Comprehensive Primary Care Payment Methodological Brief

Health Data Decisions
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I. Executive Summary

Family Medicine for America's Health (FMAHealth) is developing a Comprehensive Primary Care Payment (CPCP) model to support the move from transactional payment to performance-based payment for value. FMAHealth is a five-year collaboration sponsored by eight key family medicine organizations in the United States. Its mission is to demonstrate the value of primary care in achieving better health and better care at lower costs for people across the United States while improving the ability of primary care professionals to reach the full potential of professional and personal success that primary care offers. To accomplish its mission, FMAHealth has created seven Tactic Teams that focus on the following critical areas: Practice Transformation, Technology, Research, Payment, Workforce Education and Development, Engagement of Stakeholders, and a Cross-Tactic Team on Reducing Health Disparities. For more information, see http://fmahealth.org.

Given that FFS reimbursement is incompatible with achieving the goals of the triple aim, the objective of this project is to research and develop a quantitative methodology to describe a comprehensive primary care payment model which supports it. This goal includes developing a prospective calculator which applies this methodology and models its expected impact. This study surveys the current state of value-based primary care payment models in use in the U.S. and draws key information about the efficacy, challenges, and successes of these programs. The resulting recommendations provide a framework and justification for critical components of a CPCP model.

Based on our findings in the CPCP Background Report, we recommend that a comprehensive primary care payment methodology incorporate the following key components and best practices:

- Primary Care Payment Rate: The CPCP payment rate should account for approximately 10-12% of total health care costs, in contrast to the 6-9% supported by high performing health systems today.

- Population Risk Adjustment: The payment should be risk adjusted using a hybrid model including the Primary Care Activity Level (PCAL) framework with a Minnesota Complexity Assessment Method (MCAM), component. The Chronic Illness and Disability Payment System (CDPS) can be used as a validation proxy for development and testing. Common commercial models may also be used.

- Social Determinants of Health: The payment should be further adjusted by leveraging the University of Wisconsin Area Deprivation Index (ADI), which is a publicly available tool that provides a single index at the zip code, state, county, tract and block group level. A population of interest must be grouped by representative population weight into the most appropriate geographic groups and then averaged.

- Infrastructure Adjustment: Recommend setting an infrastructure floor to align with research of the cost to maintain minimum PCMH standards. Scaling factors should be tied to a measure of comprehensiveness of care.

- Efficiency Adjustment: Recommend using common and proven global efficiency metrics include hospital admissions for ambulatory care sensitive conditions (ACSC), potentially avoidable emergency department visits, generic fill rate, and a measure of comprehensiveness of care

- Quality Adjustment: Recommend using the Core Quality Measures Collaborative's PCMH-ACO-Primary Care Core Measure Set, with additional focus on measures of comprehensiveness and continuity of care. Metrics should focus on risk adjusted outcomes relative to expected outcomes.

- Patient Attribution: For patients without positive selection records, recommend deploying an industry standard 4-step attribution methodology supplemented by a matrix of stopping rules derived from physician productivity research to set boundary levels.

This methodology applies these recommendations by calculating a base rate that is driven by current fee-for-service payment history and then applying 4 modifiers. These modifiers adjust the base rate to account for patient risk and social determinants of health for the population in question. They also provide further adjustments for quality, efficiency, and infrastructure for the primary care provider in question.

The following components of the CPCP model provide the necessary details to calculate a prospective reimbursement schedule using the base rate and modifiers.

- Base Rate
  - PCAL calculation
  - CPCP base rate calculation

- Modifier 1: Population Adjustment
  - Risk adjustment based on age, sex, and diagnoses
  - Risk adjustment based on social determinants of health
  - Risk adjustment based on complexity
  - Payment adjustment, up to 5%

- Modifier 2: Quality Adjustment
  - Quality metrics
  - Composite scoring method
  - Payment adjustment, up to 5%

- Modifier 3: Efficiency Adjustment
  - Quality metrics
  - Composite scoring method
  - Payment adjustment, up to 5%

- Modifier 4: Infrastructure Adjustment
  - Infrastructure metrics
  - Composite scoring method
  - Payment Adjustment, up to 7.5%

- Final Rate Calculation
  - Composite calculation

This base rate and modifier schema is intended to serve as a framework. It is understood that each population, payer, or provider will likely have idiosyncrasies that must be accommodated for contracting or other pragmatic purposes. This reimbursement framework provides a starting point for further tuning and negotiation of a mutually beneficial CPCP model.

II. METHODOLOGIES

A. Base Rate

To adequately fund a CPCP model, we recommend setting the total primary care payment rate to account for approximately 10-12% of total cost of care (TCOC). The comprehensive services included in a CPCP payment must include:

Direct Services:

- Patients have 24/7 access to their care team (e.g., internet tele-visits, emails and phone calls) and their personal health information (i.e., patient portals)
- Access to internet tele-visits, emails and phone calls
- Access to clinic visits (regular hours): chronic care, prevention/wellness, and urgent/episodic care and injuries)
- Ongoing and appropriate wellness + prevention planning, based on needs of particular populations
- Routine lab and tests
- Vaccine administration
- Medication management

Coordination of Care Responsibilities:

- Integration and coordination specialty care, diagnostic services, etc., across the healthcare continuum for conditions beyond the scope of the primary care physician
- Coordination of social services and community resources
- Coordination of transitions of care (admissions to hospital/nursing home/etc., discharges, transfers)
- Coordination of hospice, home health, and other healthcare outreach services
- Non-physician care management services (patient education, health coaching, care coordination, etc.)

Quality Improvement Requirements:

- Continuous quality improvement
- Data analysis and reporting programs (internal and external)
- Population health management

To derive a coarse estimate of the payment level necessary for a comprehensive payment, we calculate the Primary Care Activity Level (PCAL) for the population of interest and set this as an upper bound reference. The PCAL model uses resources spent on other types of care to 'signal' the need for primary care services. For example, to handle simple problems in-house that might otherwise be referred out; to avert crises by attentively managing chronic problems; or to coordinate care for patients during and after hospitalizations and other crises. This allows us to build a bridge from an existing FFS model to a comprehensive payment model using the FFS payments as a starting point.

In the formula that follows, Y represents the PCAL value at the annualized patient level. We define Y as the dollar amount:

Y = All FFS Primary Care Annual Dollars)
+ (0.06 * Specialty Care Annual Dollars)
+ (0.06 * Hospital IP Annual Dollars)
+ (0.17 * ED Visit Annual Dollars)
+ (0.12 * Prescription Drug Dollars)

The service category dollar amounts are calculated from the most recent year's annual FFS payments for the patient, while the coefficients are derived from research by conducted by Ash et. al.[1] We then average the Y values for the population of interest to create a population value Y_POP, which becomes our base rate upper bound. To arrive at our unadjusted base rate, we set our base rate at 8.0% of TCOC or at Y_POP, whichever is lower. This ensures that our base rate is set at either 67% of our 12% TCOC target (namely 8.0%), or a Y_POP that accurately accounts for the primary care activity level expected from the prior year of claims experience.

B. Modifier 1: Population Adjustment

Population health risk adjustment models play a critical role in avoiding adverse selection to balance panels and allocate primary care resources. While several popular commercially available models dominant the space, open source and hybrid models offer more utility for research and demonstration projects. The Minnesota Complexity Assessment Model (MCAM), which is endorsed by the AAFP, provides a framework for multi-level assessment that accounts for both evidence-based risk and heuristics for barriers to care. The U.S. Social Deprivation Index (SDI) model provides a functional initial framework with which to model adjustments to compensate for social determinants of health in comprehensive primary care, with specific attention to income and education level. This social deprivation index is positively associated with poor access and poor health outcomes, and as a multidimensional measure of deprivation, it is more strongly associated with health outcomes than a measure of poverty alone. This model may serve as a practical utility until CMS formally adopts and implements a uniform method for social determinant adjustments.

We recommend a hybrid risk model using three components: a standard commercial or open source risk model, MCAM, and SDI, layered to account for 5% of total CPCP rate. Below is a comparative list of several common standard risk models.

RISK MODELS		
MODEL	SOURCE/COST	KEY STRENGTH
ACG	Commercial/fee	High predictive power, multiple models
DxCG	Commercial/fee	High predictive power, multiple models
CDPS	Public domain/none	Moderate predictive power, open source
CMS-HCC	Public domain/none	Low predictive power, open source

The selected risk model may be indexed to itself or an appropriate reference population and used in the following bracketing schema to evaluate the proportion of a total of 5% of CPCP payment that will be adjusted.

RISK BRACKETS		
RISK TIER	RISK PERCENTILE	VALUE
Tier 1	X < 25th	-10%
Tier 2	25th <= X < 75th	0%
Tier 3	75th <= X < 95th	5%
Tier 4	X >= 95th	20%

The Minnesota Complexity Assessment may be administered to assess level of complexity for patients suspected of having higher than average complexity. For first year programs, we recommend offering a $2 PMPM adjustment to fund initial assessments. Unassessed patients will automatically be attributed to Tier 1 below. Going forward, the population will be indexed and bracketed according to the schedule below. Patients qualifying for the associated tier will trigger a PMPM adjustment to their prospective payment. [3]

COMPLEXITY BRACKETS		
RISK TIER	MCAM PERCENTILE	VALUE
Tier 1	X < 25th	-10%
Tier 2	25th <= X < 75th	0%
Tier 3	75th <= X < 95th	5%
Tier 4	X >= 95th	20%

An adjustment for social determinants of health may be estimated from the University of Wisconsin Area Deprivation Index (ADI), which is a publicly available tool that provides a single index at the zip code, state, county, tract and block group level. A population of interest must be grouped by representative population weight into the most appropriate geographic groups and then averaged. According to a 2014 study published in the Annals of Internal Medicine, the top 15% most disadvantaged households experienced a significant increase in health impact, particularly for readmission rates. [2,6]

If the ADI for the population of interest is less than 1.15, then we assess no adjustment for social determinants. If the area averaged ADI is greater than or equal to 1.15, we assess a $5 PMPM adjustment to the base rate.

SOCIAL BRACKETS		
RISK TIER	ADI PERCENTILE	VALUE
Tier 1	X < 1.15	No adjustment
Tier 2	X > 1.15	$5 PMPM

The ADI tables are packaged with the prospective calculator, and instructions for creating an area level averaged ADI estimate are included therein.

C. Modifier 2: Quality Adjustment

Performance measurement is a key component of healthcare management and improvement. The CPCP model supports a robust but flexible approach to performance measurement. Improved health outcomes, and not merely the provision of health care services, should be the goal of the healthcare delivery system. CPCP should recognize and reward health improvement. The CPCP methodology accounts for both superior outcomes and recognizes incremental improvement of patients that have not achieved a targeted goal.

Contracting arrangements using CPCP may follow several different paths. Claims-based quality measures may be established and relaxed in favor of efficiency measures, or maintained in parallel. As a bridge model, robust quality measures may be tracked early in an arrangement as a process measure triangulation of outcomes. As efficiency measures improve while maintaining high quality standards, the quality measurement component may be relaxed partially or entirely to accommodate relaxation of encounter data reporting that resembles direct primary care. A primary care contracting arrangement may find utility in any number of approaches on this spectrum based on risk tolerance, existing performance, and other factors. For purposes of this discussion, we will assume that robust quality measurement will be maintained through administrative claims data throughout an engagement. Modifications to the final payment model under quality measurement relaxation will be addressed in that section.

We recommend conforming to the PCMH-ACO-Primary Care Core Measure Set, with additional focus on measures of comprehensiveness and continuity of care. This set of primary care quality measures was developed through consensus by the Core Quality Measure Collaborative as a minimum standard set of metrics for PCMH and ACO applications. These metrics include:

QUALITY MEASURES			
NQF NUMBER	MEASURE	DENOMINATOR DESCRIPTION	NUMERATOR DESCRIPTION
18	Controlling high blood pressure, HEDIS 2016 variant or JNC-8 variant	The percentage of members 18-85 years of age who had a diagnosis of hypertension (HTN) and whose BP was adequately controlled during the measurement year.	The number of members in the denominator whose most recent BP (both systolic and diastolic) is adequately controlled during the measurement year.
71	Persistent Beta Blocker Treatment After a Heart Attack	The percentage of members 18 years of age and older during the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with a diagnosis of AMI and who received persistent beta-blocker treatment for six months after discharge.	A 180-day course of treatment with beta-blockers.
68	Ischemic Vascular Disease: Use of Aspirin or Another Antithrombotic	Patients aged 18 years of age and older with the diagnosis of ischemic vascular disease during the measurement period, or who were discharged alive for acute myocardial infarction, coronary artery bypass graft or percutaneous coronary interventions in the 12 months prior to the measurement period.	Patients who have documentation of use of aspirin or another antithrombotic therapy.
59	Comprehensive Diabetes Care: HbA1c Poor Control	The percentage of members of 18-75 years of age with diabetes (type 1 and type 2) who had each of the following: HbA1c testing, HbA1c control (<8.0%), eye exam (retinal) performed and medical attention for nephropathy.	The most recent HbA1c level (performed during measurement year) is >9.0% or is missing, or was not done during the measurement year.
55	Comprehensive Diabetes Care: Eye Exam	The percentage of members of 18-75 years of age with diabetes (type 1 and type 2) who had each of the following: HbA1c testing, HbA1c control (<8.0%), eye exam (retinal) performed and medical attention for nephropathy.	Screening or monitoring for diabetic retinal disease.

57	Comprehensive Diabetes Care: Hemoglobin A1c Testing	The percentage of members of 18-75 years of age with diabetes (type 1 and type 2) who had each of the following: HbA1c testing, HbA1c control (<8.0%), eye exam (retinal) performed and medical attention for nephropathy.	An HbA1c test performed during the measurement year.
56	Comprehensive Diabetes Care: Foot Exam	The percentage of members of 18-75 years of age with diabetes (type 1 and type 2) who had each of the following: HbA1c testing, HbA1c control (<8.0%), eye exam (retinal) performed and medical attention for nephropathy.	Received a foot exam (visual inspection and sensory exam with mono filament and a pulse exam) during the measurement year.
62	Comprehensive Diabetes Care: Medical Attention for Nephropathy	The percentage of members of 18-75 years of age with diabetes (type 1 and type 2) who had each of the following: HbA1c testing, HbA1c control (<8.0%), eye exam (retinal) performed and medical attention for nephropathy.	A nephropathy screening or monitoring test or evidence of nephropathy.
97	Medication Reconciliation	The percentage of discharges from January 1-December 1 of the measurement year for members 18 years of age and older whom medications were reconciled the date of discharge through 30 days after discharge.	Medication reconciliation conducted by a prescribing practitioner, clinical pharmacist or registered nurse on the date of discharge through 30 days after discharge.
32	Cervical Cancer Screening	The percentage of women 21-64 who were screened for cervical cancer. Women 21-64 who had cervical cytology every 3 years. Women 30-64 who had cervical cytology/human papillomavirus (HPV) co-testing every 5 years.	The number of women who were screened for cervical cancer.
N/A	Non-recommended Cervical Cancer Screening in Adolescent Females	The percentage of adolescent females 16-20 years as of December 31 of the measurement year.	Cervical cytology or an HPV test performed during the measurement year.
2372	Breast Cancer Screening	The percentage of women 50-74 years of age who had a mammogram to screen for breast cancer.	One or more mammograms any time on or between October 1 two years prior to the measurement year and December 31 of the measurement year.
34	Colorectal Cancer Screening	The percentage of members 50-75 years of age who had appropriate screening for colorectal cancer.	One or more screenings for colorectal cancer.
28	Preventive Care Screening: Tobacco Use: Screening and Cessation	The percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months and who received cessation counseling intervention if identified as a tobacco user.	Patients who were screened for tobacco use at least once within 24 months and who received tobacco cessation intervention if identified as a tobacco user.
421	Preventive Care Screening: Body Mass Index (BMI) Screening and Follow-Up	Percentage of patients aged 18 years and older with a BMI documented during the current encounter or during the previous six months and with a BMI outside of normal parameters, a follow-up plan is documented during the encounter or during the previous six months of the current encounter	Patients with a documented BMI during the encounter or during the previous six months, AND when the BMI is outside of normal parameters, a follow-up plan is documented during the encounter or during the previous six months of the current encounter
52	Use of Imaging Studies for Low Back Pain	The percentage of members with a primary diagnosis of low back pain who did not have an imaging study within 28 days of the diagnosis.	An imaging study with a diagnosis of uncomplicated low back pain on the IESD or in the 28 days following the IESD.

5	Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS)	A standardized survey instrument that asks patients to report on their experiences with primary or specialty care received from providers and their staff in ambulatory care settings over the preceding 12 months.	The survey includes standardized questionnaires for adults and children. All questionnaires can be used for both.
710	Depression Readmission at 12 Months	Adult patients age 18 and older with major depression or dysthymia and an initial PHQ-9 score > 9 who demonstrate remission at twelve months defined as PHQ-9 score less than 5. This measure applies to both patients with newly diagnosed and existing depression whose current PHQ-9 score indicates a need for treatment.	Adults who achieved remission at twelve months as demonstrated by a twelve month (+/- 30 days) PHQ-9 score of less than five.
1885	Depression Response at 12 Months – Progress Toward Remission	Adult patients age 18 and older with major depression or dysthymia and an initial PHQ-9 score > 9 who demonstrate a response to treatment at 12 months defined as a PHQ-9 score that is reduced by 50% or greater from the initial PHQ-9 score.	Applies to patients with newly diagnosed and existing depression identified during measurement period whose PHQ-9 indicates a need for treatment.
1799	Medication Management for People with Asthma	The percentage of members 5-85 years of age during the measurement year who were identified as having persistent asthma and were dispensed appropriate medications that they remained on during the treatment period.	The number of members who achieved a PDC of at least 50% or 75% of their asthma controller medications during the measurement year.
58	Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis	The percentage of adults 18-64 years of age with a diagnosis of acute bronchitis who were not dispensed an antibiotic prescription.	Dispensed prescription for antibiotic medication on or three days after the IESD.

These measures represent a superset of recommend measures for use. To aggregate these measures, we recommend equal weighting among the measures selected, with overall value accounting for 5% of the final CPCP rate, with an absolute gating schema as follows:

QUALITY MEASURE GATES		
MEASURES	THRESHOLD	VALUE
50%	+/- 5% at or above benchmark, or close 10% of gap	1%
70%	At or above benchmark, or close 15% of gap	3%
90%	At or above, or close 20% of gap	5%

For example, if 10 measures are selected and implemented, then the provider must be within 5% of benchmark for at least 5 (50%) of those measures to trigger a 1% quality adjustment, at or above benchmark on 7 measures to trigger a 3% adjustment, or at or above benchmark on 9 measures to trigger a 5% quality adjustment. These adjustments are calculated retrospectively and applied prospectively. The calculations are absolute and not dependent on the performance of other practices.

D. Modifier 3: Efficiency Adjustment

Efficiency metrics are a critical component of any measurement model which attempts to assess the impact that primary care delivery has on the overall healthcare system. This is particularly important for a comprehensive payment model which does not reimburse based on FFS activity but assesses the global impact of a physician on the health of their patients. Current research also points to the value of a measures of comprehensiveness of care. While more difficult to measure consistently and empirically, comprehensiveness has been shown to be a key indicator of overall primary care effectiveness and global efficiency. Infrastructure payments could be supplemented to help offset the costs of maintaining hybrid claims- and survey-based measures of comprehensiveness. We recommend using common and proven global efficiency metrics including hospital admissions for ambulatory care-sensitive conditions (ACSC), potentially avoidable emergency department visits, prescription generic fill rate, as well as a measure of comprehensiveness of care.

A wide variety of ACSC hospital admissions can be assessed using the Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators. A selection of this battery of metrics specific to ACSC admissions is provided in the following table. We recommend selecting a set of appropriate measures to contribute to an aggregate 5% of final CPCP rate.

PREVENTION QUALITY INDICATORS			
AHRQ/NQF NUMBER	MEASURE	DENOMINATOR DESCRIPTION	NUMERATOR DESCRIPTION
PQI 01	Diabetes Short-term Complications Admission Rate	Population ages 18 years and older in the metropolitan area or county	Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for diabetes short-term complications (ketoacidosis, hyperosmolarity, or coma).
PQI 02	Perforated Appendix Admission Rate	Discharges, for patients ages 18 years and older, with any-listed ICD-10-CM diagnosis codes for appendicitis.	Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any-listed ICD-10-CM diagnosis codes for perforations or abscesses of appendix.
PQI 03	Diabetes Long-term Complications Admission Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for diabetes with long-term complications (renal, eye, neurological, circulatory, or complications not otherwise specified).
PQI 05	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate	Population ages 40 years and older in metropolitan area or county.	Discharges, for patients ages 40 years and older, with either a principal ICD-10-CM diagnosis code for COPD; or a principal ICD-10-CM diagnosis code for asthma.
PQI 07	Hypertension Admission Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for hypertension.
PQI 08	Heart Failure Admission Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for heart failure.
PQI 09	Low Birth Weight Rate	Number of newborns in metropolitan area or county.	Number of newborns, among cases meeting the inclusion and exclusion rules for the denominator, with any-listed ICD-10-CM diagnosis codes for birth weight less than 2,500 grams.

PQI 10	Dehydration Admission Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with either a principal ICD-10-CM diagnosis code for dehydration; or any secondary ICD-10-CM diagnosis codes for dehydration and a principal ICD-10-CM diagnosis code for hyperosmolality and/or hypernatremia, gastroenteritis, or acute kidney injury.
PQI 11	Bacterial Pneumonia Admission Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for bacterial pneumonia
PQI 12	Urinary Tract Infection Admission Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for urinary tract infection.
PQI 14	Uncontrolled Diabetes Admission Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with a principal ICD-10-CM diagnosis code for uncontrolled diabetes without mention of a short-term or long-term complication.
PQI 15	Asthma in Younger Adults Admission Rate	Population ages 18 through 39 years in metropolitan area or county.	Discharges, for patients ages 18 through 39 years, with a principal ICD-10-CM diagnosis code.
PQI 16	Lower-Extremity Amputation among Patients with Diabetes Rate	Population ages 18 years and older in metropolitan area or county.	Discharges, for patients ages 18 years and older, with any-listed ICD-10-PCS procedure codes for lower extremity amputation and any-listed ICD-10-CM diagnosis codes for diabetes.
NQF 1789	All-Cause 30 Day Readmissions	This claims-based measure can be used in either of two patient cohorts: (1) admissions to acute care facilities for patients aged 65 years or older or (2) admissions to acute care facilities for patients aged 18 years or older. We have tested the measure in both age groups	The outcome for this measure is unplanned all-cause 30-day readmission. We defined a readmission as an inpatient admission to any acute care facility which occurs within 30 days of the discharge date of an eligible index admission. All readmissions are counted as outcomes except those that are considered planned.

In addition to ACSC hospital admissions, we recommend inclusion of measures of potentially avoidable emergency department visits. These areas may include:

PREVENTABLE EMERGENCY DEPARTMENT VISITS		
MEASURE	DENOMINATOR DESCRIPTION	NUMERATOR DESCRIPTION
Potentially Avoidable ED Visits	All patients	Oregon Health Authority Measure Specs, Ambulatory Care: Avoidable Emergency Department Visits [4]

Finally, we recommend three additional measures oriented toward physician behavior and access.

PHYSICIAN BEHAVIOR AND ACCESS		
MEASURE	NUMERATOR	DENOMINATOR
Rx Generic Fill Rate	The number of generic prescriptions filled in five therapeutic classes for the eligible population.	Total number of total prescriptions filled in five therapeutic classes for the eligible population.
Comprehensiveness of Care	Primary Care Assessment Survey (PCAS) [5]	Patient survey sample
Appropriate Use of Imaging (HEDIS LBP)	Patients 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 the diagnosis.	Patients 18–50 years of age

To create an aggregated scoring, we recommend that a CPCP model include at least 8 ACSC admission measures, at least 1 potentially avoidable ED measure, and at least one of either generic fill rate or comprehensiveness of care. These measures can be used to calculate a composite efficiency adjustment using the following gated contributions to a total 5% maximum efficiency adjustment.

EFFICIENCY MEASURE GATES			
MEASURE DOMAIN	MEASURES COMPLIANT	THRESHOLD	CONTRIBUTION
ACSC Admission	50%	+/- 5% at or above benchmark, or close 10% of gap	10%
	70%	At or above benchmark, or close 15% of gap	20%
	90%	At or above benchmark, or close 20% of gap	40%
Potentially Avoidable ED	50%	+/- 5% at or above benchmark, or close 10% of gap	10%
	70%	At or above benchmark, or close 15% of gap	20%
	90%	At or above benchmark, or close 20% of gap	40%
Physician Behavior and Access	50%	+/- 5% at or above benchmark, or close 10% of gap	10%
	70%	At or above benchmark, or close 15% of gap	15%
	90%	At or above benchmark, or close 20% of gap	20%

For example, a high-performing practice which received 40% contribution scores from each domain, receives the full 10% adjustment. A practice that scores at or above benchmark in at least 70% of measures selected in each domain will indicate a 20% contribution from each domain, triggering a 60% rate of max adjustment, or 6%.

E. Modifier 4: Infrastructure Adjustment

The purpose of the infrastructure payment or care management fee mechanism is to support the transformation from the transactional visit based model to one of team-based care focused on outcomes. Team based care has two overarching goals: 1) to reduce inefficiencies by delegating clinical work among a team that can work in task-oriented verticals more efficiently than generalists, and 2) to improve the comprehensiveness of care to detect and address unmet needs, reduce referrals to specialists, and ultimately mitigate the need for utilization of health services beyond the purview of primary care.

This adjustment addresses the payment necessary for primary care practices to assemble and maintain the resources necessary to provide high-quality care and efficient care. This adjustment accounts for a team based approach to care that requires different office staffing, processes, and physician scheduling. Since revenue is no longer tied to an office visit, the practice may utilize non-physician staff (RN's, LPN's, medical assistants, and other primary care professionals) to support patient care and follow up.

We recommend setting an infrastructure payment floor or $5 PMPM, regardless of infrastructure scoring. This level has been established in the literature as the cost of maintaining minimum PCMH standards. The ceiling should be set at $7.50 PMPM, with a scoring mechanism to scale this interval based on the following key components.

INFRASTRUCTURE MEASURES		
MEASURES	BENCHMARK	VALUE
Access	At or above	$0.50 PMPM
Team-Based Care	At or above	$0.50 PMPM
Population Health Management	At or above	$0.50 PMPM
Care Management	At or above	$0.50 PMPM
Care Coordination	At or above	$0.50 PMPM

The maximum infrastructure adjustment a practice may receive is set at an absolute $7.50 PMPM, regardless of proportion of TCOC. The following guidelines should be used to set practice-specific measures and thresholds to determine compliance with the key infrastructure components:

- Access – Assess clinic hours and evening/weekend extended hours, average appointment wait time, availability of urgent care appointments.
- Team-Based Care – Assess proportion of care team work that is performed by non-physicians; assess ratio of non-physician support staff to physician staff.
- Population Health Management – Assess EMR use, risk assessment tools, care gap tracking and mitigation processes.
- Care Management – Assess health coaching, goal setting for high risk patients, chronic condition registry.
- Care Coordination – Assess referral process, lab orders, specialist coordination, health system navigation.

These areas may be adapted to a provider group and population of interest. For example, a primary care practice with less infrastructural sophistication may opt to focus on establishing core competencies such as chronic condition care gap and proactive goal setting, health navigator staff functions, and extending access hours. More sophisticated providers may choose to focus on more advanced areas or areas with maintenance thresholds to maintain, such as use of advanced risk assessment tools, increasing the proportion of clinical tasks performed by non-clinicians, health coaching, or enhanced specialist coordination.

F. Final Rate Calculation and Examples

The final rate calculation is a composite of the initial base rate estimate and the 4 modifiers. Fundamentally, we calculate the final total PMPM as a sum of patient level base PMPM and modifier adjustments.

$$\text{Patient CPCP Rate PMPM} = \text{Patient Base Rate PMPM} + \text{Modifier 1} + \text{Modifier 2} + \text{Modifier 3} + \text{Modifier 4}$$

$$\text{Population CPCP Rate PMPM} = \sum \text{Patient CPCP Rate PMPM}$$

The modifier particulars are designed to be highly configurable to a population of interest. The following calculation examples assume a variety of specific configuration decisions. These simulated case studies are designed to illustrate several realistic applications for this methodology.

Simulated Case Study: ABC Fabrication, Inc.

ABC Fabrication, Inc. is a large, western Pennsylvania-based manufacturing company with 6,800 employees and total 14,900 members. They currently contract with IBX (BCBS of NE PE) for a typical high-deductible employer-sponsored health benefit. Virtually all the group's members are paneled at Western PA Primary Care (WPPC), with which IBX contracts.

Base Rate:

IBX employer reporting generated a TCOC report showing the following category of service FFS PMPMs based on CY 2016 claims for ABC.

Primary Care PMPM	$35.33
Specialty PMPM	$105.19
Hospital PMPM	$75.45
Emergency PMPM	$21.90
Rx PMPM	$76.03
Total PMPM	$441.66
Total PMPY	$5,299.91

Using the PCAL standard weights, we calculate the Y for each of the 14,900 employees and aggregate to T_POP = $56.04. Since the standard base rate of 8.0% of TCOC is $35.33, we take the smaller of the two as our base rate, namely the standard rate of $35.33.

Modifier 1:

RISK BRACKETS			
RISK TIER	RISK PERCENTILE	VALUE	Population %
Tier 1	X < 25th	-10%	60%
Tier 2	25th <= X < 75th	0%	30%
Tier 3	75th <= X < 95th	5%	6%
Tier 4	X >= 95th	20%	4%

Taking a linear combination of the values and population percentages, we find the population to be at an overall index of .95, and thereby adjust the 5% available to 4.75%.

For MCAM, we assume a first-year model and set a standard $2 PMPM adjustor. Finally, for SDH we find the population level ADI to be 1.13, which is higher than average but not at the 1.15 threshold necessary for an adjustment.

Modifier 2:

For quality measures, we find that prior year performance on the 10 quality measures selected were within threshold for 8 measures, triggering a 3% adjustment.

Modifier 3:

Upon review of prior year claims-based performance, WPPC achieved a 40% contribution from ACSC Admission measures, a 20% contribution from Potentially Avoidable ED measures, and a 15% contribution from Physician Behavior and Access measures, totaling 75% of the available 5%, or a 3.75% adjustment.

Modifier 4:

WPPC is a highly sophisticated primary care clinic and has been participating in PCMH programs with its contracted payers since 2008. WPPC receives the base $5 PMPM PCMH maintenance rate plus 4 of the 5 additional infrastructure payment adjustments, falling short only in Care Management, triggering another $2 PMPM.

Final CPCP Rate Calculation:

Beginning with the base rate of $35.33 PMPM, we calculate the modifier percentages as:

Modifier 1:	4.75% ($1.68 PMPM)
Modifier 2:	3% ($1.06 PMPM)
Modifier 3:	7.5% ($2.65 PMPM)
Modifier 4:	$7 PMPM
Total modifier adjustments:	$12.39 PMPM
Population CPCP Rate PMPM:	$35.33 + $12.39 = $47.72 PMPM
Population CPCP Rate PMPM/TCOC PMPM:	10.8%

Simulated Case Study: XYZ Cable

XYZ Cable is a mid-sized, Arizona-based telecom company with 2,100 employees and total 3,990 members. They are self-insured and contract with a TPA for processing and administration, as well as a reinsurer. They offer their employees a rich PPO health benefit with low deductibles but high premiums and copays. The group's members are geographically dispersed across southern Arizona, but due to the rurality roughly 60% are still attributable to Tucson Primary Care Associates (TPCA).

Base Rate:

XYZ's TPA generated a TCOC report showing the following category of service FFS PMPMs based on CY 2016 claims experience.

Primary Care PMPM	$24.15
Specialty PMPM	$44.56
Hospital PMPM	$68.45
Emergency PMPM	$17.64
Rx PMPM	$42.34
Total PMPM	$294.04
Total PMPY	$3,528.48

Using the PCAL standard weights, we calculate the Y for each of the 2,390 employees and dependents attributable to TPCA and aggregate to T_POP = $39.01. Since the standard base rate of 8.0% of TCOC is $23.52, we take the smaller of the two as our base rate, namely the standard rate of $23.52.

Modifier 1:

RISK BRACKETS			
RISK TIER	RISK PERCENTILE	VALUE	Population %
Tier 1	X < 25th	-10%	55%
Tier 2	25th <= X < 75th	0%	25%
Tier 3	75th <= X < 95th	5%	14%
Tier 4	X >= 95th	20%	6%

Taking a linear combination of the values and population percentages, we find the population to be at an overall index of .96, and thereby adjust the 5% available to 4.75%.

XYZ and TPCA provider agree that administering an MCAM is not practical at this time, and choose to forgo that component.

For SDH, we find the population level ADI to be 0.17, which is considerably higher than average and at the threshold necessary for an adjustment of $5 PMPM.

Modifier 2:

For quality measures, we find that prior year performance on the 10 quality measures selected were within threshold for only 4 measures, triggering a 1% adjustment.

Modifier 3:

Upon review of prior year claims-based performance, TPCA achieved a 20% contribution from ACSC Admission measures, a 20% contribution from Potentially Avoidable ED measures, and a 10% contribution from Physician Behavior and Access measures, totaling 50% of the available 5%, or a 2.5% adjustment.

Modifier 4:

TPCA is traditional primary care clinic that has been slow to adopt patient-centered medical home standards such as team-based care and electronic medical records. TPCA receives the base $5 PMPM to invest in infrastructure needed, but does not receive other infrastructure payment adjustments at this time. TPCA will be eligible for rescoring based on infrastructure gains made in the coming experience year.

Final CPCP Rate Calculation:

Beginning with the base rate of $23.52 PMPM, we calculate the modifier percentages as:

Modifier 1:	4.75% ($1.12 PMPM) + $5 PMPM = $6.12 PMPM
Modifier 2:	1% ($0.24 PMPM)
Modifier 3:	2.5% ($0.59 PMPM)
Modifier 4:	$5 PMPM
Total modifier adjustments:	$11.95 PMPM
Population CPCP Rate PMPM:	$23.52 + $11.95 = $35.47 PMPM
Population CPCP Rate PMPM/TCOC PMPM:	12.1%

Simulated Case Study: QRS Financial

QRS Financial is a mid-sized, Wisconsin-based financial services company with 2,500 employees and total 5,150 members. They contract with Anthem Blue Cross and Blue Shield of Wisconsin and offer their employees an HMO health benefit with moderate deductibles, high premiums and no copays. The group's members are centralized to greater Milwaukee, and 85% are paneled at Milwaukee Care Partners Ltd (MCP).

Base Rate:

Anthem generated a TCOC report showing the following category of service FFS PMPMs based on CY 2016 claims experience.

Primary Care PMPM	$31.30
Specialty PMPM	$68.40
Hospital PMPM	$79.12
Emergency PMPM	$20.47
Rx PMPM	$44.50
Total PMPM	$352.67
Total PMPY	$4,232.04

Using the PCAL standard weights, we calculate the Y for each of the 4,380 members paneled to MCP and aggregate to T_POP = $48.97. Since the standard base rate of 8.0% of TCOC is $28.21, we take the smaller of the two as our base rate, namely the standard rate of $28.21.

Modifier 1:

RISK BRACKETS			
RISK TIER	RISK PERCENTILE	VALUE	Population %
Tier 1	X < 25th	-10%	40%
Tier 2	25th <= X < 75th	0%	30%
Tier 3	75th <= X < 95th	5%	18%
Tier 4	X >= 95th	20%	12%

Taking a linear combination of the values and population percentages, we find the population to be at an overall index of 1.01, indicating the max 5% available.

For MCAM, QRS and MCP agree to apply a first-year MCAM adjustor of $2 PMPM.

For SDH, we find the population level ADI to be 0.94, which is lower than average and not at the threshold necessary for an adjustment.

Modifier 2:

For quality measures, we find that prior year performance on the 10 quality measures selected were within threshold for 8 measures, triggering a 3% adjustment.

Modifier 3:

Upon review of prior year claims-based performance, TPCA achieved a 40% contribution from ACSC Admission measures, a 20% contribution from Potentially Avoidable ED measures, and a 15% contribution from Physician Behavior and Access measures, totaling 75% of the available 5%, or a 3.75% adjustment.

Modifier 4:

MCP is traditional primary care clinic that has embraced some degree of patient-centered medical home standards and has invested heavily in electronic medical record systems over the past 5 years. MCP receives the base $5 PMPM to help maintain this infrastructure investment, and receives another $1 PMPM on other incremental dimensions.

Final CPCP Rate Calculation:

Beginning with the base rate of $28.21 PMPM, we calculate the modifier percentages as:

Modifier 1:	5% ($1.41 PMPM) + $2 PMPM = $3.41 PMPM
Modifier 2:	3% ($0.85 PMPM)
Modifier 3:	3.75% ($1.06 PMPM)
Modifier 4:	$6 PMPM
Total modifier adjustments:	$11.32 PMPM
Population CPCP Rate PMPM:	$28.21 + $11.33 = $39.53 PMPM
Population CPCP Rate PMPM/TCOC PMPM:	11.2%

III. Appendix A – Patient Attribution Algorithm

Patient attribution for a CPCP model must rely heavily on positive physician selection. For selection-based attribution, patients should be asked to re-confirm their PCP selection annually, ideally shortly in advance of the prospective PMPM payment cycle analysis. Positive selection attributions must be a required component for a CPCP model to be effective. For patients that do not respond or participate actively in PCP selection, we employ a standard empirical attribution process. This process must be run retrospectively based on administrative claims data, and must be made transparent to providers in question to review and approve or contest and reconcile. We recommend a four-step process that includes a 24-month look-back period that sets a prospective attribution effective during the following experience year. A prospective methodology allows physicians to know whom they are responsible for in advance and facilitates proactive care planning and management. This methodology is consistent with the core approach used in much of the industry.

- Step 1: Patient Selection of Primary Care Physician and Team
  - This is the acknowledgement that patient selection is the best choice in attribution and should be prioritized as such.

- Step 2: Primary Care Visit Events: Wellness Visits
  - If a patient is not attributed by self-selection of a primary care physician, payers should use well visits, including Welcome to Medicare, physicals, and Annual Wellness Visits provided by the patient's primary care physician or the practice team, as the next step in the attribution process.

- Step 3: Primary Care Visit Events: All Other E/M Visits
  - If a patient is not attributed by a wellness visit, the next incremental step is to include all other evaluation and management (E/M) visits to a primary care physician. The payer should attribute the patient to the primary care physician who provides the plurality of E/M visits.

- Step 4: Primary Care Prescription and Order Events
  - If the patient is not attributed by a wellness visits or any other E/M services, payers should consider claims related to medication prescriptions, durable medical equipment prescriptions, and lab and other referral orders made by primary care physicians. Payers should require a minimum of three such events before attributing a patient on this basis.

PATIENT ATTRIBUTION				
PROCESS	EVENT TYPE	ELIGIBLE PROCEDURE	THRESHOLD	TIE BREAK
Step 1	Patient selection of PCP	N/A	N/A	N/A
Step 2	PCP visits: wellness	Well visit E/M select G codes	1 visit	Most recent event
Step 3	PCP visits: all other E/M	Any E/M codes	1 visit	Most recent event
Step 4	PCP script or order events	Any Rx, DME, lab	3 events	Most recent event

No patient attribution methodology is perfect. The four-step methodology recommended above may still produce errors in assignment. Physicians must have the option to engage in a reconciliation process in which they can review, add, and remove patients from the panel lists supplied to them.

IV. APPENDIX B – MCAM TOOL

The Minnesota Complexity Assessment Method can be used to score a patient on 5 domains of potential medical and social complexities. These data are self-reported and collected through a patient interview. This approach provides insights into an additional dimension of need and complexity meant to supplement more objective measures. The schema below yields a patient complexity score which ranges from 0-30. Higher scores indicate more complexity and signal higher potential for barriers to care, low readiness to change and insufficient family or social supports which influence a patient's ability to cope with illness and participate actively in their own care. [3]

Working draft

Minnesota Complexity Assessment Method

University of Minnesota Dept of Family Medicine & Community Health, 4/23/09

Patient:	**Age / gender:**	**Problem:**

Domain	**Current state of affairs**	**Complexity level**			
Illness (Biomedical, mental health and substance abuse sx & dx)	**1. Symptom severity / functional impairment** 0=No symptoms—or reversible w/out intense efforts 1=Mild noticeable sx—don't interfere w function 2=Mod to severe symptoms that interfere w function 3=Severe symptoms impairing all daily functions	0	1	2	3
	2. Diagnostic challenge 0=Diagnosis(s) clear 1=Narrow range of alternative diagnoses 2=Multiple possibilities—clear dx expected later 3=Multiple possibilities—no clear dx expected	0	1	2	3
Readiness to engage	**3. Distress, distraction, preoccupation** 0=None 1=Mild, e.g. tense, distractible, preoccupied 2=Moderate, e.g. anxiety, mood, confusion 3=Severe w behavioral disturbances, e.g., harm	0	1	2	3
	4. Readiness for treatment and change 0=Ready & interested in tx; active cooperation 1=Unsure/ambivalent but willing to cooperate 2=Major disconnect with proposed tx; passivity 3=Major disconnect; defiant/won't negotiate	0	1	2	3
Social	**5. Home/residential safety, stability** 0=Safe, supportive, stable 1=Safe, stable, but with dysfunction 2=Safety/stability questionable—evaluate/assist 3=Unsafe/unstable—immediate change required	0	1	2	3
	6. Participation in social network 0=Good participation with family, work, friends 1=Restricted participation in 1 of those domains 2=Restricted participation in 2 of those domains 3=Restricted participation in 3 of those domains	0	1	2	3
Health system	**7. Organization of care** 0=One active main provider (medical or MH) 1=More than or less than 1 active provider(s) 2=Multiple medical / MH providers or services 3=Plus major involv. with other service systems	0	1	2	3
	8. Patient-clinician (or team) relationships 0=All appear intact and cooperative 1=Most intact; at least 1 distrustful or remote 2=Several distrustful or remote; at least 1 intact 3=Distrust evident in all pt / clinician relationships	0	1	2	3
Resources for care	**9. Shared language with providers** 0=Shared fluency in language with provider 1=Some shared language / culture with provider 2=No shared language; professional transl. available 3=No shared language; family or no translator	0	1	2	3
	10. Adequacy / consistency of insurance for care 0=Adequately insured, can pay for meds, copays 1=Under-insured* with modest other resources 2=Under-or intermittently-insured 3=Uninsured, no other financ. resources for care	0	1	2	3

Instructions:

As you gather information and listen to the patient,

- Scan for sources of complexity (interference with usual care) on the left.
- *Ask questions* that help you understand what you don't know.
- *Circle a level* that reflects your understanding of complexity in each area.
- *Outline a plan of action* that takes into account the observed pattern of complexity

Plan of action:

General goals:
(for both complexity and diagnosis)

Self-check: Do I need someone in this case with me—and who?

Team / roles required:
(who does what—how it adds up)

Patient / family role:
(as part of the team)

What clinician / team will do today:
(To act on both complexity & diagnosis)

*Underinsured: Lack of coverage for hospital, medications, mental health; presence of high deductibles /copays

No complexity—only routine care needed
No evidence of need to act (beyond routine care)

Mildly complex—basic care planning needed
Watch / prevent—explore interacting issues

Moderately complex—multifaceted plan needed
Form a well-integrated plan—set in motion

Very complex—intensive care & planning needed
Immediate, intensive and integrated action

With all your ratings in view, decide what level and kind of action is needed in what areas—and incorporate that into your action plan.

Adapted by Peek, Baird, Coleman, & DFMCH faculty with permission from,Frits Huyse, C-L psychiatrist; Dept of General Internal Medicine; Integrated Care, University Medical Centre Groningen, The Netherlands. (Huyse & Stiefel, 2006) Contact: Macaran Baird (baird005@umn.edu)

V. GLOSSARY

Accountable Care Organization (ACO). Groups of doctors, hospitals and other health care providers who come together voluntarily to give coordinated high-quality care to their patients under advanced practice facilitation and care coordination models.

Ambulatory Care-Sensitive Conditions (ACSC). A measure set used to assess the age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to the hospital.

Area Deprivation Index (ADI). A geographic area-based measure of the socioeconomic deprivation experienced by a neighborhood. Higher index values represent higher levels of deprivation.

Chronic Illness and Disability Payment System (CDPS). A diagnostic classification system that Medicaid programs can use to make health-based capitated payments for TANF and disabled Medicaid beneficiaries.

Efficiency. Measures and measure sets commonly used to calculate the ratio between the costs of resources used compared to the number of episodes of care rendered to individual patients or the total care provided to a specific population. Efficiency measures are often used to assess the cost-effectiveness of treatment patterns.

Patient Attribution. The process of empirically assigning patients to physicians by using medical claims to identify the providers that a patient routinely sees. This is done to determine accountability for the patient's conditions and health care expenditures. This approach is often used in PPO markets where patients are not paneled prescriptively.

Patient Centered Medical Home (PCMH). A care delivery model whereby patient treatment is coordinated through their primary care physician. PCMH models rely heavily on team-based care and technological support to streamline clinical operations.

Primary Care Activity Level (PCAL). A bundled payment approach used to estimate the cost of all services that primary care practitioners should provide based on total cost of care patterns. The model uses resources spent on other types of care to signal the need for primary care services.

Quality. Health care quality is the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes. Quality measures and measure sets are used to quantify the level of value and safety provided by health care resources.

Risk Adjustment. A statistical process that quantifies the underlying health status and likely future experience of a patient or patient population. Risk models are used to calibrate payments and clinical resources among health plans and other stakeholders based on the relative health of the population.

Social Determinants of Health (SDH). A branch of health services research which seeks to quantify the effect of socio-economic factors on the ability of a patient or patient population to access and afford services, as well as successfully participate in prescribed treatment plans.

Total Cost of Care (TCOC). All costs associated with treating individuals including professional, facility inpatient and outpatient, pharmacy, lab, radiology, ancillary and behavioral health services.

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