

## Data Analytics

In July 2014, the Centers for Medicare & Medicaid Services (CMS) launched a collaborative between the Center for Medicaid and CHIP Services and the Center for Medicare & Medicaid Innovation called the Medicaid Innovation Accelerator Program (IAP). Through targeted technical support, IAP aims to improve health and health care for Medicaid beneficiaries and to reduce associated costs by supporting states in their ongoing payment and delivery system reforms. In October 2015, IAP began providing technical support to states seeking to integrate Medicare and Medicaid data. Then in 2017, IAP began to offer general data analytics technical support to states. IAP also is working with states on health care delivery system reform efforts in value-based payment and program areas such as reducing substance use disorders, improving care for Medicaid beneficiaries with complex care needs and high costs, promoting community integration via long-term services and supports, and supporting physical and mental health integration.

### Data Analytics Technical Support

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During the year-long data analytics technical support that started in May 2017, IAP worked with 11 Medicaid programs (nine states and two territories) to develop data analytic strategies; use data to drive programmatic decision-making; integrate various non-Medicare data sets with Medicaid data; and design data visualizations to enhance understanding of trends. The nine states (Alabama, Mississippi, Nebraska, New Hampshire, New Jersey, North Dakota, Pennsylvania, Washington, and West Virginia), as well as Guam and the Commonwealth of the Northern Mariana Islands, had access to a range of resources—quarterly webinars, peer-to-peer learning, shared materials on data analytics issues, and tailored technical support. These activities helped the IAP data analytics technical support states plan various reforms and lay the groundwork for using data analytics more effectively in future implementation efforts.

#### ALABAMA

Alabama redesigned its Medicaid Agency Annual Report to better explain its Medicaid program and population and to present selected outcome measures. The updated annual report summarizes the program population and program metrics for the state legislature and other key stakeholders, incorporates encounter data for the transition to Medicaid managed care, and showcases the capabilities of the Medicaid analytics team. The IAP team assisted Alabama by providing detailed feedback on the inclusion and order of report contents and on the graphical design of tables and charts. Alabama (1) integrated best practices of data visualization into the state's annual report and (2) acquired working knowledge of report design and effective communication of data to leadership and the public.

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#### GUAM/COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS (CNMI)

Guam and the CNMI worked together to create an analytic strategy that would allow them to leverage the available data to improve the care of their Medicaid populations. The IAP team held several presentations for Guam and the CNMI on health care quality measures relevant to the territories' areas of interest. The team also led discussions on additional vehicles for collecting quality data to help the territories integrate data-driven decision-making into their programs moving forward. These methods included considering the use of (1) Consumer Assessment of Healthcare Providers and Systems surveys, (2) Health Risk Assessments, and (3) Medicaid risk-adjustment techniques (Chronic Illness & Disability Payment System, Medicaid RX). In addition, Guam was preparing for Transformed Medicaid Statistical Information System reporting and requested information to support its planned implementation of a Medicaid managed care pilot. The IAP team assisted Guam through a series of informational presentations that covered the following topics: an overview of data, types of managed care, and encounter data best practices. Guam and CNMI will use information gained through this process to help identify and design programs that provide services to address the needs of specific Medicaid populations.

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## MISSISSIPPI

Mississippi sought technical support to improve its analytics and reporting on the long-term services and supports (LTSS) population. The IAP team conducted research on analytics and reporting related to LTSS, with a special focus on providing examples from other states that have a fee-for-service delivery system. The IAP team also identified ways for Mississippi to address its analytic priorities, including introducing metrics related to patient care and case management, improving home and community-based services cost savings and documentation, using incident management and provider recredentialing data, and preventing utilization of inappropriate hospital and institutional services. The team aligned analytics and reporting recommendations as much as possible with Mississippi's existing data systems to help the state make data-driven decisions. The team also developed table shells for Mississippi to use to report these analytic findings. Additionally, the team shared best practices on enrollment, cost, quality, and on data visualization to illustrate conclusions based on analytic findings.

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## NEBRASKA

The focus of Nebraska's IAP project was to improve its data quality and to develop a strategy for applying predictive modeling to policy shifts and other external events. The IAP team advised Nebraska on best practices from other states regarding contractually enforcing quality encounter data submissions for managed care organizations. The team provided Nebraska with an environmental scan of data analytic innovations carried out by other state Medicaid agencies. The environmental scan describes a predictive analytics pilot study, a program using data analytics to serve superutilizers, and analytics-based disease management programs. Through the IAP team, Nebraska obtained feedback from the Office of the National Coordinator for Health Information Technology (ONC) on how the Health Insurance Portability and Accountability Act affects data sharing across agencies. The team developed a memo that explains a method for predicting future program enrollment and spending. Finally, the team provided feedback on the content and layout of summary tables of encounter data to support a best practices approach.

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## NEW JERSEY

New Jersey developed a public-facing dashboard that describes the Medicaid program population and enables descriptive analyses of Medicaid data. Through the dashboard, New Jersey hopes to increase transparency and reduce the burden on its staff of running custom queries and reports. The IAP team helped New Jersey gather information on alternative dashboard software options; the team shared detailed reviews of graphical and textual elements of the dashboard to enhance user understanding of patterns and trends in data and provided New Jersey with in-depth training on creating a dashboard in Tableau. The dashboard is now public and can be viewed at <http://www.njfamilycare.org/analytics/home.html>. The IAP team also provided technical support for the state to develop a program to improve the match rate of its infants' Medicaid eligibility data to the Bureau of Vital Statistics electronic birth certification data. After combining its approach with New Jersey's match process, the IAP team ultimately achieved a match rate of 88 percent between data sets.

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## NORTH DAKOTA

North Dakota's data analytics goals included identifying the top five focus areas for data management and visualization and developing User Persona templates to elicit stakeholder requirements under each focus area. Input from the User Personas informed the design of a series of dashboards to enhance visualization and reporting efficiency. Using North Dakota's chosen data analytics platform, the IAP team provided demonstrations and developed sample dashboard screenshots relevant to each User Persona and delivered a user guide for developing department and role-based dashboards in a production environment. The state also aimed to develop a strategy for merging claims and encounter data from Indian Health Service (IHS) facilities. Although this goal was postponed in favor of a federal-level solution currently under consideration, to facilitate discussions with IHS facilities regarding data sharing, the IAP team provided North Dakota with talking points on care coordination, merging claims and encounter data, and a high-level strategy to accomplish a potential data merge.

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## PENNSYLVANIA

Pennsylvania identified several goals as it worked to implement a new managed long-term service and supports (MLTSS) program, which was launched January 1, 2018. The state requested technical support in selecting health outcome-based metrics to demonstrate value-based purchasing; the ultimate selection of outcome-based metrics resulted in data reports and visualization for stakeholders. Additional technical support also helped the state plan the frequency of data collection and data aggregation on the basis of several considerations: (1) the plan for data collection in its approved waiver application to meet federal waiver requirements, (2) Pennsylvania's system capabilities, and (3) frequency of similar data collected by standardized instruments, such as the Healthcare Effectiveness Data and Information Set measures. The IAP team also helped Pennsylvania identify areas in which additional measures would be needed as the program expands. The team provided Pennsylvania with examples of data dashboards from other states, focusing on LTSS when possible. These examples included an annotated list of the types of information each data dashboard contained. The IAP team also facilitated calls between Pennsylvania and four other states to discuss data analytic successes, challenges, and characteristics related to the states' MLTSS programs. These calls focused on how states developed their staff resources to manage the amount of data collected and how they used the data to inform quality improvement projects, as well as limitations in their data analytics capacity. Additionally, the IAP team facilitated a call between Pennsylvania and ONC to discuss balancing program transparency and data privacy, completed a literature review of resources related to predictive analytics and predictive modeling, and discussed with the state considerations and best practices for data visualization.

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## WASHINGTON

Washington State was interested in developing a platform to help its Accountable Communities of Health (ACHs) track and monitor progress of their regional health improvement projects. The first project focused on opioids and covered (1) primary prevention of opioid dependence/addiction, (2) improving access to treatment of opioid addiction, (3) reducing opioid overdose and fatalities, and (4) promoting long-term stabilization and whole-person care. The goal was to develop rapid-cycle reports that provide insights to project leaders on early success metrics and indicators beneficial to ACHs as they implement their opioid projects. Washington, in partnership with the IAP team, began by conducting interviews with the ACHs to develop an understanding of their interventions. The IAP team identified additional data and other information needed by ACHs to monitor their implementation progress. On the basis of these data and information, the IAP team and Washington collectively identified and prioritized indicators spanning prevention of opioid use, treatment, and interventions to prevent opioid overdoses and deaths. After identifying and prioritizing these indicators, the IAP team developed mock views for the treatment-focused opioid indicators. The visualizations will serve as a blueprint for Washington to build these rapid-cycle reports.

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## WEST VIRGINIA

West Virginia wanted to improve the quality of its encounter data and position itself to provide higher-quality information to its constituents in a way that was more usable. The IAP team provided West Virginia with best practices to help establish and enforce contractual requirements for quality encounter data. The team also conducted stakeholder interviews to identify common reporting requests and provided West Virginia with expertise to build a framework for an executive dashboard report. To streamline reporting for custom queries and robust measures, the executive dashboard was strengthened through consultation with the IAP team on data visualization and restructuring of measures. The IAP team also provided technical support to West Virginia to integrate Medicaid eligibility data with mortality vital statistics data. The team worked with the West Virginia Department of Health and Human Resources and a work group composed of West Virginia's Medicaid Director of Program Integrity, West Virginia's Medicaid Director of Quality, a representative from the Health Statistics Center, and a representative from the Data Warehouse and Decision Support System group. The composition and collaboration of the work group was critical to the successful integration of West Virginia's mortality data with Medicaid eligibility data—a final match rate of 87.65 percent was achieved.

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