# Analytic Plan: ISP Utilization

## Project Details

### Lead Investigator/s

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### Project Team Members

Carter Sevick, Kim Wiggins

### Research Objective(s)

Do PCMPs that participated in ISP have a improved outcomes for attributed members compared to members atttributed to PCMPs that did not participate in ISP?

### Time Period

July 1 2015 – June 30 2022

### Study Design

Time Frame *(e.g. cross-sectional, longitudinal, retrospective cohort, cohort):*

### Patient, Practice Cohorts/Subjects

#### Inclusion Criteria

Health First Colorado Members ages <= 64 a.o 6/30 (18/19, 19/20, 20/21, and 21/22), having:

* at least one month of eligibility for Health First Colorado
* not continuously enrolled in a physical health managed care plan
* attributed to a PCMP in any of SFYs

Claims Data for members identified above:

* Time Range: 07/01/2015 - 06/30/2022
* Claims data 07/01/2015 - 06/30/2018 to be used to develop risk adjustments for model
* Claims data 07/01/2018 - 06/30/2022 to be used in analysis

#### Exclusion Criteria

Dental

#### Study Sites

ISP vs non-ISP, based on pcmp\_loc\_id matching

## Data Sources, References

Data

1. Bidm db

Reference Files

1. Analytic Plan[[1]](#footnote-1)
2. Data Specs, Measures[[2]](#footnote-2)

## OUTCOMES, Measures, Metrics

### Context

Attribution to PCMPs / Trends in Monthly Attribution, as measured by:

1. Number of Unique Individuals attributed at any time in FY
2. Number of Unique Individuals attributed 6mo or more in FY
3. Number of Unique Individuals attributed 6mo or more in all FY’s

Member Characteristics

1. Number of months eligible for Health First Colorado
2. Number of months eligible and enrolled in a physical health managed care plan

### HCPF Data Measure Outcomes

|  |  |  |  |
| --- | --- | --- | --- |
| **Level** | **Outcome** | **Measure** | **Metric** |
| **Primary** | **Cost** |  | **PMPM Total FFS cost of care (excluding Dental)** |
| **Primary** | **Util** | **Behav Health** | **# of other encounters in a month** |
| Secondary | Util | Primary care | # of PC visits in a month |
| Secondary | Util | Primary care | # of Telehealth Services in a month |
| Tertiary | Util | Primary care | # of STBH Services (CPT codes) in a month |
| Tertiary | Util | Primary care | # of SBIRT Services (CPT codes) in a month |
| Tertiary | Util | Primary care | Diagnosis codes of SBIRT Services (CPT codes) in a month |
| Secondary | Cost | Primary care | PMPM cost of PC |
| Secondary | Util | ED | Utilization of # of ED visits in a month |
| Tertiary | Cost | ED | PMPM cost of ED services |
| Tertiary | Util | Hospitalizations | Utilization # of hospital services in a month |
| Tertiary | Cost | Hospitalizations | PMPM cost of hospitalizations |
| Secondary | Cost | Pharmacy | PMPM cost of prescriptions |
| Secondary | Utilization | Behav Health | # of Capitated ED visits in a month |
| Tertiary | Utilization | Behav Health | # of capitated hospitalizations in a month |
|  |  |  |  |

## VARIABLES

data medlong1; set bhjt.medicaidlong\_bidm

data meddemog1; set bhjt.medicaiddemog\_bidm

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | role | lev | Description | type | notes, source |
| clnt\_id | match | pt | matching key for datasets |  | meddemog  medlong |
| month |  | pt | used to create SFY  *(SFY used to get age a/0 30Junexx)* |  |  |
| SFY |  |  | state fiscal year |  | admin |
| managedCare | context |  | **Context:** member characteristics – number of mo’s eligible and enrolled in a physical health managed care plan  **Analysis:** where managedCare = 0 |  |  |
| pcmp\_loc\_type\_cd |  | pt | for pcmp\_orgTyp | cat |  |
| pcmp\_orgtyp | covariate | pr | source: medlong1  original variable: pcmp\_loc\_type\_cd  analysis: FQHC, RHC, Indian Health Service, SBHC, Other  Changed several to ‘other’ with format see appendex | cat | admin;  created from pcmp\_loc\_type\_cd |
| dob |  | pt | source: meddemog1 |  |  |
| age\_sfy1819  age\_sfy1920  age\_sfy2021  age\_sfy2122 | covariate | pt | source: meddemog1  age a/o 6/30 in each respective FY | continuous | created from dob |
| keep\_sfy1819  keep\_sfy1920  keep\_sfy2021  keep\_sfy2122 | filter | pt | if age\_sfy1819 OR age\_sfy1920… 0-64  if 0-64 a/o 6/30 sfy, sum from | binary / keep flag | admin |
| rethnic\_hcpf | covariate |  | source: meddemog1  Use new HCPF categories | categorical, factor |  |
| county /  enr\_cnty | covariate | pt | source: meddemog1 OR  source: medlong1 – enr\_cnty  if >1, Use county with majority of months elig HFColorado |  | same?? Which to use? |
| county\_count | context | pt | for above |  |  |
| RCCO/RAE |  | pt | determined by County of residence |  |  |
| BudgetGroup | covariate  (and / fiilter?) |  | use rules budget group tables STBH\_table\_updated030622.xlsx  *emailed Jake to confirm code (09/06)* | cat | budgetgroup |

## Step 01: Get members

Steps, Log notes: See Appendix

Folders & Files

|  |  |  |
| --- | --- | --- |
| Folder | Contents | File |
| 01 background | meeting notes | notes\_meetings\_emails.txt > August 28, 2022 |
| 02 code | -get variables needed to merge with medlong1 | 01\_getClients.sas |

Result:

## Context: Trends in Monthly Attribution to PCMPS

Steps

*ALSO:*

*Email from MG: One thing I would like to get a sense of is the distribution of the number of attributed members for each PCMP by ISP participation and FQHC status.  I am thinking Min, 5%, 10%, 25%, 50% 75%, 90%, 95% and Max for each of the 4 groups for SFYs 18-19, 19-20, 20-21 and 21-22.*

*The next step is to understand the stability of member attribution to PCMPs by these same 4 categories.  I am thinking % of ever attributed members to a PCMP attributed for all 4 years, 3 of the 4 years, 2 of the 4 years and 1 of the 4 years.*

Folders & Files

|  |  |  |
| --- | --- | --- |
| Folder | Contents | File |
| 01 background | meeting notes | notes\_meetings\_emails.txt > August 28, 2022 |
| 02 code | getData |  |

Results

## DATA ANALYSIS

1. *Setting and subjects.* Usually start by describing the sample and addressing issues of external and internal validity
   1. Generate frequency distributions and summary statistics (e.g. means, sd, median, rates) on outcome variables, sociodemographic and clinical variables, and other relevant variables of interest.
      1. For continuous outcomes, examine distributions to determine whether normality assumptions hold or if transformations or other approaches may be needed.
   2. Are the patients in this clinic similar to target population?
      1. Usually start by computing descriptive statistics for sample – frequencies, means (sd)
2. Bivariate analyses (parametric/nonparametric, correlations vs. categorical statistics)
3. Multivariate analyses
   1. Choice of model and rationale (e.g. logistic regression, linear regression, survival analysis, factor analysis)
   2. Strategy for c*ovariate identification and selection.* Screen by domains (e.g. sociodemographic, clinical, etc) and retain all independent variables that are associated with the outcome at ≈ p<.20 for inclusion in initial multivariate models. Final models will include covariates that are associated with missingness (if longitudinal), treatment group, or the outcome (at ≈ p<.15 in multivariate models, depending on sample size).
   3. Assessment of appropriateness/fit of model
   4. Strategies to validate model (split sample, separate sample, etc.)

**Analyses to address study questions/hypotheses.**

Some text here will help with writing later on. This would be a good place to mention specific analyses (e.g. multivariate linear regression, etc) and highlight pros and cons or issues that need to be addressed

H1.

The primary outcome for this analysis is XXX. (see draft for examples)

H2.

H3.

Table 1:

Table 2:

Table 3:

Next steps, meetings, assignment of responsibilities, etc:

# APPENDIX

## getClients log / notes

Code, steps, results (freq/s, etc)

|  |  |  |
| --- | --- | --- |
| 1 | Subset CU Medicine Practices from medlong\_bidm | NOTE: There were **55657231** observations read from the data set WORK.MEDLONG1.  WHERE (month>='01JUL2018'D and month<='30JUN2022'D) and (pcmp\_loc\_ID not = ' ');  NOTE: The data set WORK.MEDLONG2 has 55657231 observations and 11 variables.  **KEEP MANAGED CARE for the context question –**  proc freq sfy:    medlong pcmp\_loc\_type\_cd copied to analysis\_specs.xlsx for questions re: other and dental –  *where managedCare = 0; since those’ll be analysis n’s*  PROV\_TYP\_CD  pcmp\_loc\_type\_cd Count Pct  Clinic - Practitioner 30,925,002 55.56  Federally Qualified Health Center 20,778,610 37.333  Rural Health Clinic 2,193,843 3.94  Non-Physician Practitioner - Group 1,345,622 2.42  Physician 344,260 0.62  Indian Health Services - FQHC 61,847 0.11  Hospital - General 4,232 0.0076  Clinic - Dental 3,450 0.006  Nurse Practitioner 9 0.00002 |
| 2 |  |  |
| 3 | Subset members:   * 0-64 a/o June 30 for each SFY 18/19, 19/20, 20/21, 21/22 * at least one month of eligibility for HealthFirst Colorado * not continuously enrolled in a physical health managed care plan | sas file: 01\_getClients   1. Get client’s ages, subset   FROM/log original dataset:  NOTE: There were **2991591 observations read from the data set WORK.MEDDEMOG1.**  NOTE: The data set WORK.MEDDEMOG2 has 2991591 observations and 5 variables.  NOTE: DATA statement used (Total process time):  real time 0.77 seconds  cpu time 0.76 seconds  proc contents:  # Variable Type Len Format Informat Label  1 clnt\_id Char 11 $255. $255. MCAID\_ID  6 county Char 7 $255. $255. RSDNC\_CNTY\_CD  2 dob Num 8 DATE9.  5 ethnic Char 3 $255. $255. ETHNC\_CD  3 gender Char 3 $255. $255. GNDR\_CD  4 race Char 7 $255. $255. RACE\_CD  7 rethnic\_hcpf Num 8 |
| 4 | Pull claims |  |
|  |  |  |

1. S:/FHPC/DATA/HCPF\_Data\_files\_SECURE/Kim/isp/isp\_utilization/01 background/ [↑](#footnote-ref-1)
2. S:/FHPC/DATA/HCPF\_Data\_files\_SECURE/Kim/isp/isp\_utilization/01 background/Analysis\_Specifications [↑](#footnote-ref-2)