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Data Brief

Recommended Core Measures for Evaluating the Patient-Centered Medical Home: Cost, Utilization, and Clinical Quality

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ABSTRACT: The patient-centered medical home has emerged as a promising solution to address the significant fragmentation, poor quality, and high costs that afflict the U.S. health care system. The medical home model includes core components of primary and patient-centered care, recent innovations in practice redesign and health information technology, and changes to the way practices and providers are paid. There are initiatives across the country testing the promise of the medical home model. However, to properly evaluate and compare results that will aid in the implementation of these and other initiatives, researchers need a standard set of core measures. This brief describes the process and recommendations of more than 75 researchers who came together to identify a core set of standardized measures to evaluate the patient-centered medical home. It focuses on two domains of medical home outcomes: cost/utilization and clinical quality.

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INTRODUCTION

Strong primary care is critical to a well-functioning health care system.[1] Nonetheless, primary care in the United States is widely viewed as in dire need of improvement. The patient-centered medical home (PCMH) has emerged as a promising solution to address the significant fragmentation, poor quality, and high costs that afflict our system. The medical home model includes core components of primary and patient-centered care, recent innovations in practice redesign and health information technology, and changes to the way practices and providers are paid.[2]

There are numerous initiatives across the country testing the promise of the medical home model. More than 90 commercial health plans, 42 states, and three federal initiatives are participating in such tests, with thousands of providers who serve millions of patients.[3] However, only a few evaluations have published on the impact of the PCMH model as a whole, although elements have been

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shown to be associated with higher quality and lower cost.[4] Rigorous evaluations and standardization of key outcomes are needed to strengthen the empirical basis for the medical home concept, as well as to assess the viability of implementation. With rigorous, comparable data, payers, providers, and patients will be better positioned to understand results, improve the model, strengthen primary care, achieve high performance, and experience better health outcomes.

This brief describes the process and recommendations of more than 75 researchers who came together to identify a core set of standardized measures to evaluate the patient-centered medical home. The summary focuses on two domains of medical home outcomes: cost/utilization and clinical quality.

THE PCMH EVALUATORS' COLLABORATIVE

The Commonwealth Fund established the Patient-Centered Medical Home Evaluators' Collaborative in 2009 to align evaluation methods, share best practices, and exchange information to improve evaluation designs. The collaborative comprises more than 75 researchers (see Appendix A1) who are engaged in evaluating PCMH demonstrations.

The objectives of the PCMH Evaluators' Collaborative are to:

- reach consensus on a standard core set of outcome measures and instruments;
- share the consensus on instruments, metrics, and methodological lessons with interested researchers around the country; and
- foster an ongoing and supportive exchange that helps evaluators share ideas that improve their evaluation designs, analytic approach, and interpretation of findings.

Between 2009 and 2011, the PCMH Evaluators' Collaborative organized five work groups to reach consensus on a common set of measures to evaluate medical home initiatives. The work groups each focused on a key dimension of PCMH evaluation: cost and utilization, clinical quality, patient experience, clinician and staff experience, and process and implementation. Each work group reviewed the literature, developed logic models, and met regularly to debate effective and feasible measures to evaluate medical home pilots in each dimension. The cost and utilization work group published its results online in *Medical Care Research and Review* in June 2010.[5] In January 2011, the implementation group published a paper in *Medical Care* that outlined seven recommendations for medical home evaluators to consider in future studies.[6] The clinical quality group presented its findings at national meetings.[7] The findings of the clinician and staff experience group are being prepared for submission to a peer-reviewed journal. Finally, the work of the patient experience committee was incorporated into work by a team of Harvard, Yale, and National Committee for Quality Assurance (NCQA) researchers to develop and test the new PCMH–Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey, which was released by the Agency for Healthcare Research and Quality in January 2012.[8]

The potential of the medical home to increase efficiency and lower costs of care while simultaneously improving quality are the primary reasons most payers and policymakers have thrown their support behind PCMH. Given the salience of the cost and quality outcomes in ongoing and future discussions about health care reform, members of The Commonwealth Fund PCMH Evaluators' Collaborative met in June 2011 to discuss the recommendations of the cost/utilization and clinical quality work groups with the goal of identifying a minimum set of measures that would enable meaningful cross-study comparison. With a core, standardized set of measures in these two key domains, the evaluators could increase the comparability and therefore the usefulness of the forthcoming body of research for policymaking. A survey of collaborative members was conducted to ascertain support for including specific measures and measurement principles in this core set to establish a common ground for assessment. In this report, we summarize the recommendations from this group of evaluators as guideposts for medical home evaluations.

RECOMMENDED UTILIZATION AND COST MEASURES FOR PCMH EVALUATION

The vast majority of participants supported the recommendations of the cost and utilization work group to include emergency department (ED) visits, hospitalizations, and readmissions as the primary utilization indicators in the minimum measure set (Table 1). According to the work group's analysis, these indicators were both consistent with the logic model that attempted to capture all the levers a medical home could use to affect utilization, cost, and efficiency and were supported by at least some empirical evidence.

Table 1. Core Cost and Utilization Measures for Cross-Study Comparison of PCMHs

Utilization
Emergency department visits, ambulatory care–sensitive (ACS) and all
Acute inpatient admissions, ACS and all
Readmissions within 30 days
Cost
Total per member per month costs
Total per member per month costs for high-risk patients
Technical issues: all utilization and cost issues should be risk-adjusted; method of pricing should be transparent and standardized if possible

Source: Commonwealth Fund Patient-Centered Medical Home Evaluators' Collaborative.

For cost measures, there was consensus that evaluations should always include analysis of total per member per month cost effects for high-risk patients, since the PCMH initiative will most likely be able to detect a measureable effect on this patient population. A new measure on total cost of care and resource use, which was endorsed by the National Quality Forum in January 2012, was not yet available for consideration during deliberations in June 2011, though it does appear to be promising.[9]

We asked evaluators to delve further into cost and utilization measurement. We asked them:

1. Should evaluators look at ambulatory care–sensitive (ACS) measures of hospitalization and emergency department use, all use, or both?
2. Should evaluators always use risk adjustment and if so, should a specific, common approach be used to adjust cost and utilization data for patient risk factors?
3. For cost measures, should evaluators use standardized pricing (that is, use a common fee schedule to re-price services so that fee differences between payers or providers do not drive results)? If so, should a single standard (e.g., Medicare, for a specific geography, etc.) be proposed?

On these technical questions, there was greater diversity and uncertainty among respondents. A substantial majority of respondents supported the reporting of both ACS and all admissions and ED visits, although a significant minority opted for flexibility, perhaps based on initiative-specific considerations—for example, population size and characteristics, focus of medical home quality improvement efforts, etc. Nearly everyone agreed that risk adjustment should be required, but only a minority thought there should be a common method. Fewer evaluators supported cost standardization but comments clearly indicated legitimate confusion about what this would mean and how feasible such standardization would be.

In our judgment, these technical questions are important considerations that will be influenced by local constraints and other factors. For example, risk adjustment is clearly needed to make any assessment of cost and utilization interpretable by decision-makers but the method of doing so may vary because of software availability or population characteristics. Evaluators can make their results more broadly useful by using standard, validated algorithms and by making transparent exactly how utilization measures were defined, how costs were calculated, and by what method these measures were adjusted for patient risk factors.

RECOMMENDED CLINICAL QUALITY MEASURES FOR PCMH EVALUATION

Among the PCMH Evaluators' Collaborative participants, there was broad agreement about the importance of assessing changes in clinical quality as part of any medical home program. The evaluators expressed concerns that the variation in populations and local PCMH emphasis might make uniform minimum quality measure sets difficult to generalize. Therefore, the group

agreed to a core set of principles that all evaluators should follow when evaluating clinical quality (Table 2). In particular, the evaluators agreed that researchers should select measures from each of the following core areas of primary care measurement: preventive care, chronic disease management, acute care, overuse, and safety.

Table 2. Principles and Measures for Assessing Clinical Quality in PCMHs

Evaluators should use standardized, validated, nationally endorsed measures. The PCMH Evaluators' Collaborative clinical quality work group recommends selecting a group of quality measures from the lists in Appendix A2 and Appendix A3. We recommend the measures listed in Table 3 as a core set.
Evaluators should select measures from each of the following areas of primary care: preventive care, chronic disease management, acute care, overuse, and safety.
Evaluators should apply a validated approach to data collection. This is particularly important if pulling measures from the medical record or electronic health record.
Evaluators should use consistent measures across practices within a demonstration.

Source: Commonwealth Fund Patient-Centered Medical Home Evaluators' Collaborative.

The clinical quality work group assembled a proposed set of standardized, validated technical quality measures relevant to the patient-centered medical home concept. These included existing Ambulatory Care Quality Alliance (AQA) recommendations as well as the Healthcare Effectiveness Data and Information Set (HEDIS) measure set, the Physician Quality Reporting Initiative (PQRI) measures, and other state and payer demonstration measures. After a lengthy process discussing measure attributes, advantages, disadvantages, and use across the country, the work group engaged in a modified Delphi process to come up with a consensus set of metrics. These measures are listed below in Table 3. Supplemental adult measures and core pediatric measures for PCMH evaluation are listed in Appendix A2 and Appendix A3. Patient experience measures are adequately covered in the new medical home CG-CAHPS tool, which the work group believes is a good starting point for validated measurement in this domain.[10] To a large degree, these recommended technical quality and patient experience measures overlap with recently released accountable care organization (ACO) final rule quality measures.

Two measurement issues were underscored. To be interpretable, researchers should apply a validated approach to data collection. This is particularly important if measures are collected from the medical record or electronic health record (EHR). In addition, evaluators should use consistent measures across practices within a pilot or demonstration.

A further consideration in PCMH quality measurement consists of finding the appropriate mix of process and outcome measures. On one hand, given the focus on managing the health of a defined population, intermediate outcome measures—often of chronic disease—might be preferred over process measures. To meet this need, the work group selected a number of validated diabetes and cardiovascular outcome measures. However, given concerns about the ability of PCMH pilots to demonstrate large outcome changes over short time periods, the work group also emphasized key process measures as well. These measures might be more readily affected over a short time period, and they also have the advantage of often having lower variance, which allows for detection of statistically significant changes in a smaller sample of practices.

In addition to basic quality principles, certain quality measures should be used for meta-analysis. The recommended measures for meta-analysis are listed in Table 4 below.

Table 3. Core Recommended Adult Technical Quality Measures for PCMHs

Measure	Description	Data Source(s)	Composite Domain	Measure Source
Avoidance of antibiotic treatment in adults with acute bronchitis (AAB)	Percentage of adults ages 18–64 with a diagnosis of acute bronchitis who were not dispensed an antibiotic prescription	Claims	Effectiveness of Care: Respiratory Conditions	NCQA: HEDIS 2012 Measure Set
Adult weight screening and follow-up	Percentage of patients age 18 years and older with a calculated body mass index (BMI) in the past six months or during the current visit documented in the medical record AND if the most recent BMI is outside the parameters, a follow up plan is documented. Normal parameters: Age 65 and older BMI ≥23 and <30 Ages 18–64 BMI ≥18.5 and <25	Claims EHR	Effectiveness of Care: Prevention and Screening	CMS/ NQF 0421
Medication Management for People with Asthma (MMA)	The percentage of members ages 18–64 during the measurement year who were identified as having persistent asthma and who were dispensed appropriate medications and remained on their medications during the treatment period. Two rates are reported: 1. The percentage of members who remained on an asthma controller medication for at least 50% of the treatment period 2. The percentage of members who remained on an asthma controller medication for at least 75% of the treatment period	Claims EHR	Effectiveness of Care: Respiratory Conditions	NCQA: HEDIS 2012 Measure Set
Breast cancer screening (BCS)	Percentage of women ages 40–69 who had a mammogram to screen for breast cancer	Claims EHR	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Cervical cancer screening (CCS)	Percentage of women ages 21–64 who received one or more Pap tests to screen for cervical cancer	Claims Medical record EHR	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Chlamydia screening in women (CHL)	Percentage of women ages 16–24 who were identified as sexually active and who had at least one test for chlamydia during the measurement year	Claims EHR	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Colorectal cancer Screening (COL)	Percentage of members ages 50–75 who had appropriate screening for colorectal cancer	Claims Medical record EHR	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Cholesterol management for patients with cardiovascular conditions (CMC)	Percentage of members ages 18–75 who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary interventions (PCI) from January 1 to November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year, who had each of the following during the measurement year: LDL–C screening LDL–C control (<100 mg/dL)	Claims Medical record	Effectiveness of Care: Cardiovascular Conditions	NCQA: HEDIS 2012 Measure Set
Antidepressant medication management (AMM)	Percentage of members age 18 and older who were diagnosed with a new episode of major depression and treated with antidepressant medication, and who remained on an antidepressant medication treatment. Two rates are reported: 1. Effective acute phase treatment: the percentage of newly diagnosed and treated members who remained on an antidepressant medication for at least 84 days (12 weeks) 2. Effective continuation phase treatment: the percentage of newly diagnosed and treated members who remained on an antidepressant medication for at least 180 days (6 months)	Claims EHR	Effectiveness of Care: Behavioral Health	NCQA: HEDIS 2012 Measure Set
Comprehensive diabetes care: Hemoglobin A1c (HbA1c) testing	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had HbA1c testing	Claims Medical record EHR	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set
Comprehensive diabetes care: HbA1c poor control (>9.0%)	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had poor HbA1c control (>9.0%)	Claims Medical record EHR	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set

Measure	Description	Data Source(s)	Composite Domain	Measure Source
Comprehensive diabetes care: blood pressure control (<140/80 mm Hg)	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had blood pressure control of <140/80 mm Hg	Claims Medical record EHR	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set
Comprehensive diabetes care: Eye exam (retinal) performed	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had an eye exam (retinal) performed	Claims Medical record EHR	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set
Comprehensive diabetes care: LDL–C screening	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had an LDL–C screening	Claims Medical record EHR	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set
Comprehensive diabetes care: LDL–C <100 mg/dL	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had good LDL–C control (<100 mg/L)	Claims Medical record EHR	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set
Comprehensive diabetes care: Medical attention for nephropathy	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had medical attention for nephropathy	Claims Medical record EHR	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set
Comprehensive diabetes care	Percentage of members ages 18–75 with diabetes (type 1 and type 2) who had each of the following: hemoglobin A1c testing, HbA1c poor control (>9.0%), HbA1c control (<8.0%), HbA1c control (<7.0%) for a selected population, eye exam (retinal) performed, LDL–C screening, LDL–C control (<100 mg/dL), medical attention for nephropathy, blood pressure control (<140/80 mm Hg), blood pressure control (<140/90 mm Hg)	Claims Medical record	Effectiveness of Care: Diabetes	NCQA: HEDIS 2012 Measure Set
Controlling high blood pressure (CBP)	Percentage of members ages 18–85 who had a diagnosis of hypertension and whose blood pressure was adequately controlled (<140/90) during the measurement year	Claims Medical record	Effectiveness of Care: Cardiovascular Conditions	NCQA: HEDIS 2012 Measure Set
Use of imaging studies for low back pain (LBP)	Percentage of members with a primary diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of diagnosis	Claims EHR	Effectiveness of Care: Musculoskeletal Conditions	NCQA: HEDIS 2012 Measure Set
Annual monitoring for patients on persistent medications (MPM)	Percentage of members age 18 and older who received at least 180 treatment days of ambulatory medication therapy for a select therapeutic agent during the measurement year and at least one therapeutic monitoring event for the therapeutic agent in the measurement year. For each product line, report each of the four rates separately and as a total rate. • annual monitoring for members of angiotensin converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARB) • annual monitoring for member on digoxin • annual monitoring for members on diuretics • annual monitoring for members on anticonvulsants • total rate (the sum of the four numerators divided by the sum of the four denominators)	Claims	Effectiveness of Care: Medication Management	NCQA: HEDIS 2012 Measure Set
Pneumonia vaccination status for older adults (PNU)	Percentage of Medicare members age 65 and older as of January 1 of the measurement year who have ever received a pneumococcal vaccination	Survey EHR	Effectiveness of Care: Measures Collected Through the CAHPS Health Plan Survey	NCQA: HEDIS 2012 Measure Set via the Medicare CAHPS Survey
Preventive Care and Screening Measure Pair: a) Tobacco Use Assessment, and b) Tobacco Cessation Intervention	a) Percentage of patients age 18 years and older who have been seen for at least 2 office visits who were queried about tobacco use one or more times within 24 months b) Percentage of patients age 18 years and older identified as tobacco users within the past 24 months and have been seen for at least 2 office visits, who received cessation intervention	Claims EHR	Effectiveness of Care: Prevention and Screening	CMS AMA–PCPI

Source: Commonwealth Fund Patient-Centered Medical Home Evaluators' Collaborative.

Table 4. Core Recommended Technical Quality Measures for PCMH Meta-Analysis

Adult Quality Measures	
Claims-based measures	*Claims- and chart-based measures*
Diabetes process measures	All diabetes outcome measures
Pneumonia vaccination	Tobacco assessment and intervention (aligned with Meaningful Use incentives and ACO models)
Cervical cancer screening	BMI documentation and follow-up (aligned with Meaningful Use incentives and ACO models)
Breast cancer screening	Hypertension control
Colorectal cancer screening	Hyperlipidemia control
Antidepressant medication management	Acute low back pain imaging
Overuse: antibiotics for acute bronchitis	
Safety: persistent medication monitoring	
Asthma medication management (ages 18–64)	
Child Quality Measures	
Claims-based measures	*Claims- and chart-based measures*
Well-child visits (all pre-specified ages)	2-year and 13-year immunizations
Appropriate testing for children with pharyngitis	Body mass index assessment and follow-up percentile
Follow-up care for children prescribed attention deficit hyperactivity disorder medication	
Asthma medication management (ages 5–18)	

Source: Commonwealth Fund Patient-Centered Medical Home Evaluators' Collaborative.

Notes

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10 Agency for Healthcare Research and Quality, CAHPS Patient-Centered Medical Home (PCMH) Item Set.

Appendix A1. Members of the Commonwealth Fund Patient-Centered Medical Home Evaluators' Collaborative

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Note: Collaborative members provided extensive feedback on the recommended measures over several months during meetings, conference calls, and through online surveys. However, this statement does not necessarily reflect full endorsement of the entire membership.

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Appendix A2. Supplemental Adult Technical Quality Measures for PCMH Evaluations

Measure	Description	Data Source(s)	Important Considerations	Composite Domain	Measure Source
Fall risk management (FRM)	The two components of this measure assess different facets of fall risk management: Discussing fall risk: the percentage of Medicare members 75 and older or 65–74 with balance or walking problems or a fall in the past 12 months, who were seen by a practitioner in the past 12 months and who discussed falls and problems with balance or walking with their current practitioner Managing fall risk: the percentage of Medicare members 65 and older who had a fall or had problems with balance or walking in the past 12 months, who were seen by a practitioner in the past 12 months, and who received fall risk intervention from their current practitioner	Survey	May require heavy chart abstraction	Effectiveness of Care: Measures Collected Through Medicare Health Outcome Survey	NCQA: HEDIS 2012 Measure Set via the Medicare Health Outcomes Survey
Flu shots for adults ages 50–64 (FSA) and flu shots for older adults (FSO)	FSA: A rolling average represents the percentage of commercial members ages 50–64 who received an influenza vaccination between September 1 of the measurement year and the date when the CAHPS 4.0H Survey was completed FSO: The percentage of Medicare members 65 and older as of January 1 of the measurement year who received an influenza vaccination between September 1 of the measurement year and the date when the Medicare CAHPS survey was completed	Survey	May not be accurate due to wide variety of sources where patients could get an influenza vaccination	Effectiveness of Care: Measures Collected Through the CAHPS Health Plan Survey	NCQA: HEDIS 2012 Measure Set via CAHPS Health Plan Survey 4.0H, Adult Version (FSA) and Medicare CAHPS (FSO)
Medication reconciliation post-discharge (MRP)	The percentage of discharges from January 1–December 1 of the measurement year for members 66 and older for whom medications were reconciled on or within 30 days of discharge	Claims Medical record EHR	May be difficult to abstract from medical records	Effectiveness of Care: Medication Management	NCQA: HEDIS 2012 Measure Set
Osteoporosis testing in older women (OTO)	The percentage of Medicare women 65 years and over who report ever having received a bone density test to check for osteoporosis	Survey EHR	Some question the utility of this measure on a population basis	Effectiveness of Care: Measures Collected Through Medicare Health Outcome Survey	NCQA: HEDIS 2012 Measure Set via the Medicare Health Outcome Survey
Medical assistance with smoking and tobacco use cessation (MSC)	The three components of this measure assess different facets of providing medical assistance with smoking and tobacco use cessation: Advising smokers and tobacco users to quit: a rolling average represents the percentage of members 18 and older who are current smokers or tobacco users and who received cessation advice during the measurement year Discussing cessation medications: a rolling average represents the percentage of members 18 and older who are current smokers or tobacco users and who discussed or were recommended cessation medications during the measurement year Discussing cessation strategies: a rolling average represents the percentage of members 18 and older who are current smokers or tobacco users who discussed or were provided cessation methods or strategies during the measurement year	Survey EHR	May be more robust and linkable to outcomes than the smoking cessation advice measure; Documentation in the chart more likely to be inadequate	Effectiveness of Care: Measures Collected Through the CAHPS Health Plan Survey	NCQA: HEDIS 2012 Measure Set; Collected via CAHPS Health Plan Survey 4.0H, Adult Version and Medicare CAHPS (Medicare CAHPS collects results for only the *Advising Smokers and Tobacco Users to Quit* rate)
Management of urinary incontinence in older adults (MUI)	The two components of this measure assess the management of urinary incontinence in older adults: Discussing urinary incontinence: the percentage of Medicare members 65 and older who reported having a problem with urine leakage in the past six months and who discussed their urine leakage problem with their current practitioner Receiving urinary incontinence treatment: the percentage of Medicare members 65 and older who reported having a urine leakage problem in the past six months and who received treatment for their current urine leakage problem	Survey	Documentation may be inadequate; treatment may consist of medications that can promote falls	Effectiveness of Care: Measures Collected Through Medicare Health Outcome Survey	NCQA: HEDIS 2012 Measure Set via the Medicare Health Outcomes Survey
Use of high-risk medications in the elderly (DAE)	Percentage of Medicare members 65 and older who received at least one high-risk medication The percentage of Medicare members 65 and older who received at least two different high-risk medications (for both rates, a lower rate represents better performance)	Claims EHR	There may be valid reasons why a patient may need to be on these medications; not much data that reducing these medications clearly improves outcomes—these criteria are controversial	Effectiveness of Care: Medication Management	NCQA: HEDIS 2012 Measure Set

Source: Commonwealth Fund Patient-Centered Medical Home Evaluators' Collaborative.

Appendix A3. Core Recommended Pediatric Technical Quality Measures for PCMH Evaluations

Measure	Description	Data Source(s)	Composite Domain	Measure Source
Immunizations for adolescents (IMA)	The percentage of adolescents age 13 who had one dose of meningococcal vaccine and one tetanus, diphtheria toxoids and acellular pertussis vaccine (Tdap) or one tetanus, diphtheria toxoids vaccine (Td) by their 13th birthday. The measure calculates a rate for each vaccine and one combination rate.	Claims Medical record	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Medication Management for People with Asthma (MMA)	The percentage of members ages 5–18 during the measurement year who were identified as having persistent asthma and who were dispensed appropriate medications and remained on their medications during the treatment period. Two rates are reported, stratified by ages 5–11 and 12–18: 1. The percentage of members who remained on an asthma controller medication for at least 50% of the treatment period 2. The percentage of members who remained on an asthma controller medication for at least 75% of the treatment period	Claims EHR	Effectiveness of Care: Respiratory Conditions	NCQA: HEDIS 2012 Measure Set
Adolescent well-care visits (AWC)	The percentage of enrolled members ages 12–who had at least one comprehensive well-care visit with a primary care provider or an OB/GYN practitioner during the measurement year	Claims Medical record	Utilization and Relative Resource Use: Utilization	NCQA: HEDIS 2012 Measure Set
Appropriate testing for children with pharyngitis (CWP)	The percentage of children agers 2–18 who were diagnosed with pharyngitis, dispensed an antibiotic and received a group A streptococcus test for the episode	Claims EHR	Effectiveness of Care: Respiratory Conditions	NCQA: HEDIS 2012 Measure Set
Childhood immunization status (CIS)	The percentage of children at age 2 who had four diphtheria, tetanus, and acellular pertussis (DTaP); three polio (IPV); one measles, mumps and rubella (MMR); three H influenza type B (HiB); three hepatitis B (HepB), one chicken pox (VZV); four pneumococcal conjugate (PCV); two hepatitis A (HepA); two or three rotavirus (RV); and two influenza vaccines by their second birthday. The measure calculates a rate for each vaccine and nine separate combination rates.	Claims Medical record EHR	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Chlamydia screening in women (CHL)	The percentage of women ages 16–24 who were identified as sexually active and who had at least one test for chlamydia during the measurement year	Claims EHR	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Follow-up after hospitalization for mental illness (FUH)	The percentage of discharges for members ages 6 and older who were hospitalized for treatment of selected mental health disorders and who had an outpatient visit, an intensive outpatient encounter, or partial hospitalization with a mental health practitioner. Two rates are reported: 1. The percentage of members who received follow-up within 30 days of discharge 2. The percentage of members who received follow-up within seven days of discharge	Claims	Effectiveness of Care: Behavioral Health	NCQA: HEDIS 2012 Measure Set
Follow-up care for children prescribed attention deficit hyperactivity disorder medication (ADD)	The percentage of children newly prescribed attention-deficit hyperactivity disorder (ADHD) medication who had at least three follow-up care visits within a 10-month period, one of which was within 30 days of when the first ADHD medication was dispensed. Two rates are reported: 1. Initiation phase: the percentage of members 6–12 as of the index prescription start date (IPSD) with an ambulatory prescription dispensed for ADHD medication, who had one follow-up visit with practitioner with prescribing authority during the 30-day Initiation Phase 2. Continuation and maintenance phase: the percentage of members ages 6–12 as of the IPSD with an ambulatory prescription dispensed for ADHD medication, who remained on the medication for at least 210 days and who, in addition to the visit in the initiation phase, had at least two follow-up visits with a practitioner within 270 days (9 months) after the initiation phase ended	Claims EHR	Effectiveness of Care: Behavioral Health	NCQA: HEDIS 2012 Measure Set
Weight assessment and counseling for nutrition and physical activity for children/adolescents (WCC)	The percentage of members ages 3–17 who had an outpatient visit with a primary care provider or OB/GYN and who had evidence of the following during the measurement year: Body mass index (BMI) percentile documentation; counseling for nutrition; counseling for physical activity	Claims Medical record EHR	Effectiveness of Care: Prevention and Screening	NCQA: HEDIS 2012 Measure Set
Well-child visit in the first 15 months of life (W15)	The percentage of members who turned 15 months old during the measurement year and who had the following number of well-child visits with a PCP during their first 15 months of life: no well-child visits; one well-child visit; two well-child visits; three well-child visits; four well-child visits; five well-child visits; six or more well-child visits	Claims Medical record	Utilization and Relative Resource Use: Utilization	NCQA: HEDIS 2012 Measure Set
Well-child visit in the third, fourth, fifth, and sixth years of life (W34)	The percentage of members ages 3–6 who had one or more well-child visits with a primary care provider during the measurement year.	Claims Medical record	Utilization and Relative Resource Use: Utilization	NCQA: HEDIS 2012 Measure Set

Source: Commonwealth Fund Patient-Centered Medical Home Evaluators' Collaborative.

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