

# Center *for* Mississippi Health Policy

## HEALTH CARE SYSTEM PERFORMANCE

*What Mississippi Indicators Reveal*

November 2013  
Amy Radican-Wald, DrPH(c), MPH  
Senior Policy Analyst



## Table of Contents

Executive Summary	4
Introduction	6
<i>Where Does Mississippi Stand on Health System Performance Measures?</i>	6
<i>What Do These Reports Tell Us About Mississippi's Health Care System?</i>	7
Prevention Quality Indicators	11
<i>Heart Conditions</i>	11
<i>Diabetes Conditions</i>	12
<i>Lung Conditions</i>	14
<i>Infectious Conditions</i>	16
<i>Acute and Chronic Composite Conditions</i>	16
Relationship Between Health Care Quality, Cost, & Workforce	18
What Models Exist for Improving Health System Performance?	22
<i>Workforce</i>	22
<i>Payment Systems</i>	22
<i>Service Delivery Models</i>	22
<i>Performance Measurement</i>	25
Mississippi Initiatives	27
<i>Workforce</i>	27
<i>Payment Systems</i>	27
<i>Service Delivery Models</i>	28
<i>Performance Measurement</i>	29
Policy Considerations	31
Summary	32
References	33
Glossary of Terms	35
Appendix A	36
Appendix B	37
Appendix C	38
Appendix D	41
Appendix E	42

## Executive Summary

National reports on health care system performance often rank Mississippi well below most other states on a variety of measures. The information contained in these analyses can provide useful insight into weaknesses in the state's health care system and opportunities for improvement. This report examines available data for Mississippi in the context of these national health system performance indicators, explores actions taken in other states to improve health care system performance, cites examples of similar work in Mississippi, and reviews policy implications for Mississippi.

A review of data compiled by national organizations such as the Agency for Healthcare Research and Quality and the Commonwealth Fund shows that the use of hospital care for complications of chronic illnesses and other preventable conditions is higher in Mississippi when compared to national rates. Indicators of the use of preventive and primary care show lower utilization of these services in Mississippi. This inverse relationship points to a health care system heavily weighted toward higher cost, later stage, acute care.

A large body of research documents that patients are less likely to be hospitalized for certain conditions when receiving high quality outpatient care. Individuals with chronic conditions such as asthma, hypertension, or diabetes can often avoid hospitalization if they are seen regularly in a primary care setting by health care professionals who provide the following types of comprehensive care:

- appropriate medical testing and screening
- education on self-care
- medication management and timely vaccinations
- coordination among interdisciplinary teams of outpatient care providers

Research shows addressing and improving the quality of care patients receive can reduce the incidence and severity of disease complications that lead to expensive and permanent lifestyle-altering consequences – including the high rates of leg amputations and adult blindness found in Mississippi. High rates of these types of conditions often indicate inadequate access to appropriate preventive or primary care. When combined with a greater prevalence of disease and poor utilization of primary and preventive care services, these poor health outcomes can create a burden on state resources in terms of excess disability and health care costs.

In an attempt to use financial incentives to improve cost effectiveness, Medicare and other payers are moving from fee-for-service based payment systems to methods that reward improved health outcomes. New health care delivery models, such as patient-centered medical homes and accountable care organizations, are being tested and implemented. Health care providers are adapting in a variety of ways, reassessing staffing and technology needs, implementing electronic health records, and changing practice patterns. This dynamic environment provides an opportunity for Mississippi's policymakers, providers, payers, and educators to consider how these changes can work in concert to shift Mississippi's health care system toward prevention and primary care rather than continuing to emphasize the management of the consequences of delayed care.

Several states have been working for years to improve health care system performance. A review of their experience shows that their efforts have been comprehensive and collaborative in approach. Their strategic actions can be organized in the following categories:

- provider workforce development
- health services payment reform
- changes in health care delivery
- enhancement of data systems to measure performance

This report provides examples of several organizations in Mississippi that have been working to address many of these health care performance issues. There is considerable activity in many areas, but the state lacks a comprehensive, coordinated set of strategies as described for some of the other states.

The National Academy for State Health Policy, an organization with years of experience working with state governments to improve health care system performance, recommends that states work collaboratively on the following actions for strengthening health care system performance and improving health outcomes:

- Increase providers trained in primary and preventive care to enable better disease management options of health conditions
- Alter payment systems to provide incentives for improved outcomes rather than provision of higher volume and intensity of services
- Encourage expansion of patient care coordination and multi-disciplinary services to manage diseases through initiatives including patient-centered medical home and accountable care organization models
- Incorporate health professionals in service delivery planning and payment system changes
- Accelerate adoption of electronic health records to improve health care coordination and monitor performance improvement
- Periodically review additional data needs and enhance data systems to support performance improvement measurement
- Enhance current performance measurement development by participating in reporting on core health quality measures to Medicare

Mississippi can benefit from the experience of those who have tested these strategies, both within and outside of the state. Increased collaboration would accelerate the state's progress in improving its health care system performance scores.

# Introduction

SIX KEY DIMENSIONS OF HIGH  
QUALITY HEALTH SYSTEMS  
INSTITUTE OF MEDICINE REPORT, 2001

- SAFE  
avoids injuries and infections
- EFFECTIVE  
avoids underuse or  
overuse of health care services
- PATIENT-CENTERED  
patient values  
guide decision-making
- TIMELY  
reduces waits and delays
- EFFICIENT  
avoids waste
- EQUITABLE  
quality does not  
vary due to person characteristics

In 2001, the Institute of Medicine (IOM) released *Crossing the Quality Chasm*, a report that shed light on national health care system performance concerns.<sup>1</sup> In the dozen years since release of the IOM report, national examination of measures indicating health system performance became routine. The Centers for Medicare and Medicaid (CMS), Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), Food and Drug Administration (FDA), Agency for Healthcare Research and Quality (AHRQ) and other health care organizations developed nearly 150 measures for monitoring health system performance.<sup>2</sup>

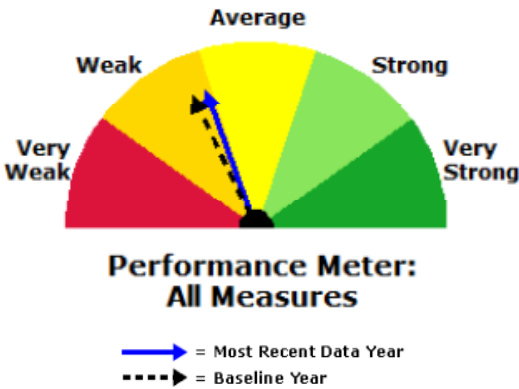
Most of these organizations use Medicare data to monitor and evaluate health system performance because Medicare billing data are comparable across geographic regions and are accessible to researchers. This report will examine available data for Mississippi in the context of national performance indicators, explore actions taken in other states to improve health system performance, cite examples of similar work in Mississippi, and review policy implications for Mississippi.

*Where Does Mississippi Stand On Health System Performance Measures?*

The federal Agency for Healthcare Research and Quality (AHRQ) produces periodic health performance reports for each state using a wide variety of measures. AHRQ compares a state's health system performance to the average for all states in what is termed a "dashboard" to illustrate each state score. The overall health care performance score is a composite of 105 measures. In the latest report, Mississippi scored "weak" relative to the other states, with a slight improvement from the previous year (Figure 1).<sup>3</sup>

*Mississippi scored "weak" relative to the other states, with a slight improvement from the previous year.*

FIGURE 1. MISSISSIPPI HEALTH SYSTEM PERFORMANCE MEASURES, 2010 AND 2011



Source: Agency for Healthcare Research and Quality. (2011).

#### MEDICARE DATA

Research organizations use Medicare hospitalization data to compare measures of state health care performance, as the data are available in a standard format for a large population of beneficiaries to examine health care system performance across the states.

The Commonwealth Fund reports on similar measures of health system performance using Medicare data. The Commonwealth Fund's *State Scorecard on Health System Performance* ranked Mississippi last out of all states in health system performance using Medicare data.<sup>4</sup>

The report also estimates what a state could expect to gain from improving its performance to the level of the best-performing state. The result for Mississippi in 2009 would have been 12,046 fewer hospitalizations saving \$67 million for preventable conditions among Medicare beneficiaries and 2,178 fewer preventable hospital readmissions for an additional \$24 million in Medicare cost savings.<sup>5</sup>

#### *What Do These Reports Tell Us About Mississippi's Health Care System?*

Research shows patients are less likely to be hospitalized for certain conditions when receiving high quality outpatient care. Individuals with chronic conditions such as asthma, hypertension, or diabetes can often avoid hospitalization if they are seen regularly in a primary care setting by health care professionals who provide appropriate testing, education, medication management, and care coordination across the health care system.<sup>6</sup>

#### AMBULATORY CARE SENSITIVE CONDITIONS

Medical conditions that should not advance to the point of requiring hospitalization when treated through timely primary and preventive outpatient care.

Complications that could have been prevented with appropriate preventive and primary outpatient care are often referred to as “ambulatory care sensitive conditions.” High rates of these types of hospitalizations generally indicate inadequate access to preventive or primary care and a need to improve preventive or primary care outpatient care performance.<sup>7</sup>

#### PREVENTABLE HOSPITAL ADMISSIONS

Cases of hospitalization for medical conditions that could be avoided through timely primary and preventive outpatient care which indicate where improvements in the health care delivery system could be made to improve health and decrease cost.

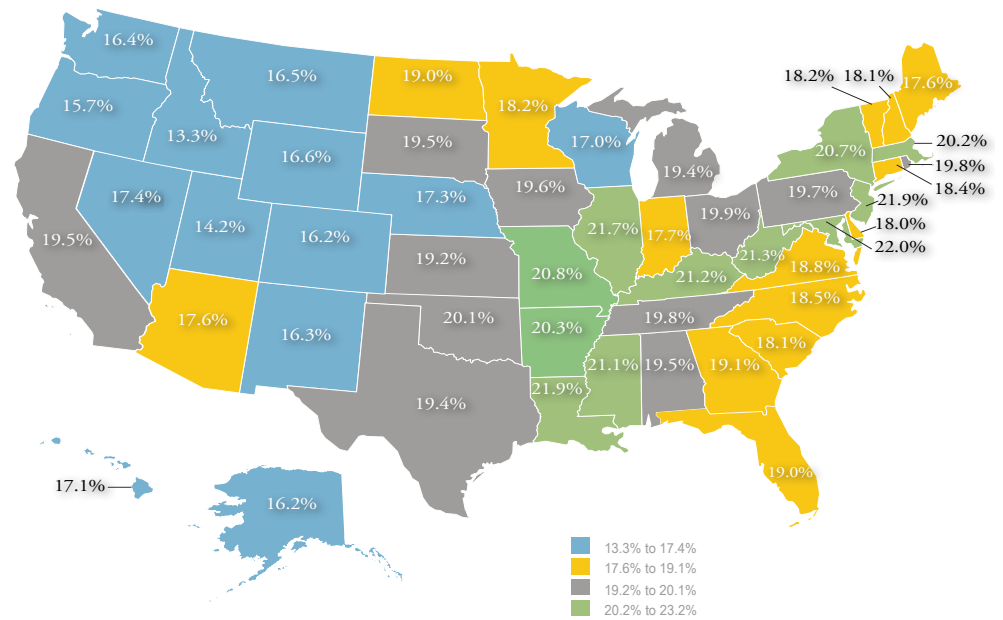
Hospitalization rates for these conditions are therefore frequently used as indicators of the lack of adequate preventive and primary care and are included in most health system scorecards referenced earlier. Medicare preventable hospital admissions and readmission data reported by the Dartmouth Institute for Health Policy and Clinical Practice, AHRQ, the Commonwealth Fund, and similar research organizations indicate room for improvement in the health care system in Mississippi that would result in considerable cost savings.

#### PREVENTABLE HOSPITAL READMISSIONS

Cases of repeat hospitalization for medical conditions clinically related to a prior hospital stay which indicate problems with the quality of hospital care or in the transition between inpatient and outpatient phases of treatment.

An analysis of Medicare data published in the *New England Journal of Medicine* in 2009, for example, showed preventable hospital readmission rates are 21 percent higher for Mississippi Medicare beneficiaries compared to the nation (Figure 2). The findings point out room to improve the delivery of inpatient and outpatient health care statewide.<sup>8</sup>

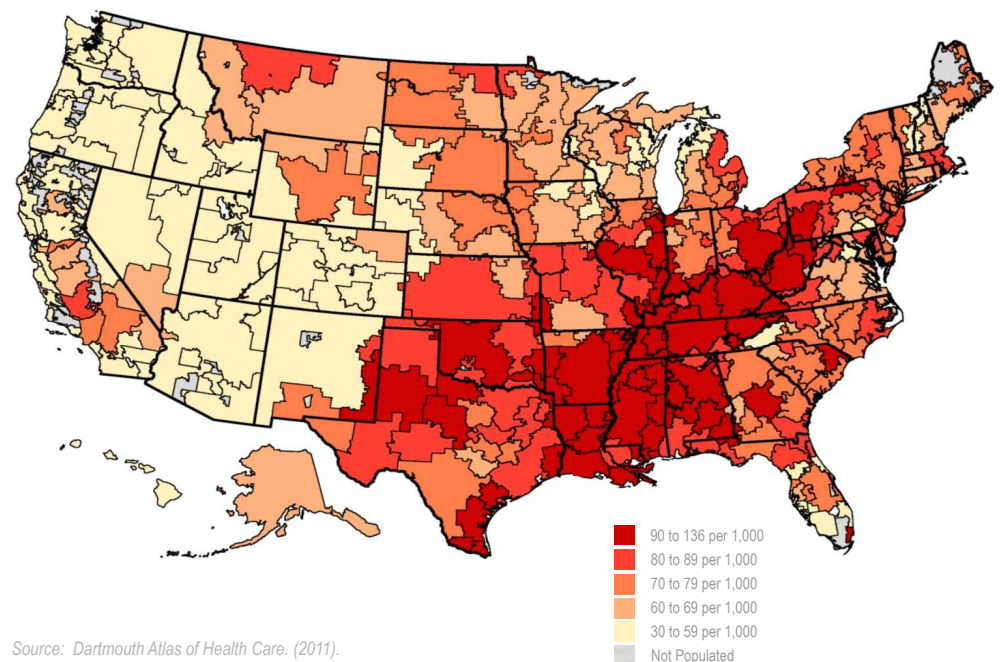
FIGURE 2. MEDICARE PREVENTABLE HOSPITAL READMISSION RATES WITHIN 30-DAYS, 2003-2004



Source: Jencks et al., *New England Journal of Medicine*. (2009).

Figure 3 visually represents an analysis of Medicare data by The Dartmouth Institute for Health Policy and Clinical Practice, which studies geographic variations among hospital referral regions nationwide and publishes analyses in the “Dartmouth Atlas” of health care.<sup>9</sup> Mississippi Medicare beneficiaries show very high hospitalization rates for ambulatory care-sensitive conditions.

FIGURE 3. AVOIDABLE HOSPITALIZATION RATES PER 1,000, 2003-2007



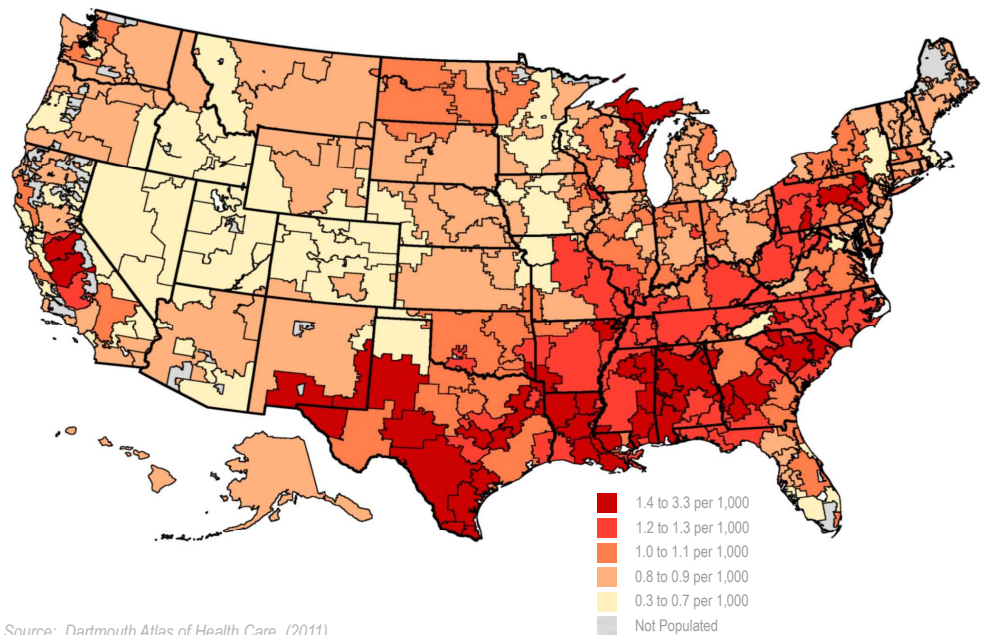
Source: Dartmouth Atlas of Health Care. (2011).



*Leg amputation rates are highest nationwide among Medicare recipients in Mississippi.*

The map in Figure 4 illustrates the variation in rates of leg amputations, a commonly used indicator of the consequences of poorly controlled diabetes. Mississippi shows high rates of leg amputations for Medicare enrollees. Without proper outpatient care to control blood sugar levels and patient education on self-care, long term complications including leg loss often result.<sup>10</sup>

FIGURE 4. LEG AMPUTATION RATES PER 1,000, 2003-2007



Source: Dartmouth Atlas of Health Care. (2011).

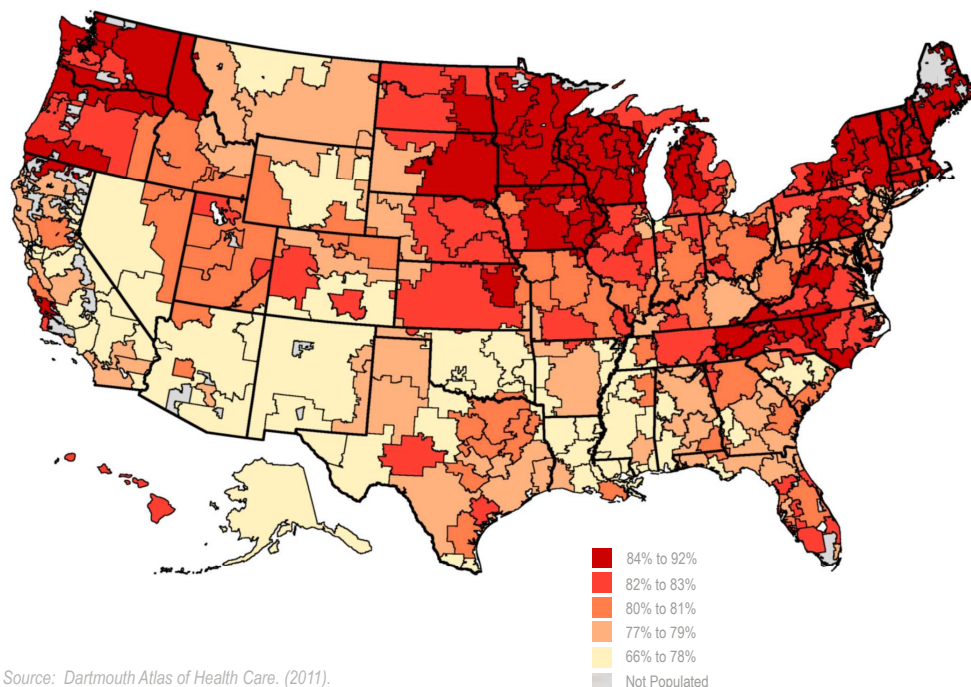
Diabetes can serve as a useful example of how disabling health outcomes can be avoided with high quality preventive and primary care. Research shows enhanced primary health care, including ongoing monitoring of diabetes related conditions, results in statistically significant ( $p < .05$ ) declines in hospital procedures for foot and leg amputations in Medicare patients.<sup>11</sup>

Additional research shows improving outpatient management of Medicare patients with diabetes saves money by reducing the number of avoidable hospitalizations for conditions related to poorly controlled diabetes.<sup>12</sup> AHRQ research further validates these findings, pointing out that effective management of diabetes care can prevent the need for leg amputation from levels of glucose that remain uncontrolled over time.<sup>13</sup>

*Frequent testing for the status of diabetes control is low among Mississippi Medicare beneficiaries.*

Effective outpatient management of diabetes includes close monitoring of blood sugar levels over time. A widely accepted measure to monitor the levels of blood sugar control is by the use of hemoglobin A1c testing. Hemoglobin A1c (HbA1c) is a test performed in the outpatient setting which measures average blood sugar levels over time.<sup>14</sup> Mississippi has one of the lowest hemoglobin A1c testing rates among Medicare beneficiaries.<sup>15</sup>

FIGURE 5. MEDICARE ENROLLEES WITH DIABETES RECEIVING HEMOGLOBIN A1C TESTING, 2003-2007



Source: Dartmouth Atlas of Health Care. (2011).

## ■ Prevention Quality Indicators

Broader measures of health system performance have been developed by the Agency of Healthcare Research and Quality (AHRQ), using data from public and private payers. Prevention Quality Indicators (PQIs) measure hospital admission rates for common conditions that are often avoidable when patients receive high quality outpatient care. Lower PQIs tend to occur where higher quality outpatient care is delivered.<sup>16</sup>

AHRQ developed the PQIs from data on patients admitted to the hospital for certain specific health complications. The methodology is detailed in Appendices A and B. PQI measures help to focus on specific areas where the health care system can achieve higher quality care using less costly health services.<sup>17</sup> PQI rates are produced annually for the United States.

*Lower PQI hospital admission rates tend to occur where higher quality outpatient care is delivered.*

PQI rates were generated by the Mississippi State Department of Health from hospital inpatient data collected in 2010. Statewide PQI rates were then compared with national PQI rates for this report to examine where Mississippi stands relative to the nation. Tests for statistical differences between state and national PQI rates were conducted for the following commonly occurring conditions to determine if the rates in Mississippi were significantly different from the national rates:

- heart conditions
- diabetes conditions
- lung conditions
- infectious conditions

### ***Heart Conditions***

Mississippi leads the nation in heart disease death rates, which is also the leading cause of death nationwide. Heart disease is the top reason for more than a quarter (26%) of deaths in Mississippi.<sup>18</sup>

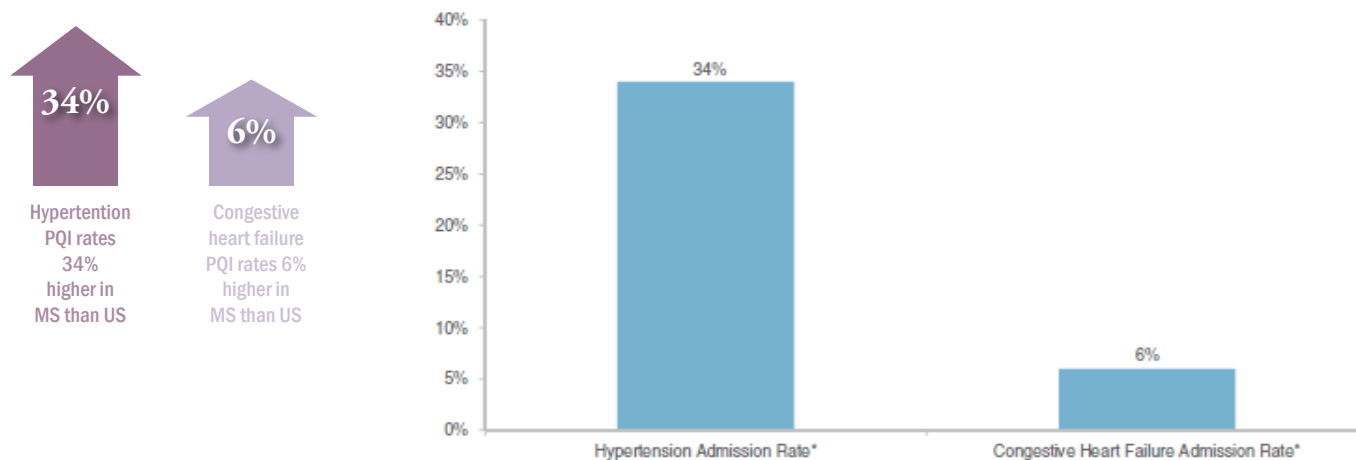
Risk factors for heart disease are particularly serious when not addressed early in disease development. Hypertension and congestive heart failure are common risk factors for heart disease conditions. Hypertension is a condition where blood pressure remains high for an extended period of time, stiffening artery walls which sets the stage for heart attacks. Congestive heart failure is a condition where the heart no longer pumps enough blood to meet the body's demand.<sup>19</sup> In Medicare beneficiaries, congestive heart failure is the top reason for hospital stays.<sup>20</sup>

The Centers for Disease Control and Prevention estimates over half of all adults (54%) in the U.S. with hypertension are classified with uncontrolled high blood pressure.<sup>21</sup> Among Medicare beneficiaries (most Americans over 65 years old), more than half (51%) do not have their high blood pressure under control.<sup>22</sup> More than half (60%) of adults with hypertension also lack awareness that their blood pressure is not under control.<sup>23</sup> Of those aware of their high blood pressure, more than one in six do not receive the drug therapy necessary to bring blood pressure under control.<sup>24</sup>

High blood pressure is often controllable with appropriate outpatient care. Congestive heart failure, a progressive disorder, can also be slowed by patient adherence to outpatient care guidelines. While most hospital facilities have directives to reduce preventable heart failure hospital readmissions, only half of United States hospitals partner with community physicians to manage high risk heart patients. Detecting and managing heart conditions early can reduce hospital admissions related to heart disease.<sup>25</sup>

PQIs suggest the degree of access to high quality outpatient care for patients with the conditions examined. Lower PQIs tend to be found where there is also poorer quality outpatient care. Heart condition PQI rates are each significantly ( $p < .05$ ) higher in Mississippi than the national heart condition PQI rates. PQI rates for hypertension in Mississippi are considerably higher (34%) compared to the nation (Figure 6).

FIGURE 6. HEART CONDITION PREVENTION QUALITY INDICATORS, MISSISSIPPI COMPARED TO US, 2010



Source: Mississippi State Department of Health & AHRQ Quality Report. (2010). \*Note: Percent difference is statistically significant at  $p < .05$ .

### Diabetes Conditions

Mississippi has one of the highest prevalence rates of diabetes in the United States.<sup>26</sup> Diagnosed cases of diabetes in Mississippi adults over the last decade rose significantly ( $p < .05$ ) from 8.2 percent to 11.3 percent. Yet, less than half (49%) of persons diagnosed with diabetes in Mississippi report seeing a health professional regularly for diabetes care.<sup>27</sup>

Diabetes is a chronic disease where the body's ability to process the sugar (glucose) is impaired. Diabetes develops when insulin levels created by the pancreas are too low to control levels of sugar in the blood stream. Glucose is the

*Under half (49%) of patients diagnosed with diabetes in Mississippi report seeing a health professional regularly for their diabetes care .*

body's prime source of fuel for cells. A person with diabetes loses the ability to move glucose

effectively from the blood stream into cells which turn the sugar into fuel. Organs and tissues become starved of essential energy. The body works to meet energy needs with fats, a less efficient fuel.<sup>28</sup> Over time, high glucose levels lead to health

#### SHORT-TERM DIABETES COMPLICATIONS

Ketoacidosis  
Dehydration  
Coma

#### LONG-TERM DIABETES COMPLICATIONS

Kidney Failure  
Blindness  
Nerve Damage  
Poor Blood Circulation  
Amputations

complications. Short-term complications of uncontrolled diabetes account for 34 percent of all diabetes-related hospitalizations, while the majority of diabetes-related hospital admissions are related to long-term complications.<sup>29</sup>

Short-term complications of uncontrolled diabetes arise from cells relying too heavily on burning fats for fuel instead of sugar. An unsafe build-up of acids in the blood stream can develop from the by-products of fat breakdown. This leads to a serious condition called ketoacidosis, characterized by severe dehydration, unconsciousness, or coma and requires treatment in hospitals.<sup>30</sup>

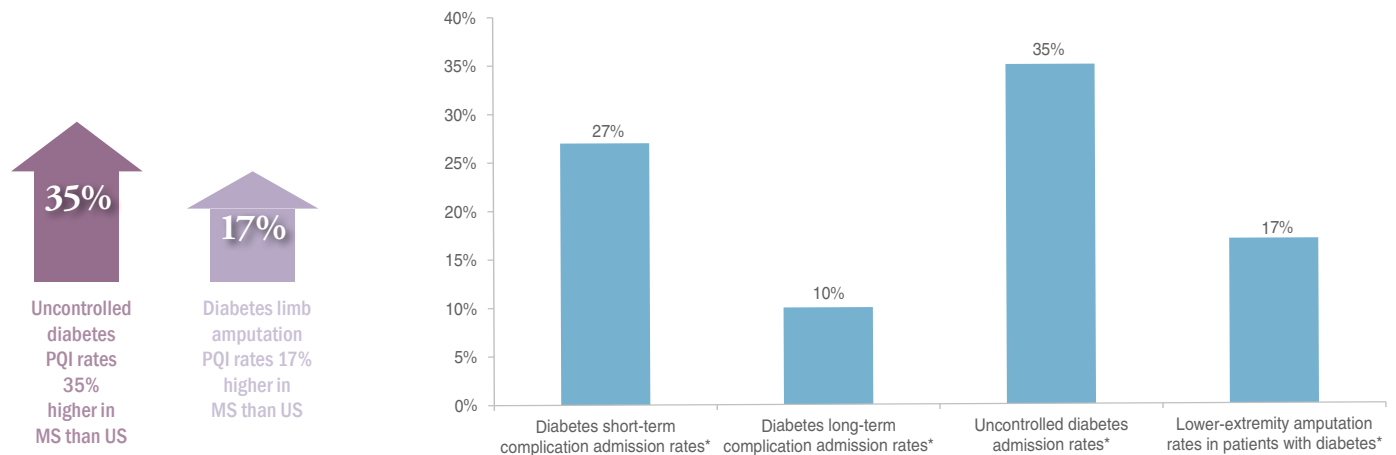
Long-term uncontrolled diabetes leads to damaged nerves and blood vessels. Blindness, kidney failure, and loss of circulation in the feet and legs are common complications. Diabetes is the leading cause of adult blindness. Damaged nerves make it difficult to feel a sore or infection, particularly on the foot. Coupled with reduced blood flow, it takes longer for an infection to heal. Left untreated, an infected foot or leg may need removal.

Keeping blood sugar under control through drug therapy, regular exams, and patient self-care can reduce hospital admissions of diabetes-related complications, including blindness and leg amputations.<sup>31</sup>

*Diabetes is the leading cause of adult blindness nationwide.*

Diabetes PQIs reflect preventable hospitalizations that occur when glucose levels are not under control.<sup>32</sup> Each of the diabetes PQIs are significantly ( $p < .05$ ) higher in Mississippi as compared to the nation (Figure 7). PQI hospital admission rates in Mississippi for uncontrolled diabetes are 35 percent higher, and leg and foot amputation rates are 17 percent higher than national PQI rates.

FIGURE 7. DIABETES CONDITION PREVENTION QUALITY INDICATORS, MISSISSIPPI COMPARED TO US, 2010



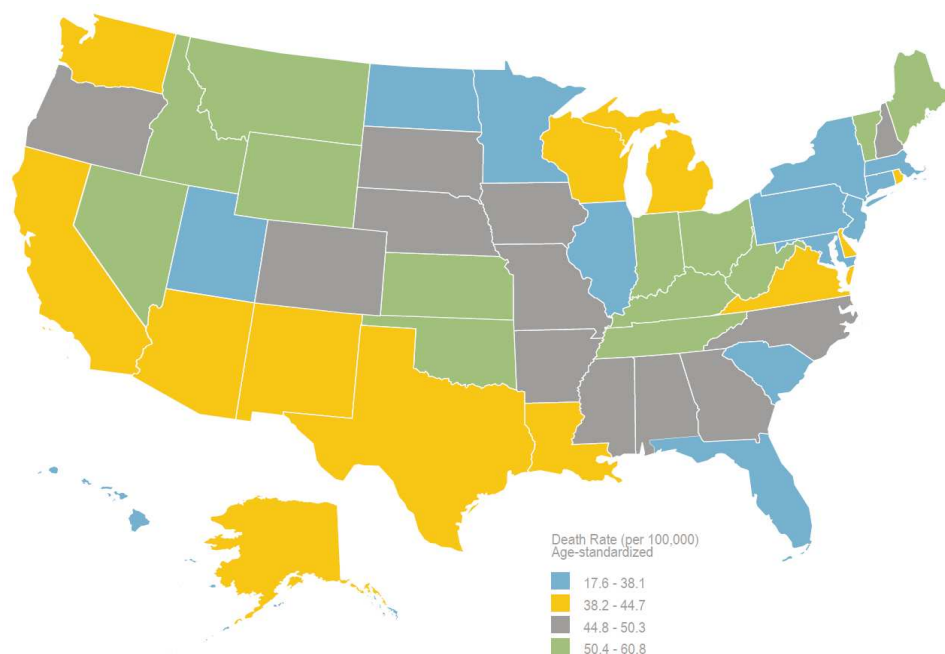
Source: Mississippi State Department of Health & AHRQ Quality Report. (2010). \*Note: Percent difference is statistically significant at  $p < .05$ .

## *Lung Conditions*

Mississippi has high rates of deaths related to lung conditions (Figure 8) that comprise chronic obstructive pulmonary disease (COPD).<sup>33</sup> COPD is a leading cause for hospital and emergency room care admissions. One or more of the following three lung conditions comprise COPD:<sup>34</sup>

- asthma
- emphysema
- chronic bronchitis

**FIGURE 8. DEATH RATE FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE, 1999-2006**



Source: Centers for Disease Control and Prevention. (2010).

Asthma is a condition affecting the lungs and respiratory system. Asthma prevalence in Mississippi adults (12%) is one of the highest in the nation.<sup>35</sup> Asthma occurs in spurts due to swelling that temporarily narrows the airways, leading to air flow blocks and shortness of breath. Symptoms of asthma include wheezing, coughing, or feeling tightness in the chest. Difficulty breathing can be triggered after inhaling irritants such as pollen, dust, fumes, tobacco smoke, or by exercise, colds, or other infections.<sup>36</sup>

When symptoms of asthma are not swiftly brought under control, hospitalization is often necessary. Complications of asthma are a common reason for hospital admissions, particularly in children.<sup>37</sup> One study finds patients with higher rates of asthma hospitalizations have lower use of asthma control and maintenance medication.<sup>38</sup>



*Risk of asthma-related hospitalizations decline with regular and consistent outpatient health care.*

Risk of asthma-related hospitalizations decline with regular and consistent outpatient health care. Comprehensive asthma management programs educate patients to control symptoms and avoid hospitalization.

Prescription medications such as steroids work to reduce inflammation of the airways and relieve symptoms.<sup>39</sup>

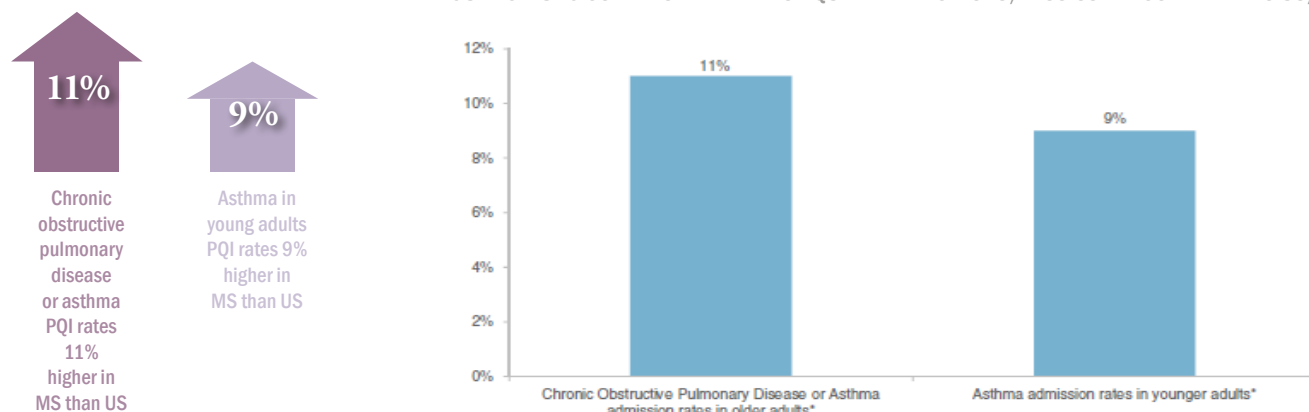
Emphysema is a disease characterized by permanently damaged air sacs in the lungs. It is the fourth leading cause of death nationwide, often due to cigarette smoking.<sup>40</sup> Air sacs in the lungs lose flexibility, and air becomes trapped in the sacs, which ultimately burst. Persons with emphysema, therefore, lose the ability to take in enough air to satisfy the body's oxygen needs. The result is shortness of breath, which increases over time. All organs in the body begin to suffer from lack of oxygen. As the disease progresses, emphysema patients experience increasing limitations on activity.<sup>41</sup>

Chronic bronchitis is a constant inflammation of the lungs. This leads to thicker mucus, frequent coughs, and lung tissue scars, setting the stage for infections like pneumonia and influenza to flourish. As a result, people with chronic bronchitis suffer airway infections more often and for longer periods of time.<sup>42</sup>

Since hospitalization can result when not treated early, it is important for people with lung conditions that comprise COPD to treat colds and lung infections quickly. Each COPD condition makes it difficult for the body to clear airway infections. Prescription drugs that help open narrow airways, antibiotics that kill infections, as well as access to devices that help deliver more oxygen to the body, can slow the advancement of COPD, reducing the risk of being hospitalized. Health care providers can counsel patients on how to quit smoking and other lifestyle factors to reduce the effects of symptoms.<sup>43</sup>

Lung condition PQIs reflect hospitalizations that occur when COPD conditions are left uncontrolled. Hospitalizations for COPD related asthma, emphysema, and chronic bronchitis comprise the lung condition PQIs. Lung condition PQIs are significantly ( $p < .05$ ) higher in Mississippi than the nation (Figure 9). COPD or asthma PQIs in older adults is 11 percent higher and asthma PQI rates for children in Mississippi is 9 percent higher than national lung condition PQI rates.

FIGURE 9. LUNG CONDITION PREVENTION QUALITY INDICATORS, MISSISSIPPI COMPARED TO US, 2010



Source: Mississippi State Department of Health & AHRQ Quality Report. (2010). \*Note: Percent difference is statistically significant at  $p < .05$ .

## Infectious Conditions

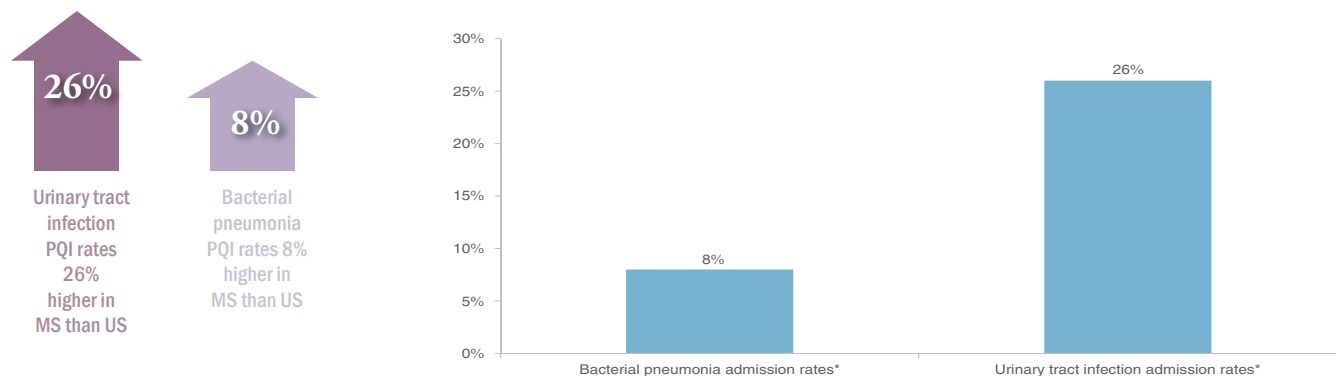
Bacterial pneumonia and urinary tract infection (UTI) are leading causes of infectious disease hospitalizations across the nation. Pneumonia is primarily an inflammation of the lungs, which may be caused by infections from certain bacteria and viruses. UTI occurs when the kidneys, bladder, and connecting tubes, known collectively as the urinary tract, are invaded by disease-causing bacteria.<sup>44</sup>

Elderly and other high risk persons are more likely to be hospitalized due to pneumonia and UTI complications. Fortunately, bacterial pneumonia and UTIs can often be treated successfully in the outpatient care setting when antibiotics are prescribed early. Some pneumonia infections can be avoided outright from vaccinations.<sup>45</sup> Elderly Mississippi adults receive pneumonia vaccines at lower rates compared to the U.S.<sup>46</sup>

*Elderly Mississippi adults receive pneumonia vaccines at lower rates compared to the nation.*

Infection-related PQI rates from bacterial pneumonia and UTI hospital admissions in Mississippi are significantly ( $p < .05$ ) higher than the national infection-related PQI measures (Figure 10). Hospital admission rates from bacterial pneumonia and urinary tract infections are 8 percent and 26 percent higher, respectively, in Mississippi than national rates.

FIGURE 10. INFECTION PREVENTION QUALITY INDICATORS, MISSISSIPPI COMPARED TO US, 2010



Source: Mississippi State Department of Health & AHRQ Quality Report. (2010). \*Note: Percent difference is statistically significant at  $p < .05$ .

## Acute and Chronic Composite Conditions

AHRQ summarizes the PQI rates across all the condition-specific measures into three composite PQIs (acute, chronic, and overall). Acute and chronic health conditions can have differing factors that influence hospitalization rates, so acute and chronic PQIs are considered separately. “Acute” composite PQIs include all conditions related to infections. “Chronic” composite PQIs include all the chronic condition PQIs such as heart, diabetes, and lung conditions. Overall composite PQIs summarize a combination of both acute and chronic conditions.<sup>47</sup>

Overall composite PQI rates in Mississippi are significantly ( $p < .05$ ) above national overall composite PQI rates by 12%. Acute and chronic PQI composite measures in Mississippi are also each significantly ( $p < .05$ ) above national acute and chronic PQI composite rates (Figure 11).

### ACUTE COMPOSITE PREVENTION QUALITY INDICATORS

Infectious Conditions

### CHRONIC COMPOSITE PREVENTION QUALITY INDICATORS

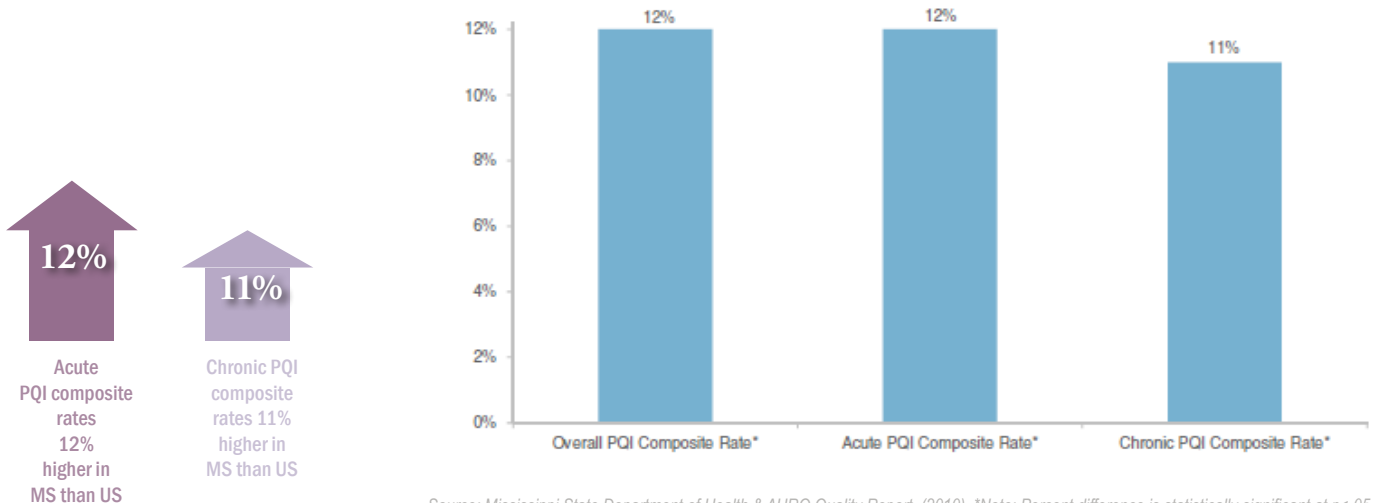
Heart Conditions

Diabetes Conditions

Lung Conditions



FIGURE 11. COMPOSITE PREVENTION QUALITY INDICATORS, MISSISSIPPI VS. UNITED STATES, 2010



Composite PQI rates have declined nationally, driven by significant decreases in preventable hospitalizations for chronic conditions.<sup>48</sup> Chronic illnesses are a primary driver of health care costs, as two-thirds of health care spending

*Two-thirds of health care spending is consumed by people with more than one chronic condition.*

nationwide is consumed by people with more than one chronic conditions.<sup>49</sup>

The composite PQI rates in Mississippi suggest room for improvement in primary and preventive care access and delivery.

# Relationships Between Health Care Quality, Cost, & Workforce

## STATE QUALITY RANKINGS BASED ON COMMON MEDICAL CONDITIONS

- Heart Attack
- Diabetes
- Heart Failure
- Pneumonia
- Stroke
- Breast Cancer

Consumers of health services often associate low cost with low quality health care and more health care with better health care.<sup>50,51</sup> Yet, mounting evidence suggests high quality care is not necessarily related to high cost.<sup>52</sup> Providers have traditionally been paid set rates, regardless of performance, so quality-based health care has not been routinely incentivized.<sup>53</sup>

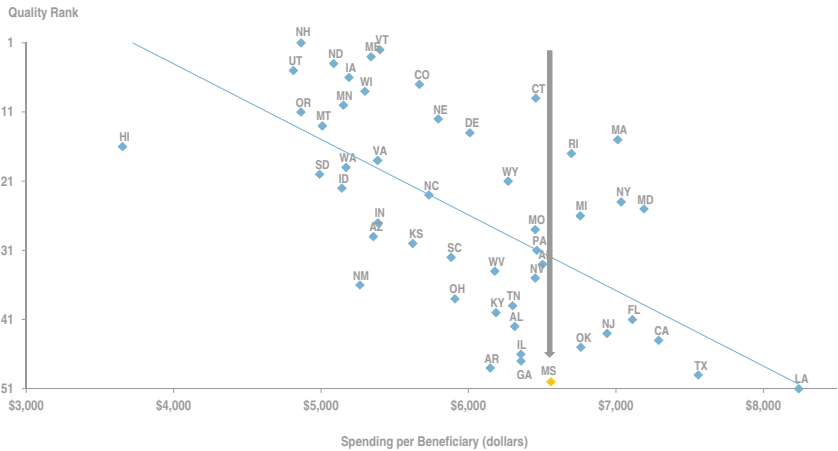
In a seminal 2004 study, Baicker & Chandra examined the relationships between health care spending, quality, and workforce, using data on quality of care rankings per state, the physician workforce, and Medicare spending. By virtue of their study design, the researchers eliminated the following factors which do not generally change widely within states over time:<sup>54</sup>

- differences in state demographic make-up
- variation in how severe an illness presents for each patient
- managed care enrollment level changes for Medicare beneficiaries
- degree of reliance on outpatient clinics

The study's findings challenge the assumption that high cost is related to high quality. As Medicare spending per beneficiary rose, each state's quality of care ranking declined (Figure 12). Mississippi was among the states spending the highest amount of Medicare dollars per beneficiary on healthcare, while ranking among the lowest in health care quality.<sup>55</sup>

*As Medicare spending per beneficiary rose, each state's quality of care ranking declined.*

FIGURE 12. MEDICARE SPENDING AND STATE HEALTH CARE QUALITY RANK, 2000-2001



Source: Copyrighted and published by Project HOPE/Health Affairs as Baicker K. and Chandra A. (2004). Medicare Spending, The Physician Workforce, And Beneficiaries' Quality Of Care Health Affairs (Millwood). April 2004; w4 184-197 DOI 10.1377/hlthaff.Q4.184 The published article is archived and available online at [www.healthaffairs.org/](http://www.healthaffairs.org/). Note: For quality ranking, smaller values equal higher quality.

States with higher physician specialist concentrations tended to have lower health quality rankings. Mississippi, with low quality rankings and high concentration of specialist physicians, exhibits this particular relationship

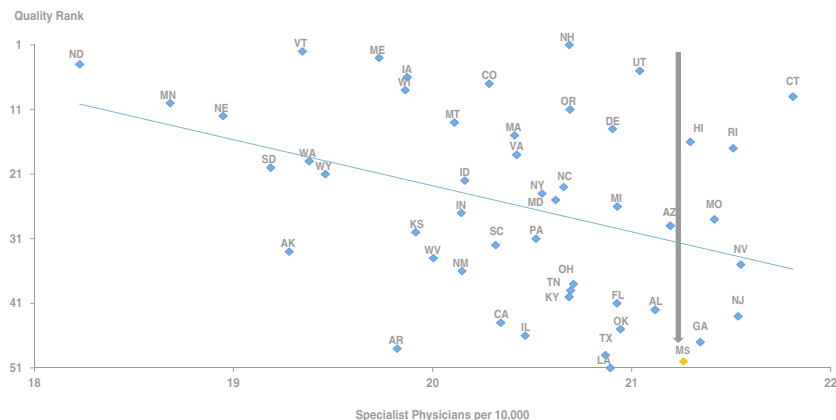
*States with higher physician specialist concentrations tended to have lower health quality rankings.*

(Figure 13).<sup>56</sup>

## SPECIALIST PHYSICIANS

Surgery  
Obstetrics & Gynecology  
Emergency Medicine  
Cardiology  
Internal Medicine  
Pediatrics

**FIGURE 13. SPECIALIST PHYSICIANS AND STATE HEALTH CARE QUALITY RANK, 2000**



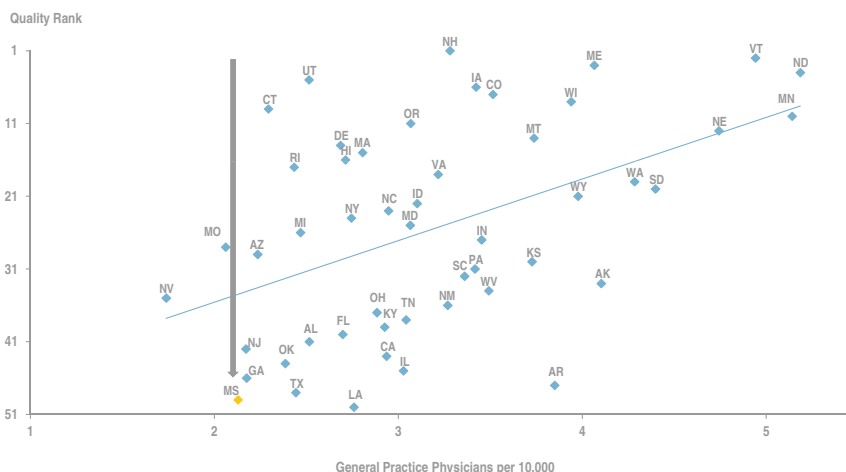
Source: Copyrighted and published by Project HOPE/Health Affairs as Baicker K. and Chandra A. (2004). Medicare Spending, The Physician Workforce, And Beneficiaries' Quality Of Care Health Affairs (Millwood). April 2004; w4 184-197 DOI 10.1377/hlthaff.Q4.184 The published article is archived and available online at [www.healthaffairs.org/](http://www.healthaffairs.org/). Note: For quality ranking, smaller values equal higher quality.

On the other hand, states with lower concentrations of general practice physicians tended to have lower quality of care rankings. This finding included the state of Mississippi as shown in Figure 14.<sup>57</sup>

## GENERALIST PHYSICIANS

General Practice  
Family Practice

**FIGURE 14. GENERAL PRACTICE PHYSICIANS AND HEALTH CARE QUALITY RANK, 2000**



Source: Copyrighted and published by Project HOPE/Health Affairs as Baicker K. and Chandra A. (2004). Medicare Spending, The Physician Workforce, And Beneficiaries' Quality Of Care Health Affairs (Millwood). April 2004; w4 184-197 DOI 10.1377/hlthaff.Q4.184 The published article is archived and available online at [www.healthaffairs.org/](http://www.healthaffairs.org/). Note: For quality ranking, smaller values equal higher quality.

States with higher proportions of specialty physicians also tended to spend more per Medicare beneficiary (Figure 15). Mississippi showed this trend as well, with high Medicare spending and high concentrations of specialty physicians.<sup>58</sup>

The scatter plot displays the relationship between the number of specialist physicians per 10,000 people and the spending per beneficiary in dollars across various US states. The X-axis represents 'Specialist Physicians per 10,000' (ranging from 18 to 22), and the Y-axis represents 'Spending per Beneficiary (dollars)' (ranging from \$4,000 to \$8,000). A blue regression line shows a positive correlation. Mississippi (MS) is highlighted with a vertical arrow, indicating it is an outlier with a low number of specialist physicians per 10,000 but high spending per beneficiary.

State	Specialist Physicians per 10,000 (X)	Spending per Beneficiary (dollars) (Y)
ND	18.3	5100
MN	18.7	5150
NE	18.9	5800
SD	19.2	5000
AK	19.3	6500
VT	19.3	5500
WA	19.4	5200
WY	19.5	6300
ME	19.7	5350
AR	19.8	6250
WI	19.8	5200
IA	19.9	5150
KS	19.9	5750
WV	20.0	6200
NM	20.1	5400
MT	20.1	5000
ID	20.2	5150
VA	20.3	5400
SC	20.4	5700
CA	20.4	7300
MA	20.4	7100
IL	20.5	6400
PA	20.5	6500
NY	20.5	7200
MD	20.6	7200
IN	20.6	5350
OH	20.6	5800
TN	20.6	6250
NC	20.6	5750
LA	20.8	8200
TX	20.8	7600
FL	20.8	7100
OK	20.8	6800
MI	20.9	6800
DE	20.9	6000
AL	21.0	6400
GA	21.0	6400
MS	21.0	6600
AZ	21.1	5350
UT	21.1	4800
NJ	21.3	6900
RI	21.3	6700
MO	21.3	6400
NV	21.3	6500
CT	21.7	6450

Conversely, as the proportion of generalist physicians rose, spending per Medicare beneficiary declined (Figure 16). Mississippi has lower availability of generalists and higher spending per Medicare beneficiary.<sup>59</sup> Physician fee schedules generally favor specialist care. Research also indicates that generalists tend to spend more time coordinating patient care outside of the regular patient office visit, which is frequently not reimbursed under the fee for service health care payment models.<sup>60</sup>

and higher spending per Medicare beneficiary.<sup>59</sup> Physician fee schedules generally favor specialist care. Research also indicates that generalists tend to provide patient care outside of the regular patient office visit, which is reimbursed under the fee for service health care payment system.

The scatter plot displays the relationship between the number of General Practitioners (GPs) per 10,000 people (X-axis) and the spending per beneficiary in dollars (Y-axis). The X-axis ranges from 1 to 5.5, and the Y-axis ranges from \$3,500 to \$8,500. A negative linear regression line is shown, indicating that as the number of GPs per 10,000 people increases, the spending per beneficiary tends to decrease. A vertical arrow points to the data point for Mississippi (MS), which is located at approximately 2.2 GPs per 10,000 people and \$6,500 in spending.

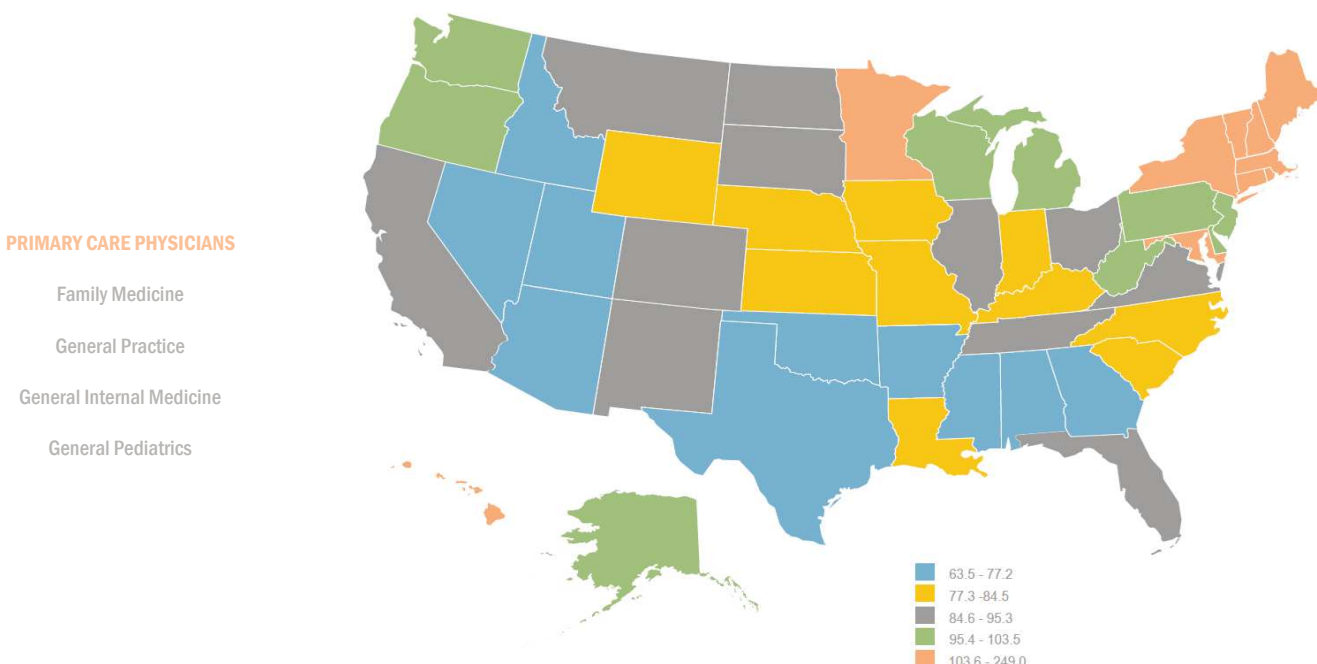
State	General Practitioners per 10,000	Spending per Beneficiary (dollars)
LA	2.8	8,300
TX	2.5	7,700
CA	3.1	7,400
MD	3.2	7,200
FL	2.7	7,100
NY	2.8	7,000
MA	2.9	6,900
OK	2.6	6,800
MI	2.7	6,700
RI	2.6	6,600
AL	2.7	6,500
MS	2.2	6,500
GA	2.3	6,400
CT	2.4	6,400
NV	1.8	6,400
MO	2.1	6,400
AZ	2.3	5,900
DE	2.7	5,800
OH	2.8	5,700
NC	2.9	5,600
IL	3.0	5,600
KY	3.0	5,500
IN	3.1	5,400
IA	3.2	5,300
VA	3.2	5,200
AM	3.2	5,100
OR	3.2	5,000
NH	3.2	4,900
SC	3.3	5,100
PA	3.3	5,200
WV	3.3	5,100
CO	3.4	5,000
KS	3.6	4,900
AR	3.7	4,800
WY	3.9	4,800
AK	4.1	4,900
WI	3.9	4,700
ME	4.0	4,700
WA	4.3	4,700
NE	4.7	4,800
VT	4.9	4,700
MN	5.2	4,600
ND	5.3	4,500
HI	2.6	3,600
UT	2.6	4,700

Baicker & Chandra's study suggests that higher cost health care is associated with an abundance of specialists relative to general practitioners. Nationally, nearly half (41%) of primary care visits are conducted by specialty physicians. Increasing access to general practitioners has been cited as one strategy to improve the quality of care patients receive in outpatient settings.<sup>61</sup> Mississippi has the lowest

*About 2,100 primary care doctors are projected to be needed in Mississippi by 2020.*

ratio of physicians to patients nationwide (174.6 per 100,000) and the lowest ratio of primary care physicians (Figure 17) to patients (63.6 per 100,000). Researchers estimate that currently, 430 more primary care physicians are needed, and about 2,100 are projected to be needed in Mississippi by 2020.<sup>62</sup>

FIGURE 17. PRIMARY CARE PHYSICIANS PER 100,000 POPULATION, 2010



Source: Association of American Medical Colleges. (2010).

Mississippi also ranks fourth highest in the number of hospital beds, eighth highest in hospital admissions, and fourth highest in emergency room visits per 1,000 population when compared to other states. Hospital cost spending trends show an increase each year, with Mississippi residents spending more on hospital care than any other type of medical care treatment. Expenditures for hospital care in the state represent 42 percent of all health care dollars spent in 2009.<sup>63</sup> This points toward a health care system performing with greater emphasis on provision of health care in later, more costly stages of disease progression rather than during earlier, more preventable stages of disease.

The relationships among quality, cost, and workforce composition are very complex. Additional factors other than availability of primary care practitioners not included in the Baicker and Chandra study, such as poor health status of the population and high availability of hospital beds, may also influence the results.

## ■ What Models Exist for Improving Health System Performance?

Even prior to the release of the 2001 Institute of Medicine (IOM) report, *Crossing the Quality Chasm*, states had begun working toward health system improvements. While there are numerous public and private sector approaches to improve performance in health care delivery and reduce costs, state efforts are focusing increasingly on enhancing primary and preventive care.<sup>64</sup> Strategies include changing payment rules for health care services, advancing technology, and collaborating to better manage conditions known to be effectively treated on an outpatient and primary prevention basis.<sup>65</sup> Health organizations in states across the nation are working to reduce unnecessary hospitalizations by improving quality of care in the outpatient care setting. Examples of selected, specific efforts being undertaken in states are outlined in Appendices C, D, and E.

*Most state efforts toward health system improvement incorporate common, interrelated strategies.*

The National Academy for State Health Policy profiled ten states whose quality improvement partnerships to improve health system performance were identified as potential models for other states.<sup>66</sup> Most state's efforts toward health system improvement incorporate certain common, interrelated strategies.

Comprehensive efforts generally address issues related to the health care workforce, payment systems, organization of care delivery, and performance measurement.

### *Workforce*

One way to broaden access to high quality primary and preventive care is to increase the number of primary care providers and the training necessary to deliver high quality care. In an era of rapidly transforming health care delivery and payment systems, many providers can benefit from technical assistance and training in the employment of technology and techniques needed to implement new practices and participate in collaborative patient care. The scope and depth of these workforce issues are extensive, and an in-depth analysis is reserved for future reports.

### *Payment Systems*

*Payment system reforms are often based on improving health outcomes while reducing health care costs.*

Fee-for-service, the traditional method of paying health care providers, incentivizes the volume of services rendered. Reimbursing medical care providers for improving patient outcomes is currently being tested to determine if this type of payment method will improve quality and reduce costs.<sup>67</sup> Payment systems can also be designed to encourage behavior and activities such as adoption and use of health information technology, coordination of patient care, and patient education. Payment system reforms frequently incorporate incentives based on improving health outcomes while reducing health care costs. Better coordinated care can lead to healthier patients who require fewer high intensity services, thus saving money in the long term.<sup>68</sup>

### *Service Delivery Models*

New health care service delivery models aim to enhance coordination of services within interdisciplinary health care teams, improve quality of service delivery by monitoring and reporting performance, and financially reward efforts to improve

*PCMH and ACO models revise provider's service delivery payments to align financial incentives with health outcomes.*

patient outcomes. Recently developed health care delivery models include the patient-centered medical home (PCMH) and accountable care organization (ACO) models. Medical home and ACO models revise provider payments to align financial incentives with health outcomes.

The PCMH model of health delivery shares components of the ACO delivery model, including a strong emphasis on primary and preventive care services.<sup>69</sup>

#### PATIENT-CENTERED MEDICAL HOME

*PCMHs provide financial incentives for quality patient outcomes instead of the volume of services provided.*

PCMH models provide financial incentives for caregivers to focus on the quality of patient outcomes instead of the volume of services provided. Medical home organizations can assume a wide variety of forms. The Centers for Medicare and Medicaid (CMS) includes the PCMH model on a list of innovative payment and health service delivery options to improve health care quality and lower costs. The guidelines describe policy options for states interested in developing health care delivery models that reduce Medicaid costs and improve quality without requiring a waiver. Over forty states have adopted policies promoting PCMH models for certain Medicaid or Children's Health Insurance Program (CHIP) beneficiaries. States can also receive enhanced federal match rates to develop or expand PCMH for Medicaid enrollees with more than one chronic condition.<sup>70</sup>

PCMH models almost always include integration of health information technology and outcome-based payment systems. Whether a PCMH employs a physical or virtual network of providers, advanced health information technology – including electronic health records and health information exchange – is needed to facilitate communication and coordination among PCMH providers.<sup>71</sup>

Payment systems within PCMH models assume varied forms and may rely on a combination of payment models, but are generally based on patient outcomes rather than simply patient volume. Some financing systems pay PCMH providers a per-member, per-month fee in addition to traditional fee-for-service payments, or may include extra compensation for PCMH activities such as care coordination. Providers are required to meet certain quality targets.<sup>72</sup>

Although general agreement exists for the PCMH concept, the model continues to evolve. Not all medical homes look alike or use the same strategies to reduce costs, improve quality, and coordinate care. States are implementing a number of PCMH activities, such as creating pilot projects, changing health care payment structures, investing in health information technology, restructuring Medicaid provider network organization, and weaving PCMH models into health service delivery practices.<sup>73</sup> A few specific examples of state level PCMH models are listed in Appendix D.

Some states have developed their own PCMH standards, but national PCMH accreditation is available from organizations such as the National Committee for Quality Assurance (NCQA). Accreditation offers formal recognition for PCMH providers meeting specified criteria. Accreditation may be a qualifying condition for enhanced reimbursement rates or receipt of other financial incentives for

coordinating care.<sup>74</sup> NCQA standards include demonstration of competence in many areas which include:

- Enhancing access and continuity of care
- Identifying and managing patient populations
- Planning and managing care
- Providing self-care support and community resources
- Tracking and coordinating care
- Measuring and improving performance

#### ACCOUNTABLE CARE ORGANIZATIONS

Accountable Care Organizations (ACOs) are growing rapidly as health care delivery models aimed to systematically improve health care quality, coordinate care, and slow health spending growth.<sup>75</sup>

*ACOs aim to slow health spending growth, so are generally broader in scope than patient-centered medical homes.*

ACOs are based on principles of coordinating care across health care settings in order to be accountable to payers for cost and quality within defined patient populations and so are generally broader in scope than patient-centered medical homes.

ACOs incorporate groups of providers and suppliers of health services (hospitals, physicians, and others involved in patient care) who work under an agreement to share with health care payers in the risk of health care overspending or savings.<sup>76</sup> Examples of select statewide ACOs are provided in Appendix E. In 2010, pilot ACOs were authorized for Medicaid and Medicare programs in the Affordable Care Act. The Medicare pilot ACO program gives providers organized as ACOs that volunteer to meet quality goals the ability to share in the cost savings achieved. Medicaid programs work similarly by allowing pediatric medical providers organized as ACOs to share in cost savings.<sup>77</sup>

A key feature of ACOs is the ability of the health care providers to share in any savings that accrue due to improvements in quality of care. In 2011, CMS announced testing of an advanced payment ACO model for some organizations participating in the Medicare Shared Savings Program. The Shared Savings Program is designed to reward ACOs that lower their growth in health care costs while meeting performance standards on quality of care. Provider participation is voluntary. Medicare beneficiaries retain the ability to seek treatment from any provider. As of June 2013, 20 ACOs were participating in the Shared Savings Program nationwide.<sup>78</sup>



## Performance Measurement

*The degree to which providers meet quality of care performance targets are increasingly being used by health care payers to set payment levels.*

While complete clinical information accessible to each provider of a patient's care is important for high quality health care, the aggregation of patient data at the provider, practice, and organizational level is key to measuring the performance of the service delivery system. Providers need timely feedback on the degree to which they meet quality targets, and the organization must employ a management information system that allows for monitoring and reporting of quality measures, which are increasingly being used by payers to set payment levels.<sup>79</sup>

In 2012, the U. S. Department of Health and Human Services (HHS) published an initial core set of health care quality measures to be used for Medicaid-eligible adults on a voluntary basis. These quality measures incorporate recommendations from CMS, NCQA, AHRQ, and many other health care organizations. Prevention Quality Indicators (PQIs) for heart, diabetes, and lung conditions are included in the initial core measures.<sup>80</sup>

*Standard core quality of care measures represent the first step in an overall strategy to encourage and compare performance improvements in health care.*

HHS specified that the standard core quality measures represented the first step in an overall strategy to encourage and enhance quality improvement and to develop “a quality-driven, evidence-based, national system for measuring the quality of health care provided to Medicaid-eligible adults.” Reports summarizing the findings from the aggregation of the data are set for release in 2014. HHS also plans to use the data to inform the National Strategy for Quality Improvement in Health Care.<sup>81</sup>

### HEALTH DATA COLLECTED FOR PERFORMANCE MEASUREMENT

High Blood Pressure Control  
Smoking Cessation Services  
Breast Cancer Screenings  
Colon Cancer Screenings  
Cholesterol Screenings  
Preventive Aspirin Use  
Influenza Immunizations  
Pneumonia Immunizations

The development of a quality reporting system for adults in Medicaid is similar to the previous creation of quality measures for children in Medicaid and the Children's Health Insurance Program and joins other national programs including the following:<sup>82</sup>

- Medicare and Medicaid EHR Incentive Programs
- Medicare Physician Quality Reporting System (PQRS)
- Health Employer Data and Information Set (HEDIS)
- National Committee for Quality Assurance Accreditation Programs
- Joint Commission's Performance Measurement Initiative

In addition, many states mandate and fund the operation of all-payer health billing claims databases to measure statewide health system performance. States such as Kansas, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, Oregon, Tennessee, Utah, and Vermont have each taken this step to implement enhanced collection of health billing data to measure health system performance at the state level.<sup>83</sup>

*Adoption of EHRs are central to a provider organization's ability to function in the current health care environment.*

The adoption of electronic health records (EHRs) are central to performance measurement and for a provider organization's ability to function in the current health care environment. Both Medicare and Medicaid provide incentive payments to providers to support the adoption of electronic health records, and the federal government has provided considerable funding to states to facilitate the development of state health information systems. In fact, the most common focus area for the ten state quality improvement partnerships profiled by the National Academy for State Health Policy was data collection, aggregation, and performance measurement.<sup>84</sup>

## ■ Mississippi Initiatives

Mississippi health leaders recognize the signals of a changing health care delivery environment and demonstrate an interest in adapting accordingly. Health care organizations across the state are executing action plans to improve health care performance, including in the health care workforce, payment systems, service delivery models, and performance measurement. A few examples of Mississippi initiatives are highlighted in the following sections from discussions with leaders in the public and private sectors. The list is not exhaustive, but illustrative of strategies being undertaken in the state.

### *Workforce*

#### *UMMC is leading the development of a new Office of Mississippi Physician Workforce.*

To address the severe shortage of primary care providers in the state of Mississippi, the University of Mississippi Medical Center (UMMC) is leading the development of a new Office of Mississippi Physician Workforce, a result of enactment of House Bill 317 in 2012.<sup>85</sup> The purpose of the Mississippi Office of Physician Workforce is to oversee workforce development needs in terms of the numbers and distribution of physicians throughout the state.

The Office of Mississippi Physician Workforce is governed by a 21 member Advisory Board charged with overseeing physician workforce development needs. Initial target efforts are outlined as follows:<sup>86</sup>

- Support creation of accredited family medicine residency programs, including state financial support for creation of these programs
- Encourage the development of an adequate and geographically distributed physician workforce in all specialties via an evolving strategic plan
- Assess the current numbers, ages, types of practice, hospital affiliations, and geographic distribution of physicians in Mississippi medical societies
- Determine current and future physician workforce needs in the state

The Advisory Board recommended and UMMC approved funding to initiate a new Family Medicine Residency training program at Forrest General Hospital in Hattiesburg. The Office of Mississippi Physician Workforce is working on the initial phase of the training program's development.<sup>87</sup> In addition, the Mississippi Office of Nursing Workforce, established in 1996, conducts annual surveys of nursing workforce needs. The Office uses a manpower prediction model to forecast nursing supply and demand for Mississippi healthcare employers and related stakeholders.<sup>88</sup>

### *Payment Systems*

Blue Cross & Blue Shield of Mississippi is investigating several initiatives for health care performance improvement. Collaborations are ongoing between the staff, hospital Chief Medical Officers, and the Mississippi Hospital Association to plan hospital-wide quality improvement initiatives. Blue Cross & Blue Shield staff also coordinate a physician team to design patient accountability and management programs based on best available clinical practices. A special clinic with multiple-provider types including dietitians and nurse practitioners, informed

by electronic lab data, is being piloted for disease management. The agency is also working toward performance-based payment for providers to provide financial incentives for reducing preventable hospital readmissions and participating in chronic care initiatives for diabetes management. An 18-month pilot demonstrated improvements in clinical diabetes measures from disease management services. The ultimate goal is reduction of preventable hospital readmissions through improved management of all chronic conditions.<sup>89</sup>

The Mississippi Division of Medicaid has implemented a coordinated health care disease management program for beneficiaries through its MississippiCAN (Mississippi Coordinated Access Network) program, which began in 2011. The MississippiCAN program aims to improve quality and lower costs through coordination of health care services for Medicaid patients.<sup>90</sup>

### Service Delivery Models

In 2011, the Mississippi State Board of Health adopted NCQA guidelines for patient-centered medical home (PCMH) designation for physician practices.<sup>91</sup> As of 2012, four health care practices in Mississippi were recognized by NCQA as a designated PCMHs.<sup>92</sup> In addition, the Medical Mall Services of Mississippi, located in Jackson, was selected by CMS as one of 20 sites nationwide to serve as an ACO Advanced Payment Program pilot site.<sup>93</sup>

The Mississippi Delta region has been the site for several coordinated care delivery model demonstrations, as the region has some of the highest rates of chronic diseases nationwide coupled with low availability of providers. One study outlines how the coordination of primary and preventive care using physicians, nurse practitioners, nurses, and pharmacists teams improved patient care in this challenging environment.<sup>94</sup> Providers collaborated to manage care for MS Delta patients with advanced

*A team-based care approach proven successful in Mississippi has similar aims for the outcomes sought within PCMH and ACO service delivery models.*

diabetes. Long-term study of these patients showed significant improvement in biological markers for disease advancement, which were sustained over time (Figure 18).<sup>95</sup> The team-based care approach, proven successful in Mississippi, has similar aims for the outcomes sought within PCMH and ACO health delivery models.

FIGURE 18. MISSISSIPPI DELTA DIABETES COORDINATION OF CARE STUDY PERFORMANCE RESULTS

CONDITION	PERFORMANCE OF CARE RESULTS FOR MEASURES OF DISEASE CONTROL
Diabetes	Levels of hemoglobin A1c lowered significantly over 5 year period. Eye exams for risk of blindness significantly increased over 1 year period.
Heart Disease	Levels of blood pressure lowered significantly over 1 year period. Levels of fat in the blood lowered significantly over 1 year period.

Source: Low, et al. (2007). *Ethnicity and Disease*, Vol. 17: S2-55-59.

## *Performance Measurement*

Spurred by the startling realization of the need for electronic health records following Hurricane Katrina in 2005 and supported by federal grants awarded to the state during the hurricane recovery period, Mississippi's Governor established by executive order the Mississippi Health Information Infrastructure Task Force.<sup>96</sup> Grant funding was used to create the Mississippi Coastal Health Information Exchange (MSCHIE) to facilitate the sharing of medical information among coastal health care providers.

The successful development of a health information network in the coastal section of the state laid the foundation for the establishment of the Mississippi Health Information Network (MS-HIN), which was authorized statutorily by the State Legislature in the Mississippi Health Information Network Act of 2010.<sup>97</sup> In addition, another large "Beacon Community" grant to Delta Health Alliance in 2010 provided for the establishment of a health information sharing in the Mississippi Delta, which would later be integrated into the statewide information network.<sup>98</sup>

The MS-HIN provides the interface necessary for health care providers to share medical information, but individual practices and facilities must invest in the software, hardware, and training needed to implement electronic health records (EHRs) that contain the information to be shared. The information necessary to appropriately manage patient care and measure performance outcomes will then be more readily available.<sup>99</sup>

*MS-HIN provides the interface to share medical information, but organizations must invest in EHR software, hardware, and training to implement.*

Mississippi Division of Medicaid (2012) is participating in the federal program that provides incentive payments to health care providers participating in Medicaid for adopting EHRs. The Medicaid EHR Incentive Program implements the incentive payments to eligible Medicaid providers who adopt, implement, or upgrade to a certified EHR system.<sup>100</sup>

Information and Quality Healthcare (IQH), a Mississippi non-profit organization coordinating projects to improve care among Medicare beneficiaries, is working with physician offices to assist with documenting the care provided to patients within EHR systems. IQH also directs the Health for Populations and Communities Initiative in partnership with the Mississippi State Department of Health, Mississippi Health Information Management Association, and the Mississippi State Medical Association.<sup>101</sup>

Major aims for the Health for Populations and Communities Initiative include the following:<sup>102</sup>

- Improve EHR documentation and data collection
- Use EHRs to support care management and report quality measures
- Develop learning and action networks to provide EHR support through the following pathways:
  - webinars and teleconferences

- tools and ideas shared by peers
  - workshops with local and national experts
  - information on developing Patient-centered medical homes (PCMHs)
  - news on innovation grants and incentive programs concerning information technology
  - opportunity for input in the Local Area Network (LAN)
- Invite primary care clinics to partner with HIT Regional Extension Centers to participate in initiatives to use EHRs offered by learning and action networks

In addition, IQH is implementing the Care Transitions program with established funding from CMS. Care Transitions focuses on hospitals, nursing homes, home health agencies, and hospices to help each avoid preventable hospital readmissions and improve the quality of patient care. The Care Transitions initiative uses data on the factors contributing to avoidable hospital readmissions from

*Medicare financial penalties provide an incentive to improve health system performance.*

hospital billing claims data to improve performance.<sup>104</sup> The main short-term goal for the Care Transitions program is a downward trend in hospital readmissions, and the ultimate goal is a 20 percent reduction in avoidable hospital readmissions over three years. Medicare financial penalties based on avoidable repeat hospital admissions provide incentive to improve performance. Care Transitions also aims to improve communication among providers. To date, communication and collaboration changed from little or none among participants to increases in the sharing of health care improvement strategies.<sup>103</sup>

Mississippi Hospital Association (MHA), a membership organization for hospitals, is involved in hospital performance measurement improvement initiatives. MHA initiatives include collaboration with the Health Research & Educational Trust (HRET), a national partnership with the American Hospital Association (AHA) and through HRET with the national Hospital Engagement Network (HEN), part of the CMS Partnership for Patients, designed to advance the goals of better health, better care, and lower cost through performance measurement. The HEN initiative aims to lower preventable hospital readmission rates by 20 percent within three years by monitoring performance of nine target clinical conditions.<sup>104</sup>

MHA also partners with the Mississippi State Department of Health (MSDH) and IQH to enhance a health-care related disease surveillance program housed within the Centers for Disease Control and Prevention (CDC).<sup>105</sup> The goal of this project is to improve data available for planning disease management and health care performance improvement.<sup>106</sup>

## Policy Considerations

Mississippi is changing the delivery of health care, in part due to external changes in health care finance and delivery. More work in the state is necessary to improve health care outcomes and health system performance. To continue to enhance the performance of Mississippi's health care system, comprehensive strategies designed to shift the focus of care towards prevention and primary care must continue and be coordinated to improve health outcomes.

Based on available evidence, health organizations, including the National Association of State Health Policy, an organization with years of experience working with state governments to develop health care systems, support the following coordinated actions for strengthening the performance of Mississippi's health care system:<sup>107</sup>

- Increase providers trained in primary and preventive care to enable better disease management options of health conditions
- Alter payment systems to provide incentives for improved outcomes rather than provision of higher volume and intensity of services
- Encourage expansion of patient care coordination and multi-disciplinary services to manage diseases through initiatives including patient-centered medical home and accountable care organization models
- Incorporate health professionals in service delivery planning and payment system changes
- Accelerate adoption of electronic health records to improve health care coordination and monitor performance improvement
- Periodically review additional data needs and enhance data systems to support performance improvement measurement
- Enhance current performance measurement evidence development by participating in reporting on core health quality measures to Medicare

## Summary

Changes are occurring nationally in Medicare and other health care payment organizations. Mississippi providers must continue to adapt to new rules and structures. This dynamic environment provides an opportunity for Mississippi's providers, payers, and educators to ensure changes work in concert to shift Mississippi's health care system toward prevention and primary care rather than continuing to emphasize managing the consequences of delayed care.

Upon examination of the data on national health care system performance measures, Mississippi ranks below many other states. Further examination of Mississippi data shows Mississippi's health care system is heavily weighted toward higher cost, later stage, acute care. Utilization of preventive and primary care is low and use of acute care for complications of chronic illnesses and other preventable conditions is high. When combined with a greater prevalence of disease, the current health system creates a burden on state resources, not just in terms of the cost of care, but also in regard to excess disability. Research shows addressing and improving the quality of care patients receive can reduce the burden and severity of disease complications that lead to expensive and permanent life-altering health outcomes such as leg amputations and blindness.

Many states are targeting improvements to their health care systems through provider workforce development, health services payment reform, changes in health care delivery, and enhancing collection of information to measure performance. Several organizations in Mississippi are working to address health care performance issues as well. Comprehensive health system improvements are unlikely to occur in Mississippi without further coordinated efforts to enhance access to preventive and primary care as well as payment reforms to alter financial incentives. An examination of actions taken elsewhere reveals strategies to enact a few comprehensive, interrelated policies to address provider workforce development, payment reform, data collection, and performance measurement to improve health system performance and health outcomes.



## References

1. Institute of Medicine. (2001). Crossing the quality chasm: a new health system for the 21st century. Washington, DC: The National Academies Press, 2000.
2. Agency for Healthcare Research & Quality. (2003). National Healthcare Quality Report 2003.
3. Agency for Healthcare Research & Quality. (2012). State Snapshots: Mississippi 2011.
4. Commonwealth Fund. (2009). State scorecard on health care system performance, 2009.
5. Ibid.
6. Schoenbaum, S.C., Schoen, C., Nicholson, J.L., & Cantor, J.C. (2011). Mortality amenable to health care in the United States: The roles of demographics and health systems performance. *Journal of Public Health Policy*, Vol. 32(4): 407-429.
7. Agency for Healthcare Research & Quality. (2003). National Healthcare Quality Report 2003.
8. Jencks, S.F., Williams, M.V., & Coleman, E.A. (2009). Rehospitalizations among patients in the Medicare fee-for-services program. *New England Journal of Medicine*, Vol. 360(14): 1418-1428.
9. Dartmouth Atlas of Health Care. (2011). Retrieved on February 12, 2012 at <http://www.americashealthrankings.org/MS/prevhosp/2011>.
10. Ibid.
11. Li, Y., Burrows, N.R., Gregg, E.W., Albright, A., & Geiss, L.S. (2012). Declining Rates of Hospitalization for Nontraumatic Lower-Extremity Amputation in the Diabetic Population Aged 40 Years or Older: U.S., 1988–2008. *Diabetes Care*, Vol. 35(2): 273-277.
12. Kralewski, J.E., Dowd, B.E., & Xu, Y.W. (2012). Medical groups can reduce costs by investing in improved quality of care for patients with diabetes. *Health Affairs*, Vol. 31(8): 1830-1835.
13. Agency for Healthcare Research & Quality. (2007). Guide to PQIs: Hospital Admission for Ambulatory Care Sensitive Conditions.
14. Goodman, D. Brownlee, S. Chang, C.H., & Fisher, E. (2010). Methods for the Dartmouth Atlas of Health Care Report: Regional and racial variation in primary care and the quality of care among Medicare beneficiaries. Dartmouth Atlas of Health Care Working Group.
15. Dartmouth Atlas of Health Care. (2011). Retrieved on February 12, 2012 at <http://www.americashealthrankings.org/MS/prevhosp/2011>.
16. Davies, S.M., Geppert, J., McClellan, M., McDonald, K.M., Ramaro, P.S., & Shojania, K.G. (2001). Refinement of the HCUP Quality Indicators. Technical Review Number 4 (Prepared by UCSF-Stanford Evidence-based Practice Center under Contract No. 290-97-0013). Publication No. 01-0035. Rockville, MD: Agency for Healthcare Research and Quality.
17. National Quality Measures Clearinghouse. (2010). Prevention Quality Indicators, September 2010. Agency for Healthcare Research & Quality.
18. Mississippi State Department of Health. (2010). Vital Statistics Mississippi, 2010.
19. Centers for Disease Control & Prevention. (2012). Heart disease conditions.
20. Agency for Healthcare Research & Quality. (2012). National Healthcare Quality Report 2011.
21. Centers for Disease Control & Prevention. (2012). Awareness and treatment of uncontrolled hypertension among adults—United States, 2003-2010. *Vital Signs*.
22. National Quality Measures Clearinghouse. (2010). Prevention Quality Indicators, September 2010. Agency for Healthcare Research & Quality.
23. Centers for Disease Control & Prevention. (2012). Awareness and treatment of uncontrolled hypertension among adults—United States, 2003-2010. *Vital Signs*.
24. National Quality Measures Clearinghouse. (2010). Prevention Quality Indicators, September 2010. Agency for Healthcare Research & Quality.
25. Roger, V.L., Go, A.S., Llyod-Jones, P.M., Adams, R.J., Berry, J.D., et al. (2010). Heart disease and stroke statistics-2011 update. *Circulation*, Vol.(123): e18-e209.
26. Centers for Disease Control & Prevention. (2009). Diabetes public health resource-diabetes interactive atlases.
27. Mississippi State Department of Health. (2010). Behavioral risk factor surveillance system report, 2010.
28. National Institutes of Health. (2011). National Diabetes Information Clearinghouse.
29. Ahern, M.M. & Hendryx, M. (2007). Avoidable hospitalizations for diabetes: comorbidity risks. *Disease Management*, Vol. 10(6): 347-355.
30. Centers for Disease Control & Prevention. (2011). National diabetes fact sheet, 2011.
31. Ibid.
32. National Quality Measures Clearinghouse. (2010). Prevention Quality Indicators, September 2010. Agency for Healthcare Research & Quality.
33. Centers for Disease Control & Prevention. (2010). Chronic obstructive pulmonary disease. U.S., 1999-2006.
34. National Quality Measures Clearinghouse. (2010). Prevention Quality Indicators, September 2010. Agency for Healthcare Research & Quality.
35. Center for Disease Control & Prevention. (2010). Lifetime asthma prevalence in adults. Behavioral Risk Factor Surveillance System.
36. National Heart, Lung, & Blood Institute. (2012). What is asthma?
37. Lieu, T.A., Quesenberry, C.P., Capra, A.M., Sorel, M.E., Martin, K.E., & Mendoza, G.R. (1997). Outpatient management practices associated with reduced risk of pediatric asthma hospitalization and emergency department visits. *Pediatrics*, Vol. 100(3):334-41.
38. Gottlieb, D.J., Beiser A.S., & O'Conner, G.T. (1995). Poverty, race, and medication use are correlates of asthma hospitalizations rates, a small area analysis in Boston. *Chest*, Vol. 108(1): 28-35.
39. Lieu, T.A., Quesenberry, C.P., Capra, A.M., Sorel, M.E., Martin, K.E., & Mendoza, G.R. (1997). Outpatient management practices associated with reduced risk of pediatric asthma hospitalization and emergency department visits. *Pediatrics*, Vol. 100(3):334-41.
40. Centers for Disease Control and Prevention. (2012). What causes COPD?
41. National Heart, Lung, & Blood Institute. (2012). What is COPD?
42. Ibid.
43. Jadwiga, A., Wedzicha, M.D., Gavin, C., & Donaldson, C. (2003). Exacerbations of Chronic Obstructive Pulmonary Disease. *Respiratory Care*, Vol. 48(12): 1204-1215.
44. National Quality Measures Clearinghouse. (2010). Prevention Quality Indicators, September 2010. Agency for Healthcare Research & Quality.
45. Ibid.
46. Kaiser Family Foundation. (2010). State Health Facts, percent of adults aged 65 and over who have had a pneumonia vaccine.
47. Agency for Healthcare Research & Quality. (2006). PQI Composite Measure Workgroup Final Report.
48. Agency for Healthcare Research & Quality. (2009). National Health Care Quality Report 2009. Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2000-2006.
49. Institute of Medicine. (2012). Living Well With Chronic Illness, A Call for Public Health Action, January 2012.
50. Hibbard, J.H., Greene, J., Sofaer, S., Firminger, K., & Hirsh, J. (2012). An experiment shows that a well-designed report on costs and quality can help consumers choose high-value health care. *Health Affairs*, Vol. 31(3):560-568.
51. Carman, K.L., Maurer, M., Yegian, J.M., Dardess, P., McGee, J., Evers, M., & Marlo, K.O. (2010). Evidence that consumers are skeptical about evidence-based health care. *Health Affairs*, Vol.29(7): 1400-1406.
52. Raugh, S.S., Wadsworth, E.B., Weeks, W.B., & Weinstein, J.N. (2011). The Savings Illusion-Why Clinical Quality Improvement Fails to Deliver Bottom-Line Results. *The New England Journal of Medicine*. December Perspectives: e48: 1-3.
53. Council of State Governments Eastern Region. (2010). Value over volume: Quality-based health care purchasing for state policymakers.
54. Baicker, K. & Chandra, A.(2004). Medicare spending, the physician workforce, & beneficiaries' quality of care. *Health Affairs*, w4-184-w4-197.
- 55-59. Ibid.
60. Chen, M.A., Hollenberg, J.P., Michelen, W., Peterson, J.C., & Casalino, L.P. (2011). Patient care outside of office visits: A primary care physician time study. *Journal of General Internal Medicine*, Vol. 26(1): 58-63.
61. National Center for Health Workforce Analysis. (2003). Area Resource File, United States Department of Health and Human Services.
62. Cossman R. E., Mason, P., Rosenberg, N., Bennett, A., Krey, A., Stubbs, M., & Turgeon, B. (2012). Health professional shortage areas defined and summarized. Social Sciences Research Center, Mississippi State University.
63. Kaiser Family Foundation. (2012). State Health Facts, Health Spending by Service by State of Provider, in Millions, 2009.
64. Davies, S.M., McDonald, K.M., Schmidt, E., Schultz, E., Geppert, J., & Ramaro, P.S. (2011). Expanding the uses of AHRQ's Prevention Quality Indicators: Validation from the clinician perspective. *Medical Care*, Vol. 49(8): 679-685.
65. Lieu, T.A., Quesenberry, C.P., Capra, A.M., Sorel, M.E., Martin, K.E., & Mendoza, G.R. (1997). Outpatient management practices associated with reduced risk of pediatric asthma hospitalization and emergency department visits. *Pediatrics*, Vol. 100(3):334-41.
66. Rosenthal, J. Gauthier, A. & Arons, A. (2010). State strategies to improve quality and efficiency: making the most of opportunities in national health reform. National Academy for State Health Policy.
67. Andrews, E. (2010). Value over volume: Quality-based health care purchasing for state policymakers. Council of State Governments Eastern Region.
68. Anderson, G. (2010). Chronic care: making the case for ongoing care. Princeton, NJ: Robert Wood Johnson Foundation.
69. Rittenhouse, D.R., Stephen, S.M., & Fisher, E.S. (2009). Primary care and accountable care—two essential elements of delivery-system reform. *New England Journal of Medicine*, 361(24): 2301-2303.
70. Takach, M. (2012). About half of the states are implementing patient-centered medical homes for their Medicaid populations. *Health Affairs*, Vol. 31(11): 2432-2440.

71. Meyers, D., Quinn, M., & Clancy, C.M. (2011). Health information technology: turning the patient centered medical home from concept to reality. Agency for Healthcare Research and Quality Commentary.
72. National Conference of State Legislatures. (2010). Health cost containment and efficiencies-Accountable Care Organizations. NCSL Briefs for State Legislators, No. 5.
73. Rosenthal, J. Gauthier, A. & Arons, A. (2010). State strategies to improve quality and efficiency: making the most of opportunities in national health reform. National Academy for State Health Policy.
74. Comlossy, M. (2012). The medical home model of care: reducing costs and improving quality. National Conference of State Legislators. Vol. 20 (33).
75. Meyer, H. (2012). Many accountable care organizations are now up and running, if not off to the races. Health Affairs: Vol.31(11): 2363-2367.
76. National Conference of State Legislatures. (2010). Health cost containment and efficiencies-Accountable Care Organizations. NCSL Briefs for State Legislators, No. 5.
77. Federal Register. (2011). Medicare Program; Medicare Shared Savings Program: Accountable Care Organizations. Health and Human Services, Centers for Medicare and Medicaid Services. Final Rule, Wednesday, November 2, 2011, Vol. 76(212).
78. Health & Human Services. (2011). National Strategy for Quality Improvement in Healthcare. Report to Congress, March 2011.
79. Federal Register. (2012). Medicaid program: initial core set of health care quality measures for Medicaid-eligible adults. Health and Human Services Office of the Secretary. Final Notice, Wednesday, January 2, 2012, Vol. 77(2).
- 80-81. Ibid.
82. Love, D., Custer, W., & Miller, P. (2010). All-payer claims databases: state initiatives to improve health care transparency. New York (NY): Commonwealth Fund; 2010. Issue Brief 1439.
83. National Academy for State Health Policy. (2009). State Partnerships to improve quality models and practices from leading states.
84. Mississippi Code of 1972, House Bill 317: Office of Mississippi Physician Workforce, 2012.
85. Beebe, D.K. (2012). Personal communication with the Interim Director of the Office of Mississippi Physician Workforce, University of Mississippi Medical Center, October 2012.
86. Ibid.
87. Mississippi Office of Nursing Workforce. (2013). Annual nursing workforce needs survey.
88. Fenter, T. (2012). Personal communication with Blue Cross & Blue Shield of Mississippi, June 2012.
90. Mississippi Division of Medicaid. (2012). Mississippi Medicaid Provider Bulletin, Vol. 18(2): 2-1-20.
91. National Committee for Quality Assurance. (2012). Patient-centered medical home.
92. Centers for Medicare and Medicaid Services. (2012). Accountable Care Organizations Program Analysis. Prepared by RTI International, December 2012).
93. Low, A. K., Grothe, K.B., Wofford, T.S., Bouldin, M.J. (2007). Addressing disparities in cardiovascular risk through community-based interventions. Ethnicity and Disease, Vol. 17: S2-55-S2-59.
94. Ibid.
95. Mississippi Governor. Executive Order No. 979
96. Mississippi Code of 1972, Annotated, §41-63-4.
97. Delta Health Alliance. (2010). Beacon cooperative community agreement program.
98. MS-HIN. (2013). Mississippi Health Information Network.
99. Mississippi Division of Medicaid. (2012). Mississippi Medicaid Provider Bulletin, Vol. 18(2): 2-1-20.
100. Information and Quality Healthcare. (2012). Personal communication with staff, September 2012).
- 101-103. Ibid.
104. McKay, M. (2012). Personal communication with the Mississippi Hospital Association, May 2012.
105. Ibid.
106. Cyndy Allard. (2013). Personal communication with the Mississippi State Department of Health Program Lead, February, 2013).
107. National Academy for State Health Policy. (2009). State partnerships to improve quality models and practices from leading states.

## Glossary of Terms

**Accountable Care Organization:** a group of health care providers that enter into a formal arrangement to assume collective responsibility for cost and quality of care of a specific group of patients and receive financial incentives to improve quality and efficiency of health care

**All Payer Claims Data:** databases that include data derived from medical claims from private, public, and non-insured payers

**Ambulatory Care Sensitive Conditions:** medical conditions that should not advance to the point of requiring hospitalization when treated through timely primary and preventive outpatient care

**Amendable Mortality:** the measurement of the causes of death before age 75 which can be prevented with timely and effective health care

**Electronic Health Records:** an official health record for an individual that is shared among multiple facilities and agencies electronically

**Health Care Quality:** the extent to which health services provided to individuals and patient populations improve desired health outcomes based on the strongest clinical evidence and provided in a technically and culturally competent manner

**Hospital Discharge:** process of patient release from a hospital by health professionals

**Hospital Readmission:** a patient released from the hospital that returns within a short period of time to receive additional care for the same or a closely related health condition

**Hospital Referral Region:** health care markets where patients (which can cross state lines) are most often referred to for hospital care and contains at least one hospital that performs major cardiovascular procedures and neurosurgery

**Models of Care Delivery:** a conceptual outline of how to plan current and future facility clinical services and guide to direct a patient's experience within a health care system

**Patient-Centered Medical Home:** a team-based health care delivery model led by a health care professional that provides comprehensive and continuous medical care to patients with the goal of obtaining maximized health outcomes

**Preventable Hospital Admissions Rate:** the number of cases of hospitalization for medical conditions that could be avoided through timely primary and preventive outpatient care which indicate where improvements in the health care delivery system could be made to improve health and decrease cost

**Preventable Readmission Rate:** the number of cases of repeat hospitalization within a defined time period for medical conditions clinically related to a prior hospital stay which indicate problems with the quality of hospital care or the transition between inpatient and outpatient phases of treatment

**Prevention Quality Indicator Rate Difference:** the percent difference calculated between the state rate and the national rate for preventable hospital conditions

**Statistical Significance:** indicates differences are likely not due to chance alone

### *Rationale for Use of Hospital Billing Data to Indicate Quality*

Increasingly, states and health care systems use hospital data generated for billing reasons to indicate care quality. Use of hospital billing data for indicating quality of health care has advantages that explain wide-spread use for such purposes. Hospital billing data are readily available and routinely collected, as health care organizations and providers of health care must be compensated for services delivered. As a result of this availability, use of billing data is a low-cost way to assess quality without adding layers of cost and complication to patient care systems. Increasingly, states and health care systems use hospital data generated for billing to indicate care quality.<sup>1</sup>

Understanding hospital billing data as an indicator and not a direct measure of care quality is key. Observing increasing rates for certain quality measures may not necessarily be the direct result of lower quality care. Better reporting as hospitals create awareness and implement programs can result in higher rates of reported events. Hospitals performing a number of procedures related to a particular quality of care measure such as certain types of surgery may also report more events than a hospital where very few of these same procedures are performed. Accounting for and awareness of such factors is necessary to improve interpretation of the indicators for quality care using hospital billing data.<sup>2</sup>

To better target management of conditions on an outpatient and primary prevention basis and improve quality of care, the following suggestions are indicated by the Agency for Healthcare Research and Quality for hospital billing data collections enhancements including:<sup>3</sup>

- hospital outpatient, emergency room, and ambulatory surgery data review
- links to death records to track post-hospitalization deaths
- links to birth records for better maternal care risk adjustments
- links to additional clinical data to improve risk adjustments
- medical record reviews on avoidable repeat hospital admissions evidence

---

1. Agency for Healthcare Research & Quality. (2010). National Healthcare Quality Report, 2010.

2. Spencer, A., Sward, D., & Ward, J. (2010). Lessons from the pioneers reporting health-care associated infections. National Conference of State Legislatures.

3. Davies, S.M., McDonald, K.M., Schmidt, E., Schultz, E., Geppert, J., & Ramaro, P.S. (2011). Expanding the uses of AHRQ's prevention quality indicators: validation from the clinician perspective. *Medical Care*, Vol. 49(8): 679-685.

### ***AHRQ Chronic Condition Prevention Quality Indicators***

Chronic health condition hospitalizations that may be avoided include the following:

- ***Heart Conditions***
  - congestive heart failure hospital admission rate
  - hypertension hospital admission rate
- ***Diabetes Conditions***
  - short-term complications hospital admission rate
  - long-term complications hospital admission rate
  - uncontrolled diabetes hospital admission rate
  - lower-extremity amputation hospital admission rates in patients with diabetes
- ***Lung Conditions***
  - chronic obstructive pulmonary disease hospital admission rate
  - asthma hospital admission rate

### ***AHRQ Acute Condition Prevention Quality Indicators***

Acute health condition hospitalizations that may be avoided include the following:

- ***Infectious Conditions***
  - bacterial pneumonia hospital admission rate
  - urinary tract infection hospital admission rate<sup>1</sup>

---

1. Agency for Healthcare Research & Quality. (2010). National Healthcare Quality Report, 2010.

## State Level Performance Improvement Initiatives<sup>1</sup>

State Partnership	Description	Origin	Governance
Colorado: The Center for Improving Value in Health Care (CIVHC)	The Colorado Center for Improving Value in Health Care (CIVHC) is an interdisciplinary entity that aims to bring consumers, businesses, health care providers, insurance companies, and state agencies together to develop long-term strategies for ensuring better value for the money spent on health care in Colorado each year and to improve the service delivery system to improve quality and drive down costs.	Executive order (2008)	Board
The Kansas Health Policy Authority (KHPA)	The Kansas Health Policy Authority (KHPA) is a state agency that works to develop and maintain a coordinated health policy agenda that combines the effective purchasing and administration of health care with promotion-oriented public health strategies.	Executive order and legislation (2005)	Board
Maine QI Partnership	Maine's partnership of the Maine Quality Forum (MQF), Quality Counts (QC), and Maine Health Management Coalition (MHMC) is a partnership of three equal parties (a "three-legged stool") that supports a range of quality initiatives in the state. The partnership does not have its own mission, though the three organizations have complementary missions each related to improving health care quality and/or value in the state.	First formal partnering for Aligning Forces for Quality grant (2006)	No separate governance structure
Massachusetts Health Care Quality and Cost Council (HCQCC)	The Massachusetts Health Care Quality & Cost Council (HCQCC) is a broad umbrella organization whose mission is to develop and coordinate the implementation of health care quality improvement goals that are intended to lower or contain the growth in health care costs, while improving the quality of care, including reductions in racial and ethnic health disparities.	Legislation (2006)	Council Members and Advisory Committee

1. National Academy for State Health Policy. (2009). State partnerships to improve quality models and practices from leading states.

## State Level Performance Improvement Initiatives (cont.)<sup>1</sup>

State Partnership	Description	Origin	Governance
The Minnesota Health Care Value Exchange (HCVE)	The Minnesota Health Care Value Exchange (HCVE) is a partnership of five organizations: Buyers Health Care Action Group, Institute for Clinical Systems Improvement, Minnesota Community Measurement, Smart Buy Alliance, and Stratis Health. Its purpose is to support HIT standards, quality standards, price standards, and incentives to promote high-quality, efficient care.	Accord (2008)	Board
Oregon QI Partnership	Oregon's informal public-private partnership coordinates, communicates, and implements a range of quality initiatives in the state. Partners include the Oregon Health Care Quality Corporation, the Oregon Patient Safety Commission, the Oregon Health Policy Commission, and the Oregon Health Fund Board (OHFB). The partnership has no formal name, but the OHFB has recommended that state health reform legislation formalize the partnership as the "Oregon Quality Care Institute."	N/A	N/A
The Pennsylvania Governor's Office of Health Care Reform (GOHCR)	The Pennsylvania Governor's Office of Health Care Reform (GOHCR) administers the Prescription for Pennsylvania (Rx for PA), the governor's health care reform initiative. It is a set of integrated strategies to eliminate system inefficiencies, better manage chronic conditions, eliminate hospital-acquired infections, enact insurance reforms, offer access to affordable insurance for the uninsured, and ensure that everyone has access to quality health care.	Executive order (2003)	No formal structure

1. National Academy for State Health Policy. (2009). State partnerships to improve quality models and practices from leading states.



### *State Level Performance Improvement Initiatives (cont.)<sup>1</sup>*

State Partnership	Description	Origin	Governance
The Rhode Island Quality Institute (RIQI)	The Rhode Island Quality Institute (RIQI) is an independent 501(c)3 organization that brings together CEO-level leaders from health systems, health insurers, physicians, state employers, consumer advocates, the state's QIO (Quality Partners of Rhode Island), and academia. RIQI's mission is to dramatically improve the quality, safety, and value of health care in Rhode Island.	Informal conversations (2002)	Board
The Vermont Blueprint for Health (Blueprint)	The Vermont Blueprint guides a comprehensive and statewide process of transformation designed to improve health maintenance for a general population, as well as health care and prevention for the most prevalent chronic conditions, thereby reducing the negative health and economic impact of poorly controlled disease.	Legislation (2003)	Advisory group
Washington State QI Partnership	The Washington Quality Forum was created within the Washington State Health Care Authority (HCA) to help spread the regional multi-stakeholder Puget Sound Health Alliance (Alliance)'s activities statewide. A hiring freeze and budget shortfall led to the Forum's termination. The HCA and the Alliance continue to partner on health reform initiatives.	Legislation (2007)	N/A

1. National Academy for State Health Policy. (2009). State partnerships to improve quality models and practices from leading states.



### *Examples of State Level Patient Centered Medical Homes*

**Patient Care Networks of Alabama:** Alabama Medicaid introduced a pilot program in August 2011 to enhance the state's case management through community networks that help primary care providers become medical homes. The program is underway in three "Patient Care Network" areas serving 80,000 recipients. Early results appear promising. After only six months, total per-member, per-month costs for recipients in network areas decreased by almost 8 percent, while those in the rest of the state decreased by less than 1 percent. The network areas also saw a 15 percent reduction in emergency room use, while non-network locations experienced a 2 percent increase during the same time period.

**Community Care of North Carolina:** Built on earlier medical home initiatives, the program expanded medical home coverage statewide in 2001 as a major initiative to manage Medicaid costs and quality of care. Currently, 14 regional networks of providers work with local health departments and social service agencies to provide health care services to more than 1 million Medicaid recipients. A 2011 analysis by Milliman Inc. found that, between 2007 and 2010, CCNC resulted in nearly \$1 billion in Medicaid cost savings. The report, which was required by the General Assembly, indicated that Medicaid recipients in the medical home system received better care and used fewer resources than those who did not use a medical home.

**Vermont Blueprint for Health:** Created by a 2006 law, this state-led initiative is improving health results and controlling costs by transforming how health care is delivered. Advanced primary care practices serve as medical homes and receive comprehensive support from community health teams and integrated health information technology. The program, which recently expanded statewide, includes commercial insurers and about 27 percent of Medicaid beneficiaries, serving more than 350,000 patients—about half the state's population. Data show promising trends. Better communication and coordination among providers is resulting in lower costs because patients are accessing appropriate services earlier compared to those who might use an emergency room or delay care until complications arise.<sup>1</sup>

---

1. National Conference of State Legislatures. (2012). The medical home model of care: reducing costs and improving quality, Vol. 20(33).

### *Examples of State Level Accountable Care Organizations (ACOs)*

**Massachusetts** legislature passed a law in 2008 that required creation of a Special Commission on the Health Care Payment System. A commission report released in 2009 recommended that the state make the transition from the current fee-for-service payment system to global payments over a period of five years. It also recommended creating an entity to guide implementation of the new payment system. Among other things, the entity would be responsible for defining and establishing risk parameters for ACOs, which will receive and distribute global payments. ACOs will assume risk for clinical and cost performance.

**Oregon** legislature passed the Healthy Oregon Act in 2007, which established the Oregon Health Fund Program and directed it to develop a comprehensive health reform plan. The law also established a set of committees to develop recommendations on specific aspects of the plan. The Delivery Systems Committee has developed recommendations concerning accountable care districts. Recommendations call for the state to define accountable care districts “that will allow for meaningful comparisons of quality, utilization and costs between districts” and test new payment models in the accountable districts.

**Vermont** legislature enacted law in 2009 that included ACO provisions. The state’s Commission on Health Reform is provided the authority to convene a work group to support an application by at least one Vermont provider network to participate in a national ACO state learning collaborative. The intent is to implement at least one ACO project in Vermont by July 1, 2010. The legislation addresses possible federal anti-trust issues that may arise when providers join to deal with cost and shared savings issues. The law states the General Assembly’s intent to ensure sufficient state involvement in design and implementation of ACOs to comply with federal anti-trust provisions “by replacing competition between payers and others with state regulation and supervision.” The law envisions that the state’s Medicaid program, Children’s Health Insurance Program (CHIP) and Health Access Program could contract with the ACO and recapture a portion of anticipated savings from the state participation.<sup>1</sup>

---

1. National Conference of State Legislatures. (2010). Health cost containment and efficiencies-accountable care organizations. NCSL Briefs for State Legislators, No. 5.



## HEALTH CARE SYSTEM PERFORMANCE

*What Mississippi Indicators Reveal*

### Center *for* Mississippi Health Policy

Plaza Building, Suite 700  
120 N. Congress Street  
Jackson, MS 39201

Phone 601.709.2133  
Fax 601.709.2134

[www.mshealthpolicy.com](http://www.mshealthpolicy.com)