). CHSI reports data at the county level. Depending on the population size in the county, data are aggregated for up to 10 years to derive reliable mortality estimates. Counties with smaller population counts require more years of data. Because HRR-level estimates are aggregated from multiple counties, it is possible that HRR-level estimates contain data for as little as three years and as many as 10 years of aggregation.
- 37 **Infant mortality, deaths per 1,000 live births:** Authors' analysis of National Vital Statistics System–Linked Birth and Infant Death Data as reported by Community Health Status Indicators, 1996-2005 (DHHS, CHSI 2009). CHSI reports data at the county level. Depending on the population size in the county, data are aggregated for up to 10 years to derive reliable mortality estimates. Counties with smaller population counts require more years of data. Because HRR-level estimates are aggregated from multiple counties, it is possible that HRR-level estimates contain data for as little as three years and as many as 10 years of aggregation.
- 38 **Percent of live births with low birth weight:** Authors' analysis of National Vital Statistics System–Linked Birth and Infant Death Data as reported by Community Health Status Indicators, 1996–2005 (DHHS, CHSI 2009). CHSI reports data at the county level. Depending on the population size in the county, data are aggregated for up to 10 years to derive reliable mortality estimates. Counties with smaller population counts require more years of data. Because HRR-level estimates are aggregated from multiple counties, it is possible that HRR-level estimates contain data for as little as three years and as many as 10 years of aggregation.
- 39 **Suicide deaths per 100,000 population:** Authors' analysis of National Vital Statistics System –Mortality Data as reported by Community Health Status Indicators, 1996-2005 (DHHS, CHSI 2009). CHSI reports data at the county level. Depending on the population size in the county, data are aggregated for up to 10 years to derive reliable mortality estimates. Counties with smaller population counts require more years of data. Because HRR-level estimates are aggregated from multiple counties, it is possible that HRR-level estimates contain data for as little as three years and as many as 10 years of aggregation.
- 40 **Percent of adults who smoke:** Percent of adults age 18 and older who ever smoked 100 or more cigarettes (five packs) and currently smoke every day or some days. Authors' analysis of 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2009, 2010).
- 41 **Percent of adults ages 18–64 who are obese (BMI \geq 30):** Authors' analysis of 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2009, 2010). Note: BMI = Body Mass Index.
- 42 **Percent of adults ages 18–64 who have lost six or more teeth because of tooth decay, infection, or gum disease:** Authors' analysis of 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2009, 2010).
- 43 **Percent of adults ages 18–64 report fair/poor health, 14 or more bad mental health days, or activity limitations:** Authors' analysis of 2009, 2010 Behavioral Risk Factor Surveillance System (NCCDPHP, BRFSS 2009, 2010).

Appendix B.3. Complete References for Data Sources

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**One East 75th Street
New York, NY 10021
Tel 212.606.3800**



**1150 17th Street NW
Suite 600
Washington, DC 20036
Tel 202.292.6700**

www.commonwealthfund.org