The Hilltop Institute
UMBC

report

Maryland Department of Health Master Agreement Annual Report of Activities and Accomplishments FY 2020

December 2020

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A Nationally Recognized Partnership

The Hilltop Institute at UMBC

The Hilltop Institute at the University of Maryland, Baltimore County (UMBC), currently in its 26th year of service to the state of Maryland, is dedicated to advancing the health and wellbeing of people and communities. Nationally recognized for its expertise in Medicaid and state health policy, Hilltop is committed to addressing complex issues through informed, objective, and innovative research and analysis. With an extensive data repository and a staff of 50 full-time professionals—policy and financial analysts, data scientists, economists, attorneys, actuaries, public health professionals, and SAS programmers—Hilltop is uniquely positioned to conduct cutting-edge data analysis, policy research, and program development to address salient issues confronting publicly financed health care systems. Hilltop is guided by an external *Advisory Board* of highly regarded national experts in health policy, academicians, and health care executives. As state and federal governments continue to consider reforms to Medicaid and the health care financing and delivery system as well as address emerging challenges such as the coronavirus pandemic and the opioid crisis, Hilltop's deep understanding of state health policy and expertise in data analytics is critical to Maryland's efforts to continue to ensure access to quality, affordable health care for all Marylanders.

Since 1994, Hilltop has maintained a collaborative and highly productive partnership with the Maryland Department of Health (the Department) and—more specifically—the Maryland Medicaid Administration. This relationship is governed through an interagency agreement between UMBC (on behalf of Hilltop) and the Department's Office of Innovation, Research, and Development. The Department has designated Hilltop as a business associate pursuant to the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule. In this capacity, Hilltop maintains an extensive data repository to support program development, operations, evaluation, research, policy analysis, and rate setting. The data repository includes Maryland Medicaid data dating back to 1991, as well as hospital discharge data and federal data sets required to support Hilltop's analyses (e.g., nursing facility assessment data and Medicare data for Marylanders). Hilltop developed and continues to expand the reporting capability of the Maryland Medicaid DataPort, State Edition, a web-based data aggregation and visualization tool for the exclusive use of the Department that provides real-time data on Medicaid eligibility, utilization, and expenditures. Hilltop also hosts a *public site* that offers Medicaid eligibility information.

Each year, Hilltop develops risk-adjusted capitation payments for HealthChoice, Maryland's Medicaid managed care program. In fiscal year (FY) 2020, HealthChoice had nine participating managed care organizations (MCOs), served about 1.2 million beneficiaries, and paid $6.5 billion in capitated payments to MCOs. Hilltop conducts the annual evaluation of HealthChoice required by the Centers

for Medicare & Medicaid Services (CMS), as well as a multitude of ad hoc analyses each year to support further development and administration of the program. In FY 2017, CMS renewed Maryland's §1115 waiver for HealthChoice, and Hilltop is providing support to the Department in implementing and evaluating new benefits and initiatives. Such benefits and initiatives include the Institution for Mental Diseases (IMD) exclusion waiver, which allows Medicaid reimbursement for residential treatment for individuals aged 21 to 64 with substance use disorder (SUD); the Evidence-Based Home Visiting Services (HVS) pilot program; the Assistance in Community Integration Services (ACIS) pilot program; and the Adult Dental Pilot Program that offers dental services to dually eligible adults aged 21 to 64. Hilltop analyzes provider fees to support state deliberations on payment rates and compliance with federal rules. Hilltop's analyses have been instrumental in the implementation and evaluation of Affordable Care Act (ACA) initiatives such as the Medicaid expansion, the Money Follows the Person (MFP) Rebalancing Demonstration, the Balancing Incentive Program, Community First Choice (CFC), and Medicaid health homes for individuals with serious and persistent mental illness (SPMI), serious emotional disturbance (SED), and opioid use disorder (OUD). Hilltop provides data analytics for the Department to support implementation and monitoring of the Maryland Total Cost of Care Model approved by CMS in 2019. In all areas of collaboration, Hilltop assists the Department in meeting its goal of ensuring that all Marylanders have access to affordable and appropriate health care.

Hilltop provides data analytics, technical support, and policy analysis to other divisions and entities of the Department (e.g., the Developmental Disabilities Administration [DDA], Behavioral Health Administration [BHA], Public Health Administration [PHA], Maryland Health Care Commission [MHCC], Health Services Cost Review Commission [HSCRC], and Community Health Resources Commission [CHRC]) and to other state agencies (e.g., the Maryland Health Benefit Exchange [MHBE] and the Maryland Department of Human Services [DHS]). Through these relationships, Hilltop helps facilitate improved cross-agency coordination on data needs, analytics, and policy development. While Hilltop also conducts work for other states, the federal government, nonprofit agencies, and foundations, its relationship with the Department remains its primary focus.

History

UMBC established The Hilltop Institute in 1994 as the Center for Health Program Development and Management in partnership with the Department. Together, Hilltop and the Department developed Maryland's High-Risk Patient Management Initiative, which aimed to provide access to health care services for individuals who were both medically fragile and financially indigent and to be managed in such a way that the state's scarce resources would be utilized in the most cost-effective manner. This program later became the Rare and Expensive Case Management (REM) program, and Hilltop managed it until 2004, when this task was assumed by the Department. Hilltop continues to provide data analysis and monitoring for the REM program.

As Hilltop's research and analytic expertise grew, the Department began requesting analyses and assistance in other areas as Maryland expanded its Medicaid program. Hilltop collaborated with the Department in the development of HealthChoice, Maryland's Medicaid managed care program launched in 1997, as well as the HealthChoice §1115 waiver applications. Today, Hilltop continues to conduct research and policy analysis for HealthChoice and develop capitated payment rates for health plans participating in the program. Over the years, Hilltop's role has evolved as the priorities and needs of the Department have changed, but its focus on data-driven research and analytics to inform program and policy development, implementation, and evaluation remains constant.

Leveraging Our Work

Leveraging its knowledge of state health policy, access to Maryland health care data, and expertise in data analytics, Hilltop often collaborates with other states agencies, foundations, and university faculty to conduct research that benefits the Maryland Medicaid program. In FY 2020 Hilltop developed an algorithm for the Maryland Primary Care Program (MDPCP)—which incentives practices to offer advanced primary care services under the state's Total Cost of Care Model—to identify an individual's relative risk of avoidable hospitalization. In partnership with Chesapeake Regional Information System for our Patients (CRISP), Maryland's health information exchange, Hilltop is using the algorithm to provide *risk stratification scores* monthly to primary care practices to assist care coordinators in triaging care. Also, to support the Total Cost of Care Model, Hilltop is developing the multi-payer claims analytic tool (MCAT) for the HSCRC to automate data aggregation, visualization, and report generation for performance and quality monitoring. For the Maryland Health Benefit Exchange, Hilltop modeled options for a state reinsurance program for Maryland's ACA marketplace; the state's reinsurance program, implemented for the 2019 plan year, has been credited with substantially lowering premiums for marketplace health plans. With funding from the Robert Wood Johnson Foundation (RWJF) Health Data for Action program, Hilltop, in partnership with researchers at the University of Maryland Baltimore (UMB), is testing a measure of hospital quality that assesses hospitals based on the frequency of downstream clinically relevant admissions as opposed to blanket 30-day all-cause readmissions. Also, with UMB researchers, Hilltop is analyzing Medicaid data to create a statewide cohort of victims of violence and examine the care they receive for their injuries in order to better understand health care resources used by victims of violence. Building on its experience in working with the federal nursing facility Minimum Data Set (MDS) for the Department, Hilltop is conducting analytics and producing reports from the MDS and MHCC's annual nursing facility survey under a contract from the MHCC. With funding from RWJF, Hilltop partnered with Virginia Commonwealth University to produce a *report* on Maryland's and Virginia's experience with §1115 IMD waivers. For the Centers for Disease Control and Prevention (CDC) Foundation, Hilltop and researchers in South Carolina analyzed Medicaid claims data to better understand how sexually transmitted infections are diagnosed, treated, and managed by the

Maryland and South Carolina Medicaid programs, with special attention to the emergency care setting.

National Recognition

Hilltop's successful state/university partnership with the Department remains the mainstay of Hilltop's work. This partnership continues to garner national attention. Hilltop is a founding member of AcademyHealth's State-University Partnership Learning Network (SUPLN), established in 2014, and Hilltop's executive director chairs the SUPLN steering committee. The network promotes evidence-based state health policy and practice through collaborations by state governments and state university research centers. Currently, Medicaid agencies in 25 states have active partnerships with 30 public universities. AcademyHealth receives funding from the Patient-Centered Outcomes Research Institute (PCORI) to support SUPLN convenings and research and dissemination activities.

In order to conduct cross-state research on Medicaid, SUPLN researchers developed the Medicaid Outcomes Distributed Research Network (MODRN). MODRN facilitates efficient, data-driven analyses without the need to share sensitive person-level data across states. States participating in MODRN use a common data model and standardized analytic code for conduct of local analyses of Medicaid administrative data. Then the states aggregate results to present cross-state comparisons of Medicaid initiatives to advance policymaking. Twelve states now participate in MODRN.

In 2019, the National Institute on Drug Abuse (NIDA) awarded a three-year grant to MODRN researchers from Hilltop and eight other states—Kentucky, Michigan, North Carolina, Ohio, Pennsylvania, Virginia, West Virginia, and Wisconsin—to harness the power of MODRN to assess OUD treatment quality and outcomes, with the goal of informing policy decisions on coverage and payment for evidence-based OUD treatments in Medicaid. The team is developing cross-state reporting capability for 15 standardized measures of OUD treatment performance and linking Medicaid claims to vital statistics to examine the association between the quality of OUD treatment and fatal and non-fatal drug overdoses. The research team also conducted an extensive policy inventory of participating states that is being used to examine associations between Medicaid coverage policies, OUD treatment quality, and overdose outcomes.

Annual Report

Effective July 1, 2019, The Hilltop Institute at UMBC renewed its five-year master agreement with the Maryland Department of Health, extending it through June 30, 2024. This annual report presents activities and accomplishments for FY 2020 (July 1, 2019, through June 30, 2020), the first year of this master agreement.

Technical Assistance to Address the COVID-19 Crisis

In January 2020, the United States confirmed its first case of the coronavirus, which initially surfaced in China in 2019. The Secretary of Health and Human Services declared a public health emergency on January 31, 2020. The resulting COVID-19 pandemic has presented many challenges for state Medicaid programs. CMS granted states some temporary flexibilities during the state of emergency (SOE), issuing a number of temporary blanket waivers that removed some administrative barriers in order to allow states to provide better access to treatment, such as permitting audio-only telehealth services. Like many states, Maryland submitted several waiver requests (§1115, §1135, and §1915(c) Appendix K). CMS also provided states with temporary increased Federal Medical Assistance Percentage (FMAP).

Hilltop has been at the forefront of Maryland's efforts—working directly with the Medicaid Director, Assistant Medicaid Director, and Unified Area Command staff—providing daily support to the Department to implement emergency measures to address the crisis. In FY 2020, Hilltop provided staff support and participated on the COVID-19 Task Force; drafted and edited several policies and procedures and emergency guidance to providers; monitored Medicaid enrollment, COVID-19 cases among the Medicaid population, and hospital occupancy/surge capacity; assisted with responses to media inquiries; and conducted a number of ad hoc analyses. In addition, Hilltop began developing options to implement a potential global risk corridor to mitigate the financial impacts of COVID-19 on the nine MCOs participating in HealthChoice.

CARES Act

The Coronavirus Aid, Relief, and Economic Security Act (*CARES Act*) established the Coronavirus Relief Fund (the Fund) and appropriated $150 billion to the Fund to be used to make payments for specified uses to states and certain local governments, the District of Columbia, and U.S. Territories. The Fund may be used for necessary expenditures incurred due to the public health emergency. Hilltop conducted reviews of the CARES Act and the various waivers and helped the Department interpret them. Hilltop also conducted a number of analyses to assist the Department in responding to requests for information by the federal government.

Waiver Application Reviews: Hilltop assisted the Department with review of its §1115, §1135, and §1915(c) Appendix K (Emergency Preparedness and Response) submissions, offering the state various policy recommendations. Hilltop reviewed the proposed provider guidance on what services could be telephonic in relationship to various long-term services and supports (LTSS) program regulations and provided suggestions.

Provider Relief Fund: In May 2020, CMS requested that states submit provider-level CY 2018 and CY 2019 Medicaid fee-for-service (FFS) and managed care revenue data (inclusive of all Medicaid payments) and provider payment information for all Medicaid participating providers. To assist the Department in obtaining the managed care data from the MCOs, Hilltop developed a memo describing the data request (including frequently asked questions), as well as a data collection template for each MCO to complete, and distributed them to the MCOs with instructions and specifications from CMS. Hilltop collected and aggregated data from the MCOs and gave it to the Department to submit to CMS. Hilltop participated in a call with the Department and MCOs and assisted and answered questions regarding the data collection process. Hilltop then updated the data to add email addresses and a flag to identify if a provider was a dentist. To assist the Department in fulfilling a request from the Maryland Department of Budget and Management, Hilltop compiled provider information to identify the types of providers that received relief funds via the CARES Act. Hilltop also identified the Medicaid provider type for all Maryland providers who received a disbursement from the U.S. Department of Health and Human Services (HHS) Provider Relief Fund.

Hiring Waiver Request: To assist the Department in implementing temporary changes for CFC Residential Services Agency providers, Hilltop reviewed and interpreted the §1135 waiver, Appendix K, and related COMAR regulations.

Streamlining Eligibility for LTSS Populations: The Maryland Department of Human Services (DHS) requested that the Medicaid program assist them in streamlining Medicaid eligibility for persons receiving LTSS in case they should be hospitalized for COVID-19. Taking note of the CARES Act waivers, Hilltop reviewed the DHS request, made comments, and provided suggestions. Hilltop provided information about post-eligibility verification flexibilities and CARES Act maintenance of effort requirements.

Hospital Surge Capacity

In May 2020, the Department requested that Hilltop assist the state in monitoring hospital surge capacity. Hilltop participates in an interagency team consisting of CRISP; the Maryland Hospital Association; the Maryland Institute for Emergency Medical Services Systems; and other Department staff and consultants to collect, analyze, and monitor daily hospital occupancy and related data. Hilltop analyzed these data to develop daily briefing reports for the Medicaid director and the state's COVID-19 Task Force. Hilltop also began overseeing the interagency team effort to document statewide maximum hospital surge capacity. Hilltop developed a standard template to collect phased surge capacity data from the state's 50 acute hospitals treating COVID-19 patients and conducted interviews with hospital executives to complete the template. The interviews are

used to inform second surge planning, operational decision-making, and resource allocation. In this role, Hilltop began meeting with various stakeholders regarding initiatives to increase COVID-19 testing in the state. These activities are continuing in FY 2021.

Other COVID Analyses and Support

CDC Code Analysis and Reporting: Hilltop analyzed the procedure codes specified by the CDC to identify COVID-19. Hilltop performed an initial run of those codes from the February 2020 data and refreshed the data after the April 2020 update, delineated by county. Hilltop developed a Tableau® dashboard—refreshed monthly—to display these data.

COVID-19 Data Modeling: On behalf of the Department, Hilltop provided data to the HSCRC to assist with COVID-19 data modeling. Hilltop prepared Medicaid FFS claims and MCO encounter records as input for analysis in a model to assess and predict COVID-19 risk to individuals with different health histories. The HSCRC provided a data dictionary defining the requested fields/variables for reporting these claims and encounters and corresponding formatting. Following that, Hilltop provided claims and encounters for all non-dental services from the beginning of CY 2016 to the latest available, excluding claims and encounters from HSCRC-regulated hospitals and claims for Medicaid beneficiaries who had dual eligibility with Medicare where Medicaid was not the primary payer. Hilltop also estimated the dollar amounts for MCO encounters using the latest shadow pricing reference fee schedules.

Changes in Medicaid Enrollment: To assist the Department in monitoring increases in Medicaid enrollment during the pandemic, Hilltop calculated the number of individuals who enrolled in Medicaid in January, February, and March 2020, delineated by program type and also by coverage category, and examined the percentage of change from the previous month.

COVID-19 and Hydroxychlororquine Monthly Reports: In April 2020, Hilltop began producing monthly reports for the Department that calculated the number of Maryland Medicaid participants with COVID-19 diagnoses as well as the number of individuals with COVID-19 diagnoses that had been prescribed hydroxychloroqine (HCQ). Hilltop also conducted an analysis of the total number of HCQ prescriptions by month from January 2019 through March 2020.

Telehealth Expansion: Due to the COVID-19 SOE, the Department expanded coverage of health care services provided through telehealth. To monitor these services, Hilltop provided an update of annual summary of telehealth utilization for CY 2018, including remote patient monitoring, and completed an analysis of the utilization of telehealth services by Medicaid participants from January 1, 2020, through May 31, 2020.

COVID-19 Fatalities: To enable data sharing, Hilltop assisted the Department in setting up a data use agreement (DUA) with the Maryland Vital Statistics Administration (VSA), the Maryland Department of Disabilities, and Hilltop. Hilltop reviewed and edited the scope of work (SOW) for the DUA. Once the DUA was in place, Hilltop linked Medicaid data with VSA data to identify Medicaid participants who died due to a confirmed or probable COVID-19 infection. Hilltop described demographic and other characteristics comparing Medicaid and non-Medicaid enrollees. For those who were enrolled in Medicaid at the time of their death, Hilltop noted whether they received services through a Medicaid waiver program or were a resident of a nursing facility or assisted living facility.

Nursing Facility Demographics: The Governor's Office requested demographic information about Marylanders currently residing in nursing facilities in order to prepare the Deputy Secretary of Public Health for an interview with *The Baltimore Sun*. Hilltop calculated the number of Medicaid participants who had spent at least one day in a nursing facility in March 2020—delineated by facility—and described their demographics.

Personal Assistance Services: To assist the Department in issuing an *interim guidance* regarding personal assistance services provided in the community, Hilltop conducted an analysis of individuals with interRAI assessments receiving home and community-based services (HCBS) to identify their CDC COVID-19 risk factors, age, and housing type. Hilltop also participated in and provided staff support and consultation for a kick-off meeting with the Department to develop policies and a plan to pay family members to provide HCBS. Hilltop reviewed and interpreted the §1135 waiver, Appendix K, and related COMAR regulations to support provider guidance documents.

HealthChoice Program Support and Evaluation

In FY 2020, Hilltop continued to play a key role in supporting HealthChoice, Maryland's Medicaid managed care program, by conducting an annual evaluation of the program, monitoring the performance of HealthChoice MCOs, and conducting special policy studies and analyses.

HealthChoice §1115 Waiver Evaluation: As in previous years, Hilltop partnered with the Department to monitor and report on the performance of the HealthChoice program. During this reporting period, Hilltop worked with the Department to restructure the evaluation by incrementally adding measures in preparation for the five-year Waiver Demonstration Evaluation covering CY 2017 through 2021 for CMS. Hilltop also provided feedback on CMS's comments to the Department's §1115 HealthChoice Demonstration Evaluation Design. In FY 2020, Hilltop submitted two drafts of the Evaluation of the Maryland Medicaid HealthChoice Program for calendar year (CY) 2014 through CY 2018. The *report* provides a brief overview of the program and recent updates summarizing changes to the overall HealthChoice program, and then addressed the following five demonstration goals:

- Improve coverage and access to care for the Medicaid population, including provider network adequacy
- Improve quality of health services delivered, including value-based purchasing
- Provide a primary medical home and appropriateness of care
- Emphasize health promotion and disease prevention, including the use of dental, somatic, and behavioral health services
- Expand coverage through demonstration programs such as Residential Treatment for Individuals with SUD and the Family Planning (FP) program

The report covered access to and the quality of care and service utilization for special populations such as children in foster care, REM participants, the ACA Medicaid expansion population, and racial/ethnic minorities. In addition, the report presented a section on chronic diseases that included diabetes, HIV/AIDS, and the prevalence of behavioral health conditions, mental health disorders (MHDs), and SUD diagnoses. Hilltop also added measures to describe enrollment in pilot programs to offer new services, such as HVS, ACIS, and Dental Services for Former Foster Care Individuals.

Hilltop performed in-depth analyses for the report, such as the percentage of HealthChoice participants who received a screening, brief intervention, and referral to treatment (SBIRT) service or other type of service (e.g., ambulatory care and outpatient emergency department [ED] use, inpatient admissions, and MAT utilization). To further examine utilization rates, Hilltop calculated

measures such as the average number of ED visits and the average length of a hospital stay. Hilltop compared ED utilization by participants with diabetes who received standard diabetes follow-up care services to those who did not to determine if there was a likelihood that the participants without follow-up care were high utilizers of outpatient ED services. Hilltop added new disease-specific measures to explore the percentage of participants who had ED visits or inpatient admissions with a primary diagnosis of asthma or diabetes. To explore the effect of updates to the Medicaid enrollment process, Hilltop added measures to track the percentage of participants who were continuously enrolled in Medicaid, as well as a measure to determine the percentage of participants who had gaps in coverage during each year.

Rare and Expensive Case Management (REM): The REM program serves individuals with multiple and severe health care needs. In FY 2020, Hilltop continued to provide analytical support to the REM program. Hilltop prepared quarterly analytic reports for REM case managers and providers and included other analyses of the REM population in its evaluation of the HealthChoice program. Hilltop provided a yearly update to the baseline evaluation covering CY 2014 through CY 2017 that contained measures including immunization, ambulatory care, and dental visits among the REM population. Hilltop also completed an analysis of costs and service utilization for Maryland Medicaid participants enrolled in REM for FY 2018 and FY 2019, pursuant to a Public Information Act (PIA) request. Finally, Hilltop provided a draft chart book that described program participant demographics, service utilization, and program cost trends for CY 2014 to CY 2018.

Early and Periodic Screening, Diagnosis, and Treatment (EPSDT): Hilltop reviewed and commented on the Department's annual EPSDT report to CMS (CMS-416). The information is used by CMS to assess the effectiveness of state EPSDT programs in terms of the number of individuals under the age of 21 (by age group and basis of Medicaid eligibility) who are provided child health screening services, referred for appropriate treatment, and receiving dental services. Child health screening services are defined for purposes of reporting on this form as initial or periodic screens required to be provided according to a state's screening periodicity schedule.

Childhood Lead Reporting: Maryland law requires all lead tests performed on children from birth through 18 years to be reported to the Maryland Department of the Environment (MDE) Childhood Lead Registry (CLR). Using a program it developed to implement an enhanced CLR/Medicaid data-matching process, Hilltop identifies Medicaid participants in the CLR data, identifies the corresponding MCOs for these children, reports the blood lead testing and elevated blood lead level rates, and develops monthly reports for the MCOs and an annual report for the Department and the Maryland Department of the Environment.

Hilltop submitted monthly calendar-year-to-date reports for children aged 0 to 6 years to the Department. Hilltop also submitted an annual report—including a county-based analysis of lead testing results for HealthChoice children aged 12 to 23 months and 24 to 35 months—to MDE on behalf of the Department. The results of the lead tests are then reported to the MCOs for follow-up on children with elevated blood lead levels.

CHIP Health Services Initiative State Plan Amendment: In June 2017, CMS approved Maryland's application for a Children's Health Insurance Program (CHIP) Health Services Initiative (HSI) state plan amendment (SPA) to implement two initiatives aimed at removing asthma and lead triggers within the home. The Department developed these two initiatives in partnership with the Department of Housing and Community Development.

Program 1 conducts home assessments to identify lead hazards in the homes of low-income children with elevated blood lead levels and abates any identified hazards in the home. For Program 1, Hilltop conducted an analysis of children aged 0 through 18 years residing in 15 specified counties—Allegany, Anne Arundel, Calvert, Caroline, Carroll, Cecil, Garrett, Howard, Kent, Montgomery, Queen Anne's, Somerset, Talbot, Washington, and Worchester—who received a lead test as reported to the CLR from April 2018 to April 2019, June 2018 to June 2019, and September 2018 to September 2019.

Program 2 provides home assessments that identify asthma triggers and conditions that could contribute to lead poisoning in the homes of low-income children with asthma and/or elevated blood lead levels and conducts educational home visits to help families address medication adherence, nutrition, and safe cleaning techniques. Hilltop's role in the project is to develop finder files to target at-risk households. For Program 2, Hilltop conducted an analysis of children enrolled in Medicaid who met the following criteria: 1) aged 0 through 18 years, 2) residing in Baltimore City, Harford County, Baltimore County, Frederick County, Charles County, Wicomico County, St. Mary's County, Dorchester County, or Prince George's County, and 3) either received a lead test as reported to the CLR or were identified as having an asthma claim or encounter in the above nine counties from April 2018 to April 2019, June 2018 to June 2019, and September 2018 to September 2019. Hilltop conducted an ad hoc follow-up analysis on the health care use of children with asthma in Medicaid by county for CY 2017 and CY 2018. Hilltop provided another ad hoc report on the dates of blood lead testing and blood lead levels for Medicaid beneficiaries participating in Program 2. Using a finder file of program participants provided by the Department, Hilltop identified dates of blood lead testing and resulting blood lead levels for participants prior to and during enrollment in the program. Hilltop responded to another ad hoc request to calculate county-level frequencies of lead testing and elevated blood lead levels for children enrolled in Medicaid for CY 2013 to CY 2017. These measures report the number of continuously enrolled

children aged 0 to 2 years and 0 to 6 years in each county who received at least one blood lead test during each year. Counts were provided by race/ethnicity, and separately for MCO and for FFS participants.

Value-Based Purchasing (VBP): The goal of Maryland's VBP strategy is to improve quality of care and access by tying a portion of each MCO's capitation to its performance on a number of prescribed performance indicators or measures. As part of the HealthChoice evaluation, Hilltop monitors and reports on those measures. In FY 2020, Hilltop responded to a request from UnitedHealthcare regarding the ambulatory care and lead measures; on behalf of the Department, Hilltop provided them with VBP encounter reconciliation files and the VBP technical specifications. Hilltop completed the final ambulatory care VBP measure for HealthChoice participants with disabilities for CY 2018 and compared the final results for CYs 2017 and 2018. Hilltop completed the final VBP scores on ambulatory care and lead screening to the MCOs for CY 2018. Hilltop also completed the preliminary ambulatory care measure for CY 2019 and compared the final CY 2018 results with the preliminary CY 2019 results. In addition, Hilltop completed the final lead VBP measure for CY 2018 and the preliminary lead VBP measures for CY 2019, which calculated the percentage of children aged 12 to 23 months who received a lead test during the calendar year or the year prior. Hilltop also researched MCO disputes to the preliminary lead screening measures. Hilltop then provided each MCO with a pre-preliminary analysis of its lead testing and ambulatory care visit VBP measures for CY 2019, followed by preliminary analyses of the same. Hilltop also provided the Department with VBP targets for nine measures for CY 2020 based on the CY 2018 VBP results.

Managing for Results (MFR): In FY 2019, Hilltop prepared the CY 2018 lead MFR measure, which included blood lead testing rates and elevated blood lead levels for children aged 12 to 23 months and 24 to 35 months—delineated by county and high-risk ZIP code in Baltimore City—who were enrolled in a HealthChoice MCO for 90 or more continuous days during CY 2018. Hilltop also prepared the FY 2021 MFR measures for CY 2018 and provided estimates for CY 2019 through CY 2021 for the following measures: percentage of individuals aged 1 to 20 years who received preventive dental services; percentage of adolescents up to date on HPV vaccine by their 13th birthday; percentage of children and adolescents aged 1 to 17 years who were on two or more concurrent antipsychotic medications; percentage of adults with a new episode of alcohol or other drug dependence who initiated treatment; number of inpatient hospital admissions for diabetes short-term complications per 100,000 adult enrollees, and percentage of adults hospitalized for treatment of mental illness receiving follow-up visits. Hilltop also calculated the number of individuals with disabilities receiving state-funded services in community alternatives versus nursing facilities, delineated by service, for FY 2018 and projected numbers for FYs 2019 through

2021. Hilltop prepared asthma avoidable admission measures for CY 2018 and provided estimates for CY 2019 to CY 2021 for the Cigarette Restitution Fund.

Encounter Data Reporting and Validation: Through monthly, quarterly, and annual reports to the Department and the MCOs, Hilltop verified the completeness, accuracy, and reliability of encounter data and regularly reviewed the data to ensure validity. Encounter data were used to evaluate access to care and network adequacy, as well as to develop payment rates for HealthChoice. Monthly reports consisted of date of service analyses and MCO data submission projections. Quarterly reports classified MCO physician, outpatient, and dental encounter data by service category (physician, lab, x-ray, etc.); calculated a ratio of services per participant; validated inpatient encounters; and identified the use or overuse of default provider numbers for physician services.

In FY 2020, Hilltop produced the second annual report to meet CMS encounter data validation reporting requirements documented in *External Quality Review (EQR) Protocol 4, Activity 3*. The annual report evaluates the Department's encounter data processing and reviews the encounter data. Documentation of the state's encounter data processing includes an overview of the electronic data interchange (EDI) and the Medicaid Management Information System (MMIS2), as well as the validation process to ensure that encounters are accepted by the system. The review of accepted encounters includes analysis of the volume of encounters submitted over time, utilization rates, completeness of identified fields, data accuracy, and timeliness of submission to the Department. The report incorporates Tableau® business intelligence platform visualization to meet the CMS requirement for visual analytics and is structured to incorporate data from Hilltop's new Master Analytic Database (See description in Data Management and Web-Accessible Databases section, below). Hilltop also evaluated all electronic encounter data submitted by the MCOs in CY 2017 and CY 2018. In addition, Hilltop provided Qlarant (the organization contracted by the Department to conduct MCO quality reviews) with nine statistically significant random samples of HealthChoice MCO encounter records from the hospital inpatient, outpatient, and physician services that occurred in CY 2018 for each Medicaid MCO.

Encounter Data Reporting by MCOs: Since January 1, 2018, the HealthChoice MCOs have been required to report the actual payment amounts for services in the MMIS when submitting their encounter data to the Department. The Department met with the MCOs in the Spring of 2018 to improve their submission of medical encounters and by August 2018 MCOs were no longer submitting encounters with missing pay data, and paid fields with $0 increased. In the Fall of 2018, the Department discovered that the paid amount from institutional encounters were not populated sufficiently enough to be used for accurate analysis. While the completeness of these submissions is improving over time, the data cannot yet be reliably used in cost analyses. In FY

2020, Hilltop conducted two analyses to determine the degree to which prices reported by the MCOs for professional encounters from January 1 through June 30, 2019, and from July 1 through December 31, 2019, differed from the prices set in the Medicaid FFS fee schedule.

Shadow Pricing: To estimate the costs of MCO services (e.g., reporting MCO data to MHCC for the MCDB), Hilltop continued to estimate or "shadow price" MCO payments to providers in FY 2020. This included developing different methodologies for different types of services. For professional services, shadow pricing includes 1) applying the FFS schedule to each procedure code, accounting for modifiers, units of service, and changes to fees over time, and 2) applying the average FFS payment to procedure codes that are not listed on the fee schedule. For regulated institutional services, because all-payer rate regulation limits the amount hospitals can bill, Medicaid MCOs must pay the amount charged by the hospital minus a discount.

CAHPS® Health Plan Survey: Hilltop prepared adult and child survey sample frames based on National Committee for Quality Assurance's (NCQA's) 2020 specifications for HealthChoice-eligible recipients for the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) health plan survey. MetaStar, a vendor contracted by the Department to review and certify that Hilltop's SAS code meets NCQA requirements, audited source code, and final sample frames. After receiving MetaStar approval, Hilltop transmitted final adult and child sample frames to the Department.

State Health Improvement Process (SHIP): At the request of the Department, Hilltop performed an analysis for the *State Health Improvement Process* on the utilization of dental, lead screening, ambulatory care, and well-visit services in CY 2018 by individuals in Medicaid. Specifically, Hilltop calculated—by county and race/ethnicity—the number and percentage of 1) Medicaid participants aged 0 to 20 years (with any period of enrollment as well as those with at least 320 days of enrollment in the calendar year) who had a dental visit; 2) pregnant women aged 21 years or older in the Medicaid program (with any period of enrollment and at least 90 days of enrollment in the calendar year) who had a dental visit; and 3) children aged 12 to 35 months in the Medicaid program (with at least 90 days of enrollment in the calendar year) who had a lead screening test. Hilltop also calculated—by age group, county, and race/ethnicity—the number and percentage of 1) Medicaid participants aged 0 to 64 years (with any period of enrollment and at least 320 days of enrollment in the calendar year) who had an ambulatory care visit; and 2) Medicaid participants aged 13 to 20 years (with any period of enrollment and at least 320 days of enrollment in the calendar year) who had a well-care visit.

Community Health Pilots: As part of the HealthChoice §1115 waiver renewal, the Department is offering local governments the opportunity to request matching funds for two pilot programs.

The Assistance in Community Integration Services (ACIS) pilot program is intended for high-risk, high-utilizing Medicaid participants who are at high risk of homelessness when transitioning to the community from an institution, or at high risk of institutional placement. The first round of pilots was awarded in November 2017 and allotted for 190 individuals between three jurisdictions. These jurisdictions (i.e., lead entities) included Baltimore City (Mayor's Office of Homeless Services), Cecil County (Cecil County Health Department), and Montgomery County (Montgomery County Department of Health and Human Services). Prince George's County (Prince George's County Health Department) was granted an award in round two in April 2018 and Baltimore City was awarded an additional 110 slots. In July 2018, CMS approved an additional 300 participant slots, bringing the total number of slots to 600 for the state. In July 2019, Montgomery County was awarded an additional 100 slots. Currently, the Department is accepting ACIS applications from local jurisdictions on a rolling basis until the 200 remaining slots are filled.[1]

The Home Visiting Services (HVS) pilot program expands home visiting services to Medicaid-eligible high-risk pregnant and post-partum women and their children up to age two. HVS is based on the evidence-based model, Healthy Families America (HFA), which uses home visits to assess the family's needs and provides resources for the health and wellbeing of the child and caregiver. Each HVS pilot is managed locally by a lead local governmental entity (lead entity) that can fund 50 percent of total HVS pilot costs, provide leadership, and coordinate with key community partners to implement the pilot. The first round of pilots was awarded in November 2017 to the Harford County Health Department and approved for up to 30 families. In April 2018, the Garrett County Health Department was awarded the second pilot and approved for up to 13 families. Hartford County's program began in January 2018 and Garrett County's began in July 2018. The Department and Hilltop monitor and evaluate the health and services provided to all participants in the HVS pilots and review the visit and billing data quarterly. The application and review process for the HVS pilot is now closed.[2]

In FY 2020, Hilltop continued to provide consultation and technical assistance regarding billing and support for program development and continued the evaluation process for both programs.

> **ACIS**: Hilltop provided significant amounts of targeted technical assistance to the Department and each of the lead entities (LEs) to ensure integrity with the large amount of data collected for billing and evaluation purposes. Hilltop frequently updated data templates when LEs added new participating entities (PEs) and trained LE and PE staff on the use of the templates. Additionally, Hilltop added new variables to the data templates

[1] See https://mmcp.health.maryland.gov/Pages/Assistance-in-Community-Integration-Services-Pilot.aspx.
[2] See https://mmcp.health.maryland.gov/Pages/Home-Visiting-Services-Pilot.aspx.

at the request of the Department to ensure consistency with the Homeless Management Information System (HMIS) when it added variables in October of 2019. Hilltop sent quarterly billing reports to the Department for each of the LEs. Late in FY 2020, Hilltop began sending LEs their quarterly billing reports. At the Department's request, Hilltop created a document explaining the quarterly billing reports for the LEs. Hilltop continued to actively participate in monthly calls with the LEs and the Department, as well as quarterly learning consortiums led by the Department. Hilltop completed multiple ad hoc data requests including: providing the number of ACIS participants who had a primary diagnosis of a substance use disorder; conducting an analysis of Baltimore City's data regarding the proposed PMPM rate for FY 2021; conducting an analysis of Prince George's County data regarding the number of participants with various data anomalies for service usage and assigned participating entity; and providing a list of full-benefit dual-eligible ACIS participants. Hilltop also prepared and presented infographics for each LE during annual site visits. Finally, Hilltop worked with the Department on specifications and new variables for the CY 2019 ACIS evaluation, which Hilltop conducted and delivered on June 30, 2020.

HVS: Hilltop continued to conduct analysis on newly enrolled participants as well as those who continued to receive services during FY 2020. The HVS evaluation is comprised of measures previously selected by the Department for the program's annual evaluation. Some of these measures are included in the overarching annual evaluation of the HealthChoice program. Hilltop provided consultation and continued the evaluation process of the health and services for the Medicaid participants enrolled in HVS. Specifically, Hilltop reviewed the data of each participant's coverage group as of the date of service and applied the FMAP to the total visit amount for by both Harford and Garrett County and submitted quarterly billing reports. Hilltop also reviewed the number of participants who received services and total number of visits completed during the quarter and submitted visit reports on a quarterly basis.

Family Planning: For required reporting to CMS, Hilltop conducted an analysis of participants enrolled in the FP program, which provides family planning-related services to women with income at or below 250 percent of the federal poverty level (FPL) who are not otherwise eligible for Medicaid, CHIP, or Medicare. In FY 2020, Hilltop completed an analysis of participants enrolled in the FP program, coverage group P10, from FY 2016 through FY 2018 to determine the proportion of FP participants who delivered a baby. In addition, Hilltop calculated the average total cost for a Medicaid-funded birth across all coverage groups in FY 2018. Later, Hilltop calculated the total Medicaid cost for participants enrolled in the FP program (P10) in CY 2018. Hilltop also

provided Depo Provera self-injectable data for CY 2018 and CY 2019 and provided counts of participants, as well as number of filled prescriptions.

Pregnant Women: To assist the Department in fulfilling a request for information on the Women, Infants, and Children (WIC) program, Hilltop calculated the number of women enrolled in Medicaid in FY 2019 who were pregnant, as well as the number of infants (children aged less than one year) and children aged one to four years, delineated by county and last coverage group.

1095-B Tax Forms: In FY 2020, Hilltop added a modified adjusted gross income (MAGI) coverage group indicator to the 2019 1095-B tax form file provided by the Department, which identified the eligibility system that made the eligibility determination so questions from enrollees could be sent to the appropriate agency (either the Department, DHS, or the MHBE).

MCO Application Readiness Review: During FY 2020, CareFirst of Maryland began the process of acquiring the University of Maryland HealthPartners HealthChoice MCO and submitted application documents to the Department. Hilltop reviewed all the documents submitted by CareFirst and provided comments to the Department. Hilltop also assisted the Department in developing a response to CareFirst, requesting clarifications and additional documentation in order to proceed with the acquisition process. In addition, Hilltop participated in several in-person meetings with Department staff to review and discuss application materials. The acquisition was not finalized as of the end of FY 2020.

Medicaid Rate Setting and Financial Analysis

Medicaid Rate Setting

In FY 2020, the state of Maryland paid approximately $6.5 billion in capitation payments to the nine HealthChoice MCOs, which provide health insurance for over 1.2 million Medicaid beneficiaries. Hilltop continued to conduct financial analyses to inform HealthChoice payment policy, develop capitation rates for MCOs, conduct financial monitoring of MCOs, and assist the Department with capitation rate recovery. Hilltop also staffed the Department's MCO Rate Setting Committee, provided consultation to the MCOs, and supported the financial review of MCOs performed by state-contracted auditors. In addition, Hilltop developed reimbursement rates for the Program of All-Inclusive Care for the Elderly (PACE).

HealthChoice Rate Setting and Financial Analysis: In FY 2020, Hilltop worked with the Department to develop risk-adjusted capitation payments for MCOs participating in HealthChoice. Maryland's risk-adjusted payment methodology uses the Johns Hopkins University Adjusted Clinical Groups (ACG) Case Mix System. This methodology is continually refined as needed to accommodate program and policy changes. Johns Hopkins provides an annual license to Hilltop for use of the ACG software, and Hilltop contracts with Johns Hopkins for ongoing support with the ACG system and the rate setting methodology.

During each annual rate setting cycle, Hilltop's responsibility for managing the Department's MCO Rate Setting Committee involves scheduling, developing the agendas for, and facilitating a series of seven two-hour public meetings with officials from the Department, the nine MCOs, Hilltop, and the actuarial services firm contracted by Hilltop (see "Competitively Procured Actuarial Services" below). The purpose of these meetings is to review the rate setting methodology and process, discuss methodological and policy issues of concern, present special analyses requested by the Department and/or the MCOs (e.g., regional analyses, constant cohort analyses, cost analyses of new services and pharmaceuticals), and review the economic outlook and trends in other states' managed care rates. Hilltop also participates in one-on-one meetings between the Department and each of the nine MCOs to review preliminary rates developed by Hilltop with the assistance of the actuarial services firm. Maryland's managed care rate setting process is highly regarded by federal officials, other states, and health plans for its transparency and collaborative, interactive nature, which allows the MCOs to be active participants. In addition, Maryland's process—by employing the combined services of Hilltop and an actuarial services consulting firm—realizes significant cost savings compared to other states. Most states contract solely with an actuarial firm at much greater cost.

Competitively Procured Actuarial Services: UMBC competitively procures the services of an actuarial services firm to provide consultation to Hilltop on developing HealthChoice risk-adjusted capitated payment rates for participating MCOs, benchmark those rates against national trends and managed care rates in other states, present the rates to the MCOs, and actuarially certify the rates. CMS requires actuarial certification for the state to obtain federal financial participation for HealthChoice. In 2018 through a competitive procurement process, UMBC selected Optumas for actuarial services for HealthChoice rates for CY 2020 through CY 2024.[3] In FY 2020, Hilltop worked extensively with Optumas to complete and certify CY 2020 HealthChoice capitation rates and initiate development of CY 2021 capitation rates.

Recommendations from Report on Managed Care Rate Setting: A 2017 Joint Chairman's Report (JCR) required a study to review potential improvements to Maryland's Medicaid managed care rate setting system. This included a review of potential improvements to the rate setting system, a review of innovations in other states that have similar systems, and appropriated funding to the Department for the analysis. At the request of the Department, in FY 2018, UMBC managed the procurement process and provided oversight for the *study* by the contracted firm Milliman, Inc.[4] In FY 2019, Hilltop provided support to the Department in reviewing and acting on the report's recommendations. Recommendation #8 stated that the Department should "leverage available tools to develop and implement a standardized framework for evaluating and determining risk of high-cost drugs." At the request of the Department, Hilltop planned and convened two one-day meetings on March 13 and December 20, 2019, with Department and Hilltop staff facilitated by Optumas to examine strategies for addressing high-cost, low-volume specialty drugs in the HealthChoice program.[5, 6] Following the meeting, Optumas reviewed MCO encounter data to provide guidance to define high-cost drug price points and modeled MCO specific risk pool scenarios. Optumas developed several versions of a policy proposal document that included various options for implementation, and Hilltop facilitated several follow-up meetings to discuss the proposals. HIV/AIDS drugs were determined to no longer be high-cost, and the Department decided to carve HIV/AIDS drugs back into the HealthChoice benefit package for CY 2020. Optumas has continued to model additional scenarios, and the Department has finalized plans for its high-cost drug policy in CY 2021 by carving Hepatitis C drugs back into the

[3] *UNIVERSITY OF MARYLAND BALTIMORE COUNTY REQUEST FOR PROPOSAL # BC-21092-R FOR UMBC ACTUARIAL SERVICES CONTRACT*, February 28, 2018.
[4] Milliman, Inc. (2018, May). *University of Maryland, Baltimore County Medicaid managed care rate setting and payment innovation study*.
[5] *Optumas Hilltop SOW* (2019, January).
[6] *Mini-Retreat on High-Cost Drugs – call meeting,* email and PowerPoint document (*MD_Hi Cost Rx_March 13 Optumas_2019.03.08.pprx)* to Alyssa Brown and Tricia Roddy from Tim Doyle (Optumas), March 8, 2019.

capitation rates as well as making the MCOs not at risk for specific high-cost drugs with annual treatment costs above $400,000 dollars.

HealthChoice Financial Monitoring: To better understand the cost differences among MCOs and the effect of capitation rates on plan performance, Hilltop examined MCO performance on selected measures and reported its findings to the Department. The report also compared the performance of provider-sponsored organizations (PSOs) to the performance of non-PSOs. In FY 2020, Hilltop analyzed specific variances in membership, premium income, and cost of medical care during CYs 2016 and 2017 and prepared a complete financial report package that analyzed MCO underwriting performance.

Nursing Facility and PACE Rate Setting: In FY 2020, Hilltop assisted the Department in developing nursing facility "Pay for Performance" scores and analysis. In addition, Hilltop continued to develop the annual calendar year rates for Hopkins Elder Plus, a PACE program in Baltimore City.

In FY 2020 Hilltop worked with the Department to begin planning for a possible expansion of the PACE program in Maryland. Hilltop developed a task list and timeline for the PACE expansion. Hilltop participated in calls with the Department and with Colorado, Washington DC, and the National PACE Association (NPA) to learn more about expansion and implementation in other states, methodologies used to identify the potentially eligible population, best practices, and lessons learned. Hilltop collaborated with the Department to draft a methodology to identify the potentially eligible population based on age, level of care, and location (both at the county and ZIP code level) and examined potential take-up rates. Hilltop conducted a national scan of states offering PACE programs to determine the financial eligibility criteria implemented across the country and reviewed data to determine the number of individuals who were new to Medicaid at the time of enrollment with Hopkins ElderPlus. Hilltop developed a rate setting methodology for PACE-potential eligibles, factoring in region, setting, and rate cell, and developed proposed regional rates for the PACE expansion. Additionally, Hilltop created a data book outlining the current PACE program, proposed expansion, potential eligibles by county and ZIP code, and proposed regional rates.

Other Financial Analysis

In FY 2020, Hilltop continued to provide the Department with consultation and financial analysis related to Medicaid provider reimbursement rates and physician payments. Hilltop also continued the process of updating the fees paid to trauma centers by the Trauma and Emergency Medical Fund.

Reimbursement Rates Fairness Act: Pursuant to Senate Bill (SB) 481 (Chapter 464 of the Acts of 2002), the Department created an annual process to set the FFS reimbursement rates for Medicaid and CHIP in a manner that ensures provider participation. The law also directs the Department to submit an annual report to the Governor and various state House and Senate committees. In December 2019, on behalf of the Department, Hilltop completed the *nineteenth annual report* examining physician fees paid by Maryland Medicaid and CHIP. The report includes a comparison of the Maryland Medicaid rates with Medicare and neighboring states' rates for the same services; a ranking of each state's reimbursement rates compared to Medicare reimbursement rates; and a discussion of whether the FFS rates and MCO provider rates will exceed the rates paid under the Medicare fee schedule.

Physician Fee Chart Book: In FY 2020, Hilltop produced a chart book comparing Maryland and neighboring states' Medicaid fees to Medicare fees.[7] The chart book also compares the physician fees of Washington DC, Delaware, Pennsylvania, Virginia, and West Virginia.

Physician Fees: In addition to the analyses described above, in FY 2020, Hilltop provided consultation and technical assistance to the Department regarding increasing physician fees. Hilltop estimated the percentage of Medicaid fees to Medicare fees for all procedures, as well as separately for evaluation and management (E&M) procedures. Hilltop also provided several analyses detailing options for increasing and decreasing physician fees to align with policy and budget initiatives. For all analyses, Hilltop trended utilization forward and provided the state and federal cost increase or savings. In consultation with the Department, Hilltop estimated the cost increase or savings associated and analyzed the following options:

- Lowering the reimbursement of all non-E&M codes to 73 percent, 75 percent, and 79.5 percent of Medicare, with several variations (raising rates lower than the specified rate only; lowering rates above 79.5 percent down to 79.5 percent; and lowering rates above 100 percent of Medicare to 100 percent of Medicare)
- Raising E&M reimbursement rates to 93 percent of 2019 Medicare rates
- Aligning the U1 (trauma), 26, and technical component modifiers with the 2020 Medicare fee schedule. Hilltop also provided additional information on new codes, deleted codes, and codes where the previous fee schedule had inconsistencies and sent a completed template of all fees to the Department
- Lowering all Medicaid fees to 100 percent of the 2020 Medicare fees—this included all CPT codes and estimates by specialty

[7] The Hilltop Institute. (2019, December). *Comparison of Maryland's and neighboring states' Medicaid fees to Medicare fees: FY 2019. A chart book.*

- Lowering DME/DMS/OXY products to 80 percent of the 2020 Medicare rates
- Lowering E&M fees to 90 percent of the 2020 Medicare rates for FY 2021

Methodology Reviews and Revisions: In FY 2020, Hilltop worked with the Department to review and refine methodology and document decision points for several fee schedule and financial analysis projects. These methodology reviews included internal Hilltop review and consultation with Hilltop's clinical subject matter experts. Hilltop prepared for and conducted a two-hour in-person work session with the Department to deliver and discuss the results. Hilltop conducted methodology reviews for the following projects:

- Determining which Current Procedural Terminology (CPT) codes to include in the Physician Fee JCR analysis
- Aligning Hilltop's internal methodology for identifying trauma claims and encounters with the Medicaid provider manual and COMAR regulations
- Determining criteria to identify utilization data used as the basis of cost estimation analyses including provider type and place of service
- Aligning the Medicaid fee schedule with the Medicare fee schedule, including identifying new codes, identifying ineligible trauma procedures, updating codes with missing facility fees, and reducing reimbursement for codes where the Medicaid fee is greater than 100 percent of the Medicare fee, facility fees greater than non-facility fees, and fees with only a 26 modifier with no corresponding TC modifier. In addition, Hilltop worked with the Department to confirm which templates should be used to provide the updated fee schedule each year.

Enteral Nutrition Fees: Hilltop worked with the Department to create a new fee schedule to transition enteral nutrition products from the Office of Pharmacy to the Durable Medical Equipment (DME) program, as required by CMS. This required changing the billing for these products from National Drug Code (NDCs) to Healthcare Common Procedure Coding System (HCPCS) codes. The Department provided Hilltop with a list of NDCs covered under the Office of Pharmacy to crosswalk the NDCs to the appropriate HCPCS code. Hilltop also used publicly available sources to crosswalk the NDC billing unit to the HCPCS billing unit. Hilltop surveyed the Medicaid enteral nutrition fee schedule from several surrounding states (including Delaware, Washington, D.C., Pennsylvania, Virginia, West Virginia, and Washington State, which was included as it covers a large number of enteral nutrition codes). Hilltop created a new fee schedule by averaging the surveyed states' codes and used utilization of CY 2019 NDCs to estimate the cost of

the proposed new fee schedule. Hilltop compared this new fee schedule to the actual cost per HCPCS code paid in CY 2019 as well as in CY 2016, as a reimbursement change occurred in CY 2017.

Analytics to Support Health Reform

In FY 2020, Hilltop continued to support the Department's implementation of health care reform by conducting financial and policy analyses and providing consultation and technical assistance for Maryland's Total Cost of Care Model, Health Homes, CFC, and several other initiatives.

Maryland Total Cost of Care Model

Under an agreement with CMS, Maryland launched the All-Payer Model in 2014 to transform the health care delivery system and improve care while moderating cost growth. The model transformed the way Maryland hospitals provide care, shifting away from a financing system based on volume of services to a system based on hospital-specific global revenues with value-based incentives. The model is designed to coordinate medical treatment for patients served in both hospital and non-hospital settings to improve health outcomes and rein in the growth of health care costs. In January 2019, the state signed a new agreement with CMS for what is now called the Total Cost of Care (TCOC) Model, which will hold the state accountable for total Medicare cost of care spending and new quality and population health targets. The TCOC Model has three components: the Hospital Payment Program, implemented in 2014 as part of the All-Payer Model and formerly known as Global Budget Revenue; the Care Redesign Program, implemented in 2017; and the MDPCP, implemented in January 2019. In FY 2020, Hilltop provided support and conducted several analyses to assist the Department in implementing the TCOC Model.

TCOC: As part of the requirements under the state's *agreement* for the TCOC Model with CMS, the HSCRC is required to report on and monitor TCOC. In particular, the HSCRC must monitor trends in health care costs within its regulatory domain and any cost shifting to unregulated settings. At the request of the Department and the HSCRC, Hilltop prepared and submitted the Medicaid TCOC report for CY 2017. The TCOC report is a non-public report of Medicaid health care utilization and expenditure data that provides the Department and the HSCRC with an enhanced understanding of the shifts in health care services provided to Maryland Medicaid beneficiaries within and between regulated and unregulated settings. As of the publication of this report, Hilltop has collected initial CY 2018 submissions from all nine MCOs and is in the process of requesting corrections and revisions.

Hilltop conducted several analyses to assist the Department and the HSCRC in fulfilling the HSCRC's obligation to annually report on the performance of the TCOC Model to CMS. At the request of the Department and the HSCRC, Hilltop provided several data tables for inclusion in the HSCRC's annual report to the Center for Medicare and Medicaid Innovation (Innovation Center). Hilltop provided total Medicaid cost, enrollment, and member months for CY 2017 and CY 2018. In

response to a follow-up request, Hilltop provided the same data for CY 2016 and 2019. To fulfill a second follow-up request, Hilltop provided Medicaid enrollment data for CY 2013 through CY 2019, broken out by participants eligible for full versus partial Medicaid benefits. Hilltop also responded to a separate request from the HSCRC to provide Medicaid enrollment for CY 2018 through CY 2020 (year to date) by dual-eligible status.

TCOC Model Implementation Monitoring: At the Department's request, Hilltop continued to provide Medicaid data quarterly to the implementation monitor for the TCOC Model, the Lewin Group. Hilltop also developed and provided data dictionaries and record counts and layouts to assist Lewin evaluators in understanding the data and responded to various questions about the data. During FY 2020, Hilltop extended its contract with the Lewin Group for an additional year.

Data Sharing with CRISP: In FY 2020, Hilltop continued to provide Medicaid eligibility and demographic information to CRISP for all Medicaid participants enrolled through March 31, 2020. Hilltop also included data dictionaries and data from the Medicare buy-in file in these transmissions. The HSCRC uses the eligibility information to conduct hospital utilization analyses required for rate setting.

Hospital System Modernization Workgroups: Hilltop continued to provide consultation and support to the Medicaid representative of the HSCRC Commission meetings, Performance Measurement, and Payment Models Workgroups by attending meetings and answering various questions about the Medicaid data.

Readmission Reduction Incentive Program: In response to a task order issued by the HSCRC under an option in the master agreement, Hilltop conducted a study on hospital readmissions. To inform measurement of hospital performance for the Maryland Readmission Reduction Incentive Program, the HSCRC requested that Hilltop analyze the number of readmissions of Maryland Medicaid beneficiaries with an index admission in a Maryland hospital and a readmission occurring in an out-of-state hospital from CY 2016 through CY 2018. Hilltop worked with HSCRC staff over several months to define the scope of the project and agree on measure specifications. Hilltop produced a report for the HSCRC and subsequently performed a follow-up analysis to combine age categories.

TCOC Savings Joint Chairmen's Report: Hilltop provided data for the draft Medicaid TCOC Savings JCR, including a high-level summary of the change in per member per month (PMPM) groupings (e.g., inpatient, outpatient, physician, pharmacy, LTC). Hilltop identified areas of potential cost savings in the Medicaid program and compared aggregate service utilization and

related cost differences between CY 2015 and CY 2018. Hilltop also revised the data on other mental health or other home health categories of service.

Dual-Eligible Beneficiaries and the TCOC Model: In FY 2020, Hilltop continued to assist the Department with the implementation of the MDPCP. Hilltop provided data on dual-eligible enrollment, nursing facility residents, and those with a co-occurring mental health and SUD diagnosis for CY 2016 through CY 2018. Hilltop also provided data for Health Home participants by program type and dual enrollment in Medicare for CY 2013 through CY 2018. Hilltop also prepared quarterly deliverables of current Health Home participants that are dually eligible in Medicare by enrollment span.

Health Homes

Section 2703 of the ACA created the option for state Medicaid programs to establish health homes for participants with chronic conditions. Health homes are intended to improve health outcomes by providing patients an enhanced level of care (LOC) management and care coordination through the integration of somatic and behavioral health services. In FY 2014, Maryland amended its Medicaid state plan to establish a health home program. The program targets populations with behavioral health needs who are at high risk for additional chronic conditions, including those with SPMI, SED, and OUD.

Health Home Program Monitoring and Evaluation: In FY 2020, Hilltop worked with the Department to revise the Maryland Medicaid Health Home Program Evaluation to include utilization outcomes broken down by dual Medicare enrollment status. Hilltop conducted an analysis of the utilization rates per participant—by length of Medicaid enrollment and dual Medicare enrollment—and estimated the trends in rates across all time periods for all health home enrollees. Hilltop also conducted an analysis of acuity (measured by ACG groupings), avoidable admissions, and costs over time. Hilltop produced a 2019 draft annual report that updated the 2018 annual report and described the outcomes of participants in the Maryland Health Home program in 2018, delineated by dual Medicare enrollment status.

Community First Choice

Section 2401 of the ACA authorized the Community First Choice (CFC) program, which gives states the option to offer certain community-based services as a state plan benefit to individuals who require an institutional LOC. Maryland implemented CFC in January 2014 after an extensive planning effort in collaboration with Hilltop. The personal assistance services that were previously offered through the Living at Home (LAH) Waiver, the Waiver for Older Adults (WOA), and the

Medical Assistance Personal Care Program (MAPC) were consolidated under the Medicaid state plan CFC program. CFC offers self-directed personal assistance services using an agency-provider model. In FY 2020, Hilltop conducted the following analyses to support the Department's CFC operation and monitoring.

Service Utilization and Cost Analyses: Hilltop conducted several analyses on service utilization and costs for the LTSS population. In addition to the analyses conducted for various chart books, Hilltop conducted several analyses on service use and expenditures. Hilltop generated ongoing reports incorporating data for FYs 2018 to FY 2020. Reports included, by month, the number of CFC participants who utilized a service, the total expenditures for the service, and the per-person expenditures for the service. Hilltop also provided information for 2019 Senate Bill 699 on the disposition of individuals with an A02 (adults aged 19 to 65) Medicaid coverage group who were disenrolled from the CFC program from FY 2014 to FY 2019. Using *LTSSMaryland* data, Hilltop identified those individuals aged 65 years and older with an A02 coverage group and a disenrollment decision form submitted for CFC. Hilltop then identified everyone's subsequent Medicaid eligibility span to determine that individual's next Medicaid encounter (i.e., enrolled in a waiver, lost Medicaid, or entered a long-term care facility). Additionally, Hilltop analyzed the number of dual-eligible individuals enrolled in CFC delineated by county in FY 2020.

Flexible Budgeting Methodology: Hilltop continued to assist the Department in expanding its flexible budgeting methodology for CFC in FY 2020. Hilltop analyzed the impact of proposed updates to resource utilization groups (RUGs) and recommended flexible budgets on plan of service (POS) exception requests utilizing FY 2019 actual approved POS data for CFC program participants. In addition, Hilltop presented a method for estimating optimal recommended budget levels for a given RUG budget grouping, evaluated the Department's proposed RUG re-grouping, and presented optimal, data-driven RUG re-groupings.

Home and Community-Based Services

Community-Based Setting Final Rule: On March 17, 2014, CMS issued a Final Rule defining what constitutes an HCBS setting. The goal of the rule is to ensure that individuals served by HCBS waivers are receiving services in integrated settings and are supported in accessing the greater community. The rule's focus is on the outcomes and experiences of the individuals. States must ensure that all HCBS settings comply with the new requirements by completing an assessment of existing state rules, regulations, standards, policies, licensing requirements, and other provider requirements. States must be in full compliance with the federal requirements by the timeframe approved in each state's Statewide Transition Plan (STP) but no later than March 17, 2022. CMS issued additional guidance in March 2019 in the form of frequently asked questions regarding the

heightened scrutiny process. Specifically, CMS clarified how providers can demonstrate compliance while ensuring beneficiary and family choice.

In FY 2020, Hilltop continued to provide support to the Department for site visits that the Department began in FY 2018 to assisted living facility (ALF), medical day care (MDC), and senior center plus (SCP) providers for the purpose of further verifying compliance with the Final Rule. Hilltop developed online data collection tools using Qualtrics surveys and then analyzed the data when requested by the Department. Hilltop developed a new MDC site visit checklist for the second round of the Department's site visits and created a new MDC provider self-assessment with a set of instructions for providers. Hilltop also performed an initial analysis of the round 2 ALF site visit data. Finally, Hilltop continued to update the staff member names in the Qualtrics instruments as requested by the Department.

Moving the ALF Service to CFC: In FY 2020, the Department considered moving the ALF service from the CO Waiver to CFC. To assist the Department in making this decision, Hilltop conducted an initial analysis on the ALFs that the Department had determined were non-compliant with the Community Settings Final Rule. Using a list of non-compliant ALFs from the Department, Hilltop determined the number of residents in each of the non-compliant ALFs who had claims in FY 2020.

Other Analyses and Technical Support

In FY 2020, Hilltop conducted extensive analysis for the Department to support program and policy deliberations related to Medicaid coverage, health services utilization, provider participation in the Medicaid program, behavioral health services, dental services, and LTSS. Hilltop also provided data analytics for federal grant applications submitted by the Department.

Coverage and Health Services Utilization

Health Insurance Coverage Protection Commission: At the request of the Department, Hilltop reviewed and provided comments on a draft of the Health Insurance Coverage Protection Commission's annual report.

Third-Party Liability: In response to a Maryland Office of the Inspector General (OIG) request, Hilltop completed an analysis for Medicaid participants with third-party liability (TPL) and Medicare Part D drug coverage.

CARTS Reporting: Hilltop contributed to the Department's annual report of core measures to CMS using the CHIP Annual Reporting Template System (CARTS) by analyzing Title XIX (Medicaid) and XXI (CHIP) enrollment for children newly enrolled in the second quarter of federal fiscal year (FFY) 2018.

Medicaid and CHIP Program (MACPro) Reporting: CMS requires states to report on the outcomes of HealthChoice and Health Home participants through a reporting system called MACPro. To help the Department complete its quality reporting to CMS for CY 2018, Hilltop analyzed the data and produced these measures: ambulatory care, admission to an institution from the community, adult body mass index, controlling high blood pressure (new measure), screening for depression and follow-up plan (new measure), plan all-cause readmission rate, initiation and engagement of alcohol and other drug dependence treatment, follow-up after hospitalization for mental illness, use of opioids at high dosage in persons without cancer (new measure), use of multiple concurrent antipsychotics in children and adolescents, and Health Home enrollee annual cost savings. In addition, Hilltop reviewed and prepared responses to the CMS Seek More Information (SMI) questions related to the MACPro measure results and reviewed a collection of proposed MACPro measures and provided feedback regarding the feasibility of using the Cognizant software to create the measures for the Medicaid population.

Annual Abortion Report: To assist the Department in providing information for the Department of Legislative Services' annual abortion report, Hilltop conducted an analysis of Medicaid

participants aged 15 to 44 years who had abortions from FY 2017 to FY 2019 and calculated the number and total costs of these services.

Hepatitis C: Hilltop calculated the number of Medicaid participants who received a hepatitis C virus (HCV) diagnosis, testing, and treatment for these conditions from CY 2016 to CY 2018. Hilltop later conducted this analysis by individual MCO and FFS. Hilltop conducted a separate analysis of the HCV data for the Hepatitis Affinity Group that included information about prevalence and treatment for CY 2018. Hilltop finalized the SOW of a DUA for the Hepatitis C Care Cascades among Maryland Medicaid enrollees.

Cost Sharing: Hilltop reviewed the literature on the impact of Medicaid cost sharing policies on enrollment and assisted the Director of Innovation, Research and Development in developing a response to the Maryland Department of Budget and Management about the potential impact of implementing premiums in Maryland on enrollment.

Immigration Status: During FY 2020, Hilltop performed an analysis of participants' immigration status, providing demographics and coverage information on this population.

Non-Emergent ED Visits: Hilltop provided the count of the total ED visits that were for non-emergent reasons or were potentially avoidable for CY 2017.

Refugees: In FY 2020, Hilltop identified and provided a count of refugees enrolled in Medicaid from CY 2013 to CY 2018. To accomplish this task, Hilltop compared a list of refugees provided by the Department and completed a matching process with Medicaid enrollment data using different algorithms.

Maryland Children's Health Program (MCHP) Enrollment: Hilltop provided data on the number of children aged 0 to 20 years enrolled in Medicaid in each town in Kent County.

Provider Participation

Electronic Health Record Incentive Program: Hilltop calculated the percentage of Medicaid outpatient ED encounters for Maryland hospitals in FY 2017 and FY 2018 and verified the eligibility of all hospitals to receive incentive payments (Medicaid patients must make up at least 10 percent of utilization [the total sum of inpatient days and ED visits]).

Provider Capacity Quarterly Reports: Hilltop provided the Department with quarterly reports on provider capacity, provider specialty, and PCPs, delineated by region and local access area.

Long-Term Services and Supports

In FY 2020, Hilltop continued to track HCBS expenditures, conducted analyses to assist the Department in its use of the interRAI core standardized assessment tool, and conducted analyses using data from MMIS, MDS, Medicare, and *LTSSMaryland*—the state's integrated LTSS tracking system—including interRAI assessment data and plans of service.

Nursing Facilities: Hilltop continued its work with the Department on the use of nursing facility services. Hilltop analyzed nursing facility expenditures both in the aggregate and at the individual level for CY 2014 to CY 2018.

Dual-Eligible Special Needs Plans: Starting in January 2021, dual-eligible special needs plans (D-SNPs) will be required to provide state Medicaid agencies with data and information to ensure timely case management around care transitions for high-risk beneficiaries. Hilltop analyzed data on five different measures to assess current D-SNP utilization: participation in LTSS waiver programs and CFC, nursing facility residence, inpatient hospital utilization, skilled nursing facility (SNF) utilization, and chronic conditions. Hilltop also analyzed data at the individual level for diabetes, hypertension, chronic kidney disease, and depression, as well as the intersection across disorders.

Full-Benefit Dual Eligibles: Hilltop calculated the number of persons enrolled in both Medicare and Medicaid (full-benefit dual eligibles) with any period of enrollment, delineated by month and by county for FY 2019.

Dual-Eligibles Pilot: To assist the Department with a potential pilot targeting dual eligibles, Hilltop analyzed Medicare and Medicaid claims data to identify chronic conditions, inpatient hospitalizations, and activities of daily living (ADL) status at the time of SNF admission for dually eligible individuals within the Johns Hopkins Hospital and Johns Hopkins Bayview catchment areas, as defined using ZIP code service areas.

Autism Waiver Reporting: Using the reporting mechanism it developed for the Department, Hilltop continued to analyze the "gray area" population in the Autism Waiver: individuals who would not be eligible for Medicaid state plan services if they were not enrolled in this waiver. The Department bills the Maryland State Department of Education (MSDE) for the cost of Autism Waiver services and state plan services for the gray area population. Hilltop produced quarterly reports to support the Department's invoicing to MSDE. In addition, Hilltop sent a monthly census report of the individuals in the Autism Waiver, delineated by age, county, coverage group, and, as applicable, disenrollment reason. Hilltop also provided an analysis requested by MSDE that

included information on FY 2019 Autism Waiver expenditures for waiver services and non-waiver services, delineated by service category, demographics, and units of service.

Waiver Assurance Reporting: In FY 2020, Hilltop produced four quarterly reports for the Department describing the CO Waiver and CFC assurance measures (number and percentage of: waiver claims within a waiver span, waiver claims outside of a waiver span, participants with an annual LOC determination, participants who received a LOC determination prior to the initiation of services, participants with a POS updated annually, service plans that were revised based on change in participant needs, participants interviewed during the annual quality survey who were satisfied with services, participants who reported during annual interRAI assessment that their blood pressure was measured within the past year, participants whose POS addresses health and safety risk factors, and participants who POS includes personal goals). In February 2020, Hilltop began producing monthly reports on Measure 94 (the list of individuals with an interRAI assessment indicating significant change but who had no new POS). Hilltop also generated a report required by CMS on the FY 2016 to FY 2018 CO Waiver evidenced-based reporting measures, aggregated by fiscal year.

CMS 372 Reports: To help the Department determine cost neutrality for the state's 1915(c) waivers—the Community Options (CO) Waiver, Autism Waiver, Community Pathways Waiver, Brain Injury (BI) Waiver, MDC Waiver, and Model Waiver—Hilltop calculated the number of unique waiver recipients, the annual waiver expenditures, the average per capita annual expenditure for all other Medicaid services expenditures, the average length of stay (LOS) of waiver coverage by LOC, and the total days of waiver coverage in FY 2018. Hilltop generated CY 2018 372 Reports for DDA's Family Supports and Community Supports Waivers that were newly implemented in 2018. Hilltop also provided information as requested to inform budget decisions, cost neutrality figures for the Autism Waiver's 2020 to 2024 renewal, and responses to CMS's questions regarding the 372 reports. In addition, Hilltop calculated the number of full and partial MFP participants in FY 2018, delineated by waiver.

CO Waiver Registry Reporting: In addition to standard 372 and MFP reporting, Hilltop provided the Department with frequencies generated from financial questions on the Level 1 Screen for people on the CO Waiver Registry to help the Department to determine if, based on their screen, there were people on the registry who were likely to be financially eligible for the waiver.

CMS MFP Benchmarks: In FY 2020, Hilltop continued to produce semi-annual reports for CMS on the state's progress in achieving MFP benchmarks. These reports provide information on HCBS expenditures for all Medicaid recipients, including expenditures for all 1915(c) waiver programs, home health services, and personal care if provided as a state plan optional service. The reports

also provide information on HCBS spending on MFP participants (qualified, demonstration, and supplemental services), and HCBS capitated rate programs (to the extent that HCBS spending can be separated from the total capitated rate).

LTSS Chart Books: In FY 2020, Hilltop continued the production of four chart books in its *Medicaid Long-Term Services and Supports in Maryland* series, which summarizes demographic, service utilization, and expenditure data for participants in the state's 1915(c) waivers. The chart books encompass FY 2013 through FY 2017 and include *Volume 1: The Autism Waiver*, *Volume 2: The BI Waiver*, *Volume 3: The MDC Waiver*, and *Volume 4: The Model Waiver*. Using the Tableau® platform, Hilltop began working to automate the process for creating these chart books. Hilltop also worked on the production of *Volume 5: HCBS* and delivered *Volume 6: Nursing Facilities*. Additionally, Hilltop worked on the production of the CY 2013-CY 2017 chart book for dual-eligible individuals.

Service Utilization and Expenditures: In response to a PIA request, Hilltop calculated the monthly private duty nursing services utilization and expenditures from FY 2017 to FY 2020. Hilltop provided data for a Maxim Healthcare PIA Request (PIA #19-498) on the number of CFC, CPAS, and 1915(c) waiver participants in FYs 2018 and 2019, total Medicaid costs for this population, and a list of the top 50 Medicaid providers by highest total cost for State Plan services and 1915(c) waiver programs. In previous years, Hilltop calculated the number of participants who used a service, the number of service units used, and the total and per-person expenditures for each HCBS service. For the CO, MDC, Increased Community Services (ICS), and CFC-only populations, Hilltop calculated the monthly number of users, total expenditures, and per-person expenditures for each service—further delineated by service received, service received outside of span, and service received during the span. Hilltop generated these reports in September 2019 and April 2020.

StateStat: Hilltop produced monthly updates for Maryland's StateStat report on the cumulative number of unduplicated waiver participants in Maryland from January 1, 2001, to May 31, 2020, for MFP and the CO and Autism Waivers.

Plans of Service: Hilltop produced quarterly reports calculating the amount of time from when a supports planner first submits a plan of service to the Department until the final decision on the plan of service is made.

MFP Reports: In FY 2020, Hilltop prepared weekly reports to identify progress for those who 1) were MFP-eligible via a submitted application, had no submitted applications in the previous nine months, did not have a developmental disability, and were not enrolled in MFP, and 2) were waiver applicants who had not made any progress toward enrollment. Reports also identified any

supports planners who had more than 35 billed hours in a pay period, as well as individuals who had a negative self-reported living situation on the quality survey. In addition, Hilltop modified the LTSS weekly reports to accommodate ongoing changes to the SQL database structure. Hilltop also assisted the Department in reporting on MFP transitions by identifying all activities related to housing assessments and applications for this population.

Private Duty Nursing: Hilltop provided the Department with updated enrollment and utilization for nursing facility spend-down individuals, REM participants, users of private duty nursing, and Employed Individuals with Disabilities (EID) participants.

Employed Individuals with Disabilities: To assist the Department in responding to stakeholder inquiries regarding the EID program, Hilltop analyzed enrollments and expenditures, expenditures excluding mental health and developmental disability services, characteristics of individuals in the EID program and similar Medicaid adults with disabilities, and the average age of EID individuals by enrollment tier.

Behavioral Health Services

Screening, Brief Intervention, and Referral to Treatment (SBIRT): *SBIRT* is an early intervention approach for individuals with nondependent substance use to effectively help them before they need more extensive or specialized treatment. For FY 2020, Hilltop provided SBIRT data in the Evaluation of the Maryland Medicaid HealthChoice Program and SUD Monitoring Plan.

Behavioral Health Collaborative Care Model Pilot (CoCM): In FY 2020, the Department requested that Hilltop provide comments on the Sample Template Reports for the CoCM Pilot Program and provide the CoCM monitoring measures comparison. In addition, Hilltop reviewed preliminary data submitted for April and May 2020 for validity and accuracy, and confirmed that program participants were enrolled in Medicaid and had a valid Medicaid identification number.

Section 1915(b)(4) Independent Assessment: On October 1, 2014, CMS approved the Department's applications for mental health targeted case management (TCM) state plan amendments (SPAs) for two populations: adults with serious mental illness (SMI) and children and youth with SED. TCM programs provide care coordination services. Under the §1915(b)(4) waiver authority, the state waived the freedom of choice of providers for behavioral health case management services for both children/youth and adults and implemented selective contracting. The waiver approval period was for five years: October 1, 2014, to October 1, 2019. In October 2019, the state was granted an extension of the waiver to continue through June 30, 2020. As part of the waiver renewal process, an independent assessment is required to evaluate the impact of

selective contracting on access to care, quality of care, and cost effectiveness of the program. Hilltop completed the independent assessment analysis using data from a variety of sources to include MMIS2, semi-structured interviews with Local Behavioral Health Authorities (LBHA), RFP templates, and contracts and reports made available by the Behavioral Health Administration and the LBHAs. Information collected during the semi-structured interviews informed the development of policy recommendations. Hilltop also analyzed several metrics and provided a final report.

Section 1115 Waiver Planning: In 2016, CMS approved Maryland Medicaid to expand coverage to include SUD treatment in IMDs. Effective July 1, 2017, the approval permitted residential SUD services to be provided in IMD settings to Medicaid-eligible individuals aged 21 to 64 for American Society of Addiction Medicine (ASAM) levels 3.1, 3.3, 3.5, 3.7, and 3.7-WM (licensed as 3.7D in Maryland) for up to two non-consecutive 30-day stays in a one-year period. On January 1, 2019, the Department phased in coverage of ASAM level 3.1 and extended coverage to dual eligibles on January 1, 2020. The Department also received approval for a waiver amendment to allow coverage for ASAM level 4.0 for beneficiaries with a primary SUD and a secondary MHD, effective July 1, 2019.

In FY 2020, Hilltop reviewed feedback from CMS on the SUD monitoring plan to evaluate the impact of the §1115 waiver, provided general comments to the Department, and provided responses to CMS on proposed changes to the metrics for the SUD monitoring plan. Hilltop conducted analyses on the following 10 SUD monitoring measures for Medicaid beneficiaries in CY 2017 and CY 2018: beneficiaries with SUD diagnosis, monthly and annually; treated in an IMD for SUD and average LOS in an IMD; receiving any SUD treatment, early intervention, withdrawal management, medication-assisted treatment (MAT); initiation and engagement of alcohol and other drug dependence treatment (IET); use of opioids at high dosage and from multiple providers; concurrent use of opioids and benzodiazepines; continuity of pharmacotherapy for OUD; follow-up after discharge from the ED for mental health or alcohol and other drug (AOD); ED utilization, inpatient stays, readmissions, and access to preventive services for SUD; and overdose deaths.

Corrective Managed Care (CMC) Program: The CMC Program identifies participants who may be receiving excessive quantities of controlled substances, especially when multiple prescribers and pharmacies are involved. If—despite the best efforts of the prescriber and pharmacist—there continues to be overutilization or perceived misuse of a controlled substance by a member, then the member can be "locked in" to a single pharmacy. Under a lock-in pharmacy agreement, the member will be required to fill prescriptions for all medications at one predetermined pharmacy. On behalf of the Department and at the request of the MCOs, Hilltop continued to perform the administrative procedures to lock in designated Medicaid participants. In addition, Hilltop

continued to answer questions for the MCOs related to pharmacy NPI records and lock-in start and end dates, and to ensure that all HIPAA requirements for confidentiality and protection of information are followed.

Psychiatric Rehab Programs (PRPs): Hilltop performed an analysis on the number of PRP providers billing for services and the number of participants they served for FY 2016 to FY 2019.

Electroconvulsive Therapy (ECT): Hilltop fulfilled a Public Information Act request from Citizens Commission on Human Rights International regarding the use of ECT in Maryland Medicaid between CY 2015 and CY 2019.

Behavioral and Somatic Treatment: Hilltop determined the percentage of professional claims related to behavioral health treatment compared to non-behavioral claims (i.e., somatic) and the total FFS reimbursement amounts in CY 2019.

School-Based Psychology Services: Hilltop calculated the number of children potentially eligible for free school lunch and then calculated the number of school-based psychology services delivered and the number of participants receiving these services during CY 2015 to CY 2019.

Baltimore City Capitation JCR: In 1994, the Department established the Baltimore City Capitation Project (the Capitation Program), which is operated by Behavioral Health Systems of Baltimore (BHSB). The Capitation Program provides intensive, wrap-around services to ensure individuals with SPMI maintain a community residence. In FY 2020, Hilltop conducted several analyses to assist the Department in responding to a Joint Chairmen's Report. Specifically, Hilltop estimated the total cost of care for Medicaid participants who were eligible to participate in the Capitation Program and for those who were enrolled and receiving care from two authorized providers—Chesapeake Connections and Creative Alternatives—in FY 2017 to FY 2019. Hilltop analyzed the health care use and total Medicaid costs of those enrolled in the program as well as comparison group of potentially eligible participants. Hilltop also identified the number of program participants whose Medicaid enrollment fluctuated across multiple coverage groups between FY 2015 and FY 2019. Hilltop calculated inpatient utilization and summarized inpatient days per participant, including the total and average cost of care for eligible and enrolled participants based on inpatient utilization in FY 2018. Hilltop later revised the average length of inpatient stay for enrolled and eligible participants and analyzed the total costs for participants classified by the number of inpatient hospitalization days during FYs 2018 and 2019.

Hilltop merged data sources to create an accurate cohort of Capitation Program participants. This included a program participant file provided by the BHA as well as identifying those Medicaid

participants with two coordinated care procedure codes indicating that a monthly capitation payment was paid. Hilltop identified the Medicaid participants enrolled in the program and the number of participants who had codes indicating a capitation payment was paid to the program between FY 2017 and FY 2019. Hilltop also compared the total capitation payment summary provided by BHA to the sum of capitation payments found for these beneficiaries based on MMIS2 data. Hilltop made several revisions to the analysis, removed the cost reported by BHA and added the IMD cost; revised it to ensure that all participants were categorized into mutually exclusive categories of either being enrolled in the program, or potentially eligible but had never been enrolled. Hilltop then compared total costs among high and low utilizers in the year prior to enrollment in the program, delineated by the participant's Medicaid coverage type. Finally, Hilltop reviewed the data collection plan and provided feedback to develop better metrics for capitation for data collection during FY 2021.

Behavioral Health Planning

Commission to Study Mental and Behavioral Health: In January 2019, Lt. Governor Rutherford announced *Executive Order 01.01.2019.02*, signed by Governor Hogan, establishing the Commission to Study Mental and Behavioral Health in Maryland. The Commission, chaired by Lt. Governor Rutherford, is tasked with studying mental health in the state, including access to mental health services and the link between mental health issues and SUDs. The Commission includes representatives from each branch of state government; the Maryland Departments of Health, Public Safety and Correctional Services, and Human Services; the Maryland State Police; the Maryland Insurance Administration (MIA); and the Opioid Operational Command Center; as well as six members of the public with experience related to mental health. In May 2019, the Department requested that Hilltop provide staffing support to this Commission. Hilltop attended all five of the Commission's meetings in FY 2020: July 31, 2019, in Montgomery County; October 23, 2019, in Hagerstown; December 11, 2019, in Easton; February 19, 2020, in Howard County; and virtually on June 23, 2020. Hilltop continues to provide staff support to the Medicaid Director in his role as co-chair of the Commission's Finance Subcommittee, which is also co-chaired by the Insurance Commissioner. Hilltop worked with MIA staff to schedule and develop meeting agendas and notes for the six subcommittee meetings. Hilltop also managed email distribution lists for the subcommittee and responded to various emails and telephone calls from subcommittee members and interested parties throughout the year. Hilltop works with the Lt. Governor's staff to ensure that the Finance Subcommittee's section of the Commission's website remains up to date. Hilltop also assisted with drafting the Finance Subcommittee's section of the Commission's *annual report*.

Behavioral Health System of Care: Two bills were introduced—but not passed—during the Maryland 2019 legislative session that sought to change the delivery and financing of Medicaid

behavioral health services. As a result of the corresponding discussions, the chairs of the Senate Finance Committee and the Health and Government Operations Committee requested the Department to convene a System of Care Workgroup to examine and make recommendations on how the state should provide, administer, and finance behavioral health services in conjunction with the TCOC model. Recommendations should consider increasing the coordination and quality of somatic and behavioral health care for Medicaid enrollees, cost efficiency, and access to services. In addition, the Workgroup should consider how behavioral health services will be coordinated with MCOs. In May 2019, the Department requested that Hilltop provide project management support to these System of Care efforts and help ensure coordination with the Governor's Commission described above. Hilltop continued this role throughout FY 2020. Working with the Medicaid Director, Hilltop helped establish and continues to manage seven different stakeholder groups: a steering committee that includes state legislators and executive agency leaders, a Medicaid-behavioral health agency joint staff group, a behavioral health provider discussion group, a Medicaid MCO discussion group, a hospital discussion group, a behavioral health parity discussion group, and the System of Care Workgroup.

Across all seven of these stakeholder groups, Hilltop worked with Department staff to schedule meetings and reserve meeting space; managed calendar invitations; drafted the corresponding meeting agendas and materials; maintained/continually updated participant and interested party email distribution lists; distributed meeting materials to participants; ensured that meeting rooms were set up properly; printed meeting materials; assisted with facilitating meetings; and drafted and distributed meeting minutes. Hilltop performed these activities for the following: 11 meetings of the Medicaid-BHA staff group, 7 meetings of the System of Care Workgroup, 7 meetings of the Behavioral Health Community Discussion Group, 6 meetings of the MCO Discussion Group, 2 meetings of the Parity Discussion Group, 1 steering committee meeting, and 3 meetings with the Hospital Discussion Group. Hilltop also continually worked with Department staff to ensure that the Department's System of Care website remained up-to-date and maintained the Department's network drive containing all the relevant System of Care documents. Hilltop worked with the Department to synthesize stakeholder discussions across these meetings into a *Guiding Principles Document* and *Preliminary Report to the General Assembly*. Development of concrete policy options is under way. Meetings were placed on hold during the spring of 2020 in response to the COVID-19 pandemic but will be resuming in 2021.

Hilltop also participated in numerous ad hoc meetings and calls with staff to debrief and plan next steps. Throughout the year, Hilltop continually responded to various telephone calls and emails from workgroup members, stakeholders, and other members of the public regarding the System

of Care initiative. Hilltop also briefed/provided orientations to new Department and BHA staff to bring them up to speed on the project.

Services to Address Opioid Addiction

In FY 2020, Hilltop conducted several analyses to assist the Department in addressing opioid addiction.

Maternal Opioid Misuse (MOM): CMS announced the MOM model grant opportunity to better align and coordinate care of pregnant and postpartum Medicaid beneficiaries with OUDs. Hilltop assisted the Department in its application for this grant by providing data on pregnant women, new mothers, and infants. Maryland is among the ten states awarded MOM model funding for a five-year period of performance that began in January 2020. In FY 2020, Hilltop calculated the 2017 capitation spending for babies aged 3 to 12 months born in 2016 of mothers with OUD and calculated the sum of capitation payments for this cohort of children. Hilltop also delivered a draft code list to estimate prevalence rates for the target population for the MOM.

Opioid Treatment Programs (OTPs): Hilltop calculated the total number of dual eligibles who received services from OTPs, calculated the total cost in FY 2018 and FY 2019, and later summarized the cost for all Medicaid participants for OTP services.

Overdoses: In FY 2020, Hilltop conducted a number of analyses related to overdoses. Hilltop matched vital statistics data with Medicaid data to calculate the number of Medicaid participants who died of an overdose (by an opioid or other drug) in CY 2018 and between January and July of CY 2019. Hilltop identified Medicaid participants who had a fatal overdose, as well as those who were enrolled in Medicaid within a year of death and at time of death for CY 2019. Hilltop also reviewed and provided feedback regarding the SOW included in the new DUA to share Maryland overdose deaths and related analyses with the OIG.

MAT: Hilltop provided monthly reports on MAT utilization for SUDs, focusing on three medications: buprenorphine, methadone, and naltrexone (Vivitrol). Hilltop provided utilization data for Medicaid participants for the months spanning January 2010 through May 2020. In addition, Hilltop provided utilization data by county for Medicaid participants spanning June 2019 through May 2020.

Naloxone: Hilltop fulfilled requests to provide updated counts of the number of Naloxone prescriptions filled by county of recipient and provider for FY 2010 through FY 2019 and for CY 2019 by quarter.

Multi-State Analyses of Opioid Use Disorder: As described in National Recognition (page 4), the Department and Hilltop participate in SUPLN and its distributed research network, MODRN. In FY 2020, Hilltop developed a presentation on cross-state findings from MODRN's analysis of OUD treatment and outcome measures and presented it to Department leadership. Hilltop also facilitated the Department's review of the OUD policy inventory developed by the MODRN team under the NIDA grant supporting MODRN's analysis of OUD treatment and outcome measures. Hilltop, together with the Department, participated in SUPLN's annual meeting in December 2019 and presented on behavioral health delivery system reform in Maryland. Along with five other MODRN states, Hilltop contributed information on OUD treatment and outcomes in Maryland for an *issue brief* published by Kaiser Family Foundation.[8] Hilltop shared with the Department a draft chart book on the prevalence, treatment, and comorbidities associated with poly-substance use among Medicaid enrollees with OUD in Maryland and three other states, a SUPLN project funded by the Medicaid and CHIP Payment Access Commission (MAPAC).

Dental Services

Dental Services for Individuals Formerly in Foster Care: In FY 2020, Hilltop analyzed the use of dental services in CY 2019 by Medicaid participants in the adult pilot program and former foster care participants. Measures included the number and percentage of former foster care participants enrolled in Medicaid for 90 days, 320 days, or any period who had dental services, by region and by type of service. In addition, Hilltop measured the percentage by region of former foster children enrolled in Medicaid for any period who received a preventive/diagnostic visit followed by a restorative visit in CY 2019. To determine whether there were reductions in ED use, Hilltop counted former foster children enrolled in Medicaid for any period who had an ED visit with a dental primary diagnosis or a dental procedure code, by region.

Dental JCR: In FY 2020, to assist the Department in its response to the Maryland General Assembly, Hilltop analyzed the utilization of Medicaid dental services by children, pregnant women, and adults. Hilltop also analyzed the use of dental service by Medicaid enrollees in the calendar year, by region, type of service, and by age group: children between 0 to 20 and 4 to 20,

[8] Donohue, J., Cunningham, P., Walker, L, and Garfield, R. (2019). *Opioid Use Disorder among Medicaid Enrollees: Snapshot of the Epidemic and State Responses*. Kaiser Family Foundation.

adults 21 to 64, and pregnant women 14 and older. Hilltop calculated the number of dentists participating in Medicaid who billed one or more services or billed more than $10,000, by region. Hilltop also calculated the total cost of dental services for CY 2018.

Postpartum Dental: To assist the Department with a JCR, Hilltop estimated the cost of providing the dental benefit for women for two months after delivery by payer for CYs 2017 and 2018. The estimate was based on the actual PMPM of FFS dental claims incurred by pregnant women within eight months prior to delivery.

Dental Services in Prince Georges County: Hilltop provided dental data for Prince George's County, by age group, race, coverage category, and last MCO of the year and provided the number of children, aged 0 to 2 years, enrolled in Medicaid with at least one dental visit during CY 2018.

Other Data Analytics and Support

Maryland HIV Medicaid Affinity Group: In FY 2017, the Department convened the Maryland HIV Medicaid Affinity Group, involving Medicaid and the Prevention and Health Promotion Administration (PHPA). The purpose of this group is to establish consistent and frequent (at least monthly) data exchanges to better inform both administrations about Medicaid participant HIV testing and care continuum participation, provide richer information for linkage and re-engagement efforts, and form the basis for quality improvement efforts with Medicaid payers and providers. Hilltop supports the Department with the HIV Affinity Group through a DUA between the Department, Hilltop, and the PHPA? Hilltop's role is to provide technical support and analytics—specifically to match participants from PHPA HIV surveillance data to Medicaid eligibility data and extract service utilization data for these participants from MMIS2. In FY 2020, Hilltop revised methods for identifying Maryland residents enrolled in Medicaid with HIV/AIDS by providing additional claim and encounter data for cases that had not been previously identified by PHPA HIV surveillance methods. Hilltop conducted a final review of the HIV Affinity DUA. and provided updates to the required covered data.

Greater Baltimore HIV Health Services Planning Committee: Hilltop assisted the Department in completing a request for the Greater Baltimore HIV Health Services Planning Committee to identify the number, demographics, and service utilization—completion of diagnostic (viral load and CD4) testing for HIV, ambulatory care visits, outpatient ED visits, inpatient admissions, HIV screenings, and the receipt of PrEP—in CY 2018 for Medicaid participants 50 years of age and older with a diagnosis of HIV/AIDS.

Diabetes Action Plan: In November 2019, the Department created a Diabetes Action Plan to reduce the burden of diabetes and includes intervention strategies for health care providers, stakeholders, and individuals. Hilltop provided comments on the diabetes request and analysis, the rationale, and a question regarding diabetes codes. Hilltop also identified the number of Medicaid participants with a diagnosis of diabetes from CY 2013 through CY 2017 to support the development of the plan and calculated the annual total Medicaid expenditure, PMPM Medicaid expenditure, and average expenditure per eligible participant for those with a diagnosis of diabetes compared to participants without the disease condition. Hilltop provided clinical criteria used for diabetes and the total number of Medicaid enrollees with diabetes. Hilltop also provided comments on the draft Diabetes Action Plan.

National Diabetes Prevention Program: The National Diabetes Prevention Program (National DPP) runs the Lifestyle Change Program, an evidence-based program established by the CDC to prevent or delay the onset of type 2 diabetes. The Department received approval to expand coverage of the Lifestyle Change Program to all eligible HealthChoice participants as of September 1, 2019. By identifying participants early through screening and testing for prediabetes (PD), the Department hopes to reduce the incidence of diabetes and increase the quality of life for Medicaid participants. In FY 2020, Hilltop provided consultation and finalized templates and instructions for MCO data collection for the National DPP. Hilltop also analyzed the prevalence of PD in the HealthChoice population, excluding participants ever diagnosed with diabetes or those who were pregnant in the measurement year.

Emergency Transportation: At the Department's request, Hilltop calculated the number of claims and costs associated with CY 2018 FFS transportation claims and crossover emergency medical services (EMS) claims. Hilltop also calculated the number of transportation services that were billed in combination with two targeted procedure codes—A0427 (ambulance service, advanced life support) or A0429 (ambulance service, basic life support)—and non-emergency transport procedure codes for CY 2018 that were Medicare crossover claims or those paid at the standard reimbursement rate. In addition, Hilltop identified Medicaid providers who had at least one Medicare crossover or Medicaid claim for transportation services by provider state, calculated the total number of services and cost of Medicare crossover claims, and calculated the number of ambulance trips by provider and county.

Kidney Disease Measurement: On behalf of the Department, Hilltop provided guidance to Maryland's quality improvement organization (M-QIP) on the availability of MMIS2 data for use for two performance measures on chronic kidney disease.

Healthy Kids: In FY 2020, Hilltop provided the Department with MMIS encounter data and FFS data for the annual children's preventive health data request for the Maryland Healthy Kids nurses chart review for CY 2019.

Births and Maternal Health: Hilltop calculated the number of births by MCO and FFS, as well as the FFS deliveries by coverage group for FY 2019. Hilltop then provided an update of Medicaid deliveries, excluding undocumented immigrants. Hilltop also analyzed kick payments made to the MCOs by the Maryland Medicaid program in CY 2018. In addition, to assist the Department in responding to the National Governors Association's (NGA's) Maternal and Child Health (MCH) Survey, Hilltop analyzed pregnancy outcomes for Medicaid enrollees in CY 2018.

Transitions of Care: Hilltop conducted an analysis of enrollees who may be eligible for certain transitions of care. Hilltop estimated the number of individuals at each MCO who might be flagged for transitions of care in the following categories: pregnant members, high utilizers, and children with special health care needs in CY 2019.

Data Analytics for Federal Grant Applications

Maternal and Child Health Block Grant: The Title V Maternal and Child Health (MCH) block grant provides funding to states to support initiatives aimed at improving the health of mothers and children. The grant application includes a list of 22 questions pertaining to Medicaid and MCHP enrollment and service utilization by pregnant women, infants, and children in CY 2019. As in past years, Hilltop analyzed enrollment and utilization data and provided responses to 18 questions on the 2020 application.

Data Requests from External Researchers and Agencies

Hilltop fulfills requests for Medicaid data from external researchers and federal and state agencies for use in program planning, monitoring, and evaluation. Upon approval of a data request by the Department, Hilltop works with the researcher or agency representative to develop a detailed SOW that is consistent with HIPAA regulations requiring covered entities to make reasonable efforts to ensure that the "minimum necessary" protected health information (PHI) is disclosed. The SOW is included in the Institutional Review Board (IRB) submission to the Department (if IRB approval is required under federal guidelines), as well as the DUA. In FY 2020, Hilltop continued to use the new multi-party DUA template for data requests, developed in FY 2018 by the Department and UMBC to clearly specify approved uses of the data and ensure compliance with data security, management, and destruction requirements. If the data request is not a task included in Hilltop's

master agreement with the Department, then Hilltop also develops a budget for the data request and arranges for payment from the requester.

In FY 2020, the Department and UMBC executed ten DUAs with external agencies, and Hilltop proceeded to fulfill these data requests. Data requests can vary from one-time extractions of summarized tabulations of Medicaid data to multiple extractions of individual-level claims and encounters for a specified study population along with a comparison group extracted through propensity score matching. In some instances, Hilltop matches person-level Medicaid claims with person-level data from other sources or performs analytics for the data requester. Table 1 lists the data requests for which DUAs were executed in FY 2020.

Data Requests

Requesting Organization	Description of Data Request
ABT Associates	Federal Section 811 Project Rental Assistance Program Evaluation: Medicaid and managed care enrollment, participant demographic data, claims, and encounter data from CY 2015 and CY 2016 for Medicaid participants living in Section 811 units and other HUD-funded housing programs and a comparison group
Baltimore Healthy Start, Inc.	Evaluation of the cost effectiveness of the infant mortality prevention program: Claims and encounters for mother-child pairs in the study group and mother-child pairs in the comparison group
Benefits Data Trust	Newly enrolled Medicaid participants for outreach to enroll in other public services
Maryland Health Services Cost Review Commission (HSCRC)	Medicaid data for COVID-19 analysis
Johns Hopkins University School of Medicine and Baltimore City Public Schools	Baltimore Healthy Schools: Claims and eligibility data for students enrolled in the Maryland Medicaid Program for an evaluation of the effects of the school environment on student health.
Johns Hopkins University School of Medicine	Medicaid children in Baltimore public schools for comparison and evaluation of the Rales School Health Clinic.
The Lewin Group	Medicaid claims and encounters for monitoring and evaluation of the HSCRC Total Cost of Care Model
University of Maryland School of Pharmacy	Eligibility, claims, and encounters of persons receiving anti-HIV prescriptions and served by selected pharmacy providers to assure regular fulfillment of prescription drug therapy.
University of Maryland School of Pharmacy	Prescriptions for Naloxone by prescriber, pharmacy, and county for evaluation of OUD interventions
University of Maryland School of Social Work	Evaluation of performance of System of Care in Prince George's County: Data on Medicaid-enrolled children using behavioral health services

Data Management and Web-Accessible Databases

In its role as a business associate of the Department pursuant to the HIPAA Privacy Rule, Hilltop maintains Maryland Medicaid data and several other data sets to support policy analysis, performance evaluation, development of risk-adjusted payment methodologies, and capitation rate setting for managed care on behalf of the Department. Data requests ranging from ad hoc reports to long-term trend analyses can be processed promptly with Hilltop's sophisticated data management technology.

In FY 2020, Hilltop continued implementing business process improvements for responding to data requests from the Department more efficiently. Hilltop completed over 900 programming requests and moved more than 35 separate projects to the centralized project repository, which has shared permissions. Hilltop's application of Git version-control software to better coordinate work among programmers has grown to include all the processes housed within the centralized project repository. The resulting process and technology laid the groundwork for further improving development operations and automation in the coming year.

Data Sets

Maryland Medicaid Data: MMIS data include FFS claims (inpatient, outpatient, physician, MCO, capitation, and special services), MCO encounters (hospital, physician, lab, nursing facility, etc.), eligibility, special program eligibility, and provider information for the Maryland Medicaid program. Hilltop receives MMIS data from the Department monthly—except for provider data, which it receives quarterly. However, plans to accept provider data monthly are underway. Hilltop loads these data into analytic formats in its data repository for usage in web applications and operational reporting, as well as policy, financial, and evaluation studies. Included in the transmissions from the Department are FFS claims (medical, institutional, and pharmacy) and MMIS eligibility and encounter data. Hilltop's data repository appends and historically reconciles over 100 million Medicaid records per month. The full repository that Hilltop houses contains more than 1.25 billion records and 2,000 variables.

***LTSSMaryland*:** Built by Hilltop, FEi Systems, and the Department, *LTSSMaryland* is a person-centered information system supporting a broad array of community-based care functions. Business processes revolve around the main client record, which provides users with a detailed chronology of participant interactions. The system supports the use of the interRAI assessment and other tools to accommodate federal guidelines, allows unified and customized reports across community-based programs, and provides increased support for person-centered care planning. The *LTSSMaryland* system supports several waivers and programs, including the CO, MDC, DDA,

and BI Waivers; REM, CFC, CPAS, ICS, and MFP programs; and reportable events (RE), quality survey, and nurse monitoring. The *LTSSMaryland* system also supports electronic billing and claims processing for attendant care, environmental modification assessments, and home-delivered meals (using the provider portal, formerly known as the In-Home Supports Assurance System (ISAS)), CO Waiver registry, support planner activities, and nurse monitoring activities. Hilltop receives a weekly SQL server database containing a full backup of *LTSSMaryland*. This database contains information on program eligibility and participation, health assessments, and POS for Maryland Medicaid LTSS recipients. Hilltop used data from *LTSSMaryland* in many of the analyses described in the Community First Choice, Home and Community-Based Services, and Long-Term Services and Supports sections of this report.

In FY 2020, Hilltop continued to support the Department's ongoing effort to develop and modify *LTSSMaryland*. Hilltop implemented several additional *LTSSMaryland* modules, including MDC Phase II, expanded use for DDA waivers, REM, and home-delivered meals. Requirements gathering and design review continued for MDC reports, REM releases 1.1 and 1.2, electronic billing for non-MA assessments, client merge, and waiver registry and wave management updates. Hilltop also provided technical assistance to expand or improve numerous existing modules, including MDC, supports planner monitoring, REM, and roles for the Maryland Department of Aging and the Brain Injury Association of Maryland. Hilltop continues to work with the Department to develop business processes, define system requirements, review use cases and report requirements, and assist with system trainings.

Minimum Data Set: Hilltop receives MDS data monthly and maintains the data for routine and incidental analyses to better understand the health status, health care usage, and health care costs of nursing facility residents in Maryland. These data are routinely linked to Maryland Medicaid recipient data for analyses at the individual, aggregate individual, and facility levels. The MDS data are also the source of case-mix information (specifically, RUGs) that are used to calculate Medicaid nursing facility payments. The data, stored in raw and refined formats, include all MDS assessments for Maryland nursing facility residents since the beginning of federal requirements for such assessments in October 1998. Separate resident and facility identification files are also included in the full MDS database.

Maryland Hospital Discharge Data: Hilltop receives data on hospital admissions and discharges semi-annually from the HSCRC. These data are used in HealthChoice rate setting and other analyses requested by the Department. In FY 2020, the complex transition to receiving reformatted data from new vendor hMetrix was completed. Currently, Hilltop maintains inpatient and outpatient HSCRC data from CY 2006 to CY 2019.

Medicare Data: Hilltop maintains Medicare claims files for dual-eligible beneficiaries. These data are linked to Medicaid data at the individual level to facilitate analysis of this population. Hilltop hosts the Medicare data on behalf of the Department, which maintains a DUA with CMS. Additional files are requested annually. The data, stored in raw and refined formats, include all CMS Medicare Common Working File data files (i.e., inpatient, SNF, outpatient, carrier, DME, home health, and hospice data) for Medicaid recipients with dual Medicare coverage from CY 2007 through CY 2017. Hilltop maintains three distinct sources of data. The Claim and Claim Line Feed (CCLF) data are included in the algorithms used by the Maryland Primary Care Program. The Research Identifiable Files (RIF) are used in linking duals. The All-Payer Claims Database (APCD) includes Medicare data that are used in a variety of analyses. (See Medical Care Data Base, below.)

Medical Care Data Base: In FY 2017, the Department and MHCC executed a DUA that requires Hilltop to process and transmit to MHCC Medicaid data for the MCDB, which is part of the MHCC's APCD. The DUA also allows Hilltop to receive a copy of the commercial and Medicare data from the MCDB for use in carrying out Medicaid analyses for the Department. The DUA was amended in FY 2020 to allow Hilltop to send Medicaid FFS data in addition to MCO data. As required under the DUA, in FY 2020, Hilltop prepared quarterly reports to MHCC describing the Department's use of MCDB data. Hilltop transferred Medicaid CY 2017 MCO institutional and professional data to MHCC. Hilltop also submitted all CY 2017 FFS files, all CY 2018 FFS files, and all CY 2018 MCO files. At the request of MHCC, Hilltop developed data dictionaries to accompany the files. Also at the request of MHCC, Hilltop re-submitted the 2017 and 2018 MCO files to change the data formatting within the data sets. Hilltop also downloaded the 2017 commercial data from MHCC in October 2019 and the 2018 data in December 2019.

Vital Statistics Data: Via the Department, Hilltop began receiving weekly vital statistics data for incorporation into data sets used for analysis of COVID-19 deaths. In addition, Hilltop receives vital statistics data for analysis of opioid use disorder overdose deaths.

eMedicaid: The Department provides Hilltop with data from eMedicaid, a database developed and maintained by the Department that is accessible through a web-based portal and allows health care practitioners to enroll as a Medicaid provider, verify recipient eligibility, and obtain payment information. In addition, eMedicaid offers a case management tracking tool for providers participating in Maryland's Medicaid Health Homes. Hilltop uses eMedicaid data to identify dual-eligible Health Home participants' health care utilization patterns. In addition, Hilltop uses eMedicaid data to report program enrollment, participant characteristics, Health Home service delivery, and clinical outcomes for the Health Home evaluation reports.

Databases Developed and Maintained for the Department

Hilltop has developed several interactive websites and databases that it continues to maintain and update monthly for the Department.

DataPort: In FY 2020, Hilltop continued development of the Maryland Medicaid DataPort, State Edition. The DataPort uses a Tableau® front end and gives authorized Department users additional data exploration tools that provide tiered levels of data granularity. Hilltop has trained 21 Department staff in the use of the DataPort. The DataPort currently includes five years of eligibility and capitation data. FY 2020 included a soft launch of the service utilization module, which includes service measures for ED visits for recipients with asthma or diabetes. Hilltop also began developing dashboards to display data related to COVID-19. In addition, Hilltop continues to develop an extensive Resources module in the DataPort that includes navigation tips, training manuals, Medicaid resources, FAQs, a data dictionary, waiver and non-waiver special program code definitions, and a ZIP code/county locator tool. In FY 2021, Hilltop will continue to develop the DataPort, State Edition, as well as begin development of the public edition, which will eventually replace Maryland Medicaid eHealth Statistics.

Master Analytic Database: In FY 2020, Hilltop expanded upon the initiative it began in FY 2018 to upgrade the back end of the decision support system (DSS) with a high-performance data warehouse model. Hilltop also continued development of the multi-purpose SQL Server database to house the back-end data for the DataPort. The database, called the Master Analytic Database, is updated monthly with Maryland Medicaid MMIS data. Currently, there are tables to support the eligibility and capitation sections of the DataPort, as well as lookup tables for formatting coded variables and a recipient table with current demographic and geographic fields. Hilltop also developed FFS claim and MCO encounter tables at the service level to support the service utilization sections of the DataPort. When the database is updated each month, an extract-transform-load (ETL) process is run to apply modeling schemes and techniques that create database views. These views serve as the source data for the DataPort and are designed to minimize query time for users. The architecture of the Master Analytic Database uses modeling techniques that enable a wide variety of data questions to be asked by users and includes a high-performant system with the capability to quickly respond to very fine-grained questions.

Legacy Decision Support System (DSS): Hilltop continued to maintain the legacy DSS for the Department. The DSS provides password-protected web-based access to 20 years of Maryland Medicaid data, including payment, eligibility, and service data delineated by recipient and provider. Users can query the DSS using both custom and standard reporting functionality that includes maps, charts, and multiple-year trends. Currently, approximately 40 Department staff are

registered to use the DSS, and Hilltop adds new user IDs as needed. Hilltop continually makes improvements to the DSS and provides technical assistance to Department staff that use the system.

Maryland Medicaid eHealth Statistics: Hilltop continued to maintain *Maryland Medicaid eHealth Statistics*, a public website that primarily provides data on Medicaid eligibility by age, coverage type, and MCO. This site provides researchers, community leaders, practitioners, and the public at large with ready access to up-to-date eligibility data.

Immunization Registry: Hilltop continued to prepare and import immunization data for Medicaid beneficiaries to the Maryland Immunization Registry (the Immunet). Hilltop collected data from various databases—including eligibility, claims, and provider files—to compile data on each Medicaid participant who had an immunization procedure during the period reported. The data provided demographic and other information on these individuals. Hilltop updates this database semi-annually. Hilltop also gave each MCO data about vaccination records for their Medicaid participants.

Appendix: List of Abbreviations

ACA	Affordable Care Act (Patient Protection and Affordable Care Act)
ACG	Adjusted Clinical Groups
ACIS	Assistance in Community Integration Services
ACO	accountable care organization
ADL	activity of daily living
ALF	assisted living facility
AOD	alcohol and other drug
APCD	All-Payer Claims Database
ASAM	American Society of Addiction Medicine
BDT	Benefits Data Trust
BHA	Behavioral Health Administration
BHSB	Behavioral Health Systems of Baltimore
BI	Brain Injury (Waiver)
CAHPS®	Consumer Assessment of Healthcare Providers and Systems
CAPABLE	Community Aging in Place—Advancing Better Living for Elders
CARES	Coronavirus Aid, Relief, and Economic Security (Act)
CARTS	CHIP Annual Reporting Template System
CDC	Centers for Disease Control and Prevention
CFC	Community First Choice
CHIP	Children's Health Insurance Program
CHRC	Community Health Resources Commission
CLR	Childhood Lead Registry
CMS	Centers for Medicare & Medicaid Services
CO	Community Options (Waiver)
CoCM	Collaborative Care Model
CPT	Current Procedural Terminology

CRISP	Chesapeake Regional Information System for Our Patients
CY	calendar year
DDA	Developmental Disabilities Administration
Del-CAN	Delaware Contraceptive Access Now
DHS	Maryland Department of Human Services
DME	durable medical equipment
D-SNP	dual-eligible special needs plan
DSS	Decision Support System
DUA	data use agreement
E&M	evaluation and management
ECT	electroconvulsive therapy
ED	emergency department
EDI	electronic data interchange
EID	Employed Individuals with Disabilities
EMS	emergency medical services
EPSDT	Early and Periodic Screening, Diagnosis, and Treatment
EQR	external quality review
ETL	extract-transform-load
FFS	fee-for-service
FFY	federal fiscal year
FMAP	Federal Medical Assistance Percentage
FP	Family Planning
FPL	federal poverty level
FY	fiscal year
HCBS	home and community-based services
HCPCS	Healthcare Common Procedure Coding System
HCQ	hydroxychloroqine

HCV	hepatitis C virus
HHS	U.S. Department of Health and Human Services
HIPAA	Health Insurance Portability and Accountability Act
HSCRC	Maryland Health Services Cost Review Commission
HSI	Health Services Initiative
HVS	Evidence-Based Home Visiting Services
ICS	Increased Community Services
IET	initiation and engagement of alcohol and other drug dependence treatment
IMD	institution for mental disease
IRB	Institutional Review Board
ISAS	In-Home Supports Assurance System
JCR	Joint Chairman's Report
LAH	Living at Home (Waiver)
LBHA	Local Behavioral Health Authority
LE	lead entity
LOC	level of care
LOS	length of stay
LTSS	long-term services and supports
MACPro	Medicaid and CHIP Program
MAPC	Medical Assistance Personal Care
MAT	medication-assisted treatment
MCDB	Medical Care Data Base
MCH	Maternal and Child Health
MCHP	Maryland Children's Health Program
MCO	managed care organization
MDC	medical day care
MDPCP	Maryland Primary Care Program

MDS	Minimum Data Set
MEAP	Maryland Energy Assistance Program
MFP	Money Follows the Person
MFR	Managing for Results
MHCC	Maryland Health Care Commission
MHD	mental health disorder
MIA	Maryland Insurance Administration
MMIS2	Medicaid Management Information System
MODRN	Medicaid Outcomes Distributed Research Network
MOM	Maternal Opioid Misuse (Model)
M-QIP	Maryland's quality improvement organization
MSDE	Maryland State Department of Education
NCQA	National Committee for Quality Assurance
NDC	National Drug Code
NGA	National Governors Association
NIDA	National Institute on Drug Abuse
NPA	National PACE Association
NRHI	Network for Regional Healthcare Improvement
OIG	Office of the Inspector General
OTP	opioid treatment program
OUD	opioid use disorder
PACE	Program of All-Inclusive Care for the Elderly
PCORI	Patient-Centered Outcomes Research Institute
PD	prediabetes
PDN	private duty nursing
PE	participating entity
PHA	Public Health Administration

PHI	protected health information
PHPA	Prevention and Health Promotion Administration
PIA	Public Information Act
PMPM	per member per month
POS	plan of service
PRP	psychiatric rehab program
PSO	provider-sponsored organization
RE	reportable event
REM	Rare and Expensive Case Management
RUG	resource utilization group
RWJF	Robert Wood Johnson Foundation
SB	Senate Bill
SBIRT	screening, brief intervention, and referral to treatment
SCP	senior center plus
SED	serious emotional disturbance
SFTP	secure file transfer protocol
SHIP	State Health Improvement Process
SIM	State Innovation Model
SMI	Seek More Information
SMI	serious mental illness
SNAP	Supplemental Nutritional Assistance Program
SNF	skilled nursing facility
SOE	state of emergency
SOW	scope of work
SPA	state plan amendment
SPMI	serious and persistent mental illness
STP	Statewide Transition Plan

SUD	substance use disorder
SUPLN	State-University Partnership Learning Network
TCM	targeted case management
TCOC	Total Cost of Care
TPL	third-party liability
VBP	value-based purchasing
VSA	Maryland Vital Statistics Administration
WIC	Women, Infants, and Children
WOA	Waiver for Older Adults

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