The Hilltop Institute

analysis to advance the health of vulnerable populations

Maryland Department of Health and Mental Hygiene
Master Agreement
Annual Report of Activities and Accomplishments: FY 2015

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UMBC

AN HONORS UNIVERSITY IN MARYLAND

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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 21st year of service to the state of Maryland, is dedicated to advancing the health and wellbeing of vulnerable populations. Hilltop, nationally recognized for its expertise in Medicaid and state health policy, is committed to addressing complex issues through informed, objective, and innovative research and analysis. With an extensive data warehouse and a staff of more than 50 full-time professionals—policy and financial analysts, economists, attorneys, actuaries, health care administrators, 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. With the passage of the Affordable Care Act (ACA) in 2010, there is a new urgency for organizations such as Hilltop that can support and guide states as they take advantage of new, unprecedented opportunities to expand health insurance coverage and strengthen the health care delivery and financing system. Such efforts will move states closer to achieving what the federal Centers for Medicare & Medicaid Services (CMS) refers to as "the triple aim" of better care, better health, and lower costs.

Since 1994, Hilltop has maintained a collaborative and highly productive partnership with the Maryland Department of Health and Mental Hygiene (the Department) and—more specifically—the Maryland Medicaid agency. This relationship is governed through an annual intra-governmental agreement between UMBC (on behalf of Hilltop) and the Department's Office of Planning. 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 warehouse to support program development, research, policy analysis, and rate setting. The data warehouse 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 home assessment data and Medicare data for individuals in Maryland who are eligible for both Medicare and Medicaid [dual eligibles]). Hilltop developed and supports a web-based Decision Support System (DSS) for the exclusive use of the Department that provides real-time data on Medicaid eligibility, utilization, and expenditures, as well as a public site that offers mapping of public health and Medical Assistance information at the state and county levels.

Each year, Hilltop develops payment rates for the 209 nursing homes that serve Medicaid beneficiaries as well as risk-adjusted capitation payments for HealthChoice, Maryland's Medicaid managed care program. In fiscal year (FY) 2015, HealthChoice had 8 participating

managed care organizations (MCOs), served over 1 million beneficiaries, and paid $4.6 billion in capitated payments to MCOs. Hilltop conducts the annual evaluation of HealthChoice required by CMS, as well as a multitude of ad hoc analyses each year to support further development and administration of that program. Hilltop prepares analyses of provider fees to support state deliberations on payment rates and compliance with federal rules. Hilltop's analyses have been instrumental in the implementation of ACA initiatives such as the Medicaid expansion, the Money Follows the Person (MFP) Rebalancing Demonstration, the State Balancing Incentives Program, and Community First Choice (CFC). Hilltop also provides the Department with analytic support related to implementation of the Maryland All-Payer Model and monitoring the effects of this new statewide financing and delivery system on the Medicaid program. 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 and research and policy support to other divisions and entities of the Department (e.g., Developmental Disabilities Administration, Behavioral Health Administration, Public Health Division, Maryland Health Care Commission [MHCC], Health Services Cost Review Commission [HSCRC], and Community Health Resources Commission) and to other state agencies (e.g., the Maryland Health Benefit Exchange [MHBE] and the Maryland Department of Aging). 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 (the Center) in partnership with the Department. Initially chartered to design and manage Maryland's High-Risk Patient Management Initiative, Hilltop (as the Center) was staffed by nurses, case managers, and analysts. The scope of work in the contract with the Department was focused on support for Maryland's most vulnerable populations—those who were both medically fragile and financially indigent—to access the health care services they needed. Not only did these individuals have multiple, complex health care needs, but the cost to the state of providing services to them was extremely high. The Department had two goals: 1) help this population access health care; and 2) manage the program in such a way that the state's scarce resources would be utilized in the most cost-effective manner. Together, the Department and UMBC designed a university-based center that would develop and manage this unique program and provide research and analytics to determine whether the program was accomplishing its goals. Hilltop provided case management for the Rare and Expensive Case

Management (REM) program 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 of Medical Assistance (Maryland's Medicaid program) as it expanded. Hilltop collaborated with the Department in the development of HealthChoice, as well as the HealthChoice §1115 Waiver applications. Today, Hilltop continues to conduct research and policy analysis for HealthChoice and develops capitated payment rates for HealthChoice providers. Over the years, Hilltop's role has evolved as the priorities and needs of the Department have changed.

Leveraging our Work

For the past decade, Hilltop has been leveraging its work to assist the Department in maximizing resources, both financially and by advancing knowledge about Maryland Medicaid. In 2007 and 2008, Hilltop partnered with the Department to secure multi-year funding from the Robert Wood Johnson Foundation (RWJF) Changes in Healthcare Financing (HCFO) and State Health Access Reform Evaluation (SHARE) programs for three different projects that allowed for analyses of issues of importance to the Department. More recently, Hilltop partnered with Benefits Data Trust to secure funding from RWJF to merge Medicare and Medicaid data to create a cohort of Medicare-Medicaid enrollees, as well as link these data with the Supplemental Nutritional Assistance Program (SNAP) and Maryland Energy Assistance Program (MEAP) data to examine the relationship between some social factors and health/health care utilization. Hilltop is also now partnering with other organizations on federally funded Indefinite Delivery/Indefinite Quantity contracts to conduct research and analyses that will inform the Department's work.

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. In June 2012, this type of partnership was the topic of a special session at the AcademyHealth Annual Research Meeting, titled *Building Research Collaborations with State Health Policymakers.* The Maryland collaboration was highlighted in the session. Furthermore, this session resulted in an article in the *Journal of Health Politics, Policy, and Law,* titled *Supporting the Needs of State Health Policy Makers through University Partnerships,* in which Hilltop and its partnership with the Department were prominently featured. In 2014, the Department and Hilltop joined 17 other established and developing state/university partnerships as members of the State-University Partnership Learning Network coordinated by AcademyHealth. The network was formed to support evidence-based state health policy and practice through collaborations by state

governments and state university research centers. Hilltop's executive director serves on the steering committee. The partnership between the Department and Hilltop is widely recognized as a model to which other states aspire.

Annual Report

In FY 2014, The Hilltop Institute at UMBC entered into a five-year Master Agreement with the Department that will extend through FY 2018. This annual report presents activities and accomplishments for FY 2015 (July 1, 2014, through June 30, 2015).

HealthChoice Program Support and Evaluation

In FY 2015, Hilltop continued to play a key role in supporting HealthChoice, Maryland's managed care program, 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. Hilltop conducted the annual evaluation of the waiver, covering calendar year (CY) 2009 through CY 2013. The evaluation first provided a brief overview of the HealthChoice program and recent program updates and then addressed the following evaluation topics: coverage and access to care; the extent to which HealthChoice provides a medical home and continuity of care; the quality of care delivered to enrollees; special topics, including ambulatory care service utilization, services provided to children in foster care, reproductive health services, services to persons with HIV/AIDS, and racial/ethnic disparities in utilization; and access to and quality of care under the Primary Adult Care (PAC) program.

In FY 2015, Hilltop submitted a draft of the HealthChoice evaluation, which addressed the Department's goals for the HealthChoice program and compared performance to state and national benchmarks. In FY 2015, Hilltop included new measures in the evaluation that present rates of inpatient admissions and avoidable inpatient admissions and developed a new improved methodology to measure primary care physician (PCP) network adequacy. For PCPs who practiced in more than one local access area (LAA), Hilltop counted them once per LAA. The previous methodology randomly assigned these providers to a single LAA, which resulted in an undercount of PCPs in certain LAAs. In addition, Hilltop presented selected Healthcare Effectiveness Data and Information Set (HEDIS) measures for the HeathChoice population and indicated whether these were above or below the national mean. The evaluation once again provided the Department with data and analytics related to coverage and access to care, enrollees with medical homes, and the quality of care provided.

Hilltop continued to perform in-depth analyses on such topics as enrollment trends and measures (e.g., ambulatory service utilization by enrollees who also utilized the emergency department [ED] and provider network adequacy); integrated results from other studies, such as provider and Consumer Assessment of Healthcare Providers and Systems (CAHPS®) surveys; and guided report design, giving the evaluation increased depth and policy context and allowing the Department to better demonstrate the program's achievements. As in the previous year, the evaluation of the PAC program (which ended December 31, 2013) was included in the

HealthChoice evaluation. Hilltop analyzed PAC enrollment and service utilization data to determine the participation levels and demographics of program participants.

Rare and Expensive Case Management: The REM program serves individuals with multiple and severe health care needs. In FY 2015, Hilltop provided support to the REM program in the form of analysis and rate setting. Hilltop prepared quarterly analytic reports for REM case management and REM providers and included other analyses of the REM population in its evaluation of the HealthChoice program. Hilltop calculated the number of foster children of any age who were enrolled in REM.

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). At the Department's request, Hilltop uses a program it developed to implement an enhanced CLR/Medicaid data-matching process, which identifies Medicaid enrollees in the CLR data, identifies the corresponding MCOs for these children, reports the blood lead testing and elevated blood lead level rates, and develops quarterly reports for distribution to MDE. The results of the lead tests are then reported to the MCOs for follow-up of children with elevated blood lead levels. Hilltop began this analysis and quarterly reporting process in FY 2008 and continued to produce these quarterly reports for the Department throughout FY 2015. Hilltop also prepared the annual county-based analysis of lead testing results for HealthChoice children aged 12 to 23 months and 24 to 35 months, which was submitted to MDE. Hilltop provided a summary of the process of data matching and reporting results to the MCOs to assist the Department in responding to questions from an MCO about accessing the lead registry.

Value-Based Purchasing: In FY 2015, Hilltop reviewed the value-based purchasing (VBP) technical specifications used in FY 2014 and made updates to reflect changes in the specifications for FY 2015 VBP measures. Additionally, Hilltop prepared the HealthChoice VPB targets for CY 2015. The methodology for determining the CY 2015 targets for the 13 VBP measures was revised. Hilltop completed the final ambulatory care VBP measure for HealthChoice enrollees with disabilities for CY 2013 and the preliminary ambulatory care measure for CY 2014; the preliminary lead VBP measure for CY 2014, which calculated the percentage of children aged 12 to 23 months who received a blood lead test during the calendar year or the year prior to the calendar year; and the final lead VBP measure for CY 2013. Hilltop then submitted the respective VBP files for each MCO through a secure file transfer protocol (FTP). In addition, at the request of the Department, Hilltop conducted an analysis of the effects of an MCO's changes to its VBP numerator on benchmark calculations for CY 2012 to CY 2015; clarified the lead screening methodology for an MCO that had questions; and clarified what

services were included in the ambulatory care VBP measures for adults with Supplemental Security Income (SSI) for an MCO.

Managing for Results: In FY 2015, the Department of Budget and Management planned to review the managing for results (MFR) measures of all departments in the state in order to implement updates for FY 2017. Hilltop reviewed the Medicaid MFR measures and made recommendations to the Department about which to delete, keep, or remove but still report for other purposes. Hilltop prepared annual asthma and diabetes MFR measures for CY 2015. For HealthChoice adult enrollees diagnosed with diabetes and children diagnosed with asthma (in accordance with HEDIS enrollment criteria), Hilltop analyzed the number of avoidable hospital admissions for both conditions. Hilltop also prepared the CY 2013 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 who were enrolled in a HealthChoice MCO for 90 or more continuous days during CY 2013. In addition, Hilltop prepared racial disparities MFR measures, calculating average annual growth for enrollment and ambulatory care visits, by race and the racial disparities gaps for CY 2009-CY 2013. Hilltop analyzed the birth weight of newborns in the HealthChoice program during CYs 2009-CY 2013 and provided the numbers and percentages of total births of newborns with very low birth weights in those years. Finally, Hilltop re-calculated the annual MFR objectives using the trends from the actual data.

Encounter Data Reporting and Validation: Through monthly, quarterly, and annual reports to the Department and MCOs, Hilltop verified the completeness, correctness, 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 enrollee; validated impatient encounters; and identified the use or overuse of default provider numbers for physician services. Annual reports focused on identifying the percentage of enrollees who used services within the past calendar year; the ratio of service users to enrollees; the distribution of diagnoses; diagnoses per claim; and cohorts by risk-adjusted category assignments. The reports also compared encounters for specialized AIDS services with encounters in specific AIDS diagnostic categories. The process Hilltop continued to follow for monitoring and validating encounter data was described in a November 2005 report. In FY 2015, Hilltop produced two encounter data validation reports for CY 2013: one on MCO encounters and one on PAC encounters. To assist the Department in responding to an inquiry from the Office of the Attorney General, Hilltop provided a description of the procedures it performs to remove duplicates for each file type of

encounter data used to calculate capitation rates, as well as a description of how the risk scores to set capitation rates are derived.

Shadow Pricing: The HealthChoice MCOs are not required to report the actual payment amounts for services when submitting their encounter data to the Department. Although these data are not reported, the Department often has the need to estimate the costs of services, such as for their new requirement to report MCO data to MHCC's Medical Care Database. To assist the Department in this effort, Hilltop continued to estimate or "shadow price" these MCO payments in FY 2015. This included developing different methodologies for different types of services. For professional services, shadow pricing includes (1) applying the fee-for-service (FFS) fee 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 institutional services, because all-payer rate regulation limits the amounts hospitals can bill, Medicaid MCOs must pay the amount charged by the hospital, minus a 6 percent discount.

HealthChoice Management and Quality Assurance: In FY 2015, Hilltop continued working with the Division of HealthChoice Management and Quality Assurance to clarify issues pertaining to health risk assessment (HRA) data received from the HealthChoice Enrollment Broker. Hilltop continued to produce quarterly reports and also produced an annual report called *Health Risk Assessment Compliance Report for CY 2014.*

Capitation Rates: To assist the Department in responding to a request from the Center for Medicare and Medicaid Innovation (CMMI) at CMS, Hilltop calculated the mean capitation payment rates for HealthChoice in CY 2014 and CY 2015.

Medicaid Rate Setting

In FY 2015, the state of Maryland paid $4.6 billion in capitation payments to the eight MCOs participating in HealthChoice, providing health insurance for more than one 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 for All-Inclusive Care for the Elderly (PACE) and the Trauma and Emergency Medical Fund.

HealthChoice Rate Setting and Financial Analysis: In FY 2015, Hilltop worked with the Department to develop risk-adjusted capitation payments for MCOs participating in HealthChoice. Maryland's risk-adjusted payment methodology is based on the Johns Hopkins University Adjusted Clinical Group (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 free of charge. Hilltop contracts with Johns Hopkins for ongoing support with the ACG system and the rate setting methodology.

Hilltop's responsibility for managing the Department's MCO Rate Setting Committee involves—during each annual rate-setting cycle—scheduling, developing the agendas for, and facilitating a series of eight two-hour public meetings with officials from the Department, the eight MCOs, Hilltop, and the actuarial services firm contracted by Hilltop (see below). The purpose of these meetings is to review the rate setting methodology and process, discuss methodological and policy issues of concern to both the MCOs and the Department, 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 managed care rates in other states. During each annual rate setting cycle, Hilltop also schedules and facilitates one-on-one meetings between the Department and each of the eight 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, permitting active participation by MCOs. 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.

In FY 2015, Hilltop worked extensively with the actuarial firm Optumas to complete and certify CY 2015 HealthChoice capitation rates and initiate development of CY 2016 capitation rates. 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 in order for the state to obtain federal financial participation for HealthChoice. In 2010, Optumas was selected by UMBC through a competitive procurement to provide actuarial services for development of HealthChoice rates for CYs 2011-2015.

Also in FY 2015, Hilltop drafted the scope of work for actuarial services to support development of HealthChoice rates for CYs 2016-2020. UMBC's procurement office issued a request for proposals on October 30, 2014. In collaboration with UMBC's procurement office, Hilltop reviewed proposals and interviewed prospective vendors. Optumas was once again the successful bidder, so a new contract was signed with Optumas in FY 2015.

HealthChoice Financial Monitoring: To better understand the cost differences among MCOs and the impact 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 2015, Hilltop analyzed specific variances in membership, premium income, and cost of medical care during CY 2012. Hilltop prepared quarterly reports for the Department summarizing—for all MCOs—capitation payments and enrollment by major eligibility category, and examining the variance between planned payments and associated member months to actual results. In addition, Hilltop prepared a complete financial report package that analyzed MCO underwriting performance.

Capitation Payment Recovery: To assist the Department in recovering funds paid to MCOs for a small group of people it believed were erroneously found eligible, Hilltop reviewed the capitation, encounter, and claims data that the Department had and compared them with the corresponding MMIS2 data that Hilltop had to determine the accuracy of the Department's calculations. Hilltop compared capitation records for individuals who transferred from the Medically Needy to the Childless Adult expansion group and identified discrepancies in the data. Hilltop also compared capitation records for persons who were inappropriately active due to "one month errors" to individuals enrolled in Medicaid and qualified health plans (QHPs) in order to identify discrepancies.

Nursing Home and Program for All-Inclusive Care for the Elderly Rate Setting: In FY 2015, Hilltop continued to develop Medicaid reimbursement rates for Maryland nursing homes and

PACE. For nursing homes, Hilltop provided analyses of rate-setting logic as needed, calculated the Medicare upper payment limit, evaluated alternative models, and provided technical assistance to Department staff. In addition, Hilltop continued to facilitate the electronic submission of cost reports by nursing home providers and developed the annual calendar year rates for Hopkins Elder Plus, a PACE program in Baltimore City.

Trauma and Emergency Medical Fund: In FY 2015, Hilltop continued to calculate monthly supplemental reimbursement payments for the Trauma and Emergency Medical Fund based on trauma physician fees.

Analytics to Support Health Reform

In FY 2015, 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 the Medicaid expansion, Maryland's All-Payer Model, Health Homes, CFC, and several other initiatives.

Medicaid Expansion

In FY 2015, Hilltop continued to support the Department in its efforts to expand Medicaid eligibility. The ACA gave states the opportunity and incentives to expand Medicaid eligibility to households with incomes up to 138 percent of the federal poverty level (FPL), and Maryland was one of the states that chose to expand Medicaid.

Reporting on the Expansion Population: In FY 2015, Hilltop continued to conduct analyses and provide assistance to the Department in determining the changes to service utilization and costs before and after the 2014 Medicaid expansion, which incorporated the PAC population into HealthChoice and created new eligibility categories for parents and childless adults with income up to 138 percent of the FPL. In collaboration with the Department, Hilltop developed a scope of work for the Chesapeake Regional Information System for our Patients (CRISP) to assign a unique Master Patient Index (MPI) to Medicaid enrollees so that enrollee records could be matched to hospital discharge data available from the HSCRC. This facilitated an analysis of service utilization by individuals enrolled under the Medicaid expansion for the purpose of identifying hospital utilization and costs before and after Medicaid enrollment to inform the HSCRC's new All-Payer Model. Hilltop provided CRISP with eligibility and demographic information and data dictionaries for all Medicaid participants enrolled between January 1, 2013, and June 30, 2014, and between January 1, 2013, and September 30, 2014. Hilltop provided Medicaid eligibility span files and data dictionaries and compared CRISP data with corresponding Hilltop data for discrepancies. Throughout FY 2015, Hilltop provided consultation on data validation and discrepancies to both the Department and CRISP. Hilltop also calculated the inpatient and outpatient utilization and expenditures for the Medicaid expansion population for the first quarter of 2014 to benchmark against CRISP data.

Medicaid Enrollment: At the request of the Department, Hilltop analyzed CY 2014 monthly enrollment data and calculated the number of childless adults and the number of all enrollees, delineated by coverage group, county, MCO, and month. Hilltop also calculated the enrolled expansion population and total enrolled population for December 2014, delineated by coverage group and MCO, to assist the Department in responding to a request from the General Assembly. To assist the Department in preparing the data for setting MCO rates, Hilltop calculated the total

number of Medicaid enrollees in the expansion population and the number of HealthChoice enrollees in the expansion population in FY 2014 and FY 2015. In addition, Hilltop calculated the monthly Medicaid enrollment numbers from January 2014 through February 2015 of persons enrolled in the Medicaid expansion coverage groups (A01, A02, and A03). To assist the HSCRC in meeting its obligation to report on its All-Payer Model, Hilltop calculated monthly total Medicaid enrollment for CY 2013 and January-November 2014.

State Network Survey: To assist the Department in preparing for a State Network Medicaid small group convening, Hilltop completed a pre-meeting survey on enrollment, PMPM expenses, and utilization demands of the expansion population, calculating these measures for September 2013 and September 2014.

Hospital Utilization: To assist the Department in preparing a presentation for the Maryland Hospital Association Readmissions Workgroup, Hilltop calculated the FY 2011-2013 hospital utilization rates for the total population and the Parent and Caretaker Relative coverage group, as well as the Quarter 1 CY 2014 rates for the Medicaid expansion population.

Maryland All-Payer Model

As part of the requirements under the state's All-Payer Model Agreement with CMS,[1] the HSCRC is required to report on and monitor the total cost of health care. In particular, the HSCRC must monitor trends in health care costs within its regulatory domain and any cost-shifting to unregulated settings. In FY 2015, Hilltop provided significant support and conducted a number of analyses to assist the Department in reporting Medicaid total cost of care.

Total Cost of Care Reporting Template: The HSCRC developed a draft template and instructions for the Department and other agencies to report their costs of care. In FY 2014, at the request of the Department, Hilltop reviewed this draft template and provided comments to the Department. Then, Hilltop drafted instructions, specifications, and a template for the Department's total cost of care (TCOC) reporting for Medicaid. In FY 2015, Hilltop continued to work with the Department on the development of the reporting template and instructions, providing consultation on the capacity of the data to ensure that the template captured information the way Hilltop could report it; reviewed comments from the MCOs on the template and proposed reporting timeframes; and provided consultation to the Department on this process. Hilltop participated on the TCOC workgroup with the Department and the MCOs to provide consultation regarding data collection and analysis and reporting, providing meeting materials and revisions to templates and instructions. Throughout this process, Hilltop continued to review

[1] See http://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_hospital/documents/chcf_all_payer_model_agreement.pdf

the templates and instructions (with data collection and analysis in mind) and collaborate with Medicaid and HSCRC staff. To facilitate the MCO reporting process and minimize errors, Hilltop developed a SAS-ready spreadsheet that consolidated required MCO reports. MCOs used this spreadsheet to report their CY 2013 expenditures, and Hilltop then aggregated the data for the first Medicaid TCOC report. Hilltop reviewed the MCO reports to ensure accurate reporting and developed an MCO submission tracking table that recorded the submissions and documented data reporting questions or issues.

Assessment of Current Reporting System: In order to ensure that accurate TCOC reporting would occur, Hilltop conducted a number of analyses. Hilltop analyzed the level of services and how they were currently being reported. Hilltop calculated the number and percentage of home health encounters, as well as the number of home health claims for FY 2013. Hilltop also reviewed the definitions for professional hospice and therapies. Hilltop consulted with the HSCRC on the use of place of service variables to identify professional claims and calculated the frequency of place of service for CY 2013. Hilltop identified providers who billed for at least one service with an "urgent care" place of service in CY 2013. Hilltop also provided definitions for the provider type and category of service variables and some service definitions for commercial plans.

Hospital Expenditures: To further inform TCOC reporting, Hilltop analyzed the HealthChoice Financial Monitoring Reports and FFS data and calculated hospital expenditures for FY 2009 through FY 2014. FFS expenditures were delineated by coverage group, type of service (Inpatient and Outpatient), and enrollee; MCO expenditures were delineated by PMPM amounts. Hilltop also provided consultation on formula/logic it uses to calculate member months by quarter. Hilltop calculated FFS hospital expenditures by region (Maryland, DC, other out-of-state), type of service (inpatient, outpatient), and coverage group for these same years.

All-Payer Hospital System Modernization Workgroups: In FY 2015, Hilltop continued to provide consultation and support to the Medicaid representative of various HSCRC Workgroups by attending meetings and answering various questions about the Medicaid data.

Estimated Medicaid Savings: Beginning with the state budget submission for FY 2016, the Maryland Budget Reconciliation and Financing Act of 2014 required the HSCRC and the Department (in consultation with the Maryland Hospital Association) to "model the methodology for calculating general fund savings in the Medicaid program by comparing an average baseline of Maryland Medicaid total risk-adjusted hospital expenditures per beneficiary over a reasonable period of time before the implementation of the Maryland all-payer model

contract to the actual Maryland Medicaid total risk-adjusted hospital expenditures per beneficiary during the period under Maryland's all-payer model contract."[2]

To assist the Department and the HSCRC in estimating the baseline data to meet this legislative requirement, Hilltop provided the Department hospital utilization data by coverage group; calculated FFS payments to HSCRC-regulated hospitals for FY 2009-FY 2014; calculated the number of recipients continuously enrolled in the Parent and Caretaker Relative coverage group during the FY 2009-2013; and delineated the number of those in the parent expansion coverage type and all others. Hilltop also calculated the number of hospital admissions (inpatient and outpatient) for FYs 2011-2013, delineated by coverage group; calculated the total Medicaid member months by coverage group for CY 2013; and calculated the total Medicaid member months for each quarter of CY 2013 and the first two quarters of CY 2014.

Health Homes

Section 2703 of the ACA, "State Option to Provide Health Homes for Enrollees with Chronic Conditions," created the option for state Medicaid programs to establish health homes, which are intended to improve health outcomes for individuals with chronic conditions by providing patients with an enhanced level of care 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 serious persistent mental illness, serious emotional disturbance, and opioid substance use disorders.

Health Home Program Evaluation: Throughout FY 2014 and FY 2015, Hilltop conducted several analyses and provided—in the program's first annual report—a description of Medicaid enrollees' participation in the Maryland Health Home program and their interactions with the health care system during the first year of program implementation.

In FY 2015, Hilltop developed a data dictionary based on its review of *eMedicaid* statistics; answered the Department's questions about various data issues; and developed data entry instructions for providers intended to improve the quality of the data they entered. Hilltop analyzed the *eMedicaid* data and developed a process for producing quarterly reports. Hilltop then produced a quarterly report for the program—encompassing quarter 1 through quarter 5—which measured participant characteristics, health home services, and health care utilization and quality. Hilltop also produced a distribution letter for the Department to participating providers

[2] *Section 16, Chapter 464, 2014 Laws of Maryland*

that detailed how they could decipher their agency's information while keeping it confidential. Hilltop reviewed the analyses performed for the first quarterly report against the federal requirements and Department's requests and suggested that additional analyses be conducted for upcoming reports. In addition, Hilltop compared a list of a community mental health organization's disease management indicators to the list of Health Home Goals and Measures proposed in the state plan amendment (SPA) to determine similarities and differences.

Community First Choice

The CFC program, implemented on January 6, 2014, resulted from Section 2401 of the ACA, which gives states the option to offer certain community-based services as a state plan benefit to individuals who require an institutional level of care. Under Maryland's CFC program, the personal assistance services that were previously offered through the Living at Home (LAH) Waiver and the Waiver for Older Adults (WOA) were consolidated under the Medicaid State Plan CFC program. CFC offers self-directed personal assistance services using an agency-provider model. In FY 2015, Hilltop conducted the following analyses to support the Department's implementation of the CFC program.

Personal Assistance Services: At the request of the Department, Hilltop continued to study personal care services received by individuals through 1915(c) HCBS waivers and Medicaid state plan services. To assist the Department in projecting how many hours for personal assistance services would be needed by recipients in FY 2016, Hilltop analyzed currently available data to calculate the average weekly hours utilized for these services, delineated by both the provider type and by program. In addition, Hilltop continued to assist the Department in determining the costs of personal assistance services. Hilltop calculated the overtime and travel time hours billed for these services by providers for FY 2014; updated calculations on the number of new personal assistance providers that would be needed if personal assistance providers were not permitted to work overtime and must be paid for travel time; and provided calculations for a presentation on personal assistance provider funding options for a meeting with the Department of Labor.

Enrollment Reports: In FY 2015, Hilltop prepared reports on individuals' last steps in the enrollment process for long-term services and supports (LTSS). Hilltop produced monthly reports that tracked the progress of enrollments for those who had completed an MFP questionnaire in the previous month; who had a Medical Assistance Personal Care (MAPC) claim in the past six months but were not yet enrolled in MFP; and who had been assigned a supports planning agency (SPA) but were not enrolled in a waiver or who had an MAPC claim but had not been assigned an SPA.

CFC/Resource Utilization Group Budget Comparison: To assist the Department in assessing the number of individuals who were exceeding their resource utilization group (RUG) budgets based on their interRAI assessments, Hilltop analyzed approved plans of service from *LTSSMaryland,* matched these plans to their corresponding interRAI assessments, compared interRAI RUG budget amounts to CFC flexible budgets, and prepared slides of the findings to be presented to the Community Options Advisory Council.

Home and Community-Based Services

Community-Based Setting Final Rule: On March 17, 2014, CMS issued regulations that define the settings in which states can pay for Medicaid home and community-based services (HCBS) for the purpose of ensuring that individuals receiving Medicaid HCBS in settings that are integrated and support full access to the greater community. States must ensure 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 to ensure settings comport with the HCBS settings requirements and must be in full compliance with the federal requirements by the timeframe approved in the Statewide Transition Plan but no later than March 17, 2019. In FY 2015, Hilltop performed a number of tasks to assist the Department in its efforts to comply with the Final Rule. Hilltop worked with the Department to develop a transition work plan, laying out all of the tasks and responsibilities to bring the state in compliance with the new regulations; developed a consumer and family survey to measure the services they were receiving to assess their provider's level of compliance with the Final Rule and determine if changes were necessary; developed a case manager survey to measure their performance; and developed a provider self-assessment to report on each facility type that they own, operate, and control to determine the level of facilities' compliance with the federal requirements. Hilltop analyzed the questions that the case manager survey and the consumer/family survey had in common and compared the responses to identify discrepancies in perception between the two respondent populations. Hilltop conducted an analysis of the residential provider self assessment and the consumer/family survey to broadly assess the current state of HCBS settings as they relate to the HCBS settings criteria set forth by CMS. Hilltop also analyzed the case manager survey to begin to gauge the current state of person-centered planning in Maryland. The findings of both analyses were discussed in a report. Hilltop revised the provider self assessment survey twice—first to include non-residential settings in addition to residential settings, then to incorporate feedback from stakeholders; compared the questions on the revised self-assessment to the federal criteria to ensure that the self-assessment captured the required information; and worked with the Department on a plan to field the revised survey.

Community Options Waiver Rate Study: At the request of the Department, Hilltop studied waiver service rates across multiple states to compare with the rates for Maryland's new

Community Options (CO) Waver, which became operational on January 6, 2014. Hilltop analyzed Maryland's CO Waiver to determine the characteristics of the population served and the services provided; documented the definitions of the services using the most recent waiver regulations; identified 13 other states that have waivers that serve the same population as Maryland; and compared the waiver services and rates in those states to Maryland's. Hilltop also provided a complete listing of each waiver that was studied and its services, including definitions of the waiver services that were comparable to Maryland's; and updated the study to include Pennsylvania.

Other Support

Network Adequacy: At the request of the Department, Hilltop provided a summary of 45 CFR §156.230 and Maryland Insurance Administration (MIA) regulations, which set standards for QHPs and commercial networks, respectively.

Mental Health Parity: On April 10, 2015, CMS issued a proposed rule titled *Application of Mental Health Parity Requirements to Coverage Offered by Medicaid Managed Care Organizations (MCOs), the Children's Health Insurance Program (CHIP), and Alternative Benefit Plans (ABPs).* Hilltop reviewed the notice of proposed rulemaking (NPRM) and the proposed rule, summarized it, and highlighted items in which the Department might be particularly interested.

Redetermination Process: In FY 2015, the Department was required to use a new process to redetermine eligibility for individuals enrolled in Modified Adjusted Gross Income (MAGI) coverage groups. Hilltop developed a plan for its role in this process, which included Hilltop sending lists of these individuals to their respective MCOs each month and tracking the redeterminations, and assessed the completeness of the Head of Household variable as a way to track individuals who had been redetermined. Hilltop tested this variable against others to determine its validity and began sending files to the Department and the MCOs. Hilltop then analyzed the redetermination data to ascertain the number and percentage of completed redeterminations and consulted with the Department on data interpretation.

Financial Analysis

In FY 2015, Hilltop continued to provide financial analysis for the Department related to Medicaid reimbursement rates, physician fees, dental services, and pharmacy and substance use disorder (SUD) treatments and services.

Reimbursement Rates Fairness Act: Pursuant to Maryland House Bill 70–*DHMH–Commissions, Programs and Reports – Revision (Ch. 656 of the Acts of 2009),* previously Senate Bill 481–*Department of Health and Mental Hygiene–Reimbursement Rates* (Ch. 464 of the Acts of 2002) and HB 627–*Community Health Care Access and Safety Net Act of 2005* (Ch. 280 of the Acts of 2005), and *Health–General* § 15-103.5, Hilltop prepared the fourteenth annual report for the Maryland legislature. The report includes a review of the reimbursement rates paid to providers under the federal Medicare fee schedule and a comparison of those rates to the FFS rates paid to similar providers for the same services under the Medical Assistance program and the rates paid to MCO providers for the same services; whether the FFS rates and MCO provider rates will exceed the rates paid under the Medicare fee schedule; an analysis of other states' rates compared to Maryland; the schedule for raising rates; and an analysis of the estimated cost of implementing these changes.

Physician Fees: In addition to the analyses described above, in FY 2015, Hilltop consulted with and provided technical assistance to the Department regarding increasing and decreasing physician fees. Hilltop compared Medicaid fees to Medicare fees and estimated the percentage of Medicaid fees to Medicare fees for all procedures. Then, Hilltop estimated what the percentages would be if fees for evaluation and management (E&M) procedures were decreased in 2015. In consultation with the Department, Hilltop continued to revise these calculations throughout the year, adding and subtracting various factors. Hilltop calculated the savings to the state if fees for E&M procedures were set at various percentages of correspondent Medicare fees; assisted the Department in responding to a number of Department of Budget and Management requests to ascertain the costs and savings to the state from increasing and reducing E&M fees to a various percentages of Medicare; and calculated the (Baltimore area) Medicare rates based on the CMS 2015 files and recalculated cost savings. Hilltop also calculated these fees for FY 2016 and calculated the costs to the state of increasing the percentage of Medicare.

Dental Rate Increase: In FY 2015, the Department received funds to increase reimbursement rates for dental services and formed a dental rate review committee to determine the method by which the rate increase would be implemented (which dental procedure rates would increased and by how much). Hilltop participated on the committee and conducted a number of analyses to inform its deliberations. Hilltop compared the Department's dental fee comparison chart against the dental fee schedule used for analyses to find discrepancies; reported the number of FFS

claims and MCO encounters for HealthChoice and PAC enrollees in CY 2013 (delineated by age group), Medicaid fee, American Dental Association (ADA) 50th percentile of charges, and National Dental Advisory Service (NDAS) 40th percentile of charges; estimated costs of each procedure at the Medicaid and a benchmark fee; estimated the costs of high-volume procedures; modeled various scenarios for the rate increase; and estimated the costs for various options for the increase.

MCO vs. FFS Expenditures: Hilltop analyzed the per capita costs for MCO enrollees to determine percentage of those expenditures that were attributable to FFS spending.

Prader-Willi Syndrome Pharmacy Expenditures: In FY 2015, Hilltop calculated the level of pharmaceutical spending by the Medicaid population with a Prader-Willi Syndrome diagnosis for FY 2010-2013.

Warfarin Use: Hilltop studied the use of Warfarin (Coumadin) in FFS Medicaid, and calculated the incidence and costs of adverse events potentially caused by use of the medication.

SUD Cost Analysis: To assist the Department with its application for block grant funding, Hilltop conducted a cost analysis of substance use disorder (SUD) services for Medicaid enrollees for FY 2013 to 2014. Hilltop analyzed outpatient and pharmacy FFS claims, MCO encounters, and Primary Adult Care (PAC) encounters related to SUD services for enrollees with a diagnosis of SUD. Hilltop also calculated the number of unique individuals with a SUD claim or encounter; number of SUD claims and encounters; total FFS cost for SUD services; total shadow-priced MCO cost for SUD services; and total shadow-priced PAC cost for SUD services statewide and also by county.

SUD Treatment Service Utilization and Expenditure Trends: At the request of the Department, Hilltop provided data dictionaries and monthly SUD claims and encounter data for FY 2014 to FY 2015 to the administrative services organization (ASO) responsible for Maryland Medicaid's behavioral health care management to assist them in determining expenditure trends and care coordination.

Medicaid Cost-Sharing Fact Sheet: In FY 2015, Hilltop prepared a draft fact sheet on the federal cost sharing rules—an abbreviated version of its summary of the July 2013 final rule on Medicaid and Exchanges—titled *Medicaid Cost-Sharing and Premiums Fact Sheet*. At the request of the Department, Hilltop then reviewed the summary of state activities related to this rule (Part 2) and offered guidance for improving the document's clarity and accuracy.

Fiscal Note for Senate Bill 281: If enacted, Senate Bill (SB) 281 would establish a Blue Ribbon Commission to study Maryland's behavioral health system, which would be staffed and require a number of studies by the Department and possibly Hilltop. To assist the Department in preparing the fiscal note, Hilltop reviewed the requirements of the bill and estimated the costs of the analyses that Hilltop would conduct.

Other Analyses and Technical Support

In FY 2015, Hilltop conducted extensive analyses for the Department to support program and policy deliberations related to Medicaid coverage, health services utilization, provider participation in the Medicaid program, dental services, and LTSS. Hilltop also provided data analytics for grant applications submitted to federal agencies by the Department.

Coverage and Health Services Utilization

Medicaid Enrollment: In FY 2015, Hilltop conducted a number of analyses for the Department on Medicaid enrollment. To assist the Department in responding to a media inquiry, Hilltop calculated the number of Medicaid managed care enrollees in each MCO for CYs 2012 through 2014, delineated by the enrollees' last MCO of the calendar year. Hilltop estimated the number of Rare and Expensive Case Management (REM) enrollees also enrolled in the Maryland Children's Health Program (MCHP); the number of REM enrollees not in MCHP; and the total number of MCHP enrollees in CYs 2013 and 2014. To assist the Department in responding to a legislative request, Hilltop calculated the number of years individuals were continuously enrolled (enrollment in each month) in Medicaid or MCHP from June 30, 2004 to June 30, 2014, then delineated this information by program (Medicaid and MCHP). To assist the Department in responding to a request to the Maryland State Department of Education (MSDE), Hilltop calculated the Medicaid enrollment of 4-year-olds in coverage groups below 200 percent of the FPL, by county, as of September 2009, 2010, 2011, 2012, and 2013.

HPV Vaccinations: At the request of the Department, Hilltop provided estimates of human papillomavirus (HPV) vaccination rates for female adolescents enrolled in Medicaid as of the year they turn 13 for CY 2011 through CY 2013, calculated according to HEDIS 2015 technical specifications. Hilltop also recalculated the HPV and colorectal cancer rates for one MCO.

Child Vaccinations: To assist the Department in responding to a request from the Centers for Disease Control and Prevention (CDC), Hilltop calculated the frequency of MCHP participants aged 0 to 18 years who received vaccines in CY 2014, delineated by age and month.

Sickle Cell Diagnoses: To assist the Department in responding to a request from the General Assembly, Hilltop calculated the number of users of any Medicaid service who had a diagnosis of sickle cell disease in CYs 2013 and 2014 to determine the number of unique enrollees who had services in which sickle cell was enumerated among the diagnoses.

X02 Coverage Group: In FY 2015, at the request of the Department, Hilltop calculated the number of women in the X02 coverage group (undocumented) living in Howard County who delivered a child in FY 2013 or FY 2014, delineated by hospital.

Pregnant Women: At the request of the Department, Hilltop calculated the CY 2014 monthly count of pregnant women enrollees (FFS and MCO) whose incomes were between 185 and 250 percent of the federal poverty level (FPL); and reviewed the accuracy of a document the Secretary would use in discussions with the Governor on a proposed FY 2016 budget decrease that would reduce Medicaid eligibility of pregnant women from those with incomes up to 250 percent of the FPL to those with incomes up to 185 percent of the FPL.

Family Planning Program: At the request of the Department, Hilltop calculated the number of enrollees in the Family Planning coverage group who received family planning services in CY 2010 to CY 2013.

Capitation Rates: To assist the Department in responding to a request from the Montgomery County Department of Health and Human Services, Hilltop provided the 2015 monthly capitation rates for persons in the Families and Children and Pregnant Women coverage groups.

Access to Care: To assist the Department in assessing access to care, Hilltop analyzed U.S. Census data and provided the number of persons in Maryland delineated by health insurance coverage (insured/uninsured), age (0 to 18/19 to 64), and percent of FPL (below 100 percent/100 percent and above) for 2012 and 2013.

SBIRT Pilot: From December 2013 through December 2014, the Behavioral Health Administration (BHA) participated in a Substance Abuse and Mental Health Services Administration (SAMHSA) pilot to conduct Screening, Brief Intervention, and Referral to Treatment (SBIRT). To assist the BHA in reporting on the success of the pilot, Hilltop calculated the preliminary frequency of alcohol and substance abuse treatment procedures, delineated by provider type and month.

Provider Participation

Physicians Participating in Medicaid: At the request of the Department, Hilltop identified all physicians in Maryland who were participating in the Medicaid program in FY 2015. Hilltop also assisted the Department in responding to a request from the HSCRC by identifying the number of physicians who participated in Medicaid, delineated by specialty.

EHR Incentive Program Outreach: The CMS Electronic Health Records (EHR) Incentive Program is open to providers participating in Medicare and/or Medicaid but is set to close to new providers in 2016. In FY 2015, to assist the Department in its outreach strategy to providers who had not enrolled in either Medicare or Medicaid, Hilltop identified the volume of claims in CYs 2013 and 2014 for providers who had not yet enrolled in the incentive program.

Dental Services

Dental Service Utilization: In FY 2015, Hilltop conducted several analyses to assist the Department in learning more about dental service utilization. Hilltop calculated the number of emergency room (ER) visits with a dental diagnosis or procedure for children and adults in Medicaid or CHIP in CYs 2013 and 2014 and, based on HEDIS specifications, calculated the percentage of enrollees aged 2 to 21 years who had at least one dental visit during CY 2009 to CY 2013. In response to the Association of State and Territorial Dental Directors (ASTDD) State Synopsis Questionnaire 2015, Hilltop updated an analysis of Medicaid and MCHP enrollment and dental service utilization for children enrolled in the two programs in FY 2014 and CY 2013 to include the number of Medicaid and MCHP enrollees, as well as information on Medicaid dental providers.

Dental Services for Pregnant Women: In order to assist the Department in determining the cost of expanding dental coverage to women during their post-partum period, Hilltop calculated the per member per month (PMPM) costs of coverage to pregnant women in CYs 2012, 2013, and 2014.

Dental Joint Chairman's Report: In FY 2015, to assist the Department in its response to the Maryland General Assembly, Hilltop performed an analysis on the utilization of Medicaid dental services by children, pregnant women, and adults for CY 2013 using the following measures: the number and percentage of children aged 0 to 20 years who had a dental visit while enrolled in Medicaid for any period in the calendar year, by age group; the number and percentage of children aged 0 to 20 years who had a preventive/diagnostic dental visit followed by a restorative dental visit while enrolled in Medicaid for any period in the calendar year; the number and percentage of children aged 4 to 20 years who had a dental visit while enrolled in Medicaid for 320 or more days in the calendar year, by type of service and age group; the number and percentage of children aged 4 to 20 years who had a dental visit while enrolled in Medicaid for 320 or more days in the calendar year, by region; the number and percentage of children aged 0 to 20 years who had an ED visit with any dental diagnosis or procedure made while enrolled in Medicaid for any period in the calendar year; the number and percentage of pregnant women aged 14 years and older who had a dental visit while enrolled in Medicaid for any period in the calendar year; the number and percentage of pregnant women aged 21 years and older who had a

dental visit while enrolled in Medicaid for 90 days in the calendar year; and the number and percentage of non-pregnant adults aged 21 years and older who had a dental visit while enrolled in HealthChoice for 90 days in the calendar year.

House Bill 355: At the Department's request, Hilltop reviewed House Bill (HB) 355—a provision of which would require the Department to conduct a study of dental services—to determine Departmental responsibilities and the projected level of staffing required needed if the bill were to be passed.

Long-Term Services and Supports

Hilltop supported the Department in activities required under the State Balancing Incentive Payment (BIP) Program; assisted the Department with implementation of CFC; continued its support of the MFP Rebalancing Demonstration Program; conducted several analyses to assist the Department in its use of the interRAI core standardized assessment tool; and conducted analyses using data from *LTSSMaryland*—the state's integrated LTSS tracking system—including interRAI assessment data and plans of service.

Money Follows the Person (MFP) Tracking: In FY 2014, Hilltop continued to track transitions from institutions, service utilization, expenditures, and participant characteristics over the course of the MFP program using the metrics it developed in FY 2011. To assist the Department in assessing the functional levels of individuals who transition from a nursing home to the community, Hilltop analyzed the most recent pre-transition Minimum Data Set (MDS) assessment for individuals who enrolled in Maryland's MFP program during FY 2014.

MFP Benchmarks: In FY 2015, Hilltop continued to report information on all HCBS expenditures for all Medicaid (not just MFP) recipients in the semiannual reports it produced for CMS on the state's progress in achieving MFP benchmarks. Each quarter, Hilltop also prepared MFP reporting files for submission to Mathematica Policy Research, the national MFP program evaluator. This work involved converting MMIS2 files for each MFP participant to Medicaid Statistical Information System files. The files required by Mathematica for each MFP participant include a finders file containing demographic and eligibility information; a participation data file, which holds more specific information on the participant than the finders file; and a service file with claims data.

Chart Books: In FY 2015, Hilltop released Volume 3 of its chart book series titled *Medicaid Long-Term Services and Supports in Maryland*, which summarizes demographic, service utilization, and expenditure data for Maryland Medicaid recipients of LTSS during FY 2010 through FY 2013. Volume 3 reported on the Traumatic Brain Injury Waiver.

Autism Waiver Rate Study: At the request of the Department, Hilltop studied waiver service rates across multiple states to determine where Maryland's Autism Waiver rates fall in comparison. Using the same methodology as it used in the HCBO Waiver rate study, Hilltop identified 11 states with waivers that serve the same population as Maryland and compared the waiver services and rates in those states to Maryland's. Hilltop also provided a complete listing of each waiver that was studied and its services, including definitions of the waiver services that were comparable to Maryland's.

Autism Waiver Reporting: In FY 2015, using the reporting mechanism it developed for the Department, Hilltop continued to analyze the "grey 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 MSDE for the cost of Autism Waiver services and state plan services for the grey area population; Hilltop produced quarterly reports to support the Department's invoicing to MSDE. In addition, Hilltop calculated the number of individuals on the Autism Waiver registry with a current Medicaid eligibility span, delineated by age and county.

StateStats: Hilltop produced monthly updates for Maryland's StateStats website on cumulative enrollment from January 1, 2001, to September 30, 2014, for the WOA, LAH Waiver, and Autism Waiver. With the merger of the LAH Waiver and the WOA into the Home- and Community-Based Options Waiver on January 6, 2014Hilltop created a new row for the CO Waiver and made an improvement to the coding logic to not count individuals with single-day waiver spans as waiver participants (aberrations in the data) and re-ran the monthly updates.

CMS 372 Reports: In FY 2015, Hilltop calculated the number of waiver recipients and expenditures by waiver service and the total costs of these services to produce the CMS 372 waiver reports for FY 2013. Hilltop produced reports for the OAW, LAH Waiver, TBI Waiver, Community Pathways Waiver, Medical Day Care Services Waiver, New Directions Waiver, Autism Waiver, Model Waiver, and Residential Treatment Center Waiver.

Standardized Assessment Tool Study: In FY 2015, Hilltop continued to conduct analyses of the interRAI assessment tool to assist the Department in determining the tool's impact on agency operations. Hilltop analyzed 220 interRAI assessments from the *LTSSMaryland* database that had been performed due to a significant change in an individual's status to determine whether the assessments would impact caseload. Hilltop compared the most recent interRAI assessments and associated demographic data from *LTSSMaryland* for persons with and without a nursing facility (NF) stay to determine if risk factors for institutionalization could be predicted.

Children with Complex Medical Conditions: Per the Department's request, Hilltop analyzed children, youth, and young adults with a complex medical condition (CMC)—i.e., persons under the age of 25 who are enrolled in the Rare and Expensive Case Management (REM) program or the Maryland 1915(c) Medicaid Model Waiver—to determine the levels of service utilization and expenditures for CYs 2013 and 2014. Hilltop conducted a follow-up analysis to determine the levels of service utilization and expenditures on a subset of the population—children aged five years and under.

Alzheimer's Disease and Related Disorders Council: Pursuant to Chapter 305, Acts of 2013, the Virginia L. Jones Alzheimer's Disease and Related Disorders (ADRD Council) was authorized to develop and monitor the Maryland State Plan on ADRD and review state statutes, policies, and programs. At the request of the Department, Hilltop met with members of the Council's Data Capacity Subcommittee and provided consultation on the capacity of the *LTSSMaryland*, MDS, MMIS2, and Chronic Conditions Warehouse databases to provide the information the Subcommittee was seeking. Hilltop then conducted an analysis of Medicaid enrollees with an ADRD diagnosis in FY 2014 who were aged 65 years and over. Hilltop linked data from each of these datasets and developed a combined dataset to determine the number receiving Medicaid community-based services, the number residing in nursing facilities, and the average per capita costs to Medicaid.

Assisted Living: In FY 2015, Hilltop calculated the number of people, delineated by gender and county, who had an assisted living claim.

Other Data Analytics

Patient-Centered Medical Home Evaluation: Since early 2013, at the request of the Department, Hilltop has been assisting MHCC and the University of Maryland School of Pharmacy with an evaluation of the Patient-Centered Medical Home (PCMH) initiative. Hilltop provides institutional, medical, and pharmacy FFS claims and MCO encounters for HealthChoice enrollees participating in the study or control groups for the evaluation. Hilltop also sent (through FTP) enrollee demographic data to MHCC and the School of Pharmacy and worked with the MCOs to provide priced MCO encounters for CYs 2012 and 2013.

Maternal Child Health/Medicaid Data Sharing: At the Department's request, Hilltop reviewed the language related to the Prevention and Health Promotion Administration (PHPA) and Medicaid's data sharing agreement.

Medicaid Data Summary Review: At the request of the Department, Hilltop reviewed and revised for accuracy a description of Medicaid data and requirements for its access and use that the Department was planning to disseminate.

Data Analytics for Federal Grant Applications

Certified Community Behavioral Health Clinics Planning Grant: On April 1, 2014, the Protecting Access to Medicare Act of 2014 (H.R. 4302) was enacted. Section 223 of the Act authorized a demonstration program to enable certified community behavioral health clinics (CCBHCs) to test prospective payment systems (PPS). The Department requested that Hilltop assist with its application for a planning grant. Hilltop used financial planning data on the volume of services of Behavioral Health Administration providers it had previously collected to identify potential pilot sites, developed the proposed rate setting/PPS methodology, and wrote the corresponding sections of the proposal.

Maternal and Infant Health Initiative Grant: To assist the Department in its application for a grant from CMS, titled *Adult Medicaid Quality: Improving Maternal and Infant Health Outcomes in Medicaid and CHIP*, Hilltop consulted with the Department about and wrote a description of the data analyses (which Hilltop would conduct) needed for the proposed project.

Hepatitis C Testing and Treatment Grant: At the request of the Department and to assist the Infectious Disease Bureau in applying to the CDC for a Hepatitis C testing and treatment grant, Hilltop calculated the number of Medicaid enrollees in FFS, HealthChoice, and PAC with a Hepatitis C diagnosis for FY 2009 to 2013 for the entire state, Baltimore City, and Baltimore County. Hilltop further delineated this information by diagnostic category, gender, age, race/ethnicity, and county.

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 calendar CY 2013. As in past years, Hilltop analyzed enrollment and utilization data and provided responses to the 22 questions for the 2015 application.

Data Management and Web-Accessible Databases

In its role as a business associate of the Department pursuant to the HIPAA Privacy Rule, Hilltop warehouses Maryland Medicaid data and a number of 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.

Data Sets

Maryland Medicaid Data: MMIS data include eligibility, special program eligibility claims and encounters (hospital/physician/lab/nursing facility, etc.), and provider information for the Maryland Medicaid program. Hilltop maintains Maryland Medicaid data back to 1991, receives updated data electronically from the Department on a monthly basis, and loads these data into analytic formats for policy, financial, and evaluation studies. Included in the data transmissions are FFS claims (medical, institutional, and pharmacy), MMIS eligibility, encounters, and PAC data. Hilltop receives and updates provider data quarterly. Hilltop processes more than 15 million Medicaid records each month, creating yearly databases in excess of 150 million records. The encounter database is the largest—with more than 120 million records—followed by the FFS database, which includes more than 50 million records and 500 variables processed annually. The national provider identifier (NPI)—a standard, unique identifier for covered health care providers, health plans, and health care clearinghouses that was adopted under HIPAA for all electronic administrative and financial transactions—has been included in Maryland Medicaid claims and HealthChoice encounters since 2008.

***LTSSMaryland*:** Built to replace the separate waiver tracking systems discussed above, *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 a uniform core standardized 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. Hilltop receives a monthly SQL database from FEi, Inc. containing a full backup of the *LTSSMaryland* reporting server back-end. This database contains information on program eligibility and participation, health assessments, and plans of care for recipients of Maryland Medicaid LTSS. Hilltop receives monthly updates of *LTSSMaryland* data.

In FY 2015, Hilltop continued to support the Department's development of *LTSSMaryland*, modifying the system to incorporate changes in the CO Waiver, CFC, and MAPC programs that became effective in January 2014. In addition to including functionality for the CO Waiver, CFC, and MAPC, *LTSSMaryland* also supports the Brain Injury (BI) Waiver, MFP, the CFC Quality Survey, nurse monitoring, independent provider qualifications tracking, and self-direction initiatives. In FY 2015, *LTSSMaryland* launched the screening and waiver registry modules, added the community settings forms (required per CMS HCBS Settings Final Rule), completed requirements documentation for phase I of the Medical Day Care Waiver module, began a redesign of the authorization to participate module, and launched major modifications to the nurse monitoring and BI modules. This includes a nightly update of MMIS eligibility and enrollment data. Hilltop has worked with the Department to develop business processes, define system requirements, review use cases and report requirements, and conduct system trainings. In addition, Hilltop participates in the change control workgroup to review system modification requests and to test system modifications. Hilltop receives and maintains a regularly updated copy of the complete *LTSSMaryland* data set to use for its analyses for the Department.

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 home residents in Maryland. These data are routinely linked to Maryland Medicaid recipients for analyses at the individual, aggregate individual, and facility levels. The MDS data are also the source of case-mix information (specifically, Resource Utilization Groups, or RUGs) that will be used to adjust Medicaid nursing home payments under revisions to the state's current nursing home payment system. The data, stored in raw and refined formats, include all MDS assessments for nursing home residents in Maryland 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.

Medicare Data: Hilltop maintains Medicare claims files for dual eligibles. 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 data use agreement (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, skilled nursing facility, outpatient, carrier, durable medical equipment, home health, and hospice data) for roughly 283,000 Medicaid recipients with dual Medicare coverage during CY 2002 through CY

2013. Medicare Part D data, covering all Medicare-covered pharmacy transactions, are also included for CYs 2006 and 2007.

eMedicaid: The Department has provided Hilltop with data from eMedicaid, a database developed and maintained by the Department that is accessible through a web-based portal and allows healthcare 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 Chronic Health Homes, implemented under an optional state plan amendment authorized by §2703 of the ACA.

Databases Developed and Maintained for the Department

Hilltop has developed several databases that it continued to maintain and update monthly for the Department, including but not limited to MCO and PAC encounters, MCO capitation, and FFS claims; provider; Medicaid eligibility; and health risk assessment (HRA). In addition, Hilltop continued to maintain and support previously developed database applications, including Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) and REM.

Decision Support System (DSS): Hilltop continued to maintain the DSS for the Department. The DSS provides password-protected web-based access to Maryland Medicaid data, including payment, eligibility, and service data 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 150 Department staff members are registered to use the DSS. In FY 2015, Hilltop continued to make improvements to the DSS and provide technical assistance to Department staff members using the system. Hilltop offered training to the Department via CDs, online tutorials, and three classes held at Hilltop. Working with the Department, Hilltop made modifications to implement a new definition for MCHP. Hilltop made additional modifications to accommodate new capitation payments for treatments for Hepatitis C. Hilltop upgraded both the database and web servers and upgraded software, moving to newer versions of ActiveX and SQL Server. New user IDs were added as needed.

Hilltop also continued to use WebFocus software, maintaining a Managed Reporting Environment (MRE), which is a user-friendly point-and-click graphical interface that accesses MMIS2 detail data and allows MMIS users to create reports, graphs, and compound reports or dashboards. The MRE can be tailored to match the skills, experience, and needs of the user and may be used by the Department's Medicaid employees with the proper authorization.

The FY 2013 acquisition of Maptitude desktop and server products augmented the existing InstantAtlas map dashboards product, allowing Hilltop to add new mapping capabilities for the

DSS, including enhanced mapping reports to support requests from the Department, such as maps using smaller geographic areas (e.g., local access area, ZIP code, and census tracts) that can be accessed through the internal DSS but not the public site.

In FY 2015, Hilltop continued the refinement of MCO reporting on the DSS site, which includes counts of enrollees and received encounters, as well as analysis of service counts. Hilltop calculated MCO inpatient kick payments and provided reference materials on procedure codes, fatal error codes, and MCO date-of-service charts.

Maryland Medicaid eHealth Statistics: Hilltop continued to maintain Maryland Medicaid eHealth Statistics (http://www.md-medicaid.org/), a public website that provides a subset of the data available on the DSS. This site allows researchers, community leaders, practitioners, and the public at large to access Maryland Medicaid health statistics.

Immunization Registry: Hilltop continued to prepare and import immunization data for Medicaid beneficiaries to the Maryland Immunization Registry. Hilltop collected data from various databases—including eligibility, claims, and provider files—to compile data on each Medicaid enrollee who had an immunization procedure during the period reported. These data provided demographic and other information on these individuals. Hilltop updates this database annually.

Health Services Needs Information: In FY 2015, Hilltop continued working with the Department to clarify issues pertaining to health risk assessment (HRA) data received from the HealthChoice Enrollment Broker, as well as the logic used to review overall compliance and compliance with specific regulations and enrollment. In addition, Hilltop continued to produce quarterly reports.

Data Requests

Throughout FY 2015, Hilltop's extensive data warehouse enabled it to fulfill hundreds of ad hoc data requests. These data requests supported policy and financial analyses conducted by the Department, Medicaid research and policy analysis conducted by external entities (with approval from the Department), and the numerous analyses and reports that Hilltop prepared during FY 2015 for the Department (see previous sections of this report). Exhibit 1 lists examples of data requests fulfilled for the Department and to support Hilltop analyses discussed in previous sections of this report. Exhibit 2 lists examples of data requests from external entities.

Exhibit 1
Selected Ad Hoc Data Requests for Analyses Conducted by the Department and Hilltop
FY 2015

- Provided data for the annual HealthChoice evaluation
- Provided data for the analysis of service utilization by beneficiaries who were enrolled in the Family Planning program
- Provided data required to complete the annual Title V Block Grant Application
- Provided the REM quarterly reports, which include data on costs, service utilization, a summary of the top 10 users based on cost overall and within each claim category, and REM recipients who do not have any claims reported during the quarter
- Provided the REM annual trend data, including cost, enrollment, and utilization data from FY 2008 to FY 2012
- Performed the preliminary and final ambulatory care VBP measures for enrollees with disabilities enrolled in HealthChoice for CY 2013
- Performed the preliminary and final lead screening VBP measure for children enrolled in HealthChoice for CY 2013
- Provided monthly reports on buprenorphine utilization data by Medicaid enrollees for the months spanning January 2010 through each month of FY 2014, as well as buprenorphine utilization data by county for Medicaid enrollees in specific months of FY 2014
- Provided the following MFR data for CY 2013: lead testing, low birth-weight, asthma and diabetes avoidable admissions, and ambulatory care racial disparities
- Provided SUD data for FYs 2012 and 2013. These data were sent to each MCO for the SUD pricing project.
- Performed a data analysis of provider types, procedure codes, and costs of providing Medicaid services to individuals enrolled in the Medicaid X02 coverage group (i.e., undocumented "aliens") in CY 2010 through CY 2012.
- Performed a data analysis on dental service utilization by children, pregnant women, and adults enrolled in Medicaid.

Exhibit 1
Selected Ad Hoc Data Requests for Analyses Conducted by the Department and Hilltop
FY 2015

- Provided information for the REM and Model Waiver populations aged 24 and under on children having complex medical conditions in the state and costs associated with hospitalization for each child.
- Provided information on the number of persons with a history of a brain injury that used Medicaid-funded case management services, including the number of users of various case management services by service, case management expenditures, and expenditures for all other Medicaid services for FY 2012 through FY 2014.
- Provided reports on MAPC users, services, and expenditures for the reporting period FY 2010 to FY 2013.
- Provided category of services information on the pre-post FFS Medicaid expenditures for new waiver enrollees for FY 2010 to FY 2013.
- Provided data on demographics and claims for all Medicaid recipients aged 18 and over for a chart book about Maryland's dually eligible population, including a comparison of duals and non-duals.
- Provided updated numbers on the number of persons transitioning from a nursing facility to the Older Adults and Living at Home Waivers for the reporting period FY 2003 through FY 2014.
- Provided data on the number of MFP participants in FY 2013 who were in MFP part of the year and the number who were in MFP for the full year.
- Provided information on the use of private duty nursing services in calendar year 2013, including the number of unique Medicaid recipients receiving private duty nursing services in CY 2013 (by various demographics).
- Provided information on nursing facility costs, non-nursing facility costs, number of nursing facility residents per month, and level of care information for the reporting period FY 2009 to FY 2013.
- Provided information on the number of Medicaid-paid baby deliveries by county and by fiscal year, including the county of residence of the mother at time of birth.
- Provided information on the use of Maryland chronic hospitals, including FFS chronic hospital expenditures and user counts for each fiscal year from FY 2009 to FY 2013.

Exhibit 1
Selected Ad Hoc Data Requests for Analyses Conducted by the Department and Hilltop
FY 2015

- Provided data on setting, type of service, and prior coverage group for newly enrolled waiver participants prior to enrolling in the Older Adults, Living at Home, Autism, and Medical Day Care Services Waivers.
- Provided reports on the number of unduplicated users and Medicaid expenditures for individuals receiving Maryland Medicaid State Plan personal care services who were not enrolled in a waiver during the same fiscal year.
- Provided information on length of stay for current Older Adults, Living at Home, Autism, and Medical Day Care Services Waiver participants.
- Provided data pertaining to level of care, monthly resident counts by age group, and both nursing facility and non-nursing facility monthly Medicaid costs for the 65 and over and the under 65 nursing facility populations.
- Provided Medicaid dental billing data for CY 2013.
- Provided data to use in administering the 2013 CAHPS® satisfaction surveys to eligible HealthChoice enrollees.
- Provided a random sample of primary care providers participating in HealthChoice, as part of the provider directory initiative.
- Performed ongoing analyses of behavioral health service utilization by Medicaid enrollees for the behavioral health integration workgroups.
- Performed an analysis of HSCRC data to estimate the number of Medicaid and non-Medicaid hospital discharges for the electronic health record incentive payment initiative.
- Merged taxpayer data provided by the Comptroller with MMIS2 and conducted ongoing analyses of Medicaid enrollment as a result of the Kids First tax mailing.
- Performed an analysis of dental service utilization and provider data to respond to the ASTDD survey.
- Provided Medicaid enrollment information for individuals potentially eligible for the Women, Infants, and Children (WIC) Program.

Exhibit 2
Selected Data Requests from External Entities
Approved by the Department and Fulfilled by Hilltop
FY 2015

- **Mathematica Policy Research:** Provided enrollment data to Mathematica Policy Research as part of the national express lane eligibility evaluation. Also prepared MFP reporting files for submission to Mathematica for the national program evaluation of MFP.
- **Delmarva:** Provided the Department and Delmarva with data used to identify the number of EPSDT recipients with childhood obesity and assisted in resolving problems with the obesity and Healthy Kids data sets for CY 2012. Also provided a data set to Delmarva with a random sample of enrollees for Delmarva's annual HealthChoice managed care encounter validation report.
- **Structured Employment Economic Development Corporation (SEEDCO):** Performed analyses identifying the number of children and adults enrolling into Medicaid and MCHP as a result of the SEEDCO referral program.
- **WBA Research/HealthcareData Company:** Prepared adult and child survey sample frames based on National Committee for Quality Assurance's 2014 specifications of HealthChoice eligible recipients for the CAHPS® health plan survey. HealthcareData Company (HDC) audited source code and final sample frames. After receiving HDC approval, transmitted final adult and child sample frames to WBA Research, HDC, and the Department.
- **University of Maryland School of Social Work:** On behalf of the Department, provided multi-year claim and encounter data for Care Management Entity youth and control groups to the Institute for Innovation and Implementation at the University of Maryland School of Social Work to support the CHIPRA Quality Demonstration Grant.
- **Maryland Health Care Commission:** With approval from the Department, developed and tested CY 2011 and 2012 Medicaid data files for inclusion in the Medical Care Database (MCDB), and constructed and tested summary cost and utilization measures. Also began reporting Medicaid data to the MCDB on behalf of the Department. Delivered two reports containing CY 2011 and 2012 Medicaid data to MHCC.

Exhibit 2
Selected Data Requests from External Entities Approved by the Department and Fulfilled by Hilltop
FY 2015

- **Benefits Data Trust:** In cooperation with the BDT, matched SNAP and MEAP data with Medicaid data for BDT's outreach to vulnerable Medicaid beneficiaries.
- **Care Management Technologies/Way Station:** Provided data, including monthly FFS claims, MCO encounters, and eligibility claims in 35 distinct files to Way Station on the number of Medicaid enrollees who received specified mental health services from 14 specific providers, including Way Station. Since June 2013, Hilltop has shadow priced the encounters for the 14 providers.
- **Maryland Health Care Commission/University of Maryland School of Pharmacy:** Provided data for the PCMH project, including CYs 2010 and 2011 claims and encounters for Medicaid enrollees with a PCP in the study or control group for the PCMH evaluation. Hilltop asked HealthChoice MCOs to identify Medicaid enrollees assigned to specified PCP practices and to price encounters.
- **Optumas:** Transferred MMIS and dual-eligible Medicare data sets to Optumas for development of savings projections for Maryland's proposed Community Integrated Medical Home. This actuarial analysis was required for the state's application to the federal government for a State Innovation Model award.

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