Benefits of Implementing the Primary Care Patient-Centered Medical Home:

A REVIEW OF COST & QUALITY RESULTS, 2012

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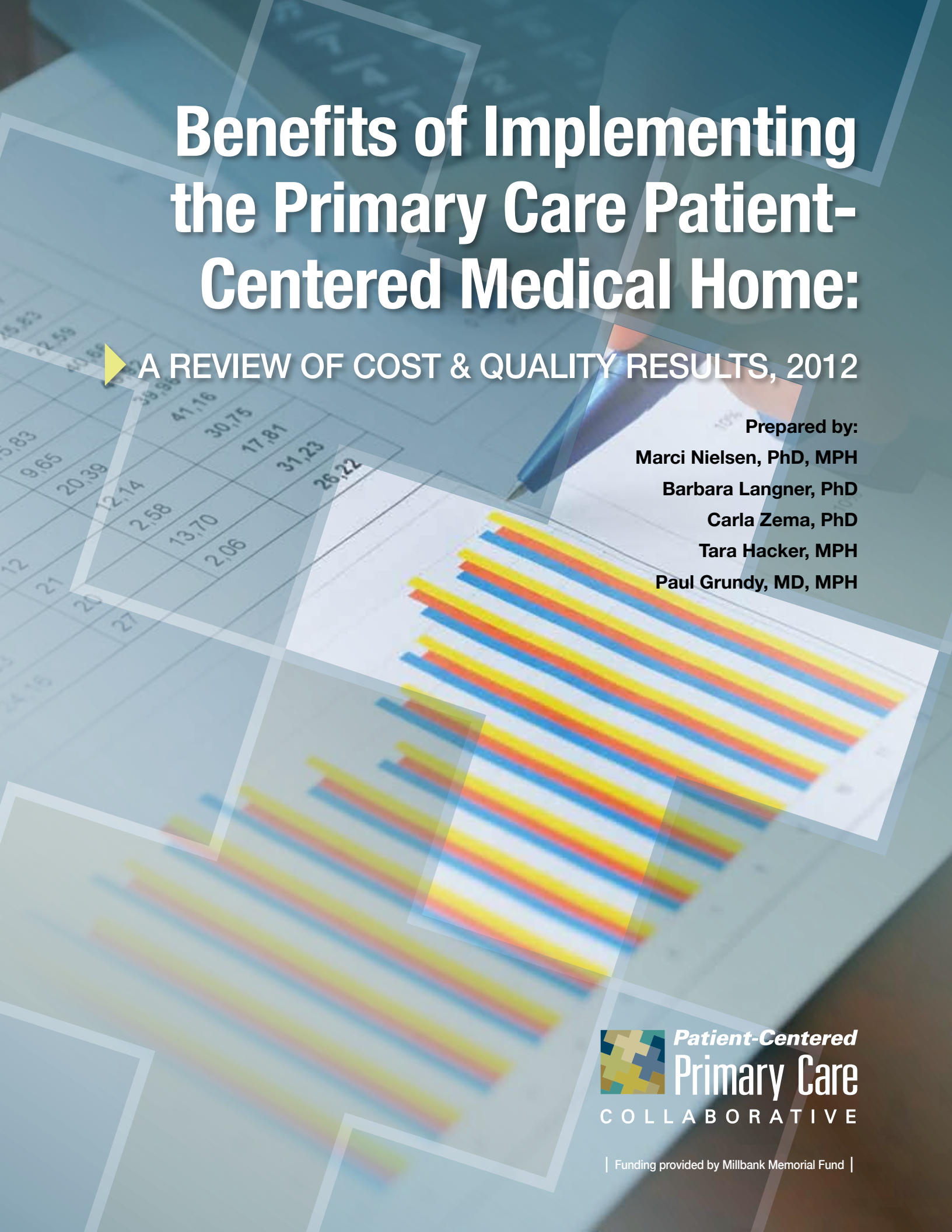

Patient-Centered Primary Care COLLABORATIVE

Funding provided by Millbank Memorial Fund

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Patient-Centered Primary Care COLLABORATIVE

Dear Colleagues,

On June 28, 2012, the United States Supreme Court ruled to uphold the vast majority of the federal health reform law passed in 2010. The Patient-Centered Primary Care Collaborative believes this ruling recognizes a fundamental value about health care delivery: A health care system built upon a strong primary care foundation, supported by the patient-centered medical home (PCMH), is critical to achieving the Institute for Healthcare Improvement's Triple Aim of better health, better care and lower costs.(1)

Efforts to transform primary care at the practice level—as with the PCMH—have gained tremendous momentum and broad support from both the private and public sectors. The number of primary care clinicians who have redesigned their practices has grown, and millions of American families are benefiting through access to better coordinated care, which leads to improved outcomes. More and more practices and health systems are creating partnerships to develop medical homes with the patients and families they serve. Major insurers are driving primary care transformation through payments for patient-centered services nationwide as a means to increase access to care, control costs, improve patient satisfaction and make Americans healthier. A mounting body of evidence demonstrates the patient-centered medical home is an effective means of delivering patient-centered health care to children and adults.

It is becoming increasingly imperative to collect and review relevant data about patients and patient populations in order to continue the transformation that moves the U.S. health care system toward team-based, coordinated and accessible care through the patient-centered medical home.

As this report demonstrates, the public and private sectors have both demonstrated their commitment to advance these team-based, patient-centered transformation efforts. We fully expect the primary care delivery system to embrace full implementation of the medical home. With the historic Supreme Court ruling behind us, it is now full speed ahead—as we seek to continue supporting these efforts.

We would like to extend our thanks to the Milbank Memorial Fund for its generous sponsorship of this report and for Carmen Hooker Odom and Mark Benton's thoughtful input and ideas. We also thank the Collaborative's Board of Directors, especially Douglas Henley, MD, FAAP, executive vice president and chief executive officer, American Academy of Family Physicians, and Beverley H. Johnson, president and CEO, Institute for Patient- and Family-Centered Care, who offered helpful insights and input. Additional comments and improvements were provided by the PCPCC's Executive Committee; Tracey Moorhead and Jeanette May of the Care Continuum Alliance; Melinda Abrams of The Commonwealth Fund and Katherine H. Capps of Health2 Resources. Their assistance helped make this report possible and any omissions or errors are ours alone. Every member of the Collaborative staff assisted in the development of this report and we appreciate their enthusiasm and commitment to all that they bring to the PCPCC.

Sincerely,

Marci Nielsen, PhD, MPH
PCPCC Executive Director

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Global Director of IBM Healthcare Transformation
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Executive Summary

Founded in 2006, the Patient-Centered Primary Care Collaborative (PCPCC or Collaborative) is a large coalition of more than 1,000 organizations and individuals—comprised of employers, physicians and other health professionals, consumer and patient/family advocacy groups, patient quality organizations, health plans, hospitals and unions—who have joined together to advance an effective and efficient health system built on a strong foundation of primary care and the patient-centered medical home (PCMH). The Collaborative serves as a broad-based national advocacy organization for the primary care patient-centered medical home, providing timely information and networking opportunities to support transformation of the U.S. health system.

This report updates our earlier reviews of the cost and quality data from 2009 and 2010, and the findings are clear, consistent, and compelling: Data demonstrates that the PCMH improves health outcomes, enhances the patient and provider experience of care, and reduces expensive, unnecessary hospital and emergency department utilization. The results meet the goals of the Institute for Healthcare Improvement's Triple Aim for better health outcomes, better care, and lower costs.[2] The momentum for transforming the U.S. health system is reaching the tipping point, and the PCMH and primary care are central to this goal. The current fragmented health system that pays for volume over value is riddled with inefficiencies, has highly variable health outcomes, is not financially sustainable, and is no longer acceptable.

This paper, in reviewing data from PCMH initiatives nationwide, has a two-fold goal. First, it provides a summary of new and updated results from PCMH initiatives from the past two years, including cost and quality outcomes data. The results provide substantial empirical support for the PCMH and the health care professionals, health plans, employers and policymakers who are adopting it, as well as the patients and their families receiving this care. Second, it defines the features of a PCMH and provides data to demonstrate how each feature of a PCMH contributes to lower costs, improved care and better health outcomes.

Introduction. The patient-centered medical home is not limited to a single place or location: It is best described as a model of primary care that is patient-centered, comprehensive, team-based, coordinated, accessible and focused on quality and safety.[3] It is supported by robust health information technology (health IT), provider payment reform focused on patient outcomes and health system efficiencies, and team-based education and training of the health professions workforce.[4] Growing support for the PCMH has arisen across the vast majority of the U.S.

health care delivery system to include more than 90 commercial insurance plans, multiple employers, 42 state Medicaid programs, numerous federal agencies, the Department of Defense, hundreds of safety net clinics, and thousands of small and large clinical practices nationwide. [5]

Private sector support. Major health plans and industry partners are embracing the PCMH model with enthusiasm by creating insurance plans and developing tools and resources contributing to the implementation of medical homes.

- WellPoint, a private health insurer covering 34 million Americans with a network of 100,000 primary care doctors, publicly announced in January 2012 its decision to invest in the medical home across its entire network.[6]

- Aetna, another large private health plan insuring more than 18 million Americans with a network of 55,000 primary care doctors, also recently announced a PCMH rollout in Connecticut and New Jersey, with expectations to begin expanding the program nationally in 2012.[7]

- Humana, serving 11.8 million medical members and 2.2 million Medicare Advantage beneficiaries, now offers medical home services in ten states providing enhanced care for more than 70,000 Medicare Advantage and more than 35,000 commercial health insurance members.[8]

- UnitedHealthcare, insuring 34 million Americans, announced in February 2012 an expansion of its value-based payment model, which supports PCMH, and is estimated to impact between 50 to 70 percent of their customers.[9]

- Numerous Blue Cross Blue Shield plans have demonstrated leadership in driving PCMH efforts in their local communities, to include Blue Cross Blue Shield of Michigan,[10] CareFirst BlueCross BlueShield (Virginia, Maryland and the District of Columbia), [11, 12] Horizon Blue Cross Blue Shield in New Jersey, Blue Cross Blue Shield of North Dakota [13] and many others. More than 4 million Blue Cross Blue Shield members in 39 states are currently participating in some version of a PCMH initiative. [14]

- Integrated health plans, such as Kaiser Permanente which serves more than 8.8 million people, have also long been committed to offering comprehensive primary care services and have embraced the PCMH model of care delivery.

Federal support. Federal health reform has made advancing primary care and the PCMH a top health policy priority. The Affordable Care Act (ACA) builds on the efforts of numerous states, health plans, medical practices, federally qualified health centers and multi-stakeholder initiatives that have spearheaded medical home care delivery. Because the PCMH is foundational to Accountable Care Organizations (ACOs)[15]—with ACOs often described as the "medical neighborhood"—the PCMH is likely to gain even greater prominence as ACOs continue to develop in the marketplace. Delivery system reform and the potential for shared savings available through programs championed by the Center for Medicare & Medicaid Innovation (e.g., the Comprehensive Primary Care initiative, the Advanced Primary Care Practice Demonstration and the Advance Payment ACO Model) hold the promise to further expand access to PCMHs for patients, specifically for elderly, chronically ill and low income populations across the country. The Department of Defense, Department of Veterans Affairs and the federal Office of Personnel Management (OPM) are implementing versions of the PCMH and experiencing impressive results, described in this report. [16]

State and local support. Many of these federal efforts build from PCMH initiatives that began with state and local communities taking the lead. [17]

As of May 2012, the vast majority of states are making efforts to advance the medical home in their Medicaid or Children's Health Insurance

Program (CHIP).[18] This work has been supported by the National Academy for State Health Policy, which has a major initiative focused on supporting state PCMH activity.[19] Recently announced by the Center for Medicare & Medicaid Innovation, the Comprehensive Primary Care initiative (CPC)[20] adds to the PCMH momentum by fostering collaboration between public and private health care payers along with health care consumers in order to strengthen primary care in seven selected marketplaces across the U.S.

International outcomes. Across the globe, research from a recent large study of 11 industrialized countries demonstrates that adults with complex care needs who had a medical home reported better coordinated care, fewer medical errors and test duplication, better relationships with their doctors and greater satisfaction with care.[21] When comparing care delivered in a medical home (to care not delivered in a medical home) within each country surveyed, researchers found a difference of between 18 to 39 percentage points on questions such as whether their doctor spends enough time with them, encourages them to ask questions, explains things clearly and engages patients in managing their chronic conditions.[22]

Broad health care professions support. Key to the PCMH is strong support among primary care physician and other health professional organizations. In February 2007, four primary care physician societies—the American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians and the American Osteopathic Association—developed the Joint Principles [23] for the Patient-Centered Medical Home, which have been highly influential in advancing this model of care delivery. Since that time, 18 more physician membership organizations have endorsed the Joint Principles. Multiple other health professionals have embraced the PCMH with its emphasis on team-based care, including nurse practitioners, physician assistants, psychologists, social workers, nutritionists, pharmacists, physical, occupational, and speech therapists and palliative care providers. Many of these health professional organizations are members of the Patient-Centered Primary Care Collaborative.[24]

Patient and family engagement. Increasingly, PCMH and other health reform initiatives are conveying the expectation for authentic patient and family engagement. This engagement occurs at multiple levels:

- At the clinical encounter—patient and family engagement in direct care, care planning, and decision-making;
- At the practice or organizational level—patient and family engagement in quality improvement and health care redesign;
- At the community level—bringing together community resources with health care organizations, patients, and families; and
- At the policy level—engaging policymakers locally, regionally, and nationally.

Patient and family engagement is an important consideration within the work of the CMS Innovation Center, National Priorities Partnership, and policy organizations such as the Robert Wood Johnson Foundation, the California Healthcare Foundation, Maine Health Access Foundation and the Colorado Health Foundation. These agencies and foundations are supporting the development of meaningful partnerships with patients and families in the redesign of primary care.

Based on the results to date and current market factors that will continue to affect health care delivery, we identify three broad conclusions about PCMH outcomes:

- ***As medical home implementation increases, the Triple Aim outcomes of better health, better care and lower costs are being achieved.*** The number of medical home providers has grown to the tens of

thousands, serving millions of Americans. Momentum for the model is rapidly increasing with public and private sector investment. The concept of the PCMH is evolving to include the medical neighborhood, especially with the growth of ACOs. As the PCMH expands, the need to continue cataloging the outcomes of the PCMH is vital for ongoing engagement from employers, purchasers, policymakers, patients and their families. As the information in this report illustrates, a mounting body of data demonstrates that the PCMH is an effective means of delivering primary care to achieve the Triple Aim outcomes [25] and transform the U.S. health system.

- ***Medical home expansion has reached the tipping point with broad private and public sector support.*** There is far-reaching interest across the health care industry in the PCMH delivery model. Major insurers are driving PCMH efforts nationwide as a means to control costs, improve patient satisfaction and make Americans healthier. Federal health reform has prompted expansion of the PCMH in Medicare, Medicaid and federally qualified health centers, in addition to leveraging innovations from commercial insurers. The Office of Personnel Management, the U.S. military and the Department of Veterans Affairs are all committed to expanding primary care through medical homes. In addition to these federal efforts, ongoing and successful initiatives at the state level continue to expand. The majority of state Medicaid programs are initiating or expanding their PCMH programs.[26] We believe the combined result of these public and private initiatives propels the PCMH to the tipping point for the care delivery system to embrace full implementation of the PCMH. Consequently, more patients than ever will receive care from PCMHs.

- ***Investment in the medical home offers both short- and long-term savings for patients, employers, health plans and policymakers.*** In the current economic environment, controlling the rising cost of health care is paramount. Although implementing the many features of a PCMH takes time, the long-term cost savings of the PCMH are impressive, as demonstrated by mature PCMH initiatives such as the Geisinger Health System.[27] By providing high quality health care to Americans that results in fewer unnecessary emergency room visits and inpatient hospital admissions, as well as better care coordination, this report demonstrates that PCMHs can achieve cost-savings in the short-term as well. Continued focus on health information technology diffusion, primary care payment reform, education and training for a robust primary care workforce, and improving patient experience are critical to the PCMH's long-term success. In addition, effective collaboration with patients and families in all aspects of primary care redesign and evaluation will be essential. Efforts to measure the effectiveness of the PCMH are ongoing [28] and continue to be a high priority for entities such as the Agency for Healthcare Research and Quality (AHRQ) and the Milbank Memorial Fund, which funded this report. In addition to supporting a number of PCMH pilots nationwide, The Commonwealth Fund's Patient-Centered Medical Home Evaluators' Collaborative has recently recommended core measures for PCMH evaluation that include both cost and quality care measures to ensure standardized metrics for effective care. [29]

Section One

Summary of PCMH: Newly-reported and updated results since the 2010 report

Roughly 30 percent, or approximately $700 billion, of the $2.5 trillion in annual health care spending in the U.S. is estimated to be unnecessary. [30] The marketplace recognizes the potential for return on investment in the medical home, in the form of both quality and cost improvements. Success of previous PCMH demonstrations across the U.S. has prompted investments in publicly and privately funded PCMH programs, with anticipation of future savings and better patient care. For example, WellPoint predicts that its new PCMH program could reduce its projected medical costs in 2015 by up to 20 percent based on analysis of its current medical home pilot projects.[31] UnitedHealthcare estimates that its new efforts will save twice as much as they cost.[32]

This section of the paper provides a summary of numerous PCMH results published since the last PCPCC 2010 Outcomes Update, primarily focused on cost and quality.[33] It highlights outcomes from peer-reviewed research as well as industry-reported outcomes. Although the initiatives described below differ from one another in scope and implementation, each incorporates features of a PCMH in order to improve health outcomes, improve health care delivery and/or lower overall health care costs. These features are described in greater detail in section two of the report.

The initiatives that follow also use different methods of analysis to determine cost savings or quality improvement. Some come from academic peer-reviewed journals, while others are industry generated. It is important to note that academic research versus industry analysis often serves distinct purposes. Academia's goal is to build a body of knowledge over time that is generalizable and of suitable quality for publication, a generally slow and deliberate process. In contrast, industry uses actuarial analysis and other statistical tools consistent with proprietary business practices that generally moves more quickly—with a focus on the financial bottom line. Other methods to evaluate the PCMH, such as rapid-cycle innovation, are being used with success.[34] It is important to acknowledge that regardless of approach, thorough and thoughtful analysis of the PCMH and the outcomes it produces will lead to improvement of health care delivery for patients and their families. Ongoing evaluation is essential as the model evolves.[35] Uniform methods to evaluate the PCMH are being developed by a team of more than 75 researchers under the leadership of The Commonwealth Fund, with the objective of supporting improvements in policy and practice.[36]

Results of Patient-Centered Medical Home Initiatives, by State or Agency				
Initiative	**Health Care Cost & Acute Care Service Outcomes**	**Health Outcomes & Quality of Care Results**	**Years of Data Review**	**Report Type**
Air Force (2011) [37]	• 14% fewer emergency department (ED) and urgent care visits • Hill Air Force Base (Utah) saved $300,000 annually through improved diabetes care management	• 77% of diabetic patients had improved glycemic control at Hill Air Force Base	2009–2011	Agency Congressional testimony
ALASKA: **Alaska Native Medical Center (2012)** [39]	• 50% reduction in urgent care and ER utilization • 53% reduction in hospital admissions • 65% reduction in specialist utilization		10-year span (years not specified)	Industry report via public presentation
CALIFORNIA: **BCBS of California ACO Pilot (2012)** [40]	• 15% fewer hospital readmissions • 15% fewer inpatient hospital stays • 50% fewer inpatient stays of 20 days or more • Overall health care cost savings of $15.5 million		2010	BCBS industry report
COLORADO: **Colorado Medicaid and SCHIP** [41]	• $215 lower per member per year for children	• Increased provider participation in CHIP program from 20% to 96% • Increased well-care visits for children from 54% in 2007 to 73% in 2009	2007—2009	Peer-reviewed article: Health Affairs
FLORIDA: **Capital Health Plan, (Tallahassee, Fla.) 2012** [42]	• 40% lower inpatient hospital days • 37% lower ED visits • 18% lower health care claims costs	• 250% increase in primary care visits	2003–2011	Institute for Healthcare Improvement report
IDAHO: **BCBS of Idaho Health Service (2011)** [40]	• $1 million reduction in single year medical claims • ROI of 4:1 for disease management programs		Years not provided	BCBS industry report
MARYLAND: **CareFirst BCBS (2011)** [43]	• 4.2% average reduction in expected patient's overall health care costs among 60% of practices participating for six or more months • Nearly $40 million savings in 2011		2011	BCBS industry report

(continued)

Initiative	Health Care Cost & Acute Care Service Outcomes	Health Outcomes & Quality of Care Results	Years of Data Review	Report Type
MICHIGAN: **BCBS of Michigan (Physician Group Incentive Program) (2011)**	• 13.5% fewer ED visits among children in PCMH (vs. 9% non-PCMH) • 10% fewer ED visits among adults in PCMH (vs. 6.5% non-PCMH) [44] • 7.5% lower use of high-tech radiology [45] • 17% lower ambulatory-care sensitive inpatient admissions • 6% lower 30-day readmission rates [40]	• 60% better access to care for participating practices that provide 24/7 access (as compared to 25% in non-participating sites) [40] 2008–2011		BCBS industry report, factsheet
MINNESOTA: **HealthPartners [46] (Bloomington, Minn.)**	• 39% lower ER visits • 24% fewer hospital admissions • 40% lower readmission rates • 30% lower length of stay • 20% lower inpatient costs due to outpatient case management program for behavioral health • Overall costs decreased to 92% of state average in 2008 [47] • Reduced outpatient costs of $1,282 for patients using 11 or more medications [48]	Improved quality of services: • Reduced appointment wait time by 350% from 26 days to 1 day • 129% increase in optimal diabetes care • 48% increase in optimal heart disease care. Changed provider behavior • 10% decrease in diagnostic imaging scans in first year	2004–2009	Industry report
NEBRASKA: **BCBS of Nebraska [49] (2012)**	• 10% fewer hospitalizations • 27% fewer emergency visits		2011	BCBS industry report
NEW JERSEY: **BCBS of New Jersey (Horizon BCBSNJ) 2012 [50, 51]**	• 10% lower per member per month (PMPM) costs • 26% fewer ED visits • 25% fewer hospital readmissions • 21% fewer inpatient admissions • 5% increase in use of generic prescriptions	Better diabetes care: • 8% improvement in HbA1c levels • 31% increase in ability to effectively self-manage blood sugar Better prevention: • 24% increase in LDL screening • 6% increase in breast and cervical cancer screening	2011	BCBS industry report, press release
NEW YORK: **Capital District Physicians' Health Plan (Albany, N.Y.) [52]**	• 24% lower hospital admissions • 9% lower overall medical cost increases resulting in savings of $32 PMPM	2008–2010		Industry report, press release
NEW YORK: **Priority Community Healthcare Center Medicaid Program (Chemung County, N.Y.) 2011 [53]**	• Cost savings of 11% overall in first 9 months of approximately $150,000 • Reduced hospital spending by 27% and ER spending by 35%	2010		Press release

Initiative	Health Care Cost & Acute Care Service Outcomes	Health Outcomes & Quality of Care Results	Years of Data Review	Report Type
NORTH CAROLINA: **Blue Quality Physician's Program (BCBSNC) 2011**[54]	• 52% fewer visits to specialists • 70% fewer visits to the ER		2011	BCBS industry report, press release
NORTH CAROLINA: **Community Care of North Carolina (Medicaid)**[55]	• 23% lower ED utilization and costs • 25% lower outpatient care costs • 11% lower pharmacy costs Estimated cost savings of: • $60 million in 2003 • $161 million in 2006 • $103 million in 2007 • $204 million in 2008 • $295 million in 2009 • $382 million 2010[56]	Improvements in asthma care: • 21% increase in asthma staging • 112% increase in influenza inoculations	2003–2010	Peer reviewed journals: *Health Affairs; Annals of Family Medicine; agency report*
NORTH DAKOTA: **BCBS of North Dakota—MediQHome Quality Program 2012**[51]	• 6% lower hospital admissions • 24% fewer ED visits • 30% lower ED use among patients with chronic disease • 18% lower inpatient hospital admission rates compared to general N.D. population	Better diabetes care: • 6.7% improvement in BP control • 10.3% improvement in cholesterol control • 64.3% improvement in optimal diabetes care. Better coronary artery disease management: • 8.6% improvement in BP control • 9.4% improvement in cholesterol control • 53.8% improvement in optimal diabetes control Better care for hypertension • 8% improvement in blood pressure control	2005–2006	BCBS industry report
OHIO: **Humana Queen City Physicians (2012)** [57]	• 34% decrease in ER visits	• 22% decrease in patients with uncontrolled blood pressure	2008–2010	Industry report
OKLAHOMA: **Oklahoma Medicaid (2011)**[58]	• Reduced per capita member costs by $29 per year	Improved access over one year period: • Reduction from 1,670 to 13 patient inquiries related to same-day/next-day appointment availability • 8% increase in patients "always getting treatment quickly."	2008–2010	Industry report

(continued)

Initiative	Health Care Cost & Acute Care Service Outcomes	Health Outcomes & Quality of Care Results	Years of Data Review	Report Type
OREGON: **Bend Memorial Clinic & Clear One Medicare Advantage (PacificSource Medicare Advantage) 2012** [59]	Lower hospital admission rates: • 231.5 per 1000 beneficiaries (compared to state/national averages of 257 and 351 per 1000, respectively). Lower ER visit rates • 242 per 1000 beneficiaries (compared to state/national averages of 490 and 530 per 1000, respectively).		2010	Press release
OREGON: **CareOregon Medicaid and Dual Eligibles (Portland, Ore.)**	• 9% lower PMPM costs [60] • Reduced PMPM costs by $89)[61]	Better disease management among diabetics in one clinic: • 65% had controlled HbA1c levels vs. 45% pre-PCMH[62]	2007–2009	Commonwealth Fund, press release
PENNSYLVANIA: **Geisinger Health System Proven-Health Navigator PCMH model (Danville, Penn.),[63, 64] 2010, 2012**	• Reduced hospital length of stay by half a day • 25% lower hospital admissions • 50% lower readmissions following discharge • 18% reduced inpatient admissions • 7% lower cumulative total spending[65] (from 2005 to 2008) Longer exposure to medical homes resulted in lower health care costs: • 7.1% lower cumulative cost savings (from 2006 to 2010) with an ROI of 1.7	Improved quality of care: • 74% for preventive care • 22% for coronary artery care • 34.5% for diabetes care	2005–2010	Congressional testimony, PCPCC Outcomes Report, peer reviewed journal: *American Journal of Managed Care*
PENNSYLVANIA: **UPMC[68] (Pittsburgh, PA) 2011**	• 13% fewer hospitalizations by 2009 • Medical costs nearly 4% lower	Improved patient outcomes for diabetics: • Increases in eye exams from 50% to 90% • 20% long-term improvement in control of blood sugar • 37% long-term improvement of cholesterol control	2009	Press interview
PENNSYLVANIA: **Independence Blue Cross—Pennsylvania Chronic Care Initiative (Southeast Pennsylvania) 2012**[51]		Better diabetes care: • Increased diabetes screenings from 40% to 92% • 49% improvement in HbA1c levels • 25% increase in blood pressure control • 27% increase in cholesterol control • 56% increase in patients with self-management goals	2008–2011	BCBS industry report

Initiative	Health Care Cost & Acute Care Service Outcomes	Health Outcomes & Quality of Care Results	Years of Data Review	Report Type
PENNSYLVANIA: **PinnacleHealth (2012)** [69]	• 0% 30-day hospital readmission rate for PCMH patients vs. 10-20% for non-PCMH patients		2011	Industry report, press release
RHODE ISLAND: **BCBS of Rhode Island (2012)** [51]	• 17-33% lower health care costs among PCMH patients	Improved quality of care measures: • 44% for family & children's health • 35% for women's care • 24% for internal medicine	2008–2011	BCBS industry report
SOUTH CAROLINA: **BCBS of South Carolina (Palmetto Primary Care Physicians) 2012** [51]	• 14.7% lower inpatient hospital days • 25.9% fewer ED visits • 6.5% lower total PMPM medical and pharmacy costs		2008–2011	BCBS industry report
TENNESSEE: **BCBS of Tennessee (2012)** [51]		Increased screening rates: • 3% for diabetes exams • 7% for diabetes retinal exams • 14% for diabetes nephropathy exams • 4% for lipid exams Increased prescription rates: • 6% for coronary artery disease medications	2009–2012	BCBS industry report
TEXAS: **BCBS of Texas (2012)** [40]	• 23% lower readmission rates • $1.2 million estimated health care cost savings		2009	BCBS industry report

(continued)

Initiative	Health Care Cost & Acute Care Service Outcomes	Health Outcomes & Quality of Care Results	Years of Data Review	Report Type
TEXAS: **WellMed Inc.[70] (San Antonio, Tex.)**		Improved disease management: • Increased control of HbA1C levels from 81% to 93% of diabetes patients • Increased LDL levels under control, from 51% to 95%, for heart disease patients • Increased control of BP levels from 67% to 90% Improved preventive care • Increased screening rates for mammography from 19% to 40% • Increased screening rates for colon cancer from 11% to 50% • Improved diabetes HbA1c testing from 55% to 71% • LDL screenings for all patients increased from 47% to 70% • LDL screenings for diabetic patients increased from 53% to 78% • LDL screenings for ischemic heart disease patients increased from 53 to 76%. • BP screening rates for all patients increased from 38 to 76% • BP screenings for high BP patients increased from 46 to 88%.	2000–2008	Peer review journal: *Journal of Ambulatory Care Management*
VERMONT: **Vermont Blueprint for Health (2012)[71]**	• 27% reduction in projected cost avoidance across its commercial insurer population		2010–2012	Industry report as part of public presentation
VERMONT: **Vermont Medicaid[72]**	• 21% decreased inpatient utilization • 22% lower PMPM inpatient costs • 31% lower ED use • 36% lower PMPM ED costs		2008–2010	Industry report
Veterans Health Administration and VA Midwest Healthcare Network (VISN 23) 2012	• 8% lower urgent care visits • 4% lower acute admission rates by 4%[73] • 27% lower hospitalizations and ED visits among chronic disease patients • $593 per chronic disease patient cost savings[74]		2007–2009; 2011	Press interview

Initiative	Health Care Cost & Acute Care Service Outcomes	Health Outcomes & Quality of Care Results	Years of Data Review	Report Type
WASHINGTON: **Regence Blue Shield (Intensive Outpatient Care Program with Boeing) 2012**[40]	• 20% lower health care costs	• 14.8% improved patient-reported physical function and mental function • 65% reduced patient reported missed workdays	2007–2009	BCBS industry report
WASHINGTON: **Group Health of Washington (Seattle, WA)** [75, 76, 77] **2009, 2010**	• 29% fewer ED visits • 11% fewer hospitalizations for ambulatory care-sensitive conditions • Net cost savings trend of $17 PMPM [78] • $4 million in transcription cost savings through the use of EHRs • $2.5 million in cost savings through medical records management • $3.4 million in cost savings through medication use management program • 40% cost reduction through use of generic statin drug	Improved medication management: • 18% reduction in use of high-risk medications among elderly • 36% increase in use of cholesterol-lowering drugs • 65% increase in use of generic statin drug Improved quality of care: • Composite measures increased by 3.7% to 4.4% Improved provider satisfaction: • Less emotional exhaustion reported by staff (10% PCMH vs. 30% controls) Improved patient experiences in one clinic: • 83% of patient calls resolved on the first call compared to 0% pre-PCMH [79]	• 2006–2007 • 2008 [57]	The Commonwealth Fund, peer reviewed journal: *American Journal of Managed Care*, PCPCC Outcomes Report

Section Two

PCMH Definition and Selected Results by PCMH Feature

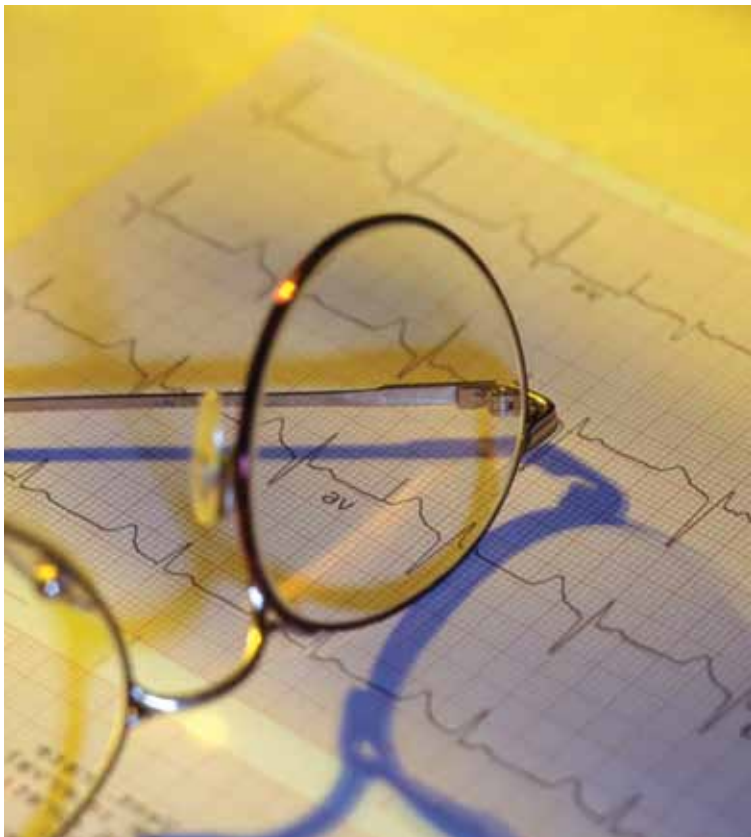
This section of the report defines the features of a PCMH and provides specific examples from peer-reviewed research and self-reported data to demonstrate how each feature contributes to better health, improved care and/or lower cost within the PCMH model.

A. What is Comprehensive Team-Based Care?

Comprehensive Team-Based Care:

The primary care medical home is accountable for meeting the large majority of each patient's physical and mental health care needs, including prevention and wellness, acute care and chronic care. Providing comprehensive care requires a team of care providers. This team might include physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, educators and care coordinators. Although some medical home practices may bring together large and diverse teams of care providers to meet the needs of their patients, many others, including smaller practices, will build virtual teams linking themselves and their patients to providers and services in their communities. (AHRQ, 2012)

A key feature of the PCMH is team-based care delivery focused on the needs of the patient and, when appropriate, the family. Depending on the practice, the team includes primary care physicians; nurse practitioners; physician assistants; mental health practitioners or behavioral health specialists; social workers; care coordinators; pharmacists; palliative care providers; physical, occupational and speech therapists; community health workers; and others offering support services in the community. Whereas some PCMHs provide most care in a single location, others include virtual teams of professionals who work together, depending upon the specific needs of the patient. Beyond the primary care setting, the PCMH also coordinates the care of patients in the medical neighborhood and across health care settings and transitions—including specialty care and inpatient hospital services—which is vital for patients with chronic illnesses. The PCMH team includes the patients and their families as well, as their input is a key component of realizing the medical home.



Examples of comprehensive team-based care and relevant key outcomes include:

Vermont Blueprint for Health

PCMH feature highlighted: Community health teams, including nurse coordinators, behavioral health providers and social workers

This statewide project currently serves more than 350,000 Vermonters. In a single year (2011), the number of physician practices in this initiative more than tripled (from 24 to 78 practices); expansion continues with all interested practices anticipated to participate by October 2013.[80] The Vermont Blueprint for Health ("Blueprint") provides advanced primary care to patients, with selected pilot sites offering additional support services provided by a community health team. The community health team differs by locality, but often includes nurse coordinators, behavioral health providers and social workers. The Blueprint also links health care providers through centralized data systems, offers payment reforms through multiple insurers, coordinates with specialized services (medical and otherwise) and focuses on continuous evaluation to fuel improvement.[81] In 2010, the Vermont Child Health Improvement Program at the University of Vermont conducted evaluations of the three Blueprint pilots and reported impressive early results to the Vermont Department of Public Health on health care costs and health outcomes, which were included in the Blueprint's Annual Report.[82]

Key Outcomes:[83]

- When comparing care before and after the Advanced Primary Care pilot began in July 2008[i], all three pilot communities found:[84]
  - ◊ Lower inpatient hospitalization rates (admission rate per 1,000) ranging from 39.7 percent (Barre service area) to 23.9 percent (Johnsbury service area) to 15.3 percent (Burlington service area);
  - ◊ Lower ED utilization (visits per 1,000) ranging from 33.8 percent (Johnsbury) to 18.9 percent (Burlington) to 2.8 percent (Barre);
  - ◊ In the Burlington service area, the subset of patients that received support from the Community Health Team experienced even lower rates of inpatient hospitalization (25.1 percent) and ED utilization (22.1 percent);
  - ◊ Patients with chronic diseases who had been seen only once a year by their primary care providers were now being seen up to four times a year; and
  - ◊ Persons referred for mental health services were more likely to obtain services because the community care team included a behavioral specialist.

[i] data reported July 2006 to January 2010

Senior Care Options program, affiliated with the Community Care Alliance

PCMH feature highlighted: Community–based team care including nurse practitioners and geriatric social workers

Individuals who are elderly and have very low income qualify for both Medicare and Medicaid and are referred to as being "dually eligible." These individuals benefit from care offered through a medical home because of their multiple chronic medical conditions and significant need for care coordination and social support. In addition, those who are dual eligibles are of interest to state and federal policymakers who regulate the financing and management of their often high-cost health care needs.[85]

Senior Care Options is a partnership between MassHealth and Medicare and part of the

Community Care Alliance in Boston. The program provides a complete package of health care and social services for dual eligibles through a team of health care professionals, including physicians, nurse practitioners, geriatric social workers and community-based staff. The goal of the Senior Care Options program is to keep patients healthy and allow them to remain in their homes for as long as possible. By comparing costs before and after the Senior Care Options program began, researchers were able to demonstrate that the team-based approach improved the quality of care for chronically ill patients and reduced their use of hospitals and nursing homes, thus reducing overall health care costs.[86]

Key Outcomes:[87]

- Improvement in the quality of health care for patients included:
  - ◊ Influenza immunization rates increased from 65 to 77 percent from 2005 to 2011;
  - ◊ Mammography screening rates increased among women ages 65 to 69 years by 75 to 79 percent from 2005 to 2011;
  - ◊ Colorectal cancer screening rates increased from 30 to 51 percent from 2005 to 2011;
  - ◊ Eye exams, including glaucoma testing, increased from 69 to 73 percent between 2008 and 2010;
  - ◊ Hospital readmission rates (30-day) decreased from 20.2% in 2009 to 18.1% in 2010; and
  - ◊ Average length-of-stay in the hospital decreased from 5.21 days in 2009 to 5 days in 2011.

The Improving Mood/Promoting Access to Collaborative Treatment (IMPACT) Study

PCMH feature highlighted: Team-based interdisciplinary primary care and behavioral health

Depression causes an immense burden of suffering on both individuals and on society with a yearly estimated cost in the U.S. (due to lost productivity and increased medical expenses) of $83 billion.[88] The Improving Mood/Promoting Access to Collaborative Treatment (IMPACT) study is one of largest treatment trials for adult depression in the U.S. Spanning two years, data from the study reported here included 18 primary care clinics from eight health care organizations in four states, including two Veterans Administration clinics. Researchers used a randomized control study design to determine whether patients who received care in a primary care practice that included a depression care manager (as part of the care team) differed from care provided in a regular primary care setting. Involving more than 1,800 older patients with a mental health diagnosis, this study found that using a depression care manager in a primary care practice as part of a care team improved the symptoms of depression in patients.

Key Outcomes:[89]

- At 12 months, 45 percent of the IMPACT patients had a 50 percent or greater reduction in depression symptoms (compared to 19 percent in the control group).
- IMPACT was more effective than usual care in all of the eight different health care organizations that were studied, regardless of whether the patients had other medical conditions or anxiety disorders.
- IMPACT was equally effective across ethnic and racial backgrounds, with African American, Latino and white patients experiencing similar outcomes.

Citywide Care Management System, Camden, N.J.

PCMH feature highlighted: Coordinating care with community services and supports

The Camden Coalition of Healthcare Providers (CCHP) developed the Citywide Care Management System (CCMS) at the urging of a young physician who was frustrated with a lack of rational health care and social services for the very high cost "super-utilizers" of EDs and hospitals.[90] In 2005, Camden, N.J. was determined by the U.S. Census to be the poorest city in the country, with 50 percent of residents visiting a local ED or hospital in a single year.[91] More than 90 percent of the costs of care—more than $460 million in 2008—was spent on just 20 percent of the patients. The most expensive patient had medical expenses of $3.5 million in a single year.[92] Jeff Brenner, MD, created the CCMS and engages a dedicated team who provide a wide variety of health and social services to their patients. The team includes a family physician, a nurse practitioner, a community health worker and a social worker who are linked through their Camden Health Information Exchange to area hospitals. Armed with data to identify those who are most in need of assistance, the CCMS has been successful in improving health outcomes and reducing use of acute care services and is working with other communities to achieve similar outcomes.

Key Outcomes: [93]

- A self-reported analysis of outcomes pre- and post-implementation of the CCMS found that patients had fewer emergency visits and hospitalizations, resulting in a 56 percent reduction in overall spending.
- The first "super-utilizers" in the program had a 40 percent reduction in ED visits.

B. What is a Patient-Centered Orientation?

A Patient-Centered Orientation:

The primary care medical home provides primary health care that is relationship-based with an orientation toward the whole person. Partnering with patients and their families requires understanding and respecting each patient's unique needs, culture, values and preferences. The medical home practice actively supports patients in learning to manage and organize their own care at the level the patient chooses. Recognizing that patients and families are core members of the care team, medical home practices ensure that they are fully informed partners in establishing care plans. (AHRQ, 2012)

As its name implies, a focus on the needs and preferences of the patient is a key feature of the PCMH. In contrast to a focus on a specific disease or organ system, the PCMH centers on the whole person. This includes physical health, but also behavioral health, oral health and long-term care supports. A patient and family-centered orientation embraces patient preferences and culture, recognizes and assists with health literacy, provides tools and resources for self-managing chronic conditions, and is founded on trust and respect between the patient and the clinician in order to develop a true partnership.[94] The Institute of Medicine defined patient-centeredness as one of the six key characteristics of quality care.[95] Various organizations such as the Institute for Patient- and Family-Centered Care[96] highlight the importance of collaboration and effective communication with patients and families, as well as the encouragement and support of the active participation of patients and family members in clinical care, primary care redesign, research, policy and program development.

Several components of patient-centeredness have been evaluated in the peer-reviewed literature, and demonstrate the importance of this orientation.

National Partnership for Women & Families[97]

PCMH feature highlighted: Patient/consumer preferences and communication

Although there is widespread support for the concept of patient-centeredness, consumers' priorities are too often perceived as peripheral in the U.S. health care system. The National Partnership for Women & Families (NPWF) launched the Campaign for Better Care aimed at ensuring that consumers receive comprehensive, coordinated care (www.campaignforbettercare.org). Through the campaign, NPWF has developed a number of initiatives to advocate for the needs and wishes of patients and their families, including a project aimed at better understanding consumer views of the patient-centered medical home.[98] Through a series of community, state and national meetings, targeted focus groups and surveys, the organization identified the key attributes of patient-centered care most important to consumers.

Key Findings:

- Consumers were most supportive of whole person care; comprehensive communication and coordination between patients and clinicians; patient support and empowerment; and ready access to care.[99]
- Consumers support these attributes of patient-centered care, although many were unclear about the meaning of the term "patient-centered medical home."[100] Other researchers have found that patients are unclear about what the term "patient-centered medical home" means, and confuse it with a nursing home or other physical location. They recommend educational and communication initiatives to explain the medical home to consumers with examples that have meaning to them. The researchers suggest that such efforts can help support and improve the PCMH as patients become better informed and involved.[101]

Agency for Healthcare Research and Quality (AHRQ)

PCMH feature highlighted: Defining patient engagement

AHRQ is the federal agency tasked with improving the quality, safety, efficiency, and effectiveness of health care for all Americans.[102] To provide decision makers and researchers with access to evidence-based resources about the medical home and its potential to transform primary care, AHRQ has developed a Patient-Centered Medical Home Resource Center website (www.pcmh.ahrq.gov).[103] Several resources are available aimed at describing patient-centeredness. In a white paper commissioned by AHRQ,[104] researchers recommend that patient engagement take place at three levels: the individual; the institution; and in the development of policy and research.

Key Findings:[105]

- From the individual care perspective, primary care practices can better engage their patients, families and caregivers by:
  - ◊ Communicating with them about how the PCMH works, defining the roles of patients and their care delivery team;
  - ◊ Supporting patients in self-care, which includes the development of goals, care plans and reduction of risk factors;
  - ◊ Partnering with patients in informal and formal decision making (including the use of tools such as shared decision-making); and
  - ◊ Giving patients access to their own medical records to improve patient safety.
- From an institutional or organizational perspective, primary care practices can engage patients and their families in quality improvement efforts by:

- ◊ Soliciting regular feedback through patient surveys;
- ◊ Gathering additional patient and family perspectives through the formation of patient/family advisory councils; and
- ◊ Including patients and their families in quality improvement efforts.

- From a policy and research perspective, decision makers and researchers can engage patients and their families by:
  - ◊ Ensuring that the design and study of medical homes represents patient perspectives;
  - ◊ Requiring that practices include patient engagement in order to qualify as an accredited medical home;
  - ◊ Using payment strategies to support patient and family engagement;
  - ◊ Providing practices with technical assistance and shared resources for patient engagement; and
  - ◊ Establishing requirements to ensure that health IT promotes patient engagement.

Health Resources and Services Administration (HRSA) Maternal and Child Health Bureau

PCMH feature highlighted: Support for family-centered care and the PCMH

Pioneered in concept by the American Academy of Pediatrics, family-centered care has been a central tenet of the medical home for more than 20 years.[106] Many of the earliest studies on the medical home were conducted in pediatric practices with the support of federal funding from HRSA MCHB. These studies looked at improvements in care and increased family satisfaction when children with special health care needs received primary care through a medical home. One of the longest-running national studies measuring children's access to medical homes is the National Survey of Children's Health, a telephone survey conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics.[107] This survey continues to demonstrate positive associations between access to a medical home, increased likelihood to receive preventive care and fewer unmet health care needs.[108]

Key Outcomes: [109]

- In this large national survey in 2007, children without a medical home were:
  - ◊ Almost four times as likely to have an unmet health care need as were children with a medical home; and
  - ◊ Three times as likely to have unmet dental needs as were children with a medical home.
- Although most children had one of the five features of a medical home, just over half (56.9 percent) had a fully implemented medical home (all five features) as defined by the study.
- Children whose health was reported as fair or poor were only half as likely to have a medical home as those whose health was rated to be excellent or very good.
- Hispanic children were more than three times more likely to lack a medical home than were white children; African American children were more than twice as likely to lack a medical home than were white children.
- Children in poverty were three and half times more likely than non-poor children to lack a medical home.

Minnesota Department of Health

PCMH feature highlighted: Support for family partnership in care planning

The Medical Home Initiative for Children with Special Health Care Needs was first implemented in 2004 by the Minnesota Department of Health (MDH). The project's aim is to support a community-based system offering services to children with special health care needs. Data from the project show that all of its providers agree that the emphasis on care coordination has improved their patients' health and well-being. Analysis of MDH claims data of 500 children from nine of these practices also indicates increased patient health and well-being. Three years after implementation, several cost savings and quality improvements were realized.

Key Outcomes: [110]

- ED visits and inpatient admissions decreased;
- Dental and well-child visits increased;
- All providers surveyed felt that care plans are important for families to communicate with other providers;
- All providers surveyed felt that care plans should be written in partnership with the family; and
- Parents, even those not involved directly in the medical home team, noticed improvements at their clinics that benefited children with special health care needs.

U.S. Department of Health and Human Services

PCMH feature highlighted: Health literacy and improved patient-provider communication

Health literacy is the capacity to understand basic health information and make appropriate health decisions. It ties directly to the PCMH since the care delivery team is focused on improving communication that enhances care coordination and engages the patient and family. Researchers are increasingly tying health literacy to a long list of health outcomes.[111] According to one large study, only 12 percent of U.S. adults have proficient health literacy, with more than a third of U.S. adults having difficulty with common health tasks such as following directions on a prescription drug label or adhering to a childhood immunization schedule using a standard chart.[112] Major PCMH accrediting bodies (such as NCQA, URAC, and the Joint Commission) have acknowledged the central role that health literacy plays within their accreditation standards. There are several federal initiatives aimed at improving health literacy built on research that has demonstrated improved health outcomes and lower costs when health literacy is improved.

Key Outcomes:

- Improved health literacy has the capacity to reduce ethnic and racial disparities in the clinical and community setting.
- In a randomized control trial, simplified hospital discharge instructions given to patients in order to help them transition from the hospital to their homes led to a 30 percent reduction in hospitalization readmission rates. [113]
- Health literacy researchers found that non-print broadcast media (such as radio and television) were "as important" or "more important" than print materials for all levels of literacy (four categories: below basic, basic, intermediate, proficient). For those with the lowest level

of health literacy, print materials were the least likely to be used.[114]

- Information from health professionals is one of the most important sources of information on health topics for all health literacy levels.[115]

C. What is Care that is Coordinated?

Care that is Coordinated:

The primary care medical home coordinates care across all elements of the broader health care system, including specialty care, hospitals, home health care, and community services and supports. Such coordination is particularly critical during transitions between sites of care, such as when patients are being discharged from the hospital. Medical home practices also excel at building clear and open communication among patients and families, the medical home and members of the broader care team. (AHRQ, 2012)

The current model of health care delivery is fragmented and difficult for patients and their families to navigate. Improved care coordination is proving to be an essential role of the primary care provider, especially for those patients with multiple ongoing health care needs that cannot be met by a single clinician or organization.[116] According to the Institute of Medicine, lack of care coordination can be unsafe, and even fatal, when abnormal test results are not communicated correctly, prescriptions from multiple doctors conflict with each other, or primary care physicians do not receive hospital discharge plans for their patients.[117] Moreover, uncoordinated care adds to the cost of care due to duplicated services, preventable hospital readmissions and overuse of more intensive procedures.

CareMore Medical Group

PCMH feature highlighted: Coordinating care through care transitions and good communication[118]

CareMore Medical Group in California, a Medicare Advantage plan, has a central focus on coordinating care for patients and meeting their individual needs. CareMore patients are over the age of 65, and many have multiple health care needs. The CareMore Medical Group promotes a comprehensive physical exam for each patient, and assigns patients to work with a nurse practitioner who leads the care team. Patients engage in chronic disease management and care coordination that is supported through health IT and remote monitoring to track patients' status. CareMore also refers its members to several community-based services to supplement their medical care, including transportation and fitness programs, home and respite care, and caregiver assistance. This includes providing assistance with transportation to physician and other health-related appointments, offering home care visits to patients, and even providing talking pill boxes that remind patients to take their prescriptions. In an effort to support patients with transitions from hospital care to outpatient treatment, CareMore has created an "extensivist" physician function. The founder of CareMore, Sheldon Zinberg, MD, underscores the importance of clear, effective communication and involving patients in their own care in order to build their trust and program buy-in.[119]

Key Outcomes:

- According to self-reported data, CareMore's innovations have resulted in lower patient hospitalization rates (24 percent below the Medicare average), hospital stays that are 38 percent shorter and an amputation rate among diabetics that is 60 percent lower than average (no date reported).[120]

- CareMore reports an impressive 97 percent patient satisfaction rate.[121]

- In a peer-reviewed study, CareMore was found to have a 15 percent reduction in health care costs compared with regional averages, as well as superior diabetes control and lower re-hospitalization rates compared with national averages.[122]

Bronx Community Accountable Healthcare Network

PCMH feature highlighted: Coordinating care across primary and specialty services within an ACO

The Bronx Community Accountable Healthcare Network (BAHN) is part of the Montefiore Medical Center and a growing collaboration of pharmacies, hospitals, physicians, ancillary services, care management services, health plans and insurers, home care, public health agencies, long-term care facilities and mental health services, built on a foundation of primary care and a PCMH model. State-of-the-art primary and specialty care is provided through a network of nearly 100 locations across the region, including the largest school health program in the nation and a home health program.[123] Clinical information between these health care organizations is exchanged through the Bronx Regional Health Information Organization (Bronx RHIO). Aggregating data from various sources, the ACO facilitates care management and coordination between specialty services by supporting patient use of online tools, empowering patients to manage their own health information, and also ensures that patients are aware of who has access to their personal information.[124] The Bronx Community Accountable Healthcare Network was also recently selected to participate as a Pioneer ACO and has demonstrated impressive results.

Key Outcomes:[125]

- Reduced hospital admissions by 28 percent and reduced ER utilization by 25 percent for the diabetes program (between 2008-2009);
- Reduced hospital admissions (from 1.46 to 1.2 inpatient admissions per member per year) for the heart failure program (2008-2009);
- Reduced hospital admissions (from 0.41 to 0.32 inpatient admissions per member per year) for the respiratory program (2008-2009); and
- Reduced readmission rate (from 21.5 percent to 14 percent) for hospital follow-up program (2008-2009).

Institute of Medicine: Living Well with Chronic Illness: A Call for Public Health Action (metaanalysis)

PCMH feature highlighted: Coordinating care with patients and families through chronic disease self-management (CDSM)

Managing patients' chronic illness is a critical feature of the PCMH. Individuals who suffer from chronic illnesses often experience significant challenges to their quality of life, as often do their family members and caretakers. Chronic diseases account for 70 percent of all U.S. deaths and represent more than 75 percent of the $2 trillion spent annually on health.[126] Researchers have examined ways to better manage chronic illness, including chronic disease management, education and support for caregivers (most of whom are unpaid), and support for shared decision making between the individual and the clinician.[127] CDSM programs vary significantly; some programs manage a specific condition (like diabetes), while others focus on risk factors for chronic disease such as smoking, weight loss or stress. However, all are focused on the ability of the patient and family to better manage care between health care visits. Although some chronic disease management programs are offered directly to patients/consumers by their employer, health plan, or through a community agency, those that are connected to the primary care provider can be more effective in improving health behaviors.[128]

Key Outcomes:[129]

- Numerous randomized controlled trials and a thorough meta-analytical review of the scientific data finds that chronic disease self-management leads to better quality of life and more autonomy for patients, as well reducing the use and cost of health care services.[130]

- In a large 24-year review of the scientific data commissioned by the Institute of Medicine, researchers identified 15 comprehensive care models that resulted in improvements in quality of life and autonomy for persons who were chronically ill:[131]

  ◊ Nine of these models were based on either interdisciplinary primary care teams or community-based health-related services that enhance traditional primary care.

  ◊ The nine models came from 106 different studies—66 percent of which were found to lower the use of health care services, and 33 percent of which lowered health care costs.

Population Health Management through Enhanced Coordination

PCMH feature highlighted: Coordinated population health management

Population health management programs typically work directly with persons at high risk for chronic illness to promote healthy behaviors or assist in managing their conditions, often without their physicians' knowledge or input. Reported by the Care Continuum Alliance, researchers tested whether individuals referred to population health management programs by their primary care practice increase their participation in disease management.[132] The study involved more than 500 patients who were at high risk for coronary artery disease (CAD), diabetes and/or hypertension and provided a modest "pay-for-outcomes" incentive to physicians that referred their patients to a population health management program. The program targeted various risk factors based on the patient's needs (blood pressure, body mass index, cholesterol, HbA1c and smoking status).[133] This study found that patients were more likely to participate in population health management when they were referred by their primary care physician.

Key Outcomes: [134]

- At the end of six months, physicians referred almost half of their eligible members to population health management (80 of 187 eligible members).

- Of those referred, slightly more than half enrolled in the population health management program (43 patients).

- During the six-month study period, individuals who had been referred by their primary care practice had a ten-fold improvement in risk factor management compared to the prior six month period (nine versus 96 distinct risk factor improvements).

D. What Does Superb Access to Care Mean?

Superb Access to Care:

"The primary care medical home delivers accessible services with shorter waiting times for urgent needs, enhanced in-person hours, around-the-clock telephone or electronic access to a member of the care team, and alternative methods of communication such as email and telephone care. The medical home practice is responsive to patients' preferences regarding access." (AHRQ, 2012)

Access to timely care matters a great deal to patients and their families. Numerous features of a PCMH can improve access to care, including shorter waiting times for patients with urgent needs; extended

primary care practice office hours; appointment scheduling options to include group visits for health coaching and education; 24-hour access to a care team member either by telephone or electronic means; and availability of multiple methods for communication based on patient preferences. The goal of a PCMH is to offer a range of options to meet the needs and preferences of a cross-section of patients and their families.[135]

The peer-reviewed literature summarized below reveals promising features that various PCMH pilots and demonstration projects have included in order to improve access to care for patients.

Improving Care by Improving Communication

PCMH feature highlighted: Expanded access outside traditional business hours in the PCMH

In a study of seven medical home projects in both urban and rural settings (Colorado Medical Homes for Children, Community Care of North Carolina, Geisinger Health System, Group Health Cooperative, Intermountain Health Care, North Dakota MeritCare/Blue Cross collaborative, Vermont Blueprint for Health), researchers analyzed key cost savings features of the PCMH.[136] They determined that expanded access to health providers was one of the essential features found to produce financial savings through reductions in ED use and preventable hospitalizations. They suggest that the best care delivery models expand opportunities for direct communication between the patient and provider team outside traditional office hours.[137]

Key Outcomes:[138]

- Hospitalizations were reduced among PCMH programs by a range of 6 percent in North Dakota to 40 percent in North Carolina;
- Emergency room visits decreased by a range of 7.3 percent in Intermountain Health Care to 29 percent in Group Health Cooperative; and
- Reduction in acute care services resulted in a range of savings of $71 in Group Health Cooperative to $640 in Intermountain Health Care.

Best Primary Care Practices: "American Medical Home Runs"

PCMH feature highlighted: Access to 24/7 services as a key PCMH feature

Researchers wanted to understand how high-performing primary care practices were achieving their "medical home runs."[139] In 2009, they conducted evaluations of primary care offices and physician groups by reviewing validated quality and cost measures. They identified medical home runs as those primary care practices whose overall health care costs were at least 15 to 20 percent lower than other practices (risk adjusted) while maintaining high quality scores (based on publically released or payer-collected quality measures).[140] Based on these criteria, four practice sites were selected for site visits and in-depth interviews: Urban Medical Group, Leon Medical Centers, CareMore Medical Group and Redlands Family Practice. One of the "common pivotal features" of the medical home run practices was "exceptional individualized caring for chronic illness," defined in the key outcomes section below.[141] The two additional pivotal features outlined by the researchers were efficient service provision and careful selection of specialists.

Key Outcomes:

- The five aspects of exceptional individualized care for individuals embraced by the medical home run practices were:
  - ◊ Taking enough time during office visits to fully understand patients' illness and self-management capacity and fine-tuning treatment plans;

◊ Between office visits, directly providing or mobilizing the help patients need to implement their self-management plan, with a special emphasis on medication management;

◊ Responding promptly 24/7 when urgent help is needed between visits;

◊ Linking patients with a small group of carefully selected specialists with whom the primary care practice actively coordinates; and

◊ Demonstrating personal concern to protect patients from health crises.

The Pediatric Alliance for Coordinated Care, Boston

PCMH feature highlighted: Improving patient satisfaction for patients and their families

The Pediatric Alliance for Coordinated Care instituted a small-scale demonstration medical home project for 150 children with special health care needs in six pediatric practices to provide comprehensive care and integrate health and other services. [143] Researchers collected data from physicians and families at the beginning of the program and two years after the program began. Data from the pediatric practices included the child's diagnosis, medical conditions, severity of the illness and dependence on medical technology. Data from the families included the child's health conditions, school absenteeism, health care satisfaction, services provided by the primary care provider and specialty care use. When the families were asked about improvements offered through the medical home, they pointed specifically to the positive experiences associated with getting timely appointments and referrals, and in having telephone calls answered.

Key Outcomes:[144]

- **Access to care:** Comparing care before and after the PCMH pilot began, families reported it was "much easier" or "somewhat easier" to access services in a PCMH. For example, 68.4 percent of families reported it was easier to get the same nurse to talk to, 60.9 percent of families said it was easier to communicate with their child's doctor, 60.5 percent reported it was easier to get referrals from the doctor, and 61.4 percent reported it was easier to get early medical care.

- **Illness measures:** The PCMH program resulted in a significant reduction in workdays missed by parents as well as reduced hospitalizations. Prior to the PCMH program, 26 percent of parents missed more than 20 days of work per year, while after the program only 14 percent reported missing this amount of work. Hospitalizations were reduced from 57.7 percent prior to implementation of the PCMH program to 43.2 percent post-implementation.

First-Contact Access in Wisconsin Primary Care Practices

PCMH feature highlighted: First-contact access for patients and preventive services

Using data from the Wisconsin Longitudinal Study survey (years 2003-2007), researchers[145] examined the relationship between primary care office "first-contact access" features (such as wait times for appointments, office hours, availability of telephone advice) and whether patients were more likely to receive recommended preventive services.[146] The study found that patients in primary care practices with "excellent" or "very good" access in eight first-contact areas experienced an increase in the rate of cholesterol screenings, flu shots and prostate screenings in the prior year.

Key Outcomes:[147]

- Among patients with excellent or very good first-contact access, 68 percent reported

first-contact access for making appointments for care by phone, 63 percent for ease of seeing doctor of his/her choice, 59 percent for convenience of location of doctor's office; and

- Among participants who reported excellent or very good first-contact access, 90 percent reported having had a cholesterol test, 63 percent a flu shot, 78 percent a prostate exam and 83 percent a mammogram.

E. What is a Systems-Based Approach to Quality and Safety?

Systems-Based Approach to Quality and Safety:

"The primary care medical home demonstrates a commitment to quality and quality improvement by ongoing engagement in activities such as using evidence-based medicine and clinical decision-support tools to guide shared decision making with patients and families, engaging in performance measurement and improvement, measuring and responding to patient experiences and patient satisfaction, and practicing population health management. Sharing robust quality and safety data and improvement activities publicly is also an important marker of a system-level commitment to quality." (AHRQ, 2012)

PCMHs can help control or lower overall health care costs by embracing performance measurement and engaging in quality improvement activities. This work is supported by use of evidence-based practice guidelines and clinical decision-support tools, as well as patient satisfaction measurement. Quality improvement should address gaps in care delivery identified from all measurement sources. A high-functioning PCMH engages in population health management and is transparent in sharing meaningful quality and safety data publicly.

Mature PCMHs demonstrate this systems-based approach to quality and safety, with improvements in outcomes and lower health care costs as a result.

Geisinger Health System in Pennsylvania

PCMH feature highlighted: Engaging in performance measurement and improvement

Geisinger Health System's PCMH, ProvenHealth Navigator, provides health care services focused on the needs of patients with chronic disease, many of whom have multiple conditions and high health care costs. Geisinger tracks short- and long-term metrics based on real-time data feedback from both their EHR system and from insurance claims data. Their quality outcomes program is centered on the satisfaction of patients and physicians; best-practice metrics for bundled chronic disease care (for diabetes, congestive heart failure, coronary artery disease, and hypertension); and preventive services metrics as defined by the Healthcare Effectiveness Data and Information Set (HEDIS).[148] Analyzing this information, researchers suggest that one of the most important ingredients in the ProvenHealth Navigator model has been the use real-time feedback of data on the use of health services by the most complex patients.[149]

Key Outcomes:

- For ProvenHealth Navigator Medicare patients (those patients who receive care in a PCMH), researchers found a 28 percent reduction in admission to the hospital, and a 8.1 percent reduction in admission to the ED (2009 data).

- For ProvenHealth Navigator commercially-insured patients, Geisinger found a 37.9 percent reduction in admission to the hospital, and a 34.4 percent reduction in admission to the ED (2009 data).

- In a more recent study that looked specifically at cost savings between 2006 and 2010, researchers found that the longer a patient was receiving care within Geisinger's PCMH model, the greater the cost savings (7.1 percent cumulative cost savings over five years, and 4.3 percent cumulative cost savings under a different analysis that included prescription drug interaction effects).[150]

Blue Cross/Blue Shield (BCBS) Michigan

PCMH feature highlighted: Interdisciplinary primary care including a focus on systems of care

The Michigan Blues' PCMH program is a two-part initiative developed with financial support from BCBS and the Physician Group Incentive Program, more than 5,700 Michigan primary care physicians (pediatricians, internists and family practice doctors) who are implementing various PCMH features into their practices. To study this PCMH, researchers examined seven domains of a PCMH: patients having a documented care plan; creation and use of chronic disease registries; performance reporting by the clinician; care management for the patient; 24-hour access to a clinician; presence of laboratory test tracking system and follow-up procedures; and use of electronic prescribing of medications.[151] The 16 practices studied were participating in both the BCBS Physician Group Incentive Program (PGIP) and the Robert Wood Johnson Foundation's Aligning Forces for Quality (AF4Q).

Key Outcomes:

- Physician practices that used a team-based approach to care coordination scored better than those not using a team-based approach, according to the PCMH assessment tool.[152]

- Patients who received care from a PCMH had 11.4 percent lower ED visit rates for primary care-related conditions.[153]

- The generic prescribing rate for pharmaceuticals rose from 38 percent in 2004 to 74 percent in 2011.[154]

- Since implementing the program, BCBS Michigan's program showed improved quality outcomes; greater collaboration/improved relationships with clinicians; improved patient experience; improved reputation in the community; membership shift to high performing physicians; and increased physician investment in electronic systems and quality improvements.[155]

Group Health Cooperative in Seattle, Wash.

PCMH feature highlighted: Measuring and responding to patient experiences and patient satisfaction

The Group Health Cooperative is a consumer-governed, not-for-profit integrated health insurance and care delivery system based in Seattle. Since 2006, it has pioneered a medical home based on its electronic health record technology.[156] Collecting data from the first two years of its medical home pilot, researchers examined the effects of the medical home on patients' experiences, quality of care, burnout of clinicians and total costs.[157] A large random sample of adults in the pilot plans was analyzed at baseline, 21 months and 24 months using HEDIS metrics, which measure health plan performance on important dimensions of care and service.[158] Researchers compared this group to a sample of similar adults who did not receive their care in a PCMH. The study demonstrates the significant cost savings, quality improvements and increased patient satisfaction associated with implementation of a PCMH.

Key Outcomes:[159]

- Clinical quality HEDIS measures divided into four composites showed improvements of 20 to 30 percent in three out of four groups at 24 months.

- Patients in the PCMH pilot reported better scores on various HEDIS measures at 12 and 24 months after the pilot began, including:
  - ◊ 2.30 and 1.63 higher scores for quality of doctor-patient interaction;
  - ◊ 2.93 and 1.03 higher scores for shared decision-making;
  - ◊ 3.32 and 3.06 higher scores for coordination of care;
  - ◊ 3.71 and 2.84 higher scores for access to care;
  - ◊ 1.1 and 1.14 higher scores for helpfulness of office staff;
  - ◊ 3.28 and 2.10 higher scores for patient activation and involvement; and
  - ◊ 3.74 and 3.96 higher scores for goal setting or tailoring
- Compared to other Group Health clinics, patients in the medical home experienced 29 percent fewer ED visits and 6 percent fewer hospitalizations.
- Total savings were estimated at $10.30 PMPM after 21 months of the pilot project, with a return on investment of $1.50 for every $1 invested in implementing the PCMH.

HealthPartners Medical Group, Minnesota

PCMH feature highlighted: Patient satisfaction and quality improvement

HealthPartners Medical Group (HPMG) is a multispecialty group practice within an integrated health system that includes a health plan, several hospitals and a wide range of other health care services, including 21 primary care practices. It provides care to 400,000 patients in the metropolitan area of Minneapolis and St Paul, approximately 60 percent of which also have HealthPartners insurance. There are an additional 35 percent who are covered by private or public insurance products, and 5 percent are uninsured. HPMG has a paperless EHR system in both primary and specialty care settings and tracks a variety of quality and patient satisfaction measures. All are achieving Level III recognition as medical homes by the National Committee for Quality Assurance. AHRQ funded a study of the 21 primary care clinics comprising HPMG and found significant improvement in patient and consumer satisfaction.[160]

Key Findings:

- For patient satisfaction ratings, HPMG had yearly improvements on all seven patient satisfaction measures; three of which were found to be statistically significant:
  - ◊ Ability for patients to get an appointment when they wanted;
  - ◊ Patients were treated with dignity and respect; and
  - ◊ Patients received timely test results.
- Using a different consumer choice satisfaction rating system, HPMG had four measures that were statistically significant:
  - ◊ Consumers were more likely to be very satisfied with the clinic;
  - ◊ Consumers would definitely recommend the clinic;
  - ◊ Consumers were very satisfied with ability to schedule a convenient appointment; and
  - ◊ Consumers were very satisfied with the ability to see a physician of their choice.

- For quality measures, care for diabetes, coronary artery disease, preventive services and generic medication use improved between 2 and 7 percent each year.

Community Care of North Carolina (CCNC)

PCMH feature highlighted: Focus on population health management in rural settings

With a focus on providing population health and quality improvement initiatives, CCNC is a state-based, public–private partnership that manages the health of Medicaid recipients by fostering the development of local, self-governing community health networks. The state Medicaid program supports these networks and physicians through separate per-member, per-month payments, while CCNC provides support through various resources, including an information technology system that facilitates the exchange and management of clinical information. The focus on quality improvement varies across practices and may include management of diabetes, asthma, congestive heart failure, or emergency and pharmacy services utilization. Statewide audits are performed and the data is aggregated by practice for comparison with national and regional benchmarks. An analysis prepared for the North Carolina Division of Medical Assistance found significant cost savings associated with the Community Care program.[161]

Key Findings:

- In fiscal year 2007, the total statewide savings was approximately $103 million or about $8.73 PMPM.
- In fiscal year 2010, the total statewide savings was approximately $382 million, or about $25.40 PMPM.
- Additional estimates for future statewide savings suggest that the CCNC medical management structure should be able to produce cost savings of approximately 7 to 15 percent.[162]

Renaissance Medical Management Company

PCMH feature highlighted: Care Coordination though use of health IT and payment reform

Renaissance Medical Management Company (RMMC) is a primary care network or independent practice association (IPA) of 180 physicians who provide care to four counties in southeastern Pennsylvania. The network incorporates active patient engagement, support for telephonic nursing for high-risk and chronically ill patients, and various health IT tools including e-prescribing, EHRs, a coordinated care tool and a population management tool. The network also includes a pay-for-performance program that includes gain-sharing arrangement that rewards health care providers for high value health care delivery. With a focus on improving outcomes for diabetes, RMMC nurses engage patients with a diabetes-specific education module and tracks patients electronically. As reported by the Care Continuum Alliance in 2010, RMMC reported sizable improvements in clinical outcomes, utilization measures and costs for patients.[163]

Key Outcomes: [164]

- Using HEDIS measures, clinical goal attainment exceeding the 90th percentile on reporting groups;
- Total health care cost savings attributed to improvements in diabetes care over a four year period:

- ◊ For diabetic patients in commercial plans, savings totaled $5.5 million
- ◊ For diabetic patients in Medicare plans, savings totaled $9.9 million
- ◊ RMMC reported a net savings of $214.53 in annual PMPM costs (as compared to control group)

- Improvements in diabetes care over a four year period, comparing RMMC patients to patients receiving care in a control group:
  - ◊ 46 percent of RRMC patients met their goals for blood sugar (HbA1c) as compared to the control group patients (at 33 percent), and
  - ◊ 55 percent of RRMC patients met their goals for low-density lipoprotein (LDL) cholesterol compared to the control group patients (at 38 percent).

Section Three

Conclusions and Future Directions

The data are clear, consistent and compelling: The PCMH improves health outcomes, enhances the patient experience of care and reduces expensive, unnecessary hospital and ED care. Based on the results to date and current market factors that are certain to impact health care delivery, we believe the future of the PCMH is bright. The PCPCC will continue to share the results of PCMHs across the country to demonstrate that primary care organized around patients and their families is key to health system reform.

We draw three broad conclusions about the PCMH, supported by the outcomes documented in this paper:

- ***As medical home implementation increases, the Triple Aim outcomes of better health, better care and lower costs are being achieved.*** The number of medical home providers has grown to the tens of thousands, serving millions of Americans. Momentum for the model is rapidly increasing with public and private sector investment. The concept of the PCMH is evolving to better connect and coordinate with the medical neighborhood, including ACOs and other integrated systems of care. As the PCMH expands, the need to continue cataloging the outcomes of the PCMH is vital for ongoing engagement from employers, purchasers, policymakers, patients and their families. As the information in this report illustrates, a mounting body of data demonstrates that the PCMH is an effective means of delivering primary care to achieve the Triple Aim outcomes[165] and transform the U.S. health system.

- ***Medical home expansion has reached the tipping point with broad private and public sector support.*** There is far-reaching interest across the health care industry in the PCMH delivery model. Major insurers are driving PCMH efforts nationwide as a means to control costs, improve patient experience and improve the health of Americans. Federal health reform has prompted expansion of the PCMH in Medicare, Medicaid and federally qualified health centers, in addition to leveraging innovations from commercial insurers. The Office of Personnel Management, the U.S. military and the Department of Veterans Affairs are all committed to expanding primary care through medical homes. In addition to these federal efforts, ongoing and successful initiatives at the state level continue to expand. The majority of state Medicaid programs are initiating or expanding their PCMH programs.[166] We believe the combined result of these public and private initiatives propel the PCMH to the tipping point for the care delivery system to embrace full implementation of the PCMH. Consequently,

more patients than ever will receive care from PCMHs.

- ***Investment in the medical home offers both short- and long-term savings for patients, employers, health plans and policymakers.*** In the current economic environment, controlling the rising cost of health care is paramount. Although implementing the many features of a PCMH takes time, the long-term cost savings of the PCMH are impressive, as demonstrated by mature PCMH initiatives such as the Geisinger Health System.[167] By providing high quality health care to Americans that results in fewer unnecessary ED visits and inpatient hospital admissions, this report demonstrates that PCMHs can achieve cost-savings in the short term as well. Continued focus on health IT diffusion, primary care payment reform, improving patient experience, involving consumers in design and evaluation, and education and training for an appropriate primary care provider workforce are critical to the PCMH's long-term success. Efforts to measure the effectiveness of the PCMH are ongoing[168] and continue to be a high priority for agencies such as the Agency for Healthcare Research and Quality, as well as for private organizations and philanthropies, such as the Milbank Memorial Fund which funded this report. In addition to supporting a number of PCMH pilots nationwide, The Commonwealth Fund's Patient-Centered Medical Home Evaluators' Collaborative has recently recommended core measures for PCMH evaluation that include both cost and quality care measures to ensure standardized metrics for effective care.[169]

- ***Successful partnerships with patients and families hold great promise for achieving and sustaining transformational change in primary care and across the continuum of care.*** While community-based primary care practices, health systems and payers are increasingly engaging patients and families in improvement, further research is needed to better understand the most effective partnership strategies, and to build commitment to these collaborative approaches. These partnerships were basic tenets in the original Joint Principles of the Patient-Centered Medical Home.

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Appendix A: Details of selected PCMH pilots (Source: Rosenthal and Abrams, Medical Home News)

	Emblem Health New York	Chronic Care Sustainability Initiative RI	Safety-net Medical Home Initiative	New Orleans PCASG	Colorado PCMH Pilot	Cincinnati AF4Q PCMH Pilot	Mid-Hudson Valley	Primary Care Global Fee Model	Pennsylvania Chronic Care Initiative
Geographic area	NY	RI	CO, ID, MA, OR, PA	LA	CO	OH	NY	NY, MA	PA
Number of …									
Practices	33	5	65	93	15	11	15 (70 sites)	5	126
Physicians	87	28	492	336	45	41	~1,000 (282 PCPs)	37	~540
Patients	15,024	25,000	554,570	292,000	20,000	30,000	~600,000	62,500	~800,000
Payers	1	4	0	1	6	3	6	0/1	12
Medicaid is participating	No	Yes	No	No	Yes	No	No*	No	Yes
Safety-net clinics included	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Payment model	FFS, and P4P.	PMPM care management fee and FFS.	Not applicable	Base payment dependent on number of eligible providers, bi-annual grant award for improved access and P4P.	PMPM care manage-ment fee, FFS, and P4P.	PMPM care manage-ment fee, FFS, and P4P.	Bonus for medical home implementati-on and separate annual P4P bonus.	Risk-adjusted, comprehen-sive annual primary care fee.	Two PMPM care management fee models, a shared-savings model, and a one-time grant model
Distinguishing characteristics	Bonus incorporates performance on patient experience surveys. Randomized control trial. External consultant provides care coordinati-on and practice redesign.	Participating payers cover more than two-thirds of state enrollees.	Largest national safety-net initiative. The Fund's demonstration project.	Part of the health care recovery effort in the wake of Hurricane Katrina. Includes only safety-net clinics.	Multi-state project with OH AF4Q PCMH pilot.	Multi-state project with CO-PCHM pilot.	Assesses incremental effects of EHRs and medical home.	High-performing practices participa-ting. Unique payment model.	Most extensive multi-payer medical home pilot in the nation with four distinct payment models.

**Medicaid is not a participating payer per se, but Medicaid managed care patients are included*

Abbreviations Key: **AF4Q**—Aligning Forces for Quality **PCMH**—Patient-centered medical home **EHR**—Electronic health record **PCP**—Primary care physician **FFS**—Fee-for-service **PMPM**—Per-member per-month **PCASG**—Primary Care Access and Stabilization Grant **P4P**—Pay for performance

Appendix B: Evaluation descriptions of selected PCMH pilots (Source: Rosenthal and Abrams, Medical Home News)

	Emblem Health New York	Chronic Care Sustainability Initiative RI	Safety-net Medical Home Initiative	New Orleans PCASG	Colorado PCMH Pilot	Cincinnati AF4Q PCMH Pilot	Mid-Hudson Valley	Primary Care Global Fee Model	Pennsylvania Chronic Care Initiative
Research design	Randomized controlled trial	Pre-/post-analysis with controls	Pre-/post-analysis with and without controls	Pre-/post-analysis; no controls	Pre-/post-analysis with controls	Pre-/post-analysis with controls	Pre-/post-analysis with controls	Pre-/post-analysis with controls	Pre-/post-analysis with controls
Time frame of pilot to be evaluated	01/07-31/10	10/08-10/10*	02/08-10/13	08/08-12/10	05/09-05/11*	09/09-09/11	11/09-11/11	01/08-12/10*	05/08-09/12
Domains examined									
Clinical quality	x	x	x		x	x	x	x	x
Health care costs and utilization	x	x	x	x **	x	x	x	x	
Patient experience	x	x	x	x	x	x	x	x	x
Physician/staff experience	X	x	x	x	x	x	x	x	x
Practice cost			x					x	
Process/ qualitative	x	x	x		x	x		x	
Structural (NCQA or other metrics)	x	x	x	x	x	x	x	x	x
Impact on disparities			x	x					

** These pilots are planning to run an additional year; it is possible that the evaluations will be extended to capture an additional year of information as well.*

***Examining the number of primary care visits only.*

Patient-Centered
Primary Care
COLLABORATIVE