How Data and Technology can Improve Medicaid Programs

October 5, 2022

Moderator

John Schmitt

Senior Director, Program Improvement and Analytics
Mathematica

Presenters

Paul Messino
Principal Researcher
Mathematica

Aaron Seib
Senior Vice
President, Strategy
and Innovation
NewWave

Chris McInnish
Researcher
Mathematica

Chris Mink
Reporting Analyst
Commonwealth of
Massachusetts

Setting the stage:
Begin with the end in mind

Policy drives everything

Program design

Implementation

**Data design and collection**

System design and analysis
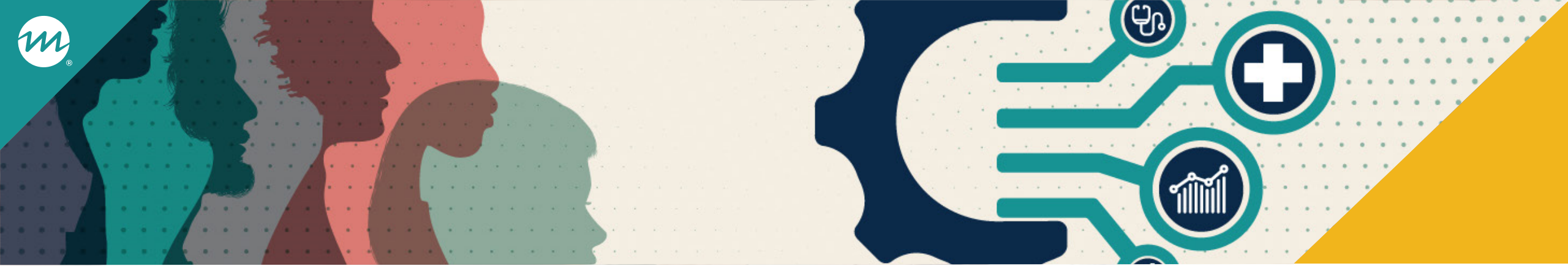
Program improvement

Begin with the end in mind

/ **How will you measure program performance?**

/ **What data to you need for those measures?**

/ **How often do you need updates from program participants?**

/ **Can program participants provide that data to you with accuracy, precision and timeliness?**

/ **How will you assess and improve both the program and the assessment process?**
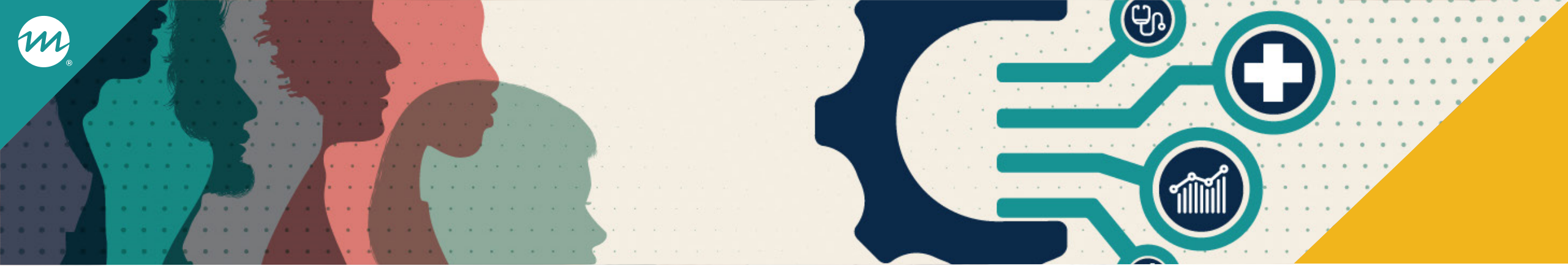
Collaboration and understanding is key

/ **All partners need to understand the policy rules and objectives – even vendors**

/ **Technology and data need to be designed with all partners involved**

/ **Program data and systems should be implemented ASAP and incrementally improved**

Technology incorporates policy into practice

/ **Ties together program participants and partners**

/ **Provides timely and accurate data that becomes actionable information**

/ **Allows for evidence-driven program improvement and monitoring**

Data and technology objectives

/ **Build transparency into systems**
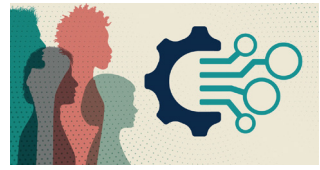- Provide insight into data and automation– no more black boxes

/ **Promote government self-determination**
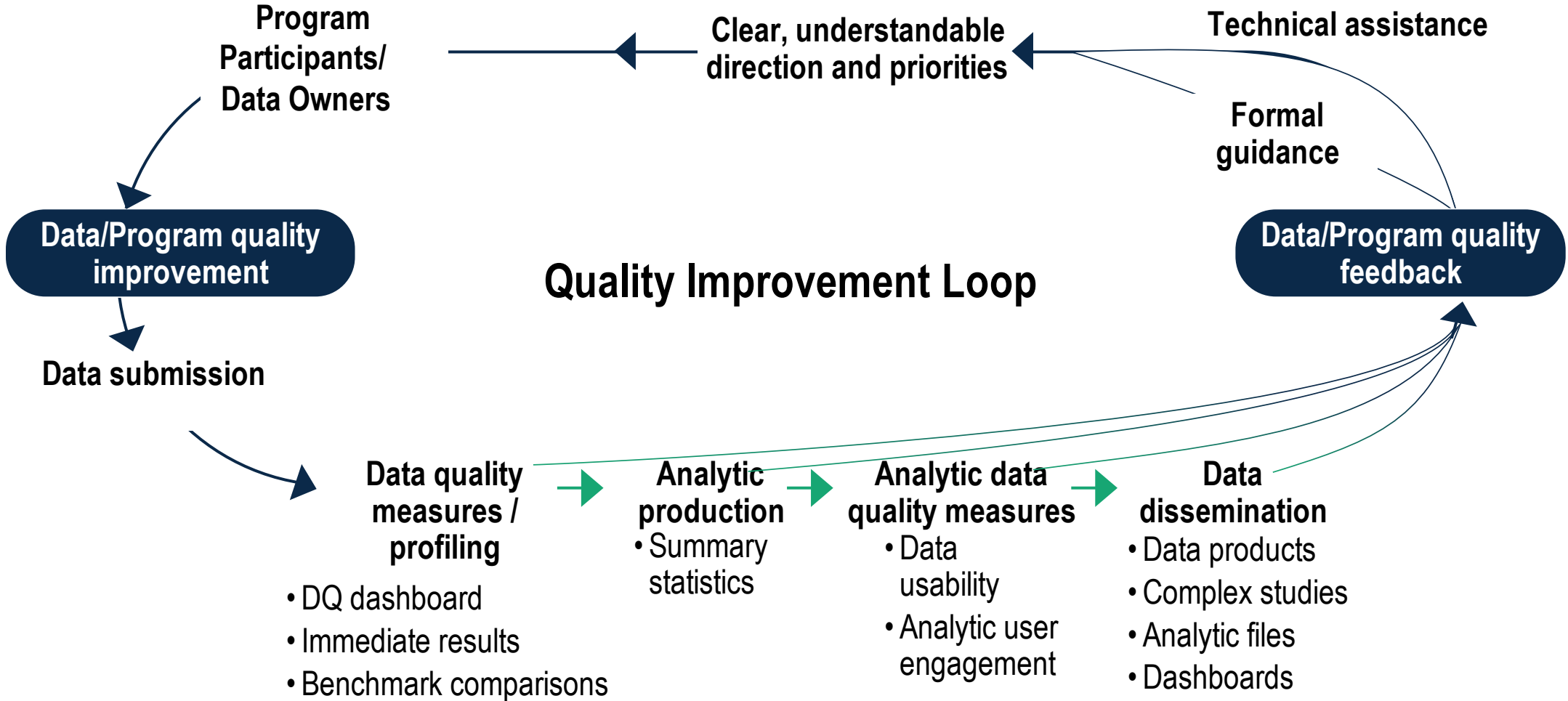- Allow policy owners to assume control of systems

/ **Design to enhance State/Fed relationships**
- Promote communication and collaboration

/ **Build in a data and program improvement process**

Data drives program/policy monitoring and improvement

Program Participants/ Data Owners

Clear, understandable direction and priorities

Technical assistance

Formal guidance

Data/Program quality improvement

Quality Improvement Loop

Data/Program quality feedback

Data submission

Data quality measures / profiling
- DQ dashboard
- Immediate results
- Benchmark comparisons

Analytic production
- Summary statistics

Analytic data quality measures
- Data usability
- Analytic user engagement

Data dissemination
- Data products
- Complex studies
- Analytic files
- Dashboards

The time is now to maximize potential

/ **Medicaid data is the key to understanding**
- Timely
- Accurate
- Constantly improving

/ **New analytic technologies**
- Easily created with minimal investment using cloud and open-source technologies
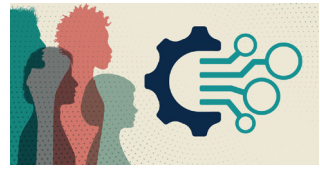- Available in many states and inside CMS to build upon

11

Today's presentations

/ **T-MSIS and Data Quality**

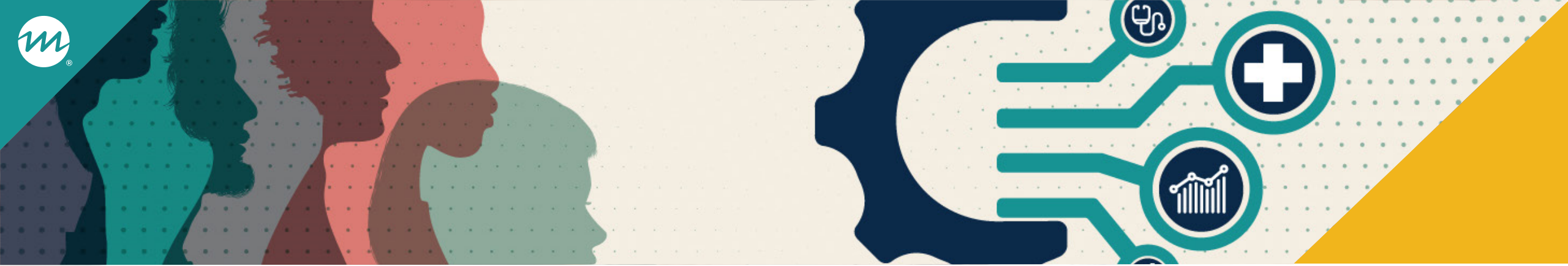- IMERSIS: Creating a self-service data quality evaluation platform for T-MSIS

/ **Implementing a policy-driven system at the state level**

- Creating a data analytics platform and report repository for MassHealth's DSRIP program

T-MSIS and Data Quality

What is T-MSIS?

/ **A comprehensive Medicaid data set submitted monthly by state Medicaid agencies to the Centers for Medicaid and Medicare Services (CMS)**
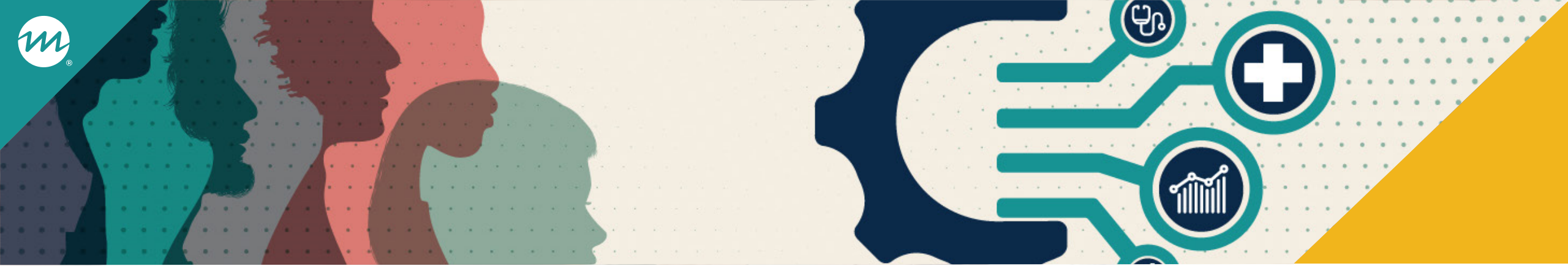
- Covers beneficiary eligibility, beneficiary and provider enrollment, service utilization, claims and managed care data, and expenditures
- Captures around 75 percent of Medicaid data

Challenge

/ **T-MSIS data quality rules are complex, extensive, and change frequently, which makes it difficult for States to efficiently resolve data quality issues and maintain sufficient data quality over time**

- Hundreds of T-MSIS data quality rules assess the timeliness, reliability, and completeness of all eight file types
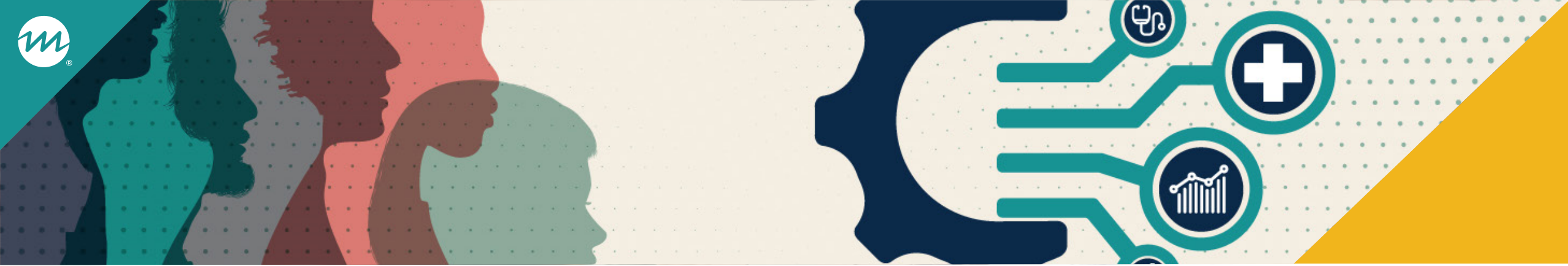- Rules are updated every two months

Process

/ **Engaged state T-MSIS leads to understand:**

- T-MSIS data quality priority

- Gaps in the current process to improve T-MSIS data quality

- People and technology support to close the gaps

Solution

/ Provide Software as a Service to:

- Ingest and score T-MSIS data quality with test or production data

- Calculate and display measure results at each step in the calculation process

- Show frequency groups of and actual non-compliant records

Score and compare T-MSIS submissions

Comparison Across Two Submissions

Submission ID A *: 2022-07-27-13-49-00_TEST_2022-06

Submission ID B *: 2022-07-19-17-52-39_CMS_2022-06

TPI: is any value

Measure ID for Single Measure Comparison: any value

TPI Comparison

	TPI	TPI Status (2022-07-19-17-52-39_CMS_2022-06)	Count Flagged Measures	TPI Status (2022-07-27-13-49-00_TEST_20...)	Count Flagged Measures
1	OBA	Ø	4	Ø	Ø
2	TPI-01	Closed	0	Ø	Ø
3	TPI-02	Closed	0	Ø	Ø
4	TPI-03	Closed	0	Closed	0
5	TPI-04	Closed	0	Closed	0
6	TPI-05	Closed	0	Ø	Ø
7	TPI-06	Open	2	Open	2
8	TPI-07	Open	1	Ø	Ø
9	TPI-08	Open	2	Open	2
10	TPI-09	Open	1	Open	1
11	TPI-10	Closed	0	Closed	0
12	TPI-11	Open	6	Ø	Ø
13	TPI-12	Closed	0	Ø	Ø
14	TPI-13	Closed	0	Ø	Ø
15	TPI-14	Closed	0	Closed	0

Measure Comparison by Submission

	Tpi	Measure ID	Status (2022-07-19-17-52-39_CMS_2022-06)	Statistic	Status (2022-07-27-13-49-00_TEST_2022-06)	Statistic
1	TPI-01	RULE-1337	Closed	0.0	Ø	Ø
2	TPI-01	RULE-1758	Closed	0.0	Ø	Ø
3	TPI-01	RULE-335	Closed	0.0	Ø	Ø
4	TPI-01	RULE-884	Closed	0.0	Ø	Ø
5	TPI-02	RULE-2028	Closed	0.0	Ø	Ø
6	TPI-02	RULE-2071	Closed	0.0084	Ø	Ø
7	TPI-02	RULE-2105	Closed	0.0	Ø	Ø
8	TPI-02	RULE-2165	Closed	0.0	Ø	Ø
9	TPI-02	RULE-2188	Closed	Div By 0	Ø	Ø
10	TPI-02	RULE-2217	Closed	Div By 0	Ø	Ø
11	TPI-02	RULE-2241	Closed	Div By 0	Ø	Ø
12	TPI-02	RULE-2263	Closed	0.0028	Ø	Ø
13	TPI-02	RULE-2289	Closed	0.0	Ø	Ø
14	TPI-02	RULE-2313	Closed	0.0	Ø	Ø
15	TPI-02	RULE-2338	Closed	0.0	Ø	Ø
16	TPI-02	RULE-2361	Closed	0.0	Ø	Ø
17	TPI-02	RULE-2392	Closed	2.0E-4	Ø	Ø

Step-wise measure calculation

Measure Specifications

The steps that were used to calculate this measure.

	Step	Description	Key Data Element:Data Element ID	Instructions	Record Count	Sample Errant Records NS
1	1	Enrolled on the last day of DQ report month	ENROLLMENT-EFF-DATE:ELG253, ENROLLMENT-END-DATE:ELG254, MSIS-IDENTIFICATION-NUM:ELG082, MSIS-IDENTIFICATION-NUM:ELG251	Define the eligible population from segment ENROLLMENT-TIME-SPAN-ELG00021 by keeping active records that satisfy the following criteria: 1. ENROLLMENT-EFF-DATE <= last day of the DQ report month 2. ENROLLMENT-END-DATE >= last day of the DQ report month OR missing 3. MSIS-IDENTIFICATION-NUM is not missing	472	Not Applicable
2	2	Eligibility determinants on the last day of DQ report month	ELIGIBILITY-DETERMINANT-EFF-DATE:ELG099, ELIGIBILITY-DETERMINANT-END-DATE:ELG100, PRIMARY-ELIGIBILITY-GROUP-IND:ELG086	Of the MSIS-IDs that meet the criteria from STEP 1, further refine the population using segment ELIGIBILITY-DETERMINANTS-ELG00005 by keeping records that satisfy the following criteria: 1. PRIMARY-ELIGIBILITY-GROUP-IND = 1 2a. ELIGIBILITY-DETERMINANT-EFF-DATE <= last day of the DQ report month 3a. ELIGIBILITY-DETERMINANT-END-DATE >= last day of the DQ report month OR missing OR 2b. ELIGIBILITY-DETERMINANT-EFF-DATE is missing 3b. ELIGIBILITY-DETERMINANT-END-DATE is missing	257	Not Applicable
3	3	Total Count		Of the MSIS-IDs that meet the criteria from STEP 2, count the number of unique MSIS IDs	172	Not Applicable
4	4	Count duplicate MSIS-IDs		Of the MSIS-IDs that meet the criteria from STEP 2, count the number of unique MSIS-IDs that appear more than once	71	See Sample Errant Record
5	5	Percentage		Divide the count of unique MSIS-IDs from STEP 4 by the count in STEP 3	0.413	Not Applicable

Group and identify errant records

Additional benefits from improving T-MSIS data quality

Speed-to-insight

- All T-MSIS data quality rules available
- Transparent measure results with non-compliant records available
- Unlimited use of Imersis from test and production environments

Increased confidence in and ability to perform advanced analytics

Improves likelihood that data are prepared for integration and re-use across Medicaid ecosystem

Quality and program management

- CMS emphasis on T-MSIS reuse:
  - Core Set
  - CMS-416 and other reports
  - PERM audits

MES risk mitigation

- T-MSIS is the most comprehensive and standardized Medicaid data set
- Imersis can validate T-MSIS data quality pre- and post-module implementation
- High-quality T-MSIS data is an outcome and can be used to calculate certification measures
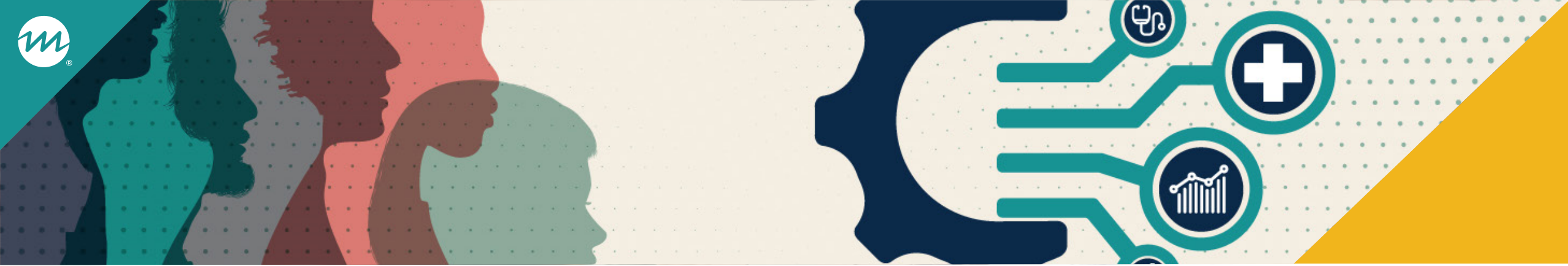
Data Analytics Platforms

Context

/ **Under Massachusetts' 1115 demonstration, Community Partners (CPs), like ACOs, are entities who are eligible to receive DSRIP funds.**

/ **Specifically, MCOs and ACOs <u>delegate certain members' care management and coordination services responsibilities to the CPs.</u> Behavioral health (BH) CPs perform comprehensive care coordination and management for beneficiaries with serious mental illness or substance use disorder, while long-term services and supports (LTSS) CPs perform LTSS care coordination.**

Context

/ **According to the state's DSRIP protocol, which outlines the requirements for DSRIP participation and funding, ACOs and CPs are financially accountable for meeting specific quality measures. Specifically, CPs earn DSRIP funding for:**

- Performing certain care coordination services

- Investing in infrastructure and capacity in key areas (such as technology)

- Achieving high performance on a subset of metrics ACOs are held accountable for, starting in 2020 (budget period (BP) 3)

/ **Note: BH CPs are eligible to earn $1M in performance-based incentive funding per year, starting in 2020, while LTSS CPs are eligible to earn $500,000 per year.**
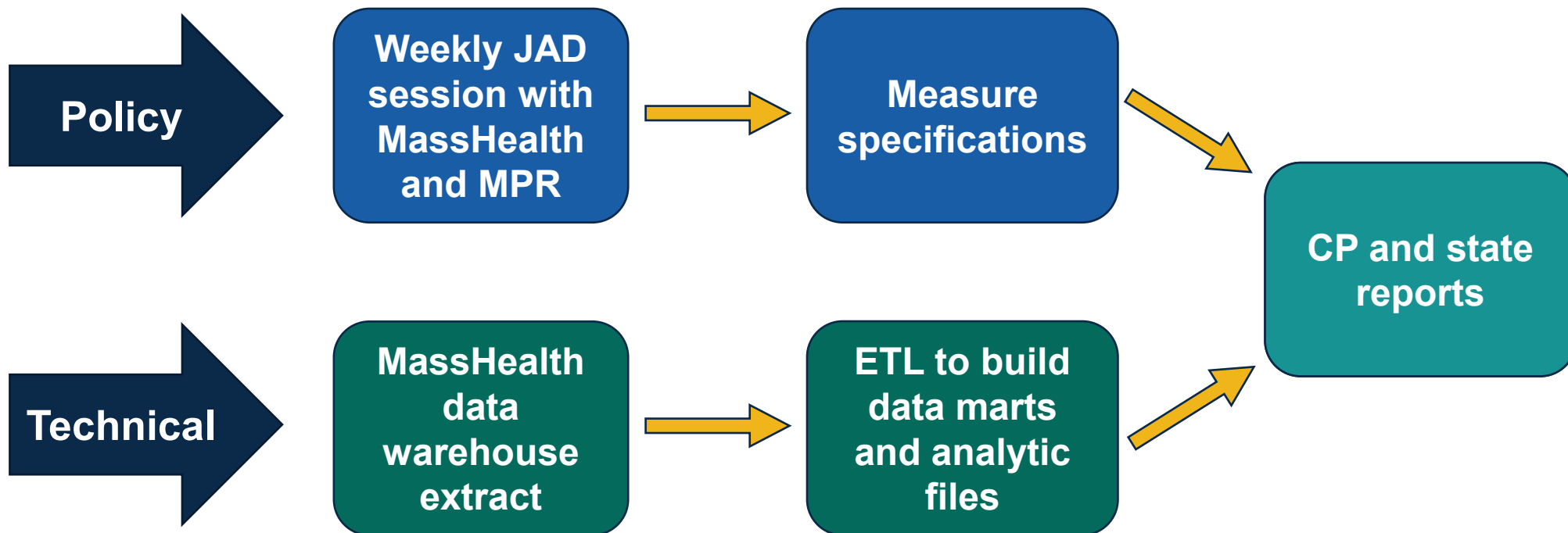
Challenge

/ **Supporting the data needs of the Community Partner Programs**

- Multiple data sources

- New measures and billing codes

- Allow programs to self manage

Process

```
Policy  →  Weekly JAD session with MassHealth and MPR  →  Measure specifications  →  CP and state reports

Technical  →  MassHealth data warehouse extract  →  ETL to build data marts and analytic files  →  CP and state reports
```

Solution

Over 600,000 data points reported each quarter

| Data Marts / Analytic Files | → | Dynamic Reports | → | Data Extracts |

Start with the basics and then add complexity

Organization
Average Days to Care Plan Complete

SAMPLE
Sep 2022

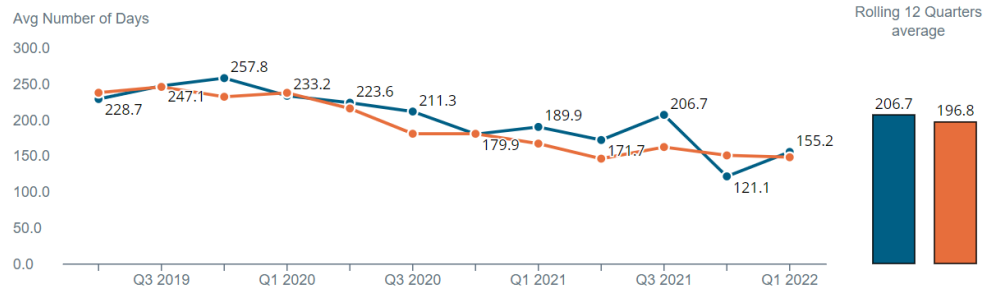**Measure(s) included in this report**
CPC: Average Days to Care Plan Complete

Overview

Time period Rolling 12 quarters ⌄   Compare with BH programs ⌄

select measure to see quarterly BH program comparison

CPC | **BH programs**

Avg Number of Days

228.7 247.1 257.8 233.2 223.6 211.3 179.9 189.9 171.7 206.7 121.1 155.2

Rolling 12 Quarters average
206.7   196.8

Download CSV

Organization
Total Cost of Care

SAMPLE
Sep 2022

Measure(s) included in this report
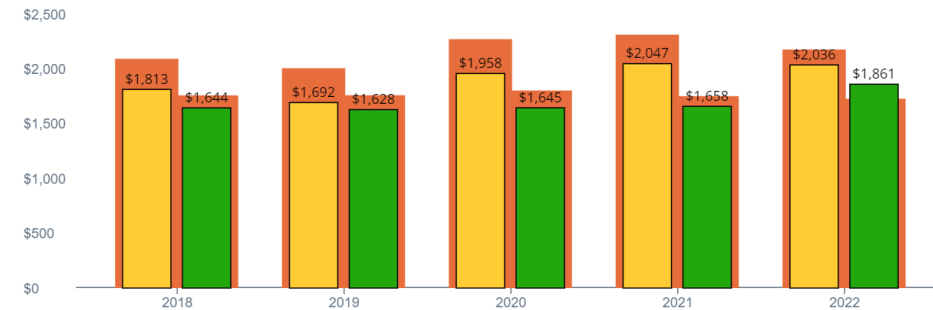TCOC: Total Cost of Care   TCOCR: Total Cost of Care - Risk Adjusted

Yearly Comparison

Compare with BH programs ⌄

TCOC   TCOCR | BH programs

Avg TCOC per Member per Month

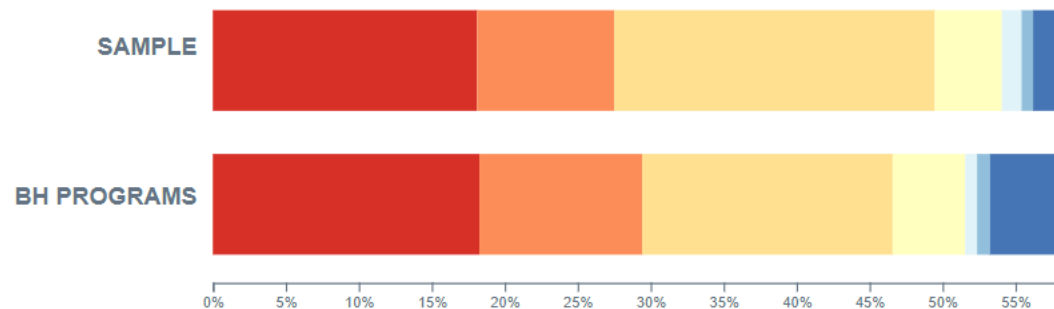| Year	TCOC	TCOCR
2018	$1,813	$1,644
2019	$1,692	$1,628
2020	$1,958	$1,645
2021	$2,047	$1,658
2022	$2,036	$1,861

Download CSV

28

Insights

Total Cost of Care by Category of Service

Most recent 12 months

The chart below presents the percentage of TCOC for selected Categories of Service (COS) during the most recent rolling 12 months.

	Measure	Inpatient - PH	Inpatient - BH	Outpatient - BH	Emergency Room	DME & Supplies	SNF	Home Health
SAMPLE	% TCOC	18.1%	9.4%	22.0%	4.6%	1.3%	0.8%	2.4%
	COS Amt Pd (PMPM)	$370	$205	$431	$93	$23	$17	$60
BH PROGRAMS	% TCOC	18.3%	11.2%	17.2%	5.0%	0.8%	0.9%	4.7%
	COS Amt Pd (PMPM)	$419	$256	$394	$114	$19	$20	$108

Download CSV

Outcomes

Cost by risk rating and program period

Select which class(es) to include
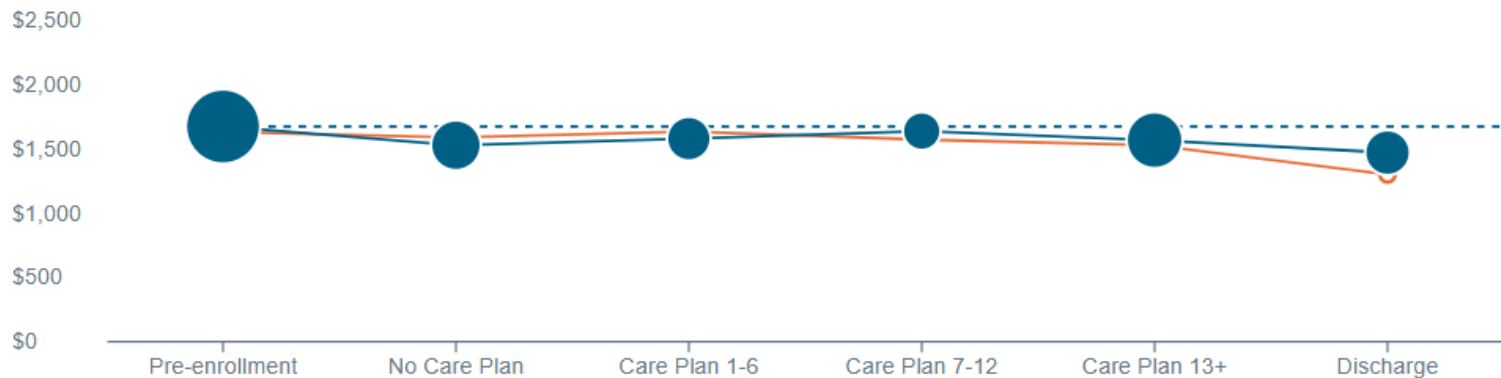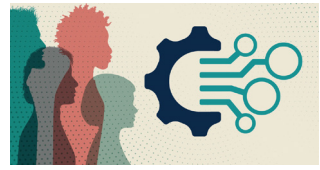
☑ 2018 ☑ 2019 ☑ 2020 ☐ 2021 ☐ 2022

Compare with BH programs ⌄ ⊶

Sample

⬤ 13,073 Member Months ● 2 Member Months - - - - Pre-enrollment line

All Organization Population

Risk Adjusted Cost ($)

Pre-enrollment · No Care Plan · Care Plan 1-6 · Care Plan 7-12 · Care Plan 13+ · Discharge

THANK YOU

Questions and Answers