

## Data Analytics

In July 2014, the Centers for Medicare & Medicaid Services (CMS) launched a collaborative between the Center for Medicaid and Child Health Insurance Program (CHIP) Services and the Center for Medicare & Medicaid Innovation called the Medicaid Innovation Accelerator Program (IAP). Through targeted technical assistance, IAP aims to improve the health and health care for Medicaid beneficiaries and to reduce associated costs by supporting states in their ongoing payment and delivery system reforms. In 2017, IAP began to offer general data analytics technical assistance 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 Assistance

For the third cohort, IAP provided technical assistance to seven Medicaid agencies for a six-month project that began in April 2019. During this time, IAP worked with these Medicaid agencies to develop data analytic strategies, use data to drive programmatic decision-making, integrate various non-Medicare datasets with Medicaid data, and design data visualizations to enhance understanding of trends. The four states (Georgia, Oklahoma, Virginia, and West Virginia) and three territories (the Commonwealth of the Northern Mariana Islands [CNMI], Guam, and the United States Virgin Islands [USVI]), had access to a range of resources—peer-to-peer learning opportunities, shared materials on data analytics issues, and tailored technical assistance. These activities helped the participating states and territories to plan various reforms and lay the groundwork for using data analytics more effectively in future implementation efforts.

#### COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS/GUAM

CNMI and Guam continued to build their knowledge of data analytic techniques from the previous cohort by using statistical software to conduct analyses of their own datasets. The IAP team worked with both territories to perform a series of functions, including properly uploading datasets from their systems to avoid formatting errors, flagging hypertensive diagnoses within their datasets, and reshaping their datasets to allow for more efficient analysis. Additionally, the IAP team, CNMI, and Guam, engaged in a series of sessions to systematically guide the territories' ability to conduct data analysis and draw insights from an inpatient dataset. This analysis included data preparation and cleaning (e.g., converting data types, calculating new variables); descriptive statistical analysis (e.g., tabulating inpatient stays by sex; aggregating diagnosis codes by count/prevalence); and advanced diagnostic analysis (e.g., running the dataset through an International Classification of Diseases package that generates a risk/mortality score). The skills that CNMI and Guam learned through IAP will allow them to move their analytic capabilities forward and begin to use data to inform decision-making on vulnerable populations of interest.

**CNMI/Guam Contact:** Norman Okamura, [norman@uhtasi.org](mailto:norman@uhtasi.org)

#### GEORGIA

Georgia sought support from IAP to guide the development and implementation of a care management organization data dashboard. The IAP team provided technical assistance to Georgia by sharing best practices for data visualization, promoting understanding of the dashboard's target audience, and building mock-up dashboards to identify methods for reporting key information. The final dashboard that was developed allows stakeholders access to key information needed to track metrics and performance with real-time data and includes Medicaid claims data, quality measures, and visualizations. Georgia plans to use the technical training the IAP team provided to develop additional dashboards and reports to improve data tracking for multiple initiatives in the future.

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## OKLAHOMA

Oklahoma participated in IAP with the goal of updating and redesigning its 14 chronic condition reports to make them more useful and understandable to relevant stakeholders. The IAP team worked with the Oklahoma team by reviewing these reports, sharing data visualization best practices, and providing suggestions for alternate metrics for Oklahoma to use in future reports. IAP team suggestions included developing templates highlighting the best practices and lessons learned. Additionally, the Oklahoma team also received training from IAP on a data visualization software tool that can be used for creating clear and compelling visuals. The Oklahoma team applied this training to the updating of each template and visuals in the final chronic condition reports to capture the key metrics and statistics to convey to internal stakeholders. The [chronic condition reports](#) were approved for public dissemination.

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## UNITED STATES VIRGIN ISLANDS

USVI sought to improve its understanding of data analytics, including how other Medicaid agencies commonly use and present analytics to inform programmatic decision-making; how to access and leverage available data sources to gain insights into USVI's Medicaid population; and how to develop basic analytic skills to apply in commonly used software. To provide this overview, the IAP team focused on reviewing common descriptive analyses with the USVI team such as how to measure frequency and measures of central tendency, presenting on best practices of data visualizations, and using data to build a foundational knowledge of analyzing data using common tools such as Microsoft Excel® Pivot Tables and various other charts. The IAP technical assistance culminated in the development of a comprehensive document that provided an overview of each topic and best practices for achieving results through the data analytic skills learned throughout the technical assistance cohort.

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## VIRGINIA

Virginia requested technical assistance to support a transition from descriptive to predictive analytics by developing a documented process for predictive modeling featuring data on opioid use disorders within the Medicaid population. The IAP team presented materials to Virginia beginning with how to develop a predictive model, detailing the formative steps towards defining the population of interest, selecting variables for consideration, running the model, interpreting results, and presenting the information in a way for stakeholders to understand the key findings. Following each presentation, the IAP team provided technical assistance and feedback as Virginia implemented each step of the framework. In addition, the IAP team documented and compiled tasks, questions, challenges, and lessons learned at each step to produce a predictive modeling toolkit for Virginia's future predictive studies. The IAP technical assistance work commenced with Virginia and the IAP's collaboration on the development of a stakeholder presentation that showcased the steps to building a predictive model using the opioid use disorder use case. Virginia delivered the presentation to local stakeholders, sharing the potential for integrating predictive analytics into additional studies.

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## WEST VIRGINIA

West Virginia sought technical assistance from IAP to help calculate two established quality measures. The IAP team worked with West Virginia to identify statistical software packages that the state could use for this work and guided West Virginia through each step of calculating the quality measures, including reviewing the measures, documenting common errors, identifying methods to address those errors, and documenting lessons learned and challenges encountered throughout the technical assistance. A final report was developed for West Virginia that details those steps and best practices to provide a guide to calculate additional quality measures in the future.

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Information on the IAP Data Analytics program, including materials from national webinars, is available on the [IAP Data Analytics webpage list here](#).