CARE TRANSFORMATION COLLABORATIVE RHODE ISLAND

pcmh kids patient-centered medical home

ADVANCING INTEGRATED HEALTHCARE

Approaches To Comprehensive Primary Care and High-risk Care Management Under Prepayment and Global Risk

Clinical Strategy Committee

April 19, 2024

Care Transformation Collaborative of RI

Agenda

Item	Time
Welcome & Announcements ***Moderator: Pano Yeracaris, MD, MPH, Chief Clinical Strategist, CTC-RI***	5 min
Rhode Island Primary Care Physicians Corporation ***Stephanie Grenier, Director of Quality & Performance, RIPCPC*** ***Andrea Galgay, Chief Operating Officer, RIPCPC*** ***Mike Tuggy, MD, SVP of Advisory Services at Converging Health***	30 min
Implementing Integrated Complex Care Management in an Accountable Care Network ***Erin Nahrgang, RN, CCM. Boston Medical Center***	45 min
Discussion & Questions	10 min

CTC-RI Conflict of Interest Statement & CME Credits

If CME credits are offered, all relevant financial relationships of those on the session planning committee have been disclosed and, if necessary, mitigated.

Claim CME Credits here:

https://www.surveymonkey.com/r/ZDZS5HG

The AAFP has reviewed 'Advancing Comprehensive Primary Care Through Improving Care Delivery Design and Community Health,' and deemed it acceptable for AAFP credit. Term of approval is from 03/18/2022 to 03/18/2023. Physicians should claim only the credit commensurate with the extent of their participation in the activity. NPs and RNs can also receive credit through AAFP's partnership with the American Nurses Credentialing Center (ANCC) and the American Academy of Nurse Practitioners Certification Board (AANPCB).

Announcements

ADVANCING INTEGRATED HEALTHCARE

May Clinical Strategy Meeting:

- Topic: OHIC Updates on Behavioral Health, RI Business Group on Health report
- May 17th, 2024, 7:30-9:00am

June Breakfast of Champions Meeting:

- Topic: Adapting Primary Care to Address Neurodivergent Patient Needs
- June 14th, 2024, 7:30-9:00am

Objectives

- Learn about an innovative multi-ACO high-risk care management model in MA for Medicaid recipients and consider lessons for work in RI
- Hear about concentrated work to prepare providers and staff for primary care capitation at a large RI IPA
- Discuss changes and developing partnerships in the RI primary care landscape

RHODE ISLAND
PHYSICIANS CORPORATION
PRIMARY CARE

Preparing for Capitation Payment Model in a large IPA

Presented by:
Stephanie Grenier, Director of Quality & Performance at RIPCPC
Andrea Galgay, COO at RIPCPC
Michael Tuggy, MD, SVP of Advisory Services at Converging Health

RIPCPC Overview

- 70 IPA practices (IM, FP, Pediatrics)
- Akido Partnership
- Wrap-around services
  - Clinical – NCMs, Pharmacists, CHWs, Master's Level BH Clinicians
  - Administrative – IT, Quality and Performance, Analytics
- Payment model change
  - Global capitation
  - PCP Sub-Cap
- Preparing practices for change
  - Converging Health partnership
  - High Value Visits
  - Pediatrics

Converging Health

- Clinician Lead
  - Two family physicians with 35 years of practice in range of models
- Analytics platform focused on clinical risk
- Care transformation training with team focus included extended team of behavioral health, social work, pharmacy support
- High value advanced primary care model developed with Family Medicine for America's Health, PCC, PBGH, National Alliance

Overview of Converging Health Effort

- Cohort model – 2 in spring, 2 in fall
  - Kick-off with physicians, advanced practitioners and practice managers
  - Physician and Advanced Practitioner pre-training survey
  - 4-hour intensive training to include all office staff
  - Regular follow-ups between QPS and practice
- Beginning with adult practices to align with Medicare capitation
- Train the trainer with Quality and Performance Specialists
- Practice-specific action plans

Roles and Responsibilities: The Transformation Team

- Quality and Performance Specialists
- Converging Health
- Clinicians
- Practice staff
- Care Teams
- Centralized administrative team

Pre-Work

- Practice considerations
- Practice observation
  - Shadow workflows
  - Staff questionnaire
- Clinician Surveys
  - Assessing understanding and concerns of APC model
- Premeeting with QPS

Training Sessions Agenda

- Why?
- Breakout groups
  - Clinicians
  - Managers/Front Desk
  - Medical Assistants/Nurses
- Practice discussion (all together)
- Group debrief

Post-Training

- Quality & Performance Specialist
  - Action plans with practices
- Debrief – QPS, practice, Converging Health
- Initiate action plans
  - Scheduling
  - Responsibility distribution
  - EHR workflow modifications

Current Timeline

Cohort	Kick Off (Overview Session)	Trainings
Cohort 1	January	April
Cohort 2	May	May/June
Cohort 3	August	August/September
Cohort 4	August	August/September

Questions/Comments?

Implementing Integrated Complex Care Management in an Accountable Care Network

April 2024

Boston Medical Center
HEALTH SYSTEM

Executive Summary

- Complex Care Management launched in 2018 at the inception of the ACO model in Massachusetts serving the BACO and Mercy ACOs. In 2023, as the WellSense ACOs expanded to additional health systems, the CCM program expanded to serve ACO partners in the South Coast/Cape Cod, South Shore, Greater Boston, Lowell, North Shore and Western Mass.
- The goal of CCM is to support the Top 2% of high risk members through intensive, community-based care management in an effort to establish individuals in ambulatory care settings, thereby reducing avoidable inpatient utilization and mitigating total cost of care.
- MassHealth has implemented a more detailed slate of requirements for complex care management in the current waiver period which codifies some of the key aspects of our programming including multidisciplinary teams, and embedding in the community setting
- CCM has developed targeted interventions to support patients with substance use disorder, behavioral health conditions, and/or homelessness recognizing these conditions as drivers of avoidable utilization
- We partner closely with Flexible Services (SDoH), Living Well at Home (housing), and other local services to connect patients to tangible supports that promote their overall stability
- Analysis of the CCM program demonstrates a reduction in inpatient utilization, an increase in ambulatory engagement, and better performance on clinical quality measures than the general ACO population

Agenda

ACO Overview

CCM Program Model

Patient Success Stories

Program Analytics

ACO Overview

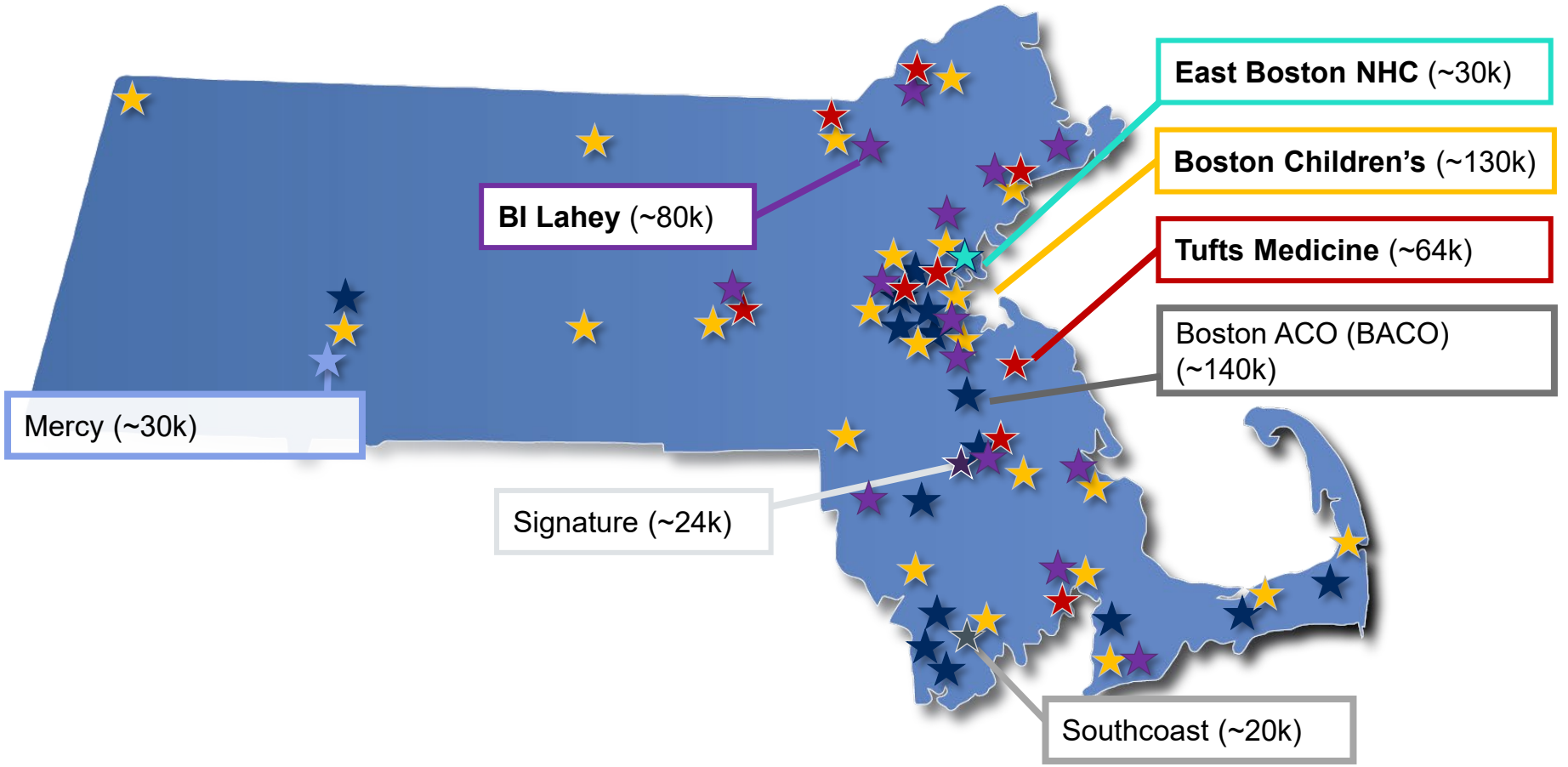
Boston Medical Center
HEALTH SYSTEM

As of 2023, WellSense is responsible for ~40% of MassHealth lives statewide through ACO contracts

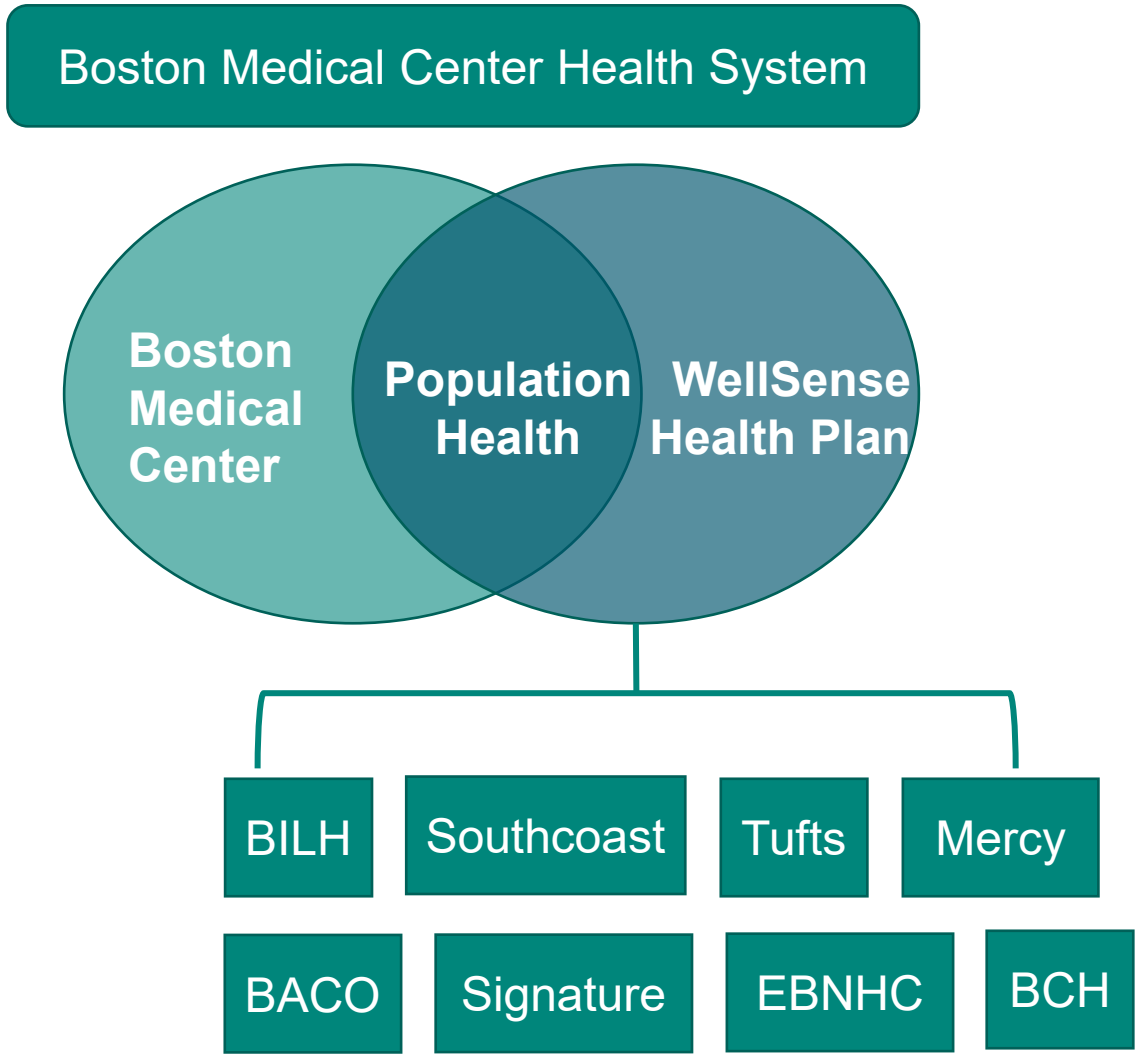
ACO partner organizations by region

Number of lives: 580K

WellSense HEALTH PLAN



BMCHS supports our ACO partnerships through health plan administration and population health programs



- The WellSense Health Plan contracts with Massachusetts-based health systems to form ACO partnerships
- Boston Medical Center is a part of the BACO contract, and provides Population Health services for the other 7 contracts
- The Population Health Department sits squarely between BMC and WellSense creating an opportunity to leverage the expertise of the delivery system and the insurance system to support the ACO model

- **Population Health services include:**
  - Community-embedded care management
  - Quality incentive programs
  - Health Equity
  - Risk Adjustment
  - Social Determinants of Health
  - Value based contracting

In this current 1115 waiver, Mass Health set more detailed requirements for Enhance Care Management Programs

	Enhanced care coordination
Funding	Enhanced care coordination is funded through a $6PMPM provision in the administrative funding of the ACO program. This funding includes baseline care coordination functions.
Who receives ECC?	**"High and rising risk enrollees"** as identified by risk stratification tool. **Patients with complex needs based on the following:** • Chronic health complexities • Behavioral and/or Substance use disorder • At risk or experiencing homeless **Must enroll 3-4% of the population in enhanced CM, 1-3% of the population in CP**
What does ECC entail?	**Coordination** • Enrollees ID'd for enhanced care coordination **must be enrolled in EITHER an ACO Care Management Program, OR a CP program.** **Must include:** – "Best efforts" to successfully outreach and engage enrollees within 30 days of assignment to program – Annual comprehensive assessment and plan of care – Multi-disciplinary care team formed in accordance with needs and preferences of the enrollee – Activities of care team: coordinates across providers, provides intensive support for transitions of care, coordinates supports to address HRSNs, coordinates housing support using Homeless Management Information System HMIS where appropriate – Medication review – Community-based visiting (at home, school, residential facilities/shelter, etc) – Establish criteria for disenrollment

**** This is not a comprehensive summary of all EOHHS contract requirements.**

WellSense/BMC provides a Care Management continuum to serve patients at all levels of risk

Increasing program intensity

	Activities and clinical model	Staffing model
Complex Care Management (CCM)	Intensive, face-to-face model based in clinical setting, integrated with primary care and IP; engagement with multiple provider types Multiple interactions per week across multiple settings, e.g., care manager may accompany patients to appointments	45-75:2 FTE (RN + CHW or LCWS + CHW)
Behavioral Health Community Partners (BH CP) **Long term services and supports Community Partners (LTSS CP)**	Moderate intensity care coordination; face-to-face and/or telephonic (not embedded with primary care) Includes outreach and engagement, assessment and care planning, care coordination, support for transitions of care, medication reconciliation support, health and wellness coaching, connection to social services and community resources	50:1 care coordinator 350:RN supervisor and 350:clinical care manager
Behavioral Health Care Management	Telephonic BH care management, focused on high risk members with SPMI, TOC from BH facilities, and TCM/FUH Range of support from care coordination to enhanced CM based on member need	75-100:1 care manager 80-110:1 care coordinator
WellSense Central CM	Telephonic care management and care coordination Engagement across providers and community supports Interactions of varying frequency based on member care plan	Roughly 100:1 care manager
Flex Services	One-time connection to social supports; no comprehensive care management (unless patient is referred through CM program) Case management for specific social need (eg via housing SSO)	N/A – no panel-carrying staff

CCM Program Model

Boston Medical Center
HEALTH SYSTEM

CCM teams embed in practices and communities to help patients connect to a complicated array of services

Goal: Establish patients with ambulatory care and community-based supports to achieve patient-identified goals, improve health related outcomes, and reduce avoidable hospital utilization

Patients are identified via:

- The CAM risk algorithm (adults)
- The PRISM risk algorithm (< 18)
- Provider referral of patients who meet utilization and clinical criteria

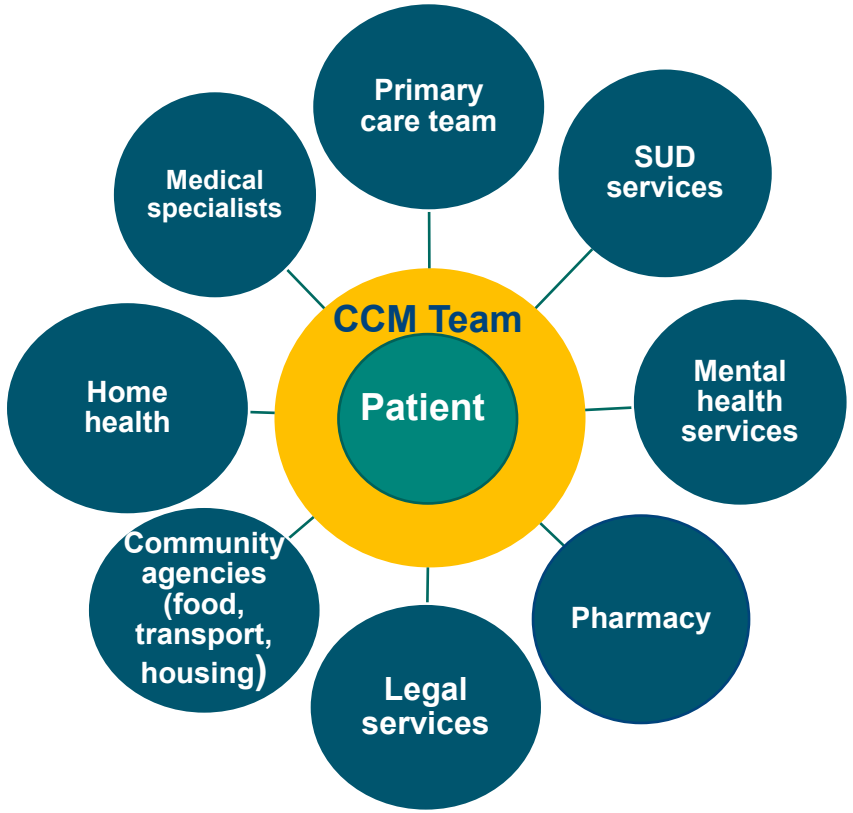
Primary care based: Collaborate with PCPs, specialists, pharmacists, & others on patients' goals, with documentation in the local EMR

Community-engaged: Connect patients with community agencies to address health related social needs, home health needs, legal and financial barriers & more

Multidisciplinary Team: RN/SW is paired with community health worker; pharmacy and housing team members consult across teams. Leadership includes: MD, SW, CHW, RN, operations

Intensive and relationship-based: 45 patient panel, 9-10 month intervention. We build trusting relationships with patients to enable creation of a sustainable, effective ***long-term support network***. Teams are available for in-person with patients in the clinic, community and home.

Post-COVID: *CCM teams work in a hybrid fashion. We have seen increased challenges around access to primary care, specialty care, behavioral health and home services. We have seen increased complexity around substance use disorder and housing.*



Common conditions/barriers in our CCM patients:	
Any substance use disorder	59%
Serious mental illness (including depression)	63%
Homelessness	28%
Chronic kidney disease	24%
COPD	20%
Heart failure	16%
Diabetes	32%

Our program targets highest risk patients for intensive, primary care and community-based interventions

1 CAM Impactibility Score

Predictive risk algorithm used to select top 2% highest risk adult patients

Incorporates:
- Demographics
- utilization patterns
- Medication adherence and risk
- Diagnoses and clinical markers
- SDoH factors
- Risk scores (DxCG, Arcadia, HCC, etc)

Lists updated every 2 mos.

2 PRISM Pediatric Risk Score

Predictive risk algorithm used to select top 2% highest risk pediatric patients

Greater emphasis on engagement with specialty providers and diagnoses than on utilization

Lists updated every 2 mos.

3 Provider Referrals

Provider referrals are a core identification source for CCM due to data lag and incomplete data that limits the sensitivity of predictive modeling

More successful engaging with referrals due to established relationship

Criteria for providers to consider includes:
- +1 inpatient stay OR +3 ED visits in 6 months
- +2 chronic conditions
- SDoH barriers
- Identified opportunity for CCM impact

CCM leverages in-person engagement opportunities to enroll patients in CCM

Outreach & Engagement

Emphasis on face-to-face engagement

CCM staff are embedded in **clinic settings**, and leverage clinic relationships and ambulatory visits to engage patients

CCM may coordinate a **warm hand off** from other types of supportive services to enroll in CCM

Outreach SW encounters patients who are homeless in the street or shelter system

Telephonic outreach from the "High Risk List" is the last resort for patient enrollment

Focus on Transitions of Care

One of the most valuable opportunities for engaging new CCM participants is during **Transitions of care**

- TOC intervention is concentrated on patients in the Top 5% of risk who are likely to return to the hospital without support
- CCM staff are embedded in high-volume hospital sites and enroll patients during hospitalization
- Ambulatory teams follow up with the patient within 72 hours of discharge to the community with an emphasis on a F2F visit

CCM is embedded in primary care, the team collaborates directly with providers and clinic team

Co-Located	CCM Staff have regular scheduled time in the practice to facilitate ad hoc collaboration dictated by availability of space in designated practice *e.g.* ***In Practice****: ~2/3 days/week,* ***In-Community*** *~2/3 days/week either working from home, or completing community visits*
Patient Accompaniment	At the request of the patient or the provider, CCM team member may accompany patients to their PCP appointment Facilitates advocacy, patient education, and application of plan of care in the patient's home environment
Coordination in the EMR	CCM team has access to clinic EMR system, and regularly updates progress toward patient's goals, and/or relevant clinical information Dependent on EMR capability, CCM team coordinates with clinic team members via EMR messaging
Scheduled meetings	At the request of the clinic/providers, CCM holds regular scheduled meetings to review patients enrolled in CCM and collaborate on the plan of care
Warm Handoff	The goal of CCM is to establish patients with clinic-based and community-based services. CCM will refer and provide warm hand-off to services (ie: OBAT, IBH, community based supports)

CCM recognizes and targets connections to social determinants of health and community behavioral health resources

Housing

Flexible Services: CCM teams across all regions refer to existing housing navigation agencies with close collaboration for clinical CM

Cross-sector partnership: Boston-area CCM teams refer to Living Well at Home Program who partners with the Boston Housing Authority for expedited pathways to public housing

Transitions of Care: CCM supports housing transitions with close follow up with patients before and after their move

CHW are trained in housing access and advocacy

Food Security

Flexible Services: CCM teams across all regions refer to food and nutrition agencies with close collaboration for clinical CM

Benefits include meal delivery, cash assistance (in addition to SNAP), budgeting

Navigation: CHWs navigate food benefit programs such as SNAP

Clinical Intervention: Referral for clinically tailored meals

BH & SUD engagement

Expertise: CCM staff are recruited for experience in behavioral health and substance use disorder

CCM staff receive Motivational Interviewing training focused on SUD engagement

Access: CCM accompanies patients through ED-based programs and community-based rapid access programs for BH & SUD

Data sharing: CCM teams are alerted of BH and SUD related inpatient admissions in order to support TOC

Patient success stories

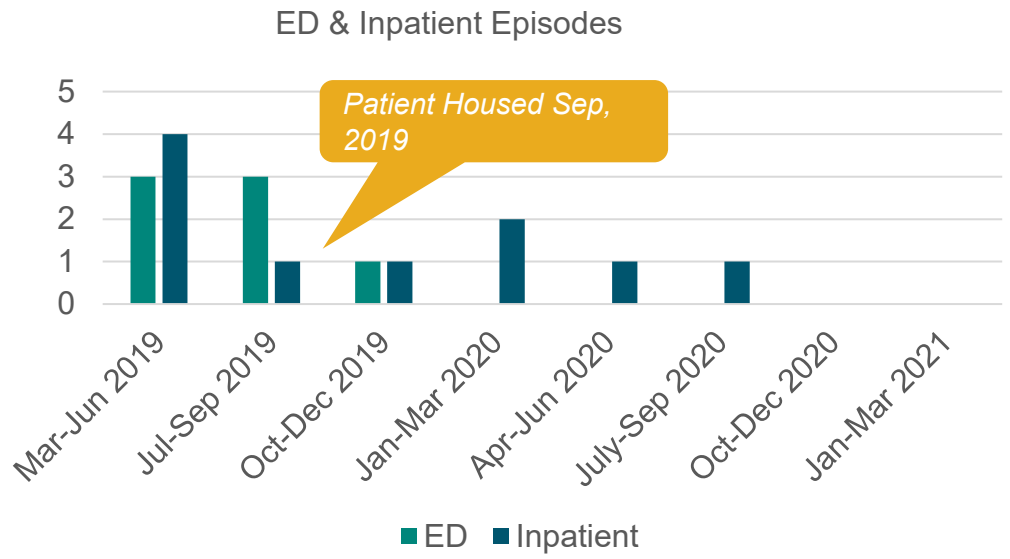
Boston Medical Center
HEALTH SYSTEM

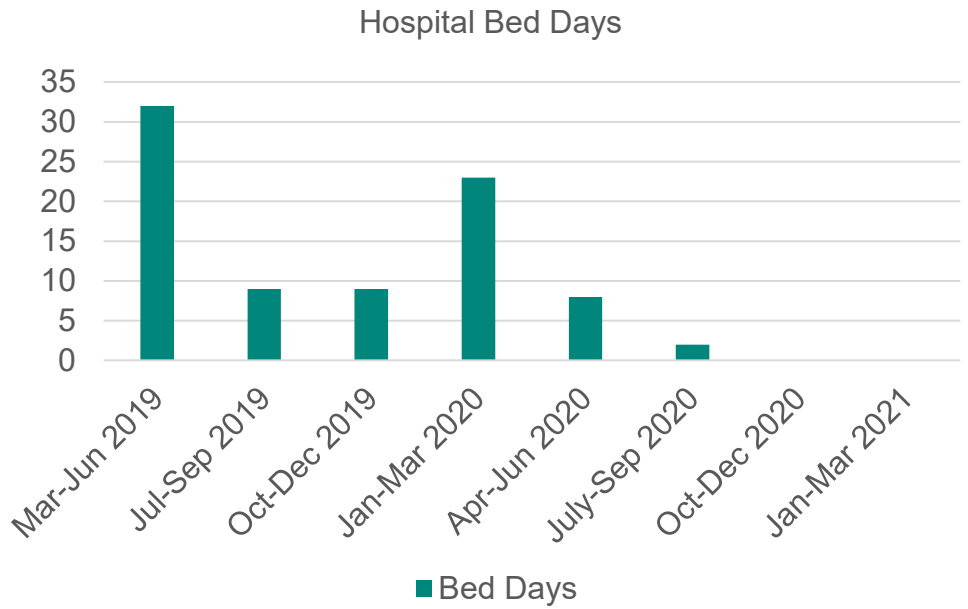
Patient story: better reported health, reduced utilization, maintained living environment as a result of permanent supporting housing

47-year-old patient with multiple medical and mental health conditions including hoarding behavior leading to eviction; homeless for many years, with >10 inpatient stays in the year prior to housing

Housed in September 2019 in partnership with Boston Housing Authority, with furniture provided. Initiated home services including medication management and house keeping. Re-engaged with ambulatory medical and mental health providers

Improved management of conditions; reports better health and self-efficacy; has independent management of home environment and lease for 5 years; only 1 inpatient stay since 2021, no ED visits since 2019





Patient success: addressing barriers to ambulatory engagement achieves long-term stability

61 year old patient with a history of Hepatitis C, COPD, HTN, Chronic Kidney Disease, Anxiety, Depression, Tobacco Use

Connected to SDoH resources and supports: successful assistance with PT-1 SSDI, utility assistance, food resources/Guild deliveries, RAFT application to support housing, completed schooling for interior design

Connected with Medical/BH resources and support: Completed Medication Reconciliation, Connected patient to specialty care, established medication home delivery. Patient successfully completed Hepatitis C treatment, chronic disease education and tobacco cessation, Appointment accompaniment to support patient's self-advocacy and anxiety

Upon graduation from CCM, patient continued to receive long-term support from Community Partner team in coordinating care. Patient had decreased smoking from 3ppd to 1ppd. Hep C was successfully treated. Increase in engagement with specialty care and medication adherence. Patient reported better management of conditions with reduced anxiety. No ED/Hospital admissions since 2019

Patient success: supporting families to stabilize pediatric patients with complex needs

9 year old patient with a history of pseudo spina bifida, flaccid paralysis of legs, leg length discrepancy, gunshot wound of the back, bladder and bowel incontinence with out sensory awareness, non-English speaking and limited access to interpreter services.

Connected to SDOH resources and supports

- Connected to PT-1, completed application for The Ride for non-medical transportation, and accompanied patient and family to mobility center for interview
- Scheduled emergency transport to medical appointments when needed
- Provided mother with CCM phone

Connected with Medical/BH resources and supports

- Established with HHA services, medication reconciliation and education and reviewed instruction on how to refill
- Connected patient with specialty care at BMC and BCH and provided appointment reminders
- Ensure monthly confirmation with medical supply vendor for timely DME delivery
- Connected with National Seating and Mobility to address wheelchair concerns
- Accompanied to appointment to support self-advocacy and rapport building

Since graduation, patient has not had any ED visits or hospital admissions

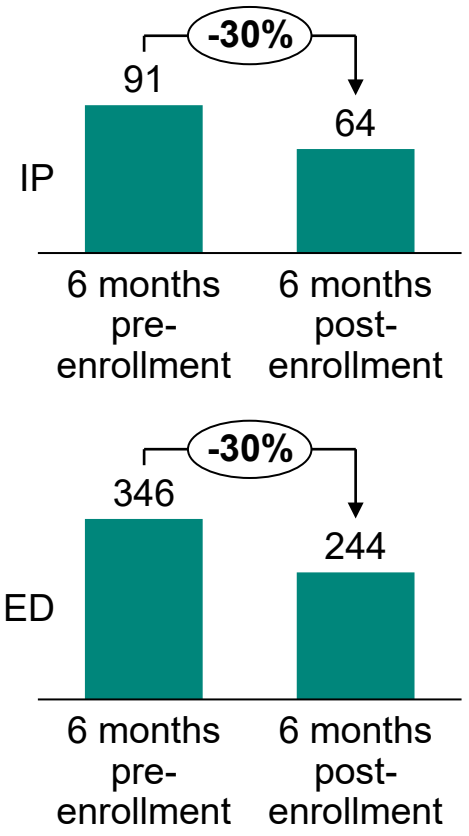
- Continues to use PT-1 to get to ongoing care, including many specialty appts, and The Ride for other transport
- No issues with receiving DME or medication refills with improved medication compliance
- Ongoing longer-term support through church volunteers

Program Analytics

Boston Medical Center
HEALTH SYSTEM

Extracting a causal estimate of the CCM program is not a simple process due to selection bias and mean reversion

IP and ED monthly utilization per 1K for members enrolled in BMC CCM (N = 847)[1]



Challenges + Approach

- **Selection bias**
  - CCM enrollees are inherently different from non-enrollees, so simple comparisons yield biased results
- **Pre-enrollment utilization spike**
  - CCM enrollees often have a utilization spike 1-2 months prior to enrollment, exacerbating trends developed via pre-post analysis or via comparison to non-CCM enrollees
- **Rolling enrollment**
  - New members enrolling in CCM over time; while we would like to estimate the impact by duration, we have fewer data points for longer duration enrollees

To overcome these challenges, we ran a matched control analysis of CCM enrollees vs. a control group comprised of BMCHP MCO members

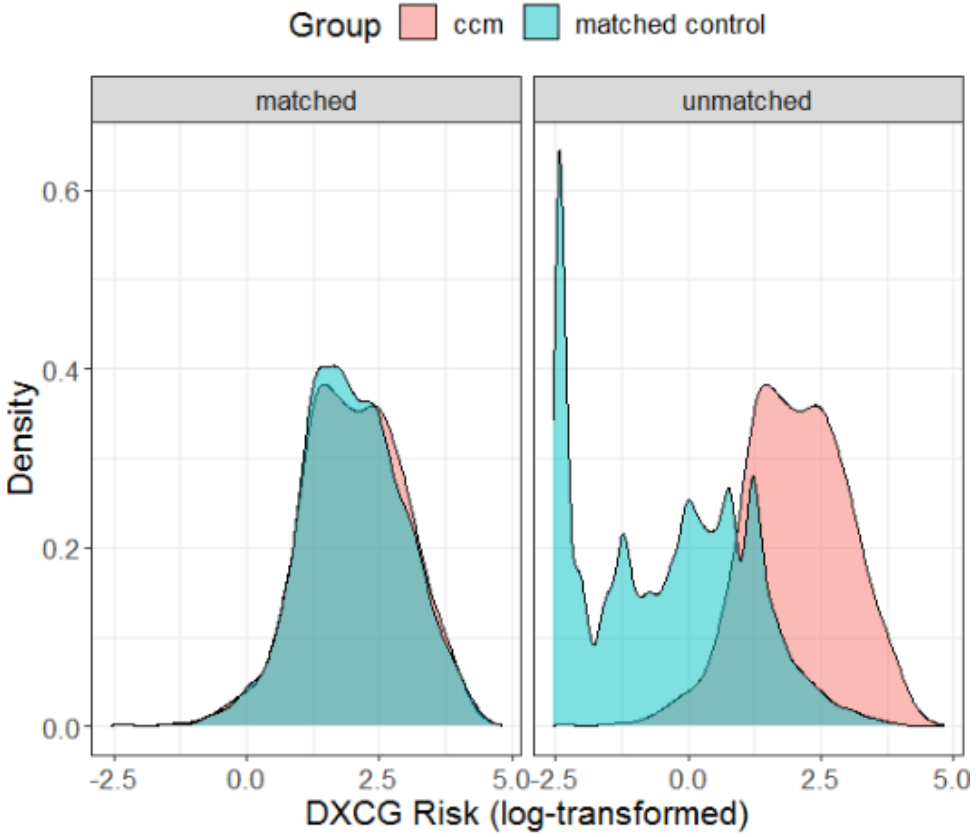
Matching steps

1. Build a model to estimate the likelihood of being enrolled in CCM
2. Match CCM enrollees to members in the MCO with similar baseline covariates
3. Evaluate baseline differences between CCM enrollees to the MCO matched control
4. Estimate the impact of CCM

Quality of Match

1. Multiple enrollment dates (1 per month) are assigned to eligible control group members to replicate rolling CCM enrollment
2. Match quality is great for DXCG risk score and RC, with some differences for specific conditions
3. Match quality is better for pre-enrollment IP utilization than ED utilization

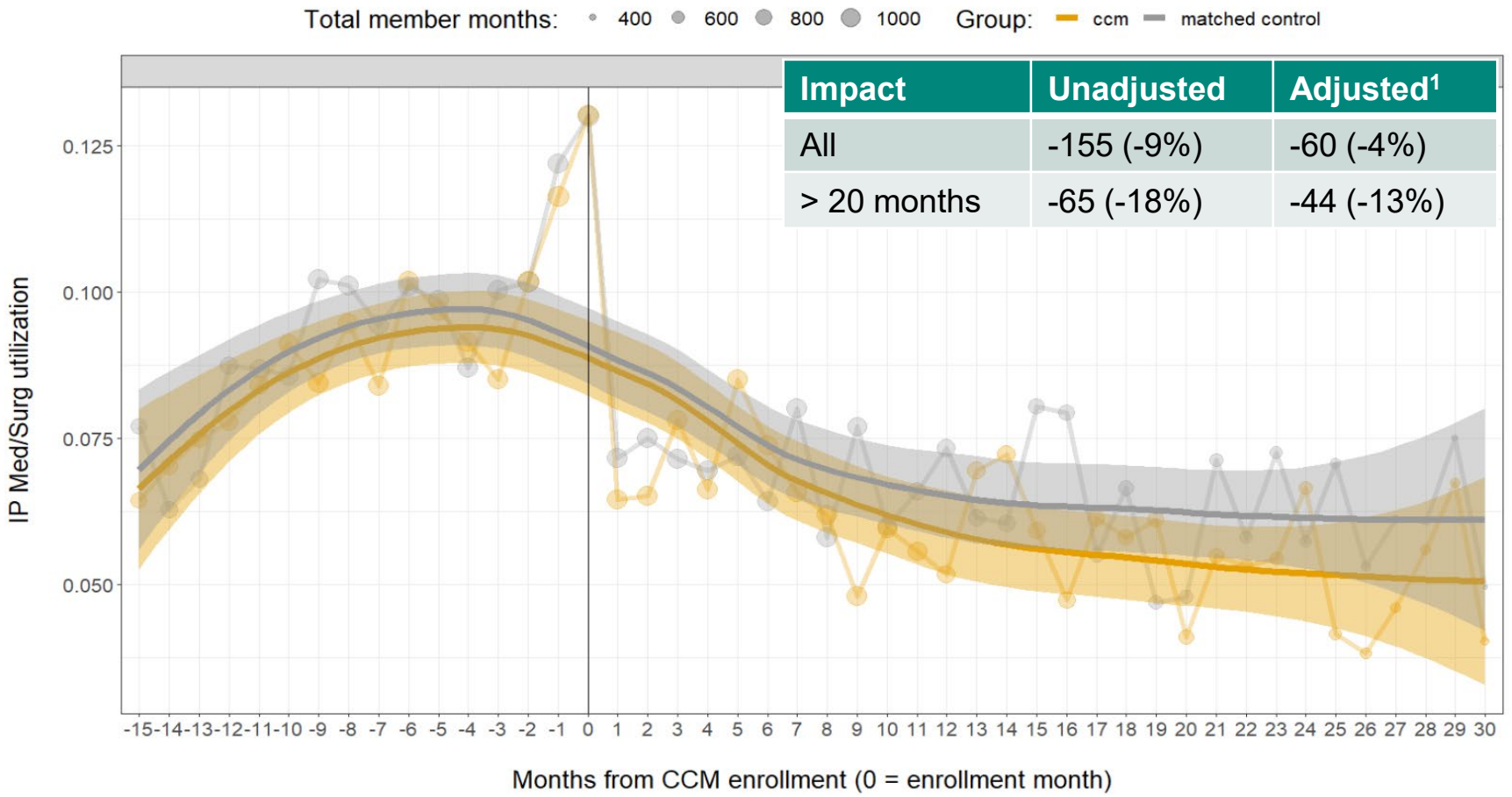
DXCG Risk as an example match variable



- Successful matching is achieved when CCM and matched control members have balanced covariates, and subsequently, balanced probabilities of receiving treatment

The latest refresh of the matched control analysis includes 1,150 CCM enrollees, who had a 4% adjusted reduction in inpatient utilization compared to a matched control over 30 months of post-enrollment data

BACO grads and disenrollees Inpatient monthly utilization per enrollee comparing CCM vs. the matched MCO control group



Impact	Unadjusted	Adjusted[1]
All	-155 (-9%)	-60 (-4%)
> 20 months	-65 (-18%)	-44 (-13%)

- One consistent finding is impact tends to be **larger over a longer timeframe** (e.g, it takes ~7-8 months to observe a difference in utilization)
- Note that relative to year prior to enrollment, CCM enrollees do have **36% lower utilization** over next 30 months, but the matched control corrects for the mean reversion

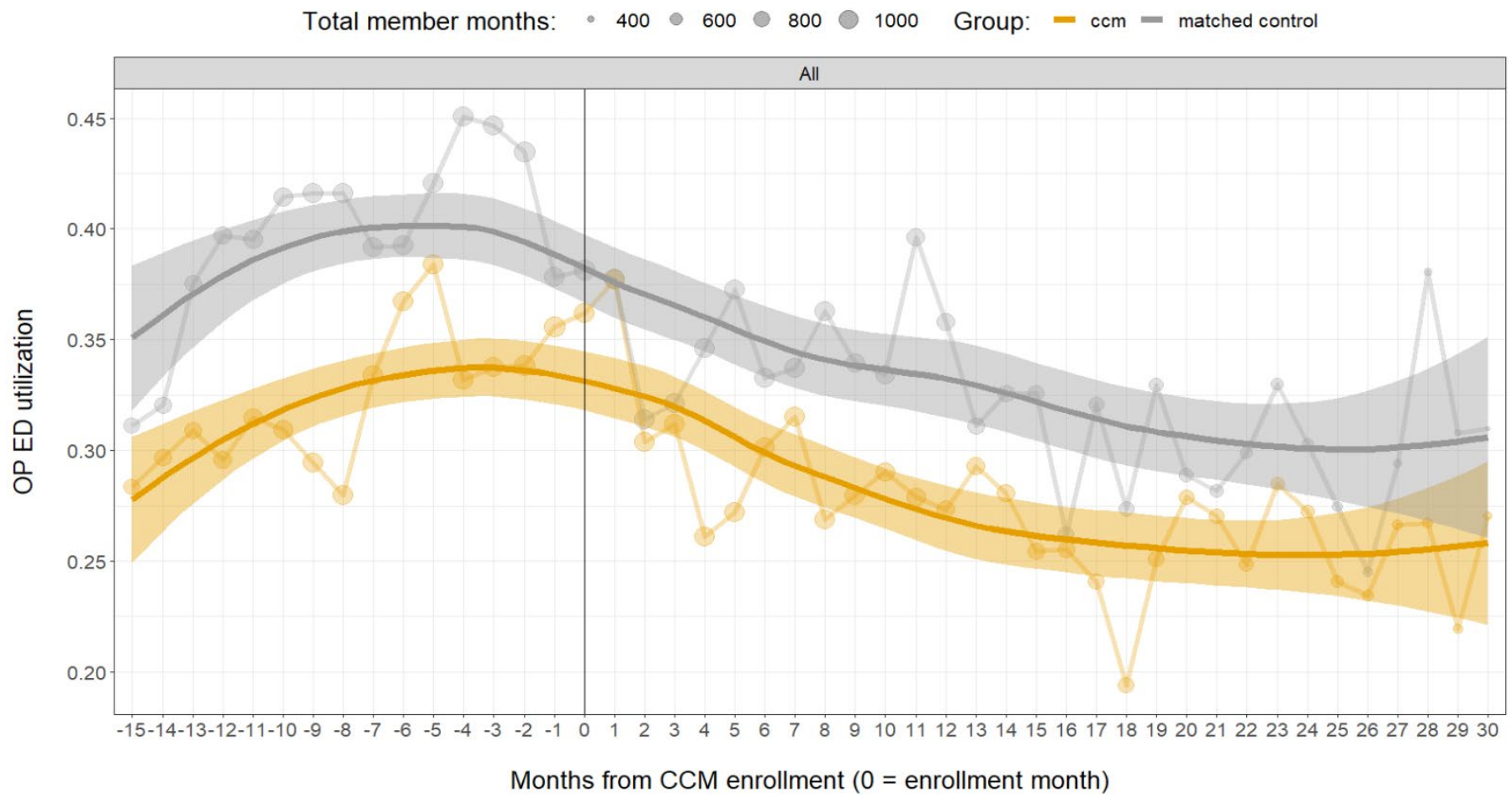
Boston Medical Center HEALTH SYSTEM

1 Adjusted results are calculated by taking the average rate difference between treatment and control over the entire 12-0 pre-enrollment period and applying that same difference to "adjust" the control group

The ED utilization pattern is similar to the prior match solution, with no significant observed difference in utilization v. the matched control

Preliminary

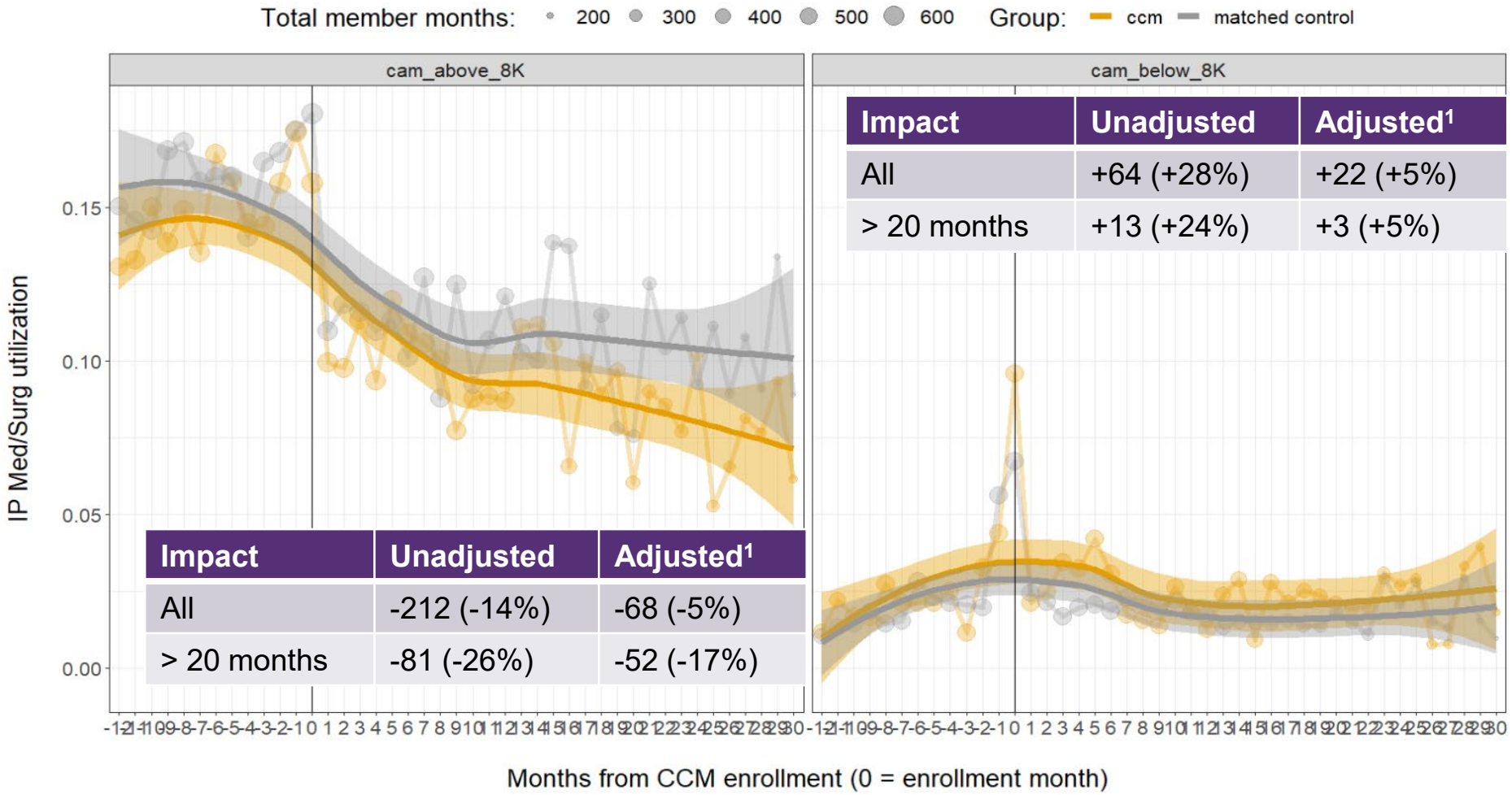
BACO grads and disenrollees ED monthly utilization comparing CCM vs. the matched MCO control group



CCM members with higher predictive risk scores (CAM score) experience a larger reduction in inpatient utilization, which has implications for patient selection

Preliminary

BACO grads and disenrollees Inpatient monthly utilization by CAM (risk score) segment comparing CCM vs. the matched MCO control group



Impact	Unadjusted	Adjusted[1]
All	-212 (-14%)	-68 (-5%)
> 20 months	-81 (-26%)	-52 (-17%)

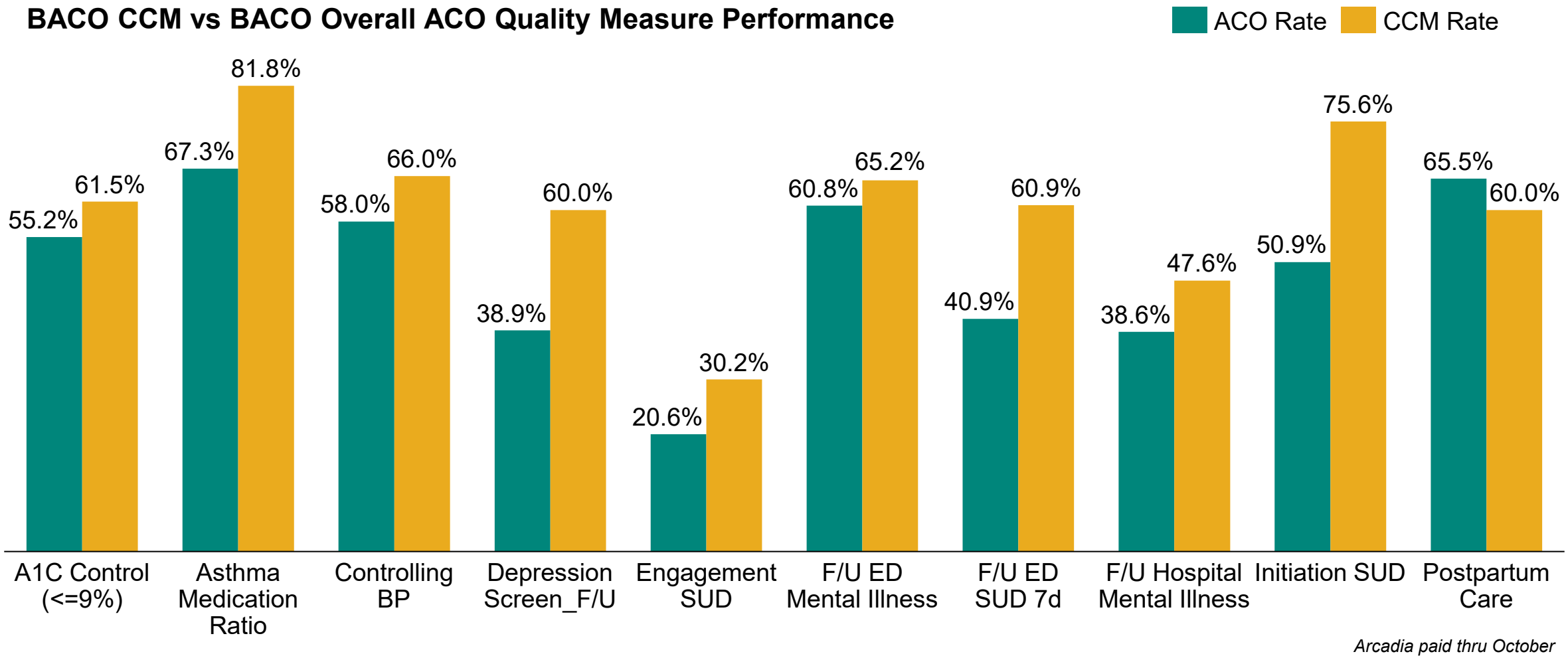
Impact	Unadjusted	Adjusted[1]
All	+64 (+28%)	+22 (+5%)
> 20 months	+13 (+24%)	+3 (+5%)

- **Higher CAM enrollees have much higher starting and predicted utilization**, so the impact on inpatient events is greater
- On average, the 36-month reduction in inpatient cost for **high-CAM members is estimated at $3,755 per enrollee** v. $1,346 for all CCM enrollees

Boston Medical Center HEALTH SYSTEM

1 Adjusted results are calculated by taking the average rate difference between treatment and control over the entire 12-0 pre-enrollment period and applying that same difference to "adjust" the control group

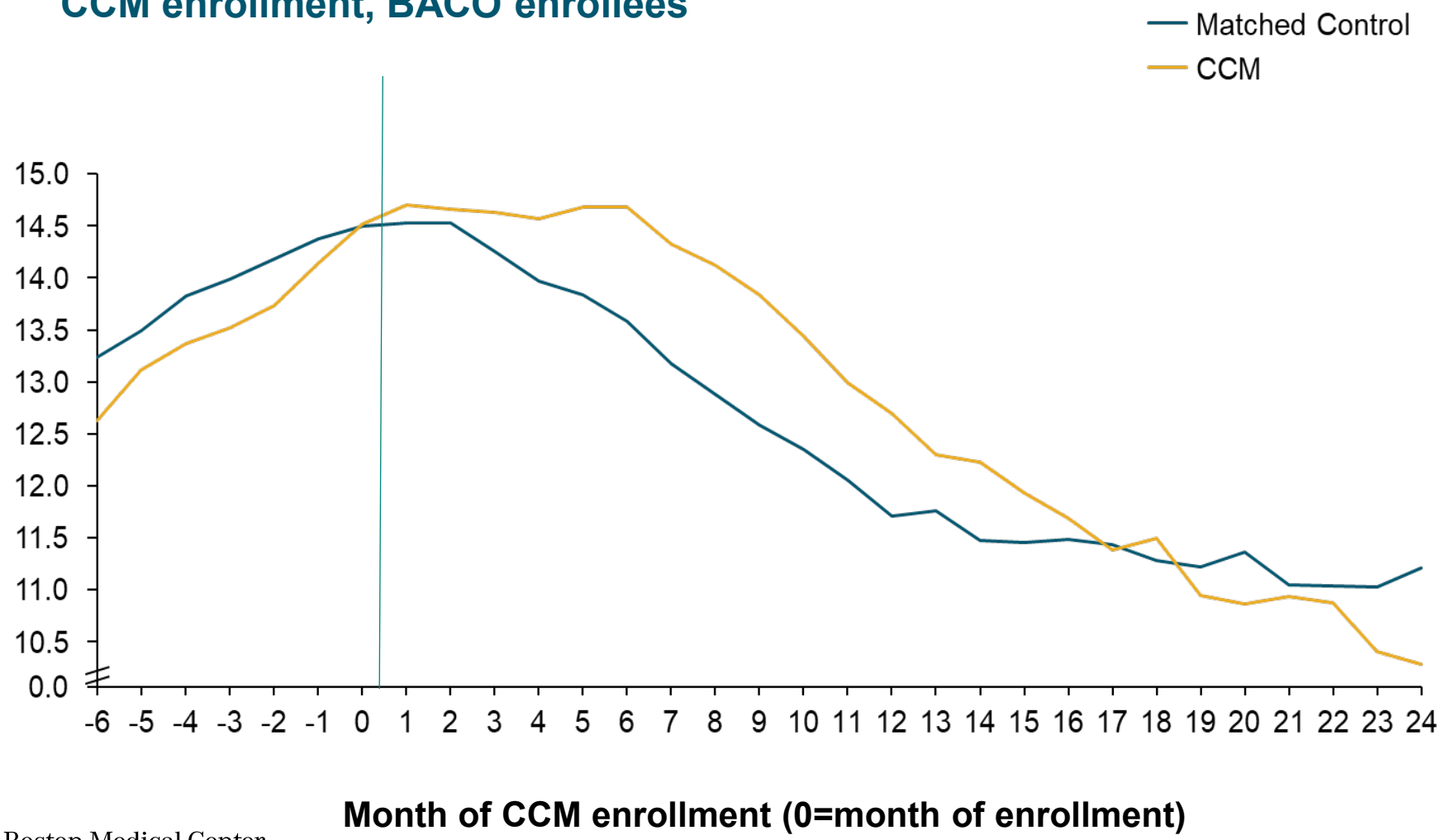
Despite their complexity, CCM members perform better than non-CCM members on nearly all incentiveized ACO quality measures increasing the financial impact of the program



Arcadia paid thru October

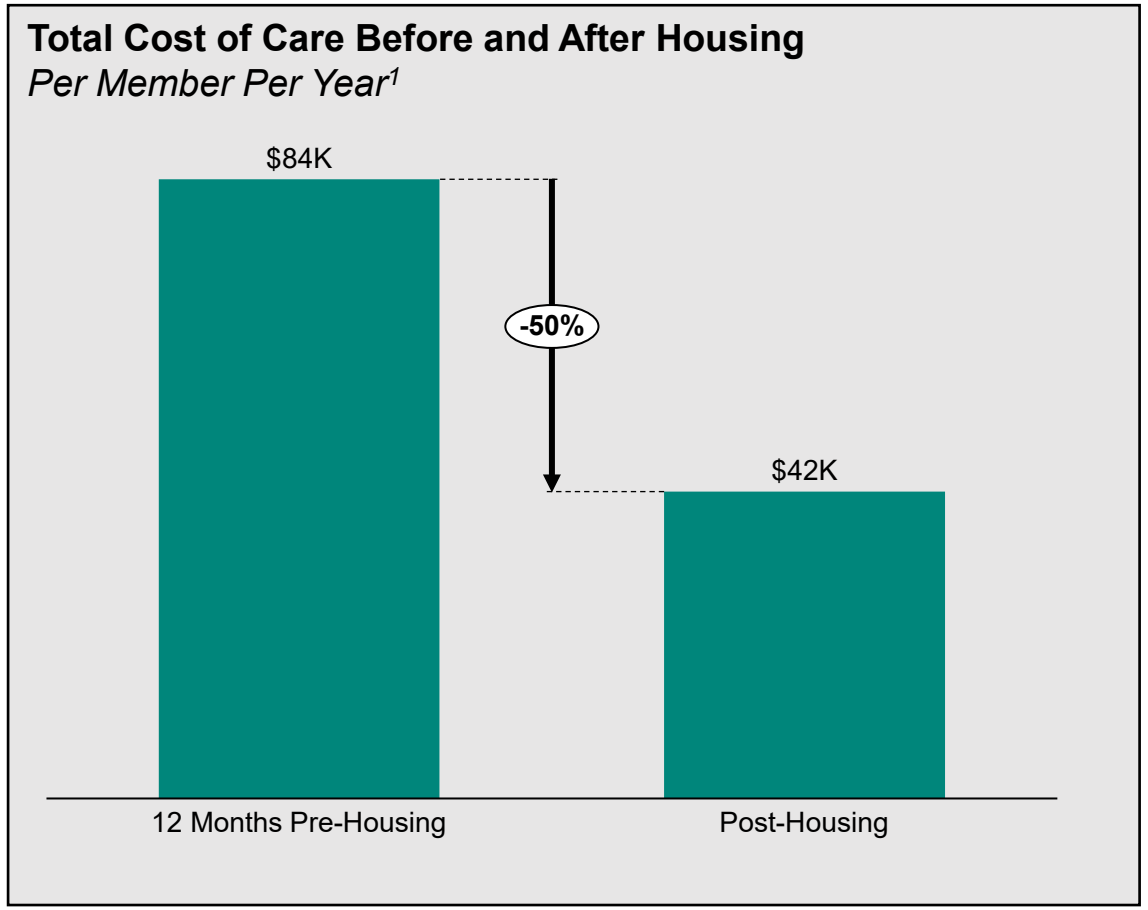
CCM enrollees sustain higher DXCG risk scores than the control group post enrollment likely due to more engagement with care

DXCG risk score of CCM enrollees v. matched control by month of CCM enrollment, BACO enrollees



- Although the CCM teams do not risk code, they may have an **indirect impact on risk scores** by supporting members in getting access to primary and specialty care
- Since DXCG is a matching variable in our study, we can directly observe a **relative improvement in risk score** v. the matched control group
- The delta peaks at 1.24 DXCG points around month 8-9
- Using $700/DXCG point standard value to WS, this means an **additional ~$700K accrues to WS from the risk adjustment** effect

Data suggests that members housed had reduced medical expenses after being housed (high utilizers with at least 12 months enrollment post-housing)



- **Of 155 members housed between Feb 2018 and Jan 2024, 42 members were described as high utilizers**
  - 15 had a SMI diagnosis and 20 had a SUD diagnosis
  - High utilizer: 1+IP claim and 3+ED claims with at least 12 months post-housing
- Analysis of Wellsense claims 12 months pre-housing and > 12 months post-housing demonstrates a **50% reduction** in annual Total Cost of Care
  - **91%** reduction in inpatient behavioral health admissions
  - **39%** reduction in inpatient medical/surgical admissions
  - **50%** reduction in annual ED visits
  - **63%** reduction in PCP visits
  - **62%** reduction in outpatient specialist visits
  - **50%** reduction in annual **Impactable** Total Cost of Care
  - **1% reduction** in the Rx costs
- However, this was not measured against a control group

Boston Medical Center
HEALTH SYSTEM

Source: Wellsense claims paid through Dec 2023

Questions?

Boston Medical Center
HEALTH SYSTEM

Appendix

Overview: CCM clinical components / model

Element	Description	Rationale / source of requirement
Comprehensive Assessment and Plan of Care	All members enrolled in care management must have a comprehensive assessment and plan of care documented in the EMR	NCQA, EOHHS Model Contract (2.4.b & 2.5)
Key TOC functions	72-hr follow up calls for all enrolled members, including those not yet engaged in CM but on a roster in the “outreach” phase	EOHHS Model Contract (2.6.C.5), NCQA
Availability of staff for in person and community work	Staff must meet members face-to-face in various settings, including their homes, clinical and other community settings	EOHHS Model Contract requires some face-to-face interaction (2.6.C.3) Evidence-based practice
Time-limited intervention with throughput / key criteria for graduation	Goal-oriented intervention determined by patient’s plan of care; patient graduates when goals are achieved or supported Must be processes in place to ensure members move through and graduate from the program	EOHHS Model Contract requires criteria for disenrollment (2.6.D.8) ROI
Multidisciplinary staff w/ BH, clinical, and SDoH capability	Care team must be able to address members’ BH and SDoH needs, which requires that expertise in the team itself	EOHHS Model Contract (requires care plan to address these needs – 2.6.C.4.d) Evidence-based practice
Ongoing training	Ensure initial training on care management principles, and ongoing training for best practice – *may be supported by WS; can leverage EOHHS TA dollars*	Quality of intervention
Robust integration with primary care sites	Primary care sites must be involved in care planning, ongoing member engagement, and graduation. Ideally sites engage PCP champion to foster engagement.	EOHHS Model Contract (2.6.C.4.a) requires PCP involvement Quality of intervention
Sufficient staffing	CM staff are dedicated to CM and care coordination activities Requirements must be met regardless of staffing constraints Defined staffing ratio not to exceed 1 dyad:200 lives managed per year; ratios may vary with clinical justification Panel size and composition may vary but must provide an adequate intervention for the top 3-4%	Quality of intervention EOHHS Model Contract (2.6.D.3)

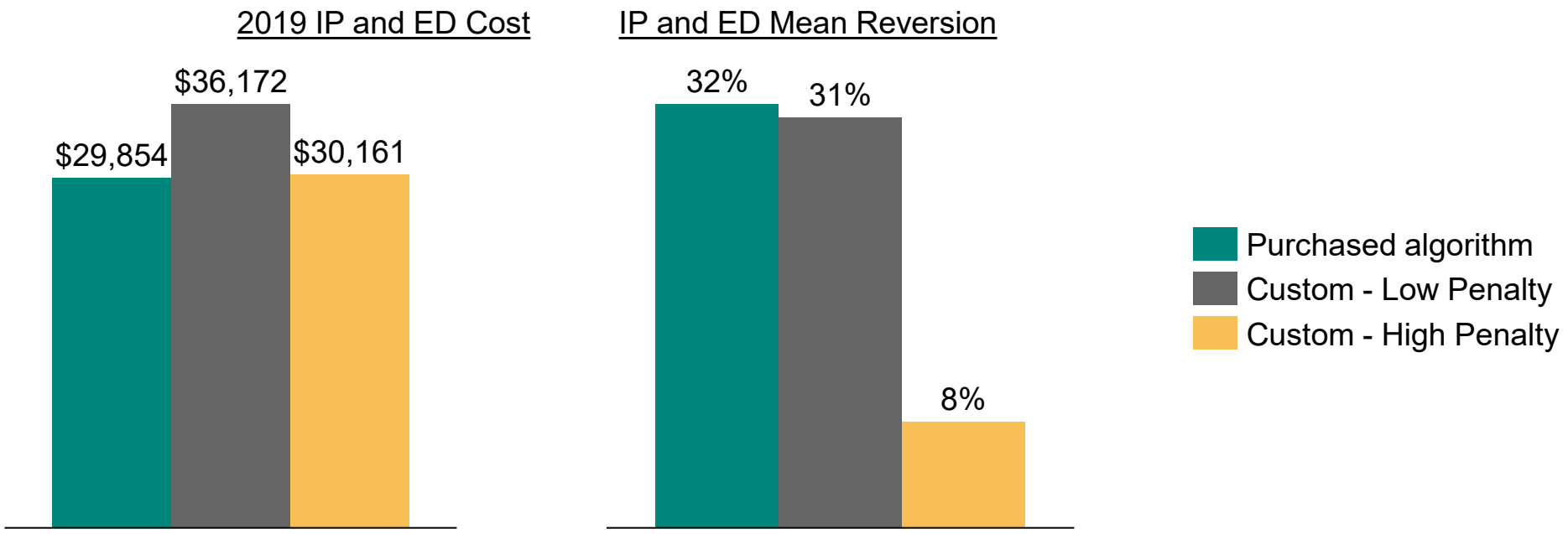
CAM predictive model that assesses more than 300 variables to predict future IP and ED utilization over the next 1-2 years

Sample measures / measure clusters for BMCHS "CAM" score

Demographics	Utilization patterns	Medication utilization/ adherence	Conditions/ Diagnoses/ Clinical markers	SDOH factors	Risk scores
Age	Impactable TCOC	GPI2 TCOC – last 6 months	DXCG conditions	Homeless diagnosis	DXCG risk score
Sex	IP/OP TCOC	Med trauma predictors	Charlson morbidity score and conditions	Neighborhood stress score and components	Arcadia risk score
Rating Category	L3 TCOC - last 6 months		Overdose history/crisis encounters		MH risk score
ACO attribution/ member months	Care coordination metrics (multiple specialties, providers, pcp engagement, etc.)		Complex comorbidities (OUD/SMI, Homeless/CHF, multiple BH conditions, etc)		HCC risk score
	Cost unexplained by DXCG		Clinical test results (e.g., A1C, cholesterol, glucose, GFR, etc.)		

Compared to our prior algorithm, CAM predictive modeling identifies patients with similar levels of future cost but much lower levels of mean reversion

Actual 1-year outcomes for BACO top 2% across models with different levels of mean reversion penalty[1] (N ~ 25K)



Takeaways

- Model was validated through chart reviews from clinical team
- There is a tradeoff between prediction of high-utilizing members and 'mean reversion' – or tendency of current high utilizers to see a utilization reduction in future periods

The CAM score shows vastly less algorithmic bias relative to the well-publicized article in *Science* that came out in 2019

Relative difference of chronic conditions between Black patients and white patients in top 2% of the BACO random test sample (N~400)1

Model	Chronic conditions included	# conditions for Black patients	# conditions for white patients	Difference (Black patients relative to white patients)	Reduction in bias relative to reference study
Reference Study[2]	One year lookback	4.8	3.8	+26%	
CAM	One year lookback	7.9	7.6	+4%	86%
	Two year lookback	10.0	10.0	+0%	100%

Reasons for reduced bias relative to the original publication:

- CAM specifically targets IP + ED, not total medical expenses
- Incorporation of additional components, like neighborhood stress score, in addition to costs

1 Chronic illnesses determined using ICD codes and 30 conditions in the Elixhauser comorbidity index
2 Dissecting racial bias in an algorithm used to manage the health of populations

CCM Workflow

- **Patients are identified** as having complex needs;
  - Providers refer patients as needs are identified and/or patients are identified through a high risk algorithm.
  - Team discusses referral with provider to identify opportunity for impact, and agree the patient has impartible, complex needs.
- CCM team **outreaches to enroll** patient during clinic visit, hospital stay, or telephonic outreach
- Team completes the **General Assessment within 30 days of enrollment**, and develops plan of care driven by patient's goals
- RN finalizes the **plan of care** and works with CCM team to determine next steps
- Plan of care is discussed with PCP and other relevant care team members for clinical input
- The team conducts weekly touchpoints with patients (or more frequent) early in the program, duration between touchpoints may lengthen as patients stabilize
  - **RN/SW** focuses on clinical coordination, navigation of clinical settings and resources
  - **CWA** focuses on assessment of social determinants of health and navigation of social services
- **When admitted to the hospital**, CCM team coordinates with the inpatient team to support plan for discharge, contacts patient within 72 hours of discharge, and conducts home visit as soon as possible
- CCM team **regularly coordinates** with manager and other leaders to address barriers to case work
- CCM connects patients to **long-term supports** to support their management of health conditions
- As patient's goals are addressed, **CCM team begins to discuss graduation** with primary care team and the patient
- Patient is **graduated from CCM with warm hand** off to long term supports and ambulatory care team

Boston Medical Center
HEALTH SYSTEM

CTC-RI Conflict of Interest Statement & CME Credits

If CME credits are offered, all relevant financial relationships of those on the session planning committee have been disclosed and, if necessary, mitigated.

Claim CME Credits here:
https://www.surveymonkey.com/r/ZDZS5HG

The AAFP has reviewed 'Advancing Comprehensive Primary Care Through Improving Care Delivery Design and Community Health,' and deemed it acceptable for AAFP credit. Term of approval is from 03/18/2022 to 03/18/2023. Physicians should claim only the credit commensurate with the extent of their participation in the activity. NPs and RNs can also receive credit through AAFP's partnership with the American Nurses Credentialing Center (ANCC) and the American Academy of Nurse Practitioners Certification Board (AANPCB).