CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

Medicaid Innovation Accelerator Program (IAP)

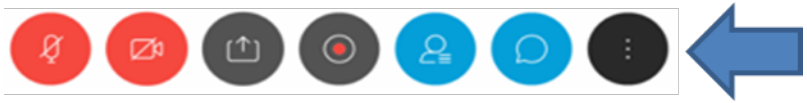
Resourceful Data Analytics: Leveraging Accessible Tools and Techniques to Translate Results Into Action

August 5, 2020

2:30 pm – 4:00 pm ET

IAP | Medicaid Innovation Accelerator Program

Webinar Logistics

- All lines will be muted
- Questions can be sent in the chat box during the webinar; there will be three Q & A segments
  - If the chat panel is displayed but there is not an area for you to enter a question, expand the panel by selecting the down arrow
  - If the chat box is not displayed, click on the ellipsis (…) button to add it to your screen 
- Slides, a recording, and a transcript will be posted online within a few weeks of the webinar

Welcome and Overview

Keith Branham, Research Analyst, Medicaid IAP Data Analytics Team, Data and Systems Group, Center for Medicaid and Children's Health Insurance Program Services, Centers for Medicare & Medicaid Services (CMS)

Purpose and Learning Objectives

- Understand benefits and challenges associated with accessible (i.e., easy to access) data analytic and visualization platforms
- Gain insights into key considerations for effectively conveying analytic results to inform policy
- Learn about state efforts to adopt and utilize common data analytic platforms to develop meaningful reporting mechanisms

Polling Question #1

- Who has joined today's webinar?
  - State Medicaid agency
  - Other state agency
  - State contractor/vendor
  - Other *(please provide details in the subsequent question)*

Agenda

- Introductions
- Overview of the Medicaid IAP
- Considerations and Best Practices for Analytic Tools
- Resourceful Data Analytics and Actions: State Perspectives
  - **Oklahoma Health Care Authority**
  - **Iowa Medicaid Enterprise**
- Key Takeaways and Conclusion

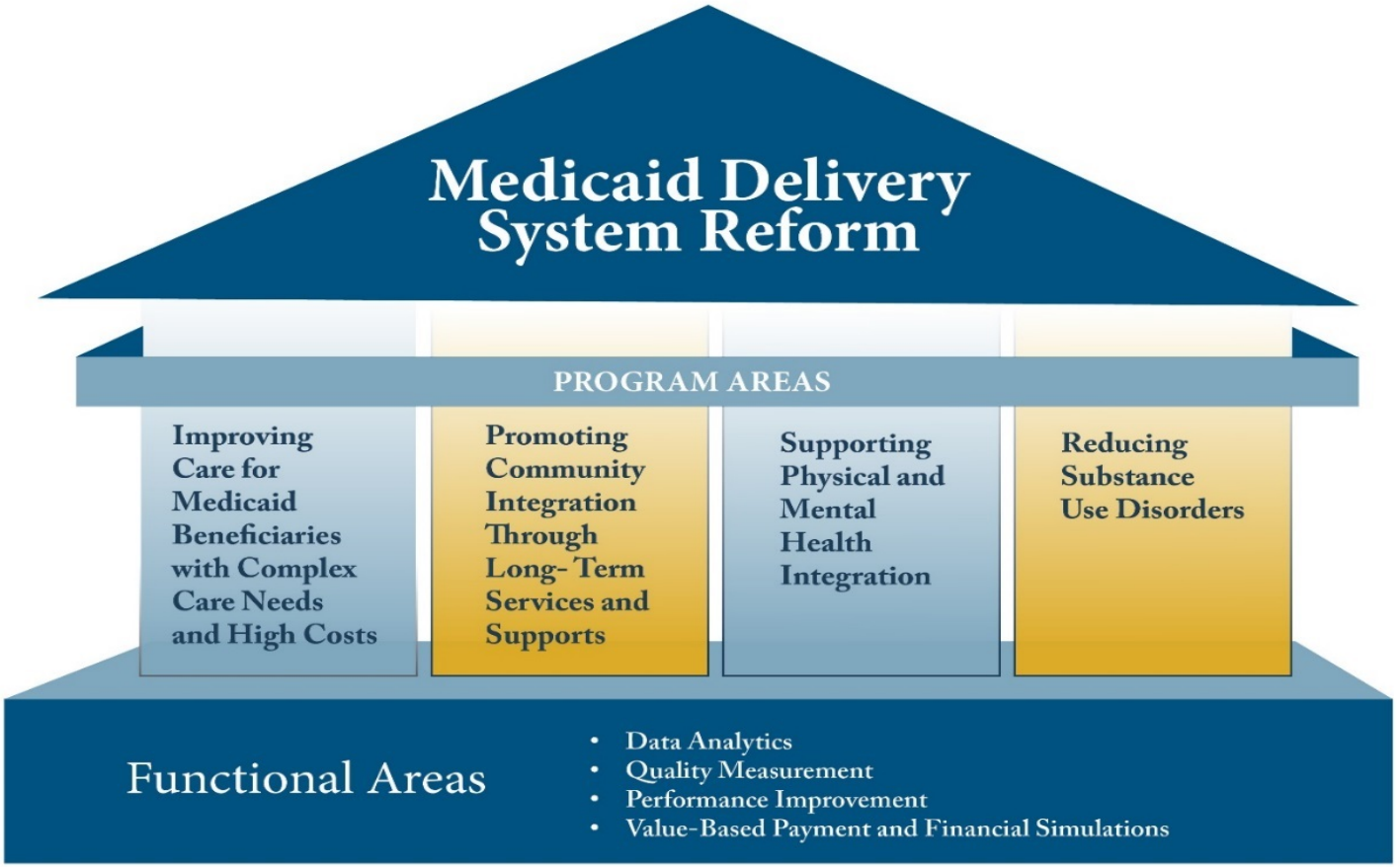
Speakers

- Shannon Harrer
  - Analytics Lead, IBM® Watson Health®
- Ryan Nelson
  - Clinical Outcomes Analyst, Oklahoma Health Care Authority
- Kimberly Köehler
  - Data Analytics Team Lead, Iowa Medicaid Enterprise

Speakers (Cont'd.)

- Regina Kling-Navratil
  - Data Analyst, Iowa Medicaid Enterprise
- Bob Schlueter
  - Business Analyst, Iowa Medicaid Enterprise
- Mike Egan
  - Member/Provider Analyst, Iowa Medicaid Enterprise

Overview of Medicaid IAP



Considerations and Best Practices for Analytic Tools

Shannon Harrer

Analytics Lead

IBM Watson Health

Commonly Used Analytic Tools

- Data has the potential to inform health care delivery, clinical decision-making, and policy
- Tools and methods used to disseminate data can impact our audience's engagement and understanding
- A picture speaks a thousand words

Commonly Used Analytic Tools (Cont'd.)

- Today, we will discuss benefits, limitations, best practices, and considerations for using four commonly used tools
  - Microsoft® Excel®
  - Tableau®
  - SAS®
  - Open Source Tools (e.g., R, Python)

Microsoft Excel

- Spreadsheet-based software to organize, format, calculate, and plot data

Benefits

- ✓ Point and click functionality
- ✓ Commonly used
- ✓ Manipulation and transformation
- ✓ Small datasets
- ✓ Dashboard functionality
- ✓ Simple visualizations

Limitations

- × Proprietary
- × Uses static data extracts
- × Knowledge of macros required to harness full capability
- × Collaboration limits

Tableau

- Software to represent and visually draw insight from data

Benefits

- ✓ Point and click functionality
- ✓ Integrates with databases for real-time results
- ✓ Dashboard functionality
- ✓ No coding skills required
- ✓ Easy collaboration

Limitations

- × Proprietary
- × Less common than Excel
- × Barriers to entry
- × Not designed for data manipulations and transformations

SAS

- Language that supports data manipulation and statistical analyses

Benefits	Limitations
✓ Commonly used	× Proprietary
✓ Manipulation and transformation	× Many features require programming knowledge
✓ Ability to handle large datasets	× Procedural language that can result in many lines of code
✓ Dedicated customer support	

Open Source Tools

- R and Python are languages that support data manipulation, statistical analyses, and visualizations

Benefits

- ✓ Free to download
- ✓ Integrates with databases for real-time results
- ✓ Dashboard functionality
- ✓ High degree of customization possible but not required
- ✓ Data manipulation, statistics, modeling, and visualization

Limitations

- × Requires programming knowledge
- × Barriers to entry and acceptance
- × Changes to maintained libraries may require periodic updates

Benefits and Limitations of Commonly Used Analytic Tools

Feature	Microsoft Excel	Tableau	SAS	Open Source
Annual license	Required	Required	Required	Not Required
Experience among staff	Common	Less Common	Less Common	Rare
Versioning concerns	Low	Moderate	Low	Moderate
Statistical features	Moderate	Low	High	High
Ease of use	High	High	Moderate	Moderate
Quality of visualizations	Low	High	Low	High
Dashboard functionality	Yes	Yes	Yes	Yes
Visualization flexibility	Moderate	Moderate	Moderate	High

Best Practices for Implementing Analytic Tools

- Know your audience!
- Develop a plan (e.g., identify the question and approach beforehand)
- Design iteratively
- Request feedback early and often
- Reduce manual processes where possible

Best Practices for Data Visualizations

- Lead with key data
- Identify the take-home message for your audience
- Report metrics with which the audience identifies
- Avoid lengthy text-based summaries

Best Practices for Data Visualizations (Cont'd.)

- Always include labels, values, and/or axes to avoid confusion
- Be consistent with language and color schemes
- Simple is powerful

Polling Question #2

- Which common data analytic and visualization platforms has your state used *(select all that apply)*?
  - Microsoft products (e.g., Excel, Word)
  - Tableau
  - SAS
  - R
  - Python
  - Other *(please provide details in the subsequent question)*

Questions or Comments?

RESOURCEFUL DATA ANALYTICS AND ACTIONS: A PERSPECTIVE FROM OKLAHOMA

Ryan Nelson

Clinical Outcomes Analyst

Oklahoma Health Care Authority

MEDICAID IAP DATA ANALYTICS PROJECT: GOAL

- Goal: Create a report which visually communicated key information about the population with a specific chronic condition
- Report content
  - Prevalence of the condition
  - Demographic breakdown
  - Overview of costs associated with health care services received

MEDICAID IAP DATA ANALYTICS PROJECT: GOAL (CONT'D.)

- These reports help to inform various intervention initiatives throughout the agency
  - The previous reports felt textbook-like

MEDICAID IAP DATA ANALYTICS PROJECT: TARGET AUDIENCE

- Previous reports targeted key decision-makers within the agency
- Objective: Make the reports accessible to all state agencies and external partners
  - Ultimately, reports were developed in a format for the public

MEDICAID IAP DATA ANALYTICS PROJECT: KEY STAKEHOLDERS

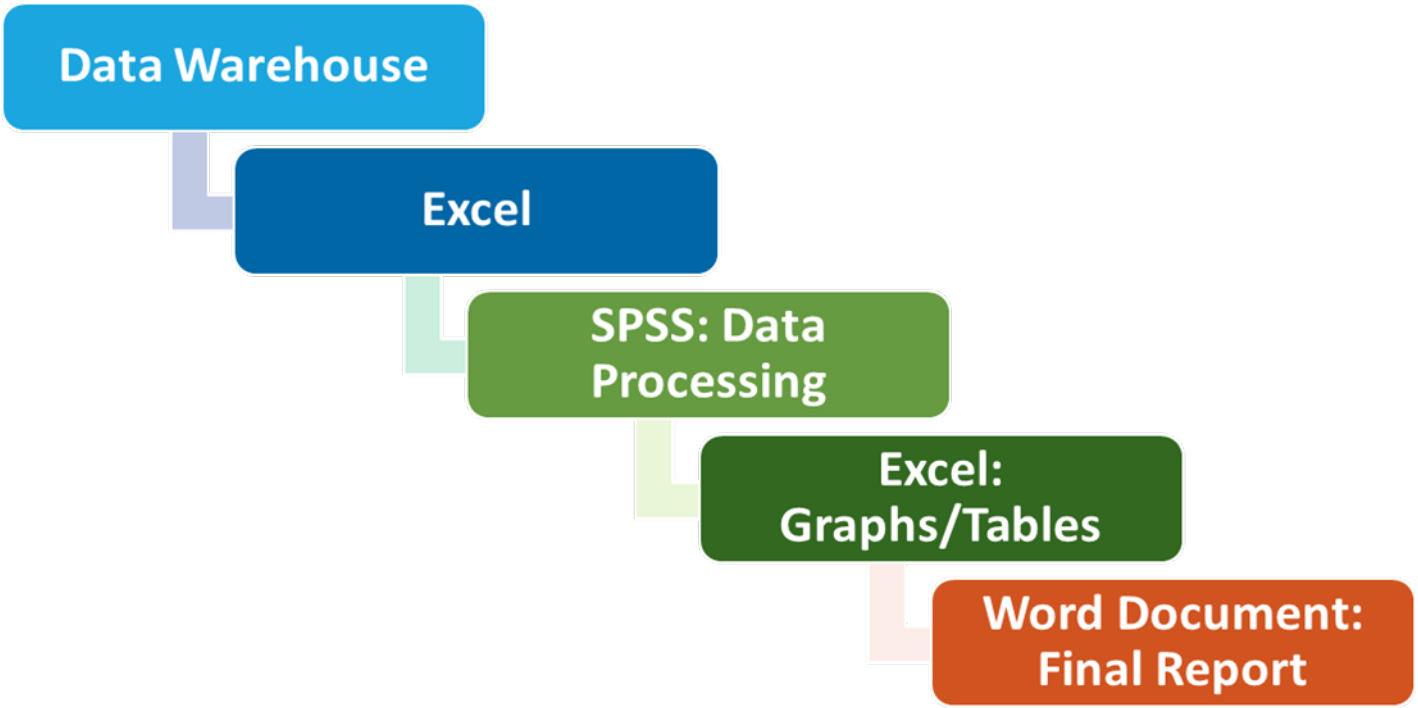
- Fred Oraene, Director of Office of Data Governance and Analytics
- Sarah Walker, Clinical Outcomes Manager
- Ryan Nelson, Clinical Outcomes Analyst
- Jennifer Gaskill, Senior Research Analyst

MEDICAID IAP DATA ANALYTICS PROJECT: PLATFORMS CONSIDERED

- Microsoft Office
  - Pro: No additional investment
  - Con: Time-consuming process
- SAP Lumira
  - Pro: Integration with SAP Business Intelligence
  - Con: Additional investment
- Tableau
  - Pro: Ease of use and extensive user community
  - Con: Additional investment

MEDICAID IAP DATA ANALYTICS PROJECT: PREVIOUS PROCESS

- Hands-on, time-consuming process
- Each report was run separately

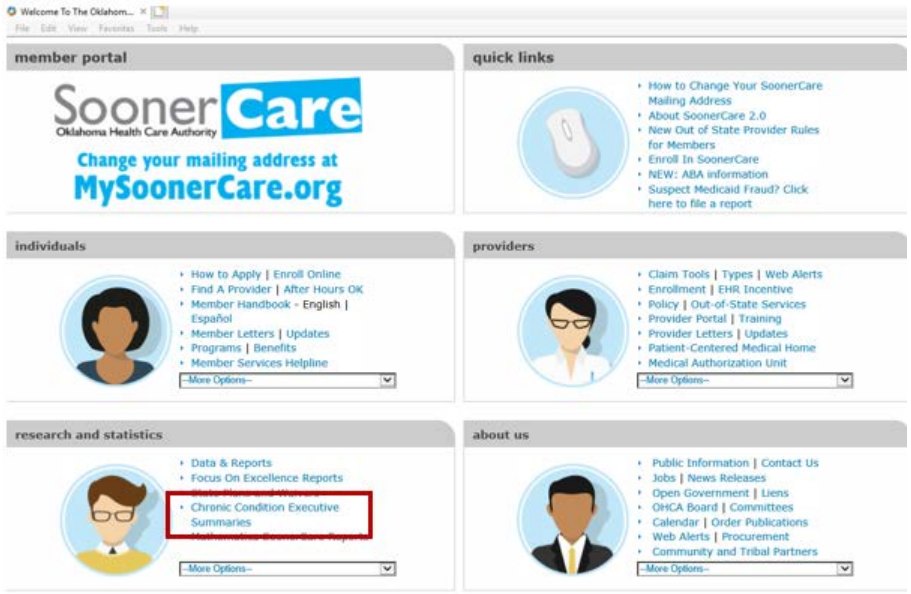


MEDICAID IAP DATA ANALYTICS PROJECT: UPDATED PROCESS

- Streamlined process
  - Minimizes the propensity of error
- Greatest challenge
  - Wide and Short versus Narrow and Long data files

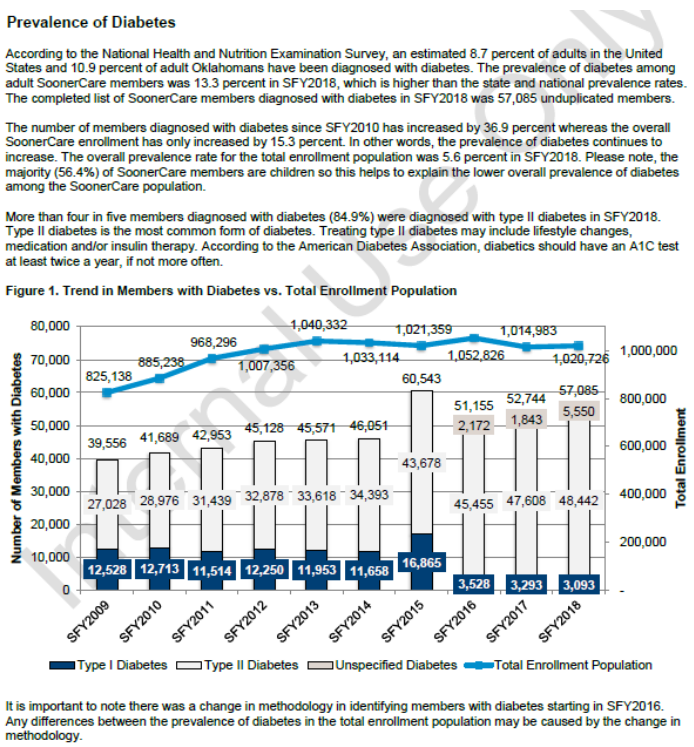
SUSTAINING THE GAINS

- Accountability
  - Chronic condition reports are now part of the agency's public website (http://okhca.org/)
- Future plans
  - Continue to leverage Tableau's capabilities
  - Create a single dashboard
    - Allow users to create dynamic views



WORDS OF WISDOM

- Continue to look for opportunities to improve your work



Prevalence of Diabetes

According to the National Health and Nutrition Examination Survey, an estimated 8.7 percent of adults in the United States and 10.9 percent of adult Oklahomans have been diagnosed with diabetes. The prevalence of diabetes among adult SoonerCare members was 13.3 percent in SFY2018, which is higher than the state and national prevalence rates. The completed list of SoonerCare members diagnosed with diabetes in SFY2018 was 57,085 unduplicated members.

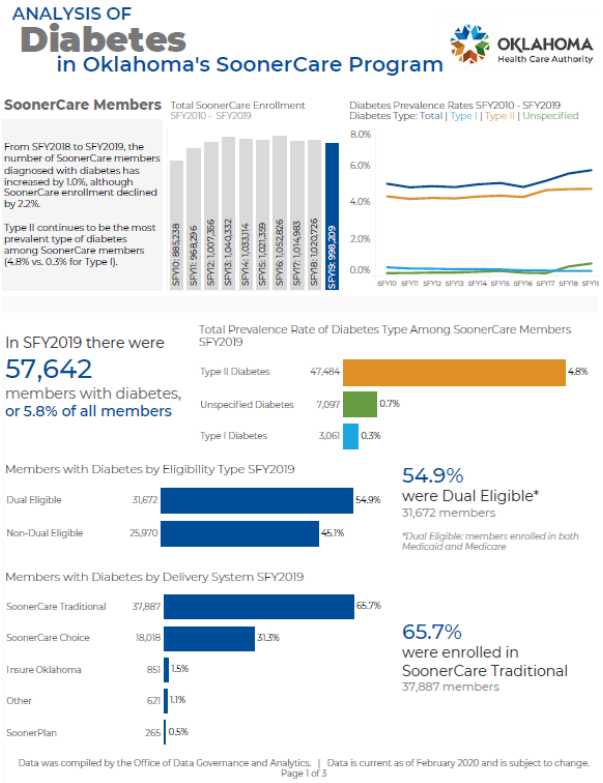
The number of members diagnosed with diabetes since SFY2010 has increased by 36.9 percent whereas the overall SoonerCare enrollment has only increased by 15.3 percent. In other words, the prevalence of diabetes continues to increase. The overall prevalence rate for the total enrollment population was 5.6 percent in SFY2018. Please note, the majority (56.4%) of SoonerCare members are children so this helps to explain the lower overall prevalence of diabetes among the SoonerCare population.

More than four in five members diagnosed with diabetes (84.9%) were diagnosed with type II diabetes in SFY2018. Type II diabetes is the most common form of diabetes. Treating type II diabetes may include lifestyle changes, medication and/or insulin therapy. According to the American Diabetes Association, diabetics should have an A1C test at least twice a year, if not more often.

Figure 1. Trend in Members with Diabetes vs. Total Enrollment Population

It is important to note there was a change in methodology in identifying members with diabetes starting in SFY2016. Any differences between the prevalence of diabetes in the total enrollment population may be caused by the change in methodology.

Internal Use Only



ANALYSIS OF
Diabetes
in Oklahoma's SoonerCare Program

OKLAHOMA Health Care Authority

SoonerCare Members

From SFY2018 to SFY2019, the number of SoonerCare members diagnosed with diabetes has increased by 1.0%, although SoonerCare enrollment declined by 2.2%.

Type II continues to be the most prevalent type of diabetes among SoonerCare members (4.8% vs. 0.3% for Type I).

Total SoonerCare Enrollment SFY2010 - SFY2019

SFY10: 885,238
SFY11: 968,296
SFY12: 1,007,356
SFY13: 1,040,332
SFY14: 1,033,114
SFY15: 1,021,359
SFY16: 1,052,826
SFY17: 1,014,983
SFY18: 1,020,726
SFY19: 998,209

Diabetes Prevalence Rates SFY2010 - SFY2019
Diabetes Type: Total | Type I | Type II | Unspecified

8.0%
6.0%
4.0%
2.0%
0.0%
SFY10 SFY11 SFY12 SFY13 SFY14 SFY15 SFY16 SFY17 SFY18 SFY19

In SFY2019 there were
57,642
members with diabetes,
or 5.8% of all members

Total Prevalence Rate of Diabetes Type Among SoonerCare Members SFY2019

Type II Diabetes	47,484	4.8%
Unspecified Diabetes	7,097	0.7%
Type I Diabetes	3,061	0.3%

Members with Diabetes by Eligibility Type SFY2019

Dual Eligible	31,672	54.9%
Non-Dual Eligible	25,970	45.1%

54.9%
were Dual Eligible*
31,672 members

*Dual Eligible: members enrolled in both Medicaid and Medicare

Members with Diabetes by Delivery System SFY2019

SoonerCare Traditional	37,887	65.7%
SoonerCare Choice	18,018	31.3%
Insure Oklahoma	851	1.5%
Other	621	1.1%
SoonerPlan	265	0.5%

65.7%
were enrolled in
SoonerCare Traditional
37,887 members

Data was compiled by the Office of Data Governance and Analytics. | Data is current as of February 2020 and is subject to change.
Page 1 of 3

OKLAHOMA
Health Care Authority

GET IN TOUCH

4345 N. Lincoln Blvd.
Oklahoma City, OK 73105

okhca.org
mysoonercare.org

Agency: 405-522-7300
Helpline: 800-987-7767

Questions or Comments?

Department of HUMAN SERVICES

Resourceful Data Analytics and Actions: A Perspective from Iowa

Kimberly Köehler

Data Analytics Team Lead

Iowa Medicaid Enterprise

Regina Kling-Navratil

Data Analyst

Iowa Medicaid Enterprise

Bob Schlueter

Business Analyst

Iowa Medicaid Enterprise

Mike Egan

Member/Provider Analyst

Iowa Medicaid Enterprise

August 5, 2020

Medicaid IAP Data Analytics Project: Background

- Goal: Provide a high-level infographic overview of the Iowa Medicaid program
- Target population: State legislators and other external interest groups
- Key stakeholders involved: Medicaid Director, who was new to the state at the time of creation and needed to convey data about the program

Medicaid IAP Data Analytics Project: Platforms and Processes

- Rationale for selecting Tableau as the analytic platform
  - Experience working with Tableau (two major dashboards)
  - Unfamiliarity with mapping in other business intelligence platforms
- Processes conducted and results
  - Audience determination
  - Data elements
  - What story do the data elements tell?

Medicaid IAP Data Analytics Project: Platforms and Processes (Cont'd.)

- Challenges and solutions
  - Data consistency for the managed care organizations (MCOs) as well as fee-for-service-(FFS) derived datasets
    - Reporting of Iowa Expenditures found in capitation and FFS
    - Clearly communicate what are state versus MCO expenditures
  - Consistency among other externally published information
    - Need to validate results with other published reports

Medicaid IAP Data Analytics Project: Platforms and Processes (Cont'd.)

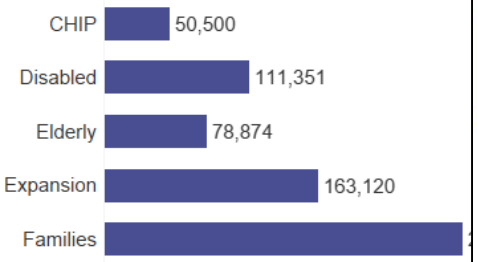
- Challenges and solutions (cont'd.)
  - Source information retention
    - Analytics tool does not pull data directly from data warehouse
    - Data are maintained and stored in Excel spreadsheets
  - Destination for audience
    - Significant Iowa Medicaid Enterprise internal review, including colors and images
    - Document noninteractive and published as PDF

Design Change Over Time

Department of HUMAN SERVICES

The Iowa Medicaid program provides preventive, acute, and maintenance services for low-income Iowans whose income is below 133% of poverty ($15,521 annually for a single person $20,921 for a couple or higher depending on family size).

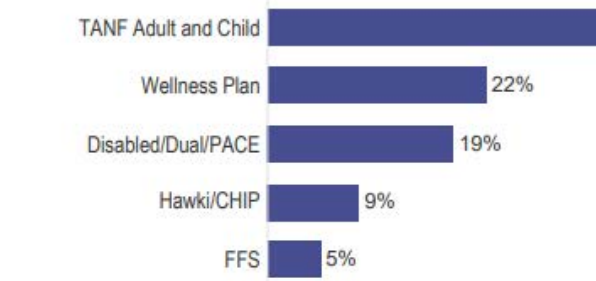
As of 2017, **677,583 (18%)** of Iowans are enrolled in **IA Medicaid/CHIP**



Department of HUMAN SERVICES

Iowa Medicaid provides medically necessary healthcare coverage for financially needy adults, children, parents with children, people with disabilities, elderly people and pregnant women to help them live healthy, stable, and self-sufficient lives.

January 2019* **698K** or **22%** of Iowans are enrolled in **IA Medicaid/CHIP**



*Distinct member counts included Hawki, FFS, HIPP and Current MCO Members based on eligibility date pulled after the 10th of the month.

Sustaining the Gains

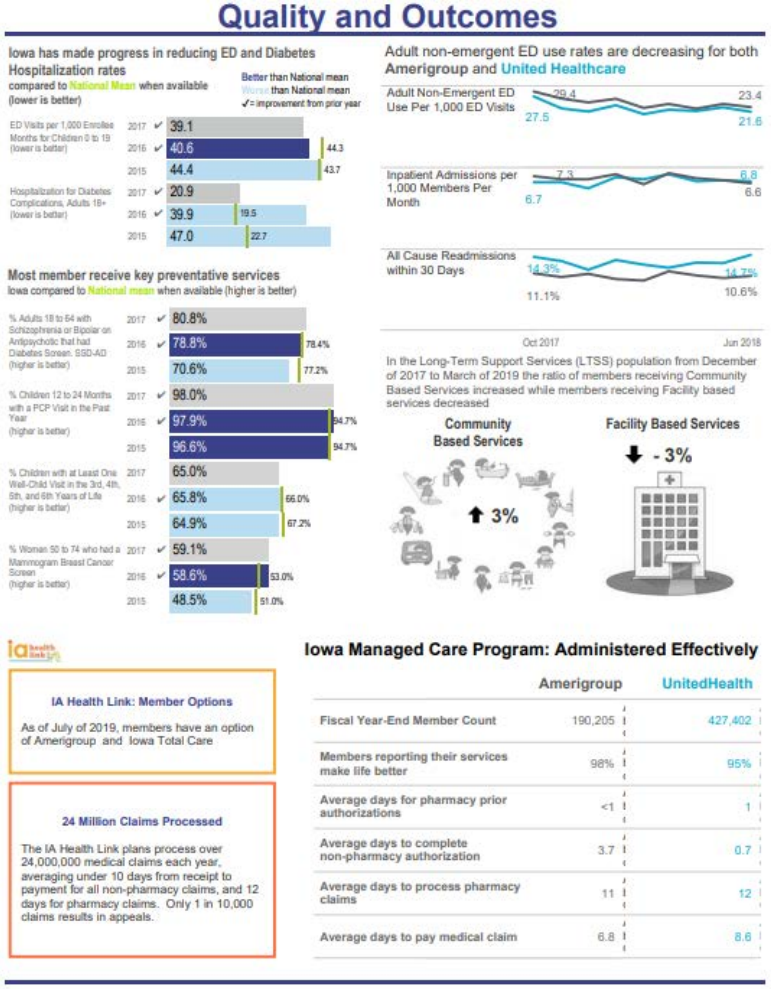
- Updated results: Iowa is working to update its data to provide an annual refresh of the data in the infographic
  - Automating tasks where possible

Sustaining the Gains (Cont'd.)

- Future plans: Success from this project led to pursuit of additional technical assistance via Medicaid IAP
  - Reducing Substance Use Disorders: Dashboard development (Lead: Kurt Behrens)
  - Using Data Analytics to Better Understand Medicaid Populations with Serious Mental Illness (Lead: Kimberly Köehler; Co-Lead: Mike Egan)
  - Value-Based Purchasing Affinity Group (Bob Schlueter, et al)

Words of Wisdom

- Medicaid IAP encourages relational thinking through data discovery and trending
  - Programmatically
  - Between programs
  - Through external data sources that provide context



Contact Information

Kimberly Köehler
kkoehle@dhs.state.ia.us

Bob Schlueter
rschlue@dhs.state.ia.us

Regina Kling-Navratil
rklingn@dhs.state.ia.us

Mike Egan
megan@dhs.state.ia.us

https://dhs.iowa.gov/ime/about/performance-data/infographic

Questions or Comments?

Key Takeaways for Today's Webinar

- When considering an appropriate analytic tool and approach, identify a concrete purpose and prepare for iterative testing
- Use of accessible analytic tools can support streamlined processes that promote efficiencies in Medicaid
- Current and consistent data across sources are key to effectively convey analytic results and inform policy

Thank You!

Thank you for joining today's webinar!

Please complete the evaluation form following this presentation.

For more information and resources, please visit Medicaid.gov.