The Hilltop Institute

analysis to advance the health of vulnerable populations

Maryland Department of Health and Mental Hygiene
FY 2012 Memorandum of Understanding
Annual Report of Activities and Accomplishments

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UMBC

AN HONORS UNIVERSITY IN MARYLAND

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Executive Summary: *Highlights*

A Nationally Recognized Partnership

Hilltop was founded on July 1, 1994, in partnership with the Maryland Department of Health and Mental Hygiene (the Department), which administers the Medicaid program in Maryland. Since its inception, Hilltop's work with Maryland Medicaid has been supported through an annual Memorandum of Understanding (MOU) with the Department. This report discusses activities and accomplishments under the fiscal year (FY) 2012 MOU. Below are the highlights.

Medicaid: *Program Development and Policy and Financial Analysis*

- Prepared the eleventh annual report for the Maryland Legislature on the Reimbursement Rates Fairness Act.
- Conducted a number of analyses on physician fees.
- Continued to support the Department in its efforts to expand eligibility for Medicaid to uninsured children and their families and to expand the benefits in the Primary Adult Care (PAC) program by analyzing various characteristics of those enrolled in the programs.
- Concluded its work on its study to evaluate the outreach process of the Kids First Act to determine whether the use of tax forms is effective in identifying and enrolling children who are uninsured but eligible for Medicaid or the Maryland Children's Health Program (MCHP). Hilltop prepared all the final reports for the project, including a report on the final evaluation results.
- Hilltop assisted the Department with providing enrollment and retention data to Mathematica Policy Research, Inc. so that it could proceed with the CHIPRA-mandated evaluation of Express Lane Eligibility.
- Reported on Medicaid and MCHP enrollment and service utilization by pregnant women, infants, and children to assist the Department with both its 2012 and 2013 applications for the Maternal and Child Health Block Grant.
- Provided the Department with the number of Medicaid enrollees in Maryland who received hemodialysis or peritoneal dialysis in calendar year (CY) 2010 and CY 2011.
- Performed an analysis of Medicaid expenditures for enrollees during their last six months of life.
- Matched data from the Maryland Health Care Commission with the Medicaid Management Information System (MMIS2) to identify the length of Medicaid enrollment for each individual in FY 2010 and FY 2011
- Performed a number of studies on service utilization by various coverage groups.

- Matched Title X family planning clinic records from CY 2008 through CY 2010 with Medicaid enrollment and claims records from CY 2006 through CY 2010 for a study of family planning services rendered to clients of Title X-funded family planning clinics and Medicaid enrollees.
- Evaluated the Emergency Department Diversion Project by: reviewing the subgrantees' data and intervention evaluations; comparing the interventions; analyzing the data as a whole as well as comparing subgrantees' data against MMIS2 data and data on uninsured individuals from the Maryland Health Services Cost Review Commission (HSCRC); and reporting key findings.
- Conducted an analysis of the Basic Health Plan option of the Affordable Care Act that addressed the policy issues and financial feasibility of implementing a Basic Health Plan in Maryland.
- Continued to calculate the reimbursement rates from the Trauma and Emergency Medical Fund on a monthly and annual basis.
- Improved the Decision Support System (DSS) by identifying new content areas to add, increasing functionality, adding new reports, and using WebFocus to develop new DSS applications, such as the Managed Reporting Environment, which is a user-friendly point and click graphical interface that has access to MMIS2 detail data.
- Added new mapping capabilities for the DSS with the acquisition of InstantAtlas, a software product that supports interactive dashboards that include maps, data tables, and charts and graphs.

HealthChoice: *Program Support, Evaluation, and Financial Analysis*

- Prepared the HealthChoice §1115 Waiver annual evaluation, which was structured based on the HealthChoice program goals set forth by the Department in the following areas: coverage and access to care under HealthChoice; the extent to which HealthChoice provides a medical home and continuity of care; the quality of care delivered to enrollees; program financing and budget neutrality; special topics, including dental services, reproductive health services, mental health care, substance abuse treatment services, and racial/ethnic disparities in utilization; and access and quality of care under Maryland's signature PAC program.
- Continued to produce detailed financial analyses, which assisted the Department in the development of Medicaid financial policy, fiscal notes, and rate setting.
- Developed risk-adjusted capitation payments for MCOs participating in HealthChoice; staffed the Department's MCO Rate Setting Committee; provided consultation to the MCOs; and supported the HSCRC in its review of providers.
- Analyzed MCO performance and prepared the HealthChoice Financial Monitoring Report; compared the performance of provider-sponsored organizations (PSOs) to non-PSOs; analyzed specific variances in membership, premium income, and cost of medical

care between CYs 2007 and 2008; and prepared a complete financial report package analyzing MCO underwriting.

- Continued the development of a rate methodology for benefits in the PAC program.
- Estimated payments to federally qualified health centers for services provided to PAC program enrollees with retroactive HealthChoice eligibility.
- Prepared quarterly analytic reports and an annual trends report for the Rare and Expensive Case Management (REM) program.
- Analyzed the utilization of EDs by Medicaid enrollees in CY 2010 as well as an analysis of ambulatory care utilization by Medicaid enrollees who visited the emergency department.
- Performed a completeness review of an MCO application and assisted the Department in drafting its response to the MCO.
- Performed a number of special analyses as background to better understanding Medicaid beneficiaries' need for and utilization of mental health and substance abuse services by: providing the Department with monthly data on Buprenorphine utilization by Medicaid enrollees identified persons in Medicaid with a mental health disorder or substance use disorder (SUD) as well as the total number of Medicaid services used by these enrollees for FY 2008, FY 2009, FY 2010, and FY 2011.
- Conducted a number of analyses on MCO SUD expenditures.
- Performed an analysis of dental service utilization for children in foster care during calendar year (CY) 2005 through CY 2011.
- Performed an analysis to assist the Department in monitoring enrollment compliance of the MCOs.
- Conducted a number of analyses to assist the Department in learning more about dental service utilization.
- Conducted a number of analyses to assist the Department in preparing its *Annual Report to the General Assembly on Dental Care Access in HealthChoice.*
- Verified the completeness, correctness, and reliability of encounter data through monthly, quarterly, and annual reports to the Department and MCOs, and regularly reviewed the data to ensure its validity.
- Prepared quarterly childhood lead level reports to assist the Department in reporting results of lead tests to the Maryland Department of the Environment (MDE) and the MCOs. 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 sent to MDE.
- Prepared the HealthChoice value-based purchasing targets for CY 2012.

- Analyzed the number of avoidable asthma and diabetes inpatient claims and avoidable hospital admissions, and prepared lead testing and racial disparities measures for the Managing for Results initiative.

Long-Term Services and Supports: ***Program Development, Policy Analysis, and Financial Analytics***

- Began working with the Department in support of the structural changes needed to implement the Balancing Incentive Payment Program.
- Continued to assist the Department in the development and implementation of its statewide Medicaid Money Follows the Person (MFP) Demonstration.
- Designed a pilot study to compare the "level of care" determinations of the interRAI assessment tool with the determinations made by Maryland's current tool.
- Continued to develop linked Medicare and Medicaid data to assist in the analysis of the needs of Medicare-Medicaid enrollees to explore how coverage by both Medicare and Medicaid impacts the utilization, delivery, and costs of services.
- Continued to produce semi-annual reports for the Centers for Medicare and Medicaid Services (CMS) on the state's progress in achieving MFP benchmarks.
- Provided monthly point-in-time (June) data on individuals enrolled in waiver programs, MFP, and nursing facilities for 2008 through 2012.
- Released a third series of chart books entitled *Medicaid Long-Term Services and Supports in Maryland*, which summarize demographic, service utilization, and expenditure data for state FYs 2007 through 2010.
- Examined a sample of Statewide Evaluation and Planning Services assessments to determine whether the authorized service level matched actual Medicaid claims and whether deficiencies in activities of daily living and instrumental activities of daily living were related to authorized service levels.
- Continued the development of reimbursement rates for nursing homes, the Program for All-Inclusive Care for the Elderly, and the Trauma and Emergency Medical Fund.
- Performed a number of analyses on services for persons with traumatic brain injury (TBI).
- Continued to conduct analyses and produce reports on the Medicaid home- and community-based services waivers on service utilization, enrollment, and demographics of waiver populations.
- Produced the FY 2010 CMS 372 reports for the Older Adults Waiver, Living at Home Waiver, TBI Waiver, Community Pathways Waiver, New Directions Waiver, Autism Waiver, and Model Waiver.
- Produced monthly updates for Maryland's StateStats website on cumulative enrollment.

- Conducted a number of analyses to assist the Department in its efforts to learn more about recipients of services from the Developmental Disabilities Administration.
- Continued development of the *MFP Tracking System*, a web-based system used statewide to manage MFP business processes.
- Continued developing the integration of the nursing facility Minimum Data Set (MDS) data submission process with the MFP tracking system.
- Maintained and modified waiver tracking systems by adding a new activity tracking module, developing a new error reporting tool, developing several new reports, and improving the system's security.
- Supported, maintained, and provided on-going system modifications for the Quality Care Review Tracking System.
- Continued and expanded its role in support of the Department's creation of an integrated long-term services and supports (LTSS) information system.
- Conducted system requirements analysis for the new integrated system; created a single user interface for the existing tracking systems; and developed an algorithm for a new Core Standardized Assessment for persons seeking LTSS.
- Coordinated the development of a sub-contract with the software development company that will develop and install the platform for the integrated system; developed a project plan, and coordinated the activities among the Department, Hilltop, and the software company.

Data Management and Web-Accessible Databases

- Maintained and managed all of Maryland's Medicaid data, processing 12 million records monthly and creating yearly databases in excess of 150 million records.
- Maintained HSCRC hospital data from 2006 through 2012.
- Maintained MDS data from nursing homes for all residents.
- Continued the refinement of the MCO reporting on DSS site with reporting on both MCO and PAC usage.
- Updated and expanded the *Eye on Medicaid* site.
- Continued to maintain Maryland Medicaid eHealth Statistics, a public website providing a subset of the data available on the DSS, which allows researchers, community leaders, practitioners, and the public at large to access Maryland Medicaid health statistics.
- Prepared hundreds of ad hoc data reports to support the work of the MOU.

IT Architecture and Platform

- Provided a protected information technology (IT) architecture and platform to insure adherence to the Health Insurance Portability and Accountability Act of 1996 regulations regarding electronic security.
- Utilized a three-tiered electronic defense and surveillance system that protects the information and data from outside UMBC, outside the Hilltop network, and within the Hilltop network.
- Utilized a Virtual Private Network (VPN) device to allow for remote access for both work-at-home scenarios and disaster recovery operations, as well as for increasing the protection of web-based applications that collect protected health information.
- Improved security by isolating WebFocus, the waiver tracking systems, and remote access from the Internet via the VPN.
- Migrated Hilltop's data warehouse to the new Storage Area Network.
- Further strengthened data security with the addition of a new security information and event management system.
- Added the *LTSSMaryland* website used for tracking applications to Maryland's Medicaid waiver programs.

A Nationally Recognized Partnership

History

UMBC established The Hilltop Institute in 1994 as the Center for Health Program Development and Management (the Center) in partnership with the Maryland Department of Health and Mental Hygiene (the Department). Initially chartered to design and manage Maryland's High-Risk Patient Management Initiative, Hilltop (as the Center) was staffed by nurses and case managers in addition to 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 this population have multiple, complex health care needs, but also 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 were utilized in the most cost-effective manner. Together, the Department and UMBC worked to design a university-based center that would not only develop and manage this unique program, but also provide research and analytics to determine if 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 taken over by the Department. Hilltop continues to provide data analysis and monitoring for the 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 that program expanded. Hilltop collaborated with the Department in the development of HealthChoice, Maryland's mandatory Medicaid managed care program, 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.

Hilltop develops other initiatives with the Department, such as the Primary Adult Care (PAC) program and the Money Follows the Person (MFP) program; provides monthly, quarterly, and annual reports on such topics as reimbursement rates, REM, and home- and community-based services (HCBS) waivers; and provides analysis to assist the Department in its planning for initiatives like Medicaid Expansion.

Hilltop warehouses all of the state's Medicaid claims, eligibility, provider, and other data, and answers hundreds of data requests each year.

Hilltop continues to provide consultation on major and salient health issues, such as federal health reform, to assist the Department in meeting its goal of ensuring that all Marylanders have access to affordable and appropriate health care.

Continuing the Collaboration

Hilltop's successful state-university partnership with the Department, its founding partner, 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.* Hilltop looks forward to this continuing collaboration.

Memorandum of Understanding

Hilltop's work with Maryland Medicaid is supported through an annual memorandum of understanding (MOU) with the Department. This report presents activities and accomplishments of the fiscal year (FY) 2012 (July 1, 2011, through June 30, 2012) MOU.

Medicaid

Program Development and Policy and Financial Analysis

During FY 2012, Hilltop prepared annual and quarterly reports; supported the Department in its efforts to expand Medicaid eligibility to uninsured children and their families, as well as childless adults; and conducted other special studies and analyses of the Maryland Medicaid program at the Department's request.

Reimbursement Rates Fairness Act: Pursuant to Senate Bill 481 (Chapter 464 of the Acts of 2002) and HB 70 – *Commissions, Programs and Reports – Revision* (Ch. 656 of the Acts of 2009), Hilltop prepared the eleventh annual report for the Maryland legislature. The report addressed progress the state has made in updating fee-for-service (FFS) Medicaid reimbursement rates to promote provider participation in the Medicaid program. Specifically, the report assessed the progress of establishing the rate setting process; provided a comparison of Maryland Medicaid's reimbursement rates with the rates of other states and Medicare; addressed the schedule for bringing Maryland's reimbursement rates to a level that assures provider participation in the Medicaid program; and discussed the estimated costs of implementing the schedule and proposed changes to the FFS reimbursement rates.

Physician Fees: In addition to the analyses described above, in FY 2012, Hilltop consulted with and provided technical assistance to the Department in regard to increasing physician fees. Hilltop provided guidance on rate structures to utilize when comparing Medicaid rates to Medicare rates and performed an analysis of the cost increases to the Department of raising the evaluation and management (E&M) reimbursement rates to primary care physicians to their July 1, 2009, levels to comply with provisions of the Affordable Care Act (ACA).

Medicaid Expansion: In FY 2012, Hilltop continued to support the Department in its efforts to expand Medicaid eligibility to childless adults and uninsured children and their families, and to expand the benefits in the PAC program. Hilltop provided data on monthly enrollment in the PAC and Medicaid expansion programs for January 2010 through July 2011, by county. Hilltop also conducted an analysis of inpatient and outpatient hospital service utilization by individuals who were enrolled in the Medicaid Expansion program in FY 2009 and FY 2010. Hilltop compared the number of inpatient and outpatient visits, length of inpatient stays, and number of outpatient services among Medicaid Expansion enrollees by their months of enrollment, ranging from 13 to 24 months. The same analysis was also performed for the PAC population. Hilltop calculated the average monthly Medicaid Expansion population enrollment for FY 2010 and FY 2011; compared the overall utilization of Medicaid Expansion enrollees to the utilization of newly enrolled Medicaid Expansion enrollees for both FY 2010 and FY 2011; and used the

actual run-out trends in FY 2010 to project the May through July 2012 run-out numbers. In addition, Hilltop calculated the frequency of inpatient and outpatient claims and encounters for Medicaid Expansion and PAC enrollees in FY 2010 and projected this frequency for FY 2011 based on FY 2010 data.

Kids First Act: House Bill (HB) 1391, The Kids First Act, added §10-211.1 of the Tax-General Article (the statute) to the Annotated Code of Maryland effective July 1, 2008. The Kids First Act requires the Department to "study and make recommendations for improving the processes for determining eligibility for the Maryland Medical Assistance Program and the Maryland Children's Health Program (MCHP), including the feasibility of facilitating outreach or auto-enrollment through linkages with other electronic data sources." In FY 2009, the Department and Hilltop were commissioned by the Robert Wood Johnson Foundation State Health Access Reform Evaluation (SHARE) program to evaluate the outreach process for the Kids First Act to determine whether the use of tax forms is effective in identifying and enrolling children who are uninsured but eligible for Medicaid or the Children's Health Insurance Program (CHIP). In FY 2010, Hilltop analyzed the findings from this study, published them in an issue brief entitled *Using Information from Income Tax Forms to Target Medicaid and CHIP Outreach: Preliminary Results of the Maryland Kids First Act,* and disseminated findings nationwide.

Hilltop continued to disseminate the findings from the study in FY 2011. The project produced a second issue brief—this time published by Hilltop (co-authored by Hilltop and the Department)—entitled *Overcoming Interagency Data-Sharing Barriers: Lessons from the Maryland Kids First Act,* which discussed the issues the state encountered when trying to share data between the Department and the Comptroller. This brief garnered much attention nationally as other states struggled with similar issues and looked to Maryland as an example. Hilltop also presented the study findings at the AcademyHealth Annual Research Meeting.

Since the passage of the Kids First Act, Hilltop has monitored the Department's outreach efforts. Although there has been an increase in enrollment of children into Medicaid and CHIP, it has been difficult to determine the cause of the increase—whether it was associated with the outreach effort, the economic crisis, and/or other factors. The state's data-sharing issues hampered Hilltop's efforts to evaluate the outreach strategy and hampered the state's efforts to evaluate whether the Kids First Act was achieving its desired goals. In FY 2010, Hilltop helped the Department develop an effective strategy to eliminate impediments to achieving the goals of the Kids First tax-based outreach initiative. Since that time, the Maryland General Assembly passed a law that eliminates these impediments. As a result, the data necessary for Hilltop to study the outreach effort were made available in FY 2012. Hilltop secured an extension of the SHARE grant to enable the completion of the evaluation.

In FY 2012, Hilltop concluded its work on the SHARE-funded aspect of this project. Hilltop developed a list of variables and the Comptroller provided the Department with a data set containing demographic and income information for Maryland residents who indicated consent to share their data in tax year 2010. Hilltop matched these data to Medicaid data to identify tax filers and dependents that were already enrolled so that the Department could eliminate those people from the outreach effort. Hilltop prepared all the final reports for the SHARE grant, including a report on the final evaluation results. Hilltop will continue to analyze the taxpayer and enrollment data at the Department's request.

Express Lane Eligibility: In FY 2012, Hilltop assisted the Department with providing enrollment and retention data to Mathematica Policy Research, Inc. so that it could proceed with the CHIPRA-mandated evaluation of Express Lane Eligibility.

Maternal and Child Health Block Grant: In FY 2012, Hilltop assisted the Department in providing supplemental information requested by the Maternal and Child Health Bureau for the 2012 and 2013 applications for the Maternal and Child Health Block Grant. For the 2012 application, Hilltop provided demographic information on pregnant women, infants, and children enrolled in the program. For the 2013 application, Hilltop provided the data for and drafted the responses to the application's 24 questions pertaining to Medicaid and MCHP enrollment and service utilization by pregnant women, infants, and children in calendar year (CY) 2011.

Enrollees Receiving Dialysis: In FY 2012, Hilltop provided the Department with the number of Medicaid enrollees in Maryland who received hemodialysis or peritoneal dialysis in CY 2010 and CY 2011. Hilltop provided this information for all of Maryland and also delineated it by county.

Expenditures in Last Six Months of Life: In FY 2012, Hilltop performed an analysis of Medicaid expenditures for enrollees during their last six months of life. Hilltop identified all deaths of Medicaid enrollees in CY 2010, identified all of these enrollees' services in the six months prior to their death, and identified the costs associated with those services. Hilltop also updated the analysis to determine what portion of those expenditures were related to crossover payments for services received by Medicare-Medicaid enrollees.

Length of Medicaid Enrollment: At the request of the Department, Hilltop matched data from the Maryland Health Care Commission (MHCC) with the Medicaid Management Information System (MMIS2) to identify the length of Medicaid enrollment for each individual in FY 2010 and FY 2011. These data were used to determine the enrollment criteria for Medicaid beneficiaries participating in the patient-centered medical home (PCMH) project.

Coverage Groups: In FY 2012, at the request of the Department, Hilltop performed a number of studies on service utilization by various coverage groups. Hilltop performed an analysis of total service utilization for enrollees in select Medicaid coverage groups for CY 2008 through CY 2010. Hilltop identified the number of Medicaid recipients enrolled in Supplemental Security Income for any period in CY 2010 and CY 2011, as well as the number of recipients enrolled in December of those years. In addition, Hilltop provided a report on how many children, aged 0 to 20 years, were enrolled in CHIPPRA in federal FY 2011.

Title X: At the request of the Department, Hilltop matched Title X family planning clinic records from CY 2008 through CY 2010 with Medicaid enrollment and claims records from CY 2006 through CY 2010 for a study of family planning services rendered to clients of Title X-funded family planning clinics and Medicaid enrollees.

Emergency Department Diversion Project Evaluation: In 2008, the Centers for Medicare and Medicaid Services (CMS) awarded grants to 20 states to develop and implement emergency department (ED) diversion pilot programs. The Department received one of these grants and implemented the *Maryland Improving Access to Care by Reducing Inappropriate Use of Emergency Rooms* project. The Department solicited requests for proposals that increased access to community services in lieu of preventable hospital emergency services, and awarded two-year subgrants to the Primary Care Coalition of Montgomery County (PCC) and Baltimore Medical Systems (BMS). As part of its award to the Department, CMS required an evaluation of the project. The Department required that its subgrantees collect data and evaluate the effectiveness of their respective interventions. In FY 2012, Hilltop evaluated the project by reviewing the subgrantees' data and intervention evaluations; comparing the interventions; analyzing the data as a whole and comparing subgrantees' data against MMIS2 data and data on uninsured individuals from the Maryland Health Services Cost Review Commission (HSCRC); and reporting key findings. Hilltop also drafted the final evaluation report submitted to CMS.

Basic Health Plan: In FY 2012, at the request of the Department, Hilltop conducted an analysis of the Basic Health Plan option, a health coverage option found in Section 1331 of the ACA. The analysis addressed the policy issues and financial feasibility of implementing a basic health plan in Maryland.

Trauma and Emergency Medical Fund: In FY 2012, Hilltop continued to calculate the reimbursement rates from the Trauma and Emergency Medical Fund on a monthly and annual basis.

Decision Support System: Hilltop developed and maintains the Decision Support System (DSS), a password-protected system maintained for the exclusive use of the Department, which

provides easy access to data on Medicaid program eligibility, enrollment, service utilization, and payments. Currently, about 130 Department staff members are registered to use the DSS. In FY 2012, Hilltop continued to make improvements to the DSS and provide technical assistance to Department staff using the system. Hilltop offered training to the Department through CDs, online tutorials, and classes here at Hilltop. New user IDs were added as needed. Working with the Department, Hilltop identified new content areas to add to the DSS, increased functionality, and added new reports.

In FY 2012, Hilltop continued to use WebFocus software that allows for new features on the DSS that were not previously available. These applications were tested at Hilltop and are being implemented on the Department's production DSS server. Hilltop enhanced the Managed Reporting Environment (MRE), a user-friendly point and click graphical interface that has access to MMIS II detail data and allows MMIS users to create reports, graphs, and compound reports or dashboards, and can be tailored to match the skills, experience, and needs of the user. The MRE environment was improved in 2012 to provide additional reporting capabilities. Calendar year service files have been added for all years in the eligibility, claims, and encounter databases. The enhanced MRE environment is in production mode and may be used by the Department's Medicaid employees with the proper authorization.

In FY 2012, Hilltop continued converting the existing DSS applications to add new capabilities that give more depth and more options to custom reports. In addition, a new option from Webfocus allows interactive standard reports and graphs to be output into a portable format to download from the DSS—or be distributed in another secure format—and run independently of the DSS data warehouse. This work will carry forward into FY 2013. New applications have been developed for the DSS and will be added when the DSS is converted to a new website, anticipated before the end of FY 2013.

In FY 2012, Hilltop added new mapping capabilities for the DSS with the acquisition of InstantAtlas, a software product that supports interactive dashboards that include maps, data tables, and charts and graphs. These reporting tools are grouped together in a page-sized frame with dynamic interoperability. The new InstantAtlas applications made their debut on the DSS public site with over a dozen reports on health conditions and services in the state of Maryland. The applications contain statistics at the state and county levels, as well as drill-down reports for more detailed statistics. Hilltop plans to provide additional mapping reports in support of requests from the Department in FY 2013, such as maps using smaller geographic areas (LAA, zip code, and census tracts), which would be added to the private DSS. InstantAtlas also provides Hilltop with additional capabilities such as user-guided reporting for data tables, advanced charts and graphs, and ad hoc maps for users.

HealthChoice

Program Support, Evaluation, and Financial Analysis

In FY 2012, Hilltop continued its key role in supporting HealthChoice, Maryland's managed care program, by assisting the Department in collecting and validating encounter data, monitoring program performance, developing capitation rates and monitoring the finances for HealthChoice and PAC, and carrying out 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. In FY 2012, Hilltop conducted the annual HealthChoice §1115 Waiver evaluation, which 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 dental services, mental health care, services provided to children in foster care, reproductive health services, the REM program, and racial/ethnic disparities in utilization; and access and quality of care under the PAC program.

Hilltop continued to perform in-depth analyses on measures such as ambulatory service utilization by enrollees who also utilized the ED and provider network adequacy; integrated results from other standard HealthChoice reports, such as provider and Consumer Assessment of Healthcare Providers and Systems (CAHPS®) survey results; included benchmarks for measures where standardized national comparisons were available, such as Healthcare Effectiveness Data and Information Set (HEDIS) measures; and continued to take a substantial role in designing and drafting the report. The evaluation's increased depth and policy context continued to allow the Department to better demonstrate the program's achievements. As in the past year, the evaluation of the PAC program was included in the HealthChoice evaluation. Hilltop analyzed enrollment and utilization data to determine participation levels and demographics of program participants, as well as to assess the program.

In FY 2012, Hilltop followed the same format it developed in FY 2010, which was framed around the Department's goals for HealthChoice and used not only state but also national benchmarks, such as HEDIS data, to conduct the evaluation. This once again provided the Department strong evidence that HealthChoice continues to be successful in achieving its stated goals related to coverage and access to care, providing a medical home to enrollees, and improving quality of care.

HealthChoice Financial Analysis: In FY 2012, Hilltop continued to produce detailed financial analyses, which assisted the Department in the development of Medicaid financial policy, fiscal

notes, and rate setting. Hilltop worked with the Department to develop risk-adjusted capitation payments for managed care organizations (MCOs) participating in HealthChoice. Maryland's risk-adjusted payment methodology is based on the Johns Hopkins University Adjusted Clinical Group (ACG) Case Mix System. The methodology is continuously refined to accommodate program and policy changes. Hilltop subcontracted with Johns Hopkins for ongoing support in the development of the rate methodology and with Optumas to secure actuarial certification, which is required to obtain federal financial participation in HealthChoice. In FY 2012, the state paid $3 billion in capitation payments to the seven MCOs participating in HealthChoice, providing insurance for more than 913,000 Medicaid beneficiaries. Hilltop continued to staff the Department's MCO Rate Setting Committee, provide consultation to the MCOs, and support the HSCRC's review of providers.

HealthChoice Financial Monitoring Report: In order to better understand 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 non-PSOs. In FY 2012, Hilltop analyzed specific variances in membership, premium income, and cost of medical care between CY 2009. 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 analyzing MCO underwriting performance.

PAC Program: Hilltop continued the development of a rate methodology for PAC benefits in FY 2012, basing rates solely on actual utilization and costs in the development of CY 2012 rates. Hilltop began maintaining quarterly PAC financial monitoring reports and reports to measure the variance between planned enrollment and capitation payments to results. During CY 2010, PAC benefits were expanded and rates were developed to cover hospital-billed ED services, as well as additional substance abuse benefits. Plan-level risk scores were developed to incorporate the MCOs' acuity into the payment methodology. In FY 2012, CY 2012 PAC rates were implemented to reflect regional resource differences between Baltimore City and the rest of the state.

PAC Payments to FQHCs: In FY 2012, at the request of the Department, Hilltop estimated payments to federally qualified health centers (FQHCs) for services provided to PAC program enrollees with retroactive HealthChoice eligibility. The analysis was conducted in response to concerns raised by the FQHCs that the MCOs should pay the full FQHC cost-based rate for PAC enrollees that gain retroactive full HealthChoice eligibility. (At the time of the study, FQHCs were reimbursed for these services based on the physician fee schedule.) For this study, Hilltop

compared the payments for services provided to these enrollees through the physician fee schedule with the payments through the FQHC cost-based rate and reported the results.

Rare and Expensive Case Management: The REM program serves persons with multiple and severe health care needs. In FY 2012, 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. In addition, Hilltop included other analyses of the REM population in its evaluation of the HealthChoice program, discussed in the next section. Responding to a special request from the Department, Hilltop provided information about a particular Medicaid enrollee regarding costs of services received, categorized by service, for each year since the enrollee was first enrolled in Medicaid.

Emergency Department Utilization: In FY 2012, Hilltop analyzed the utilization of EDs by Medicaid enrollees in CY 2010 and ambulatory care utilization by Medicaid enrollees who visited the ED. Hilltop then revised the analysis to present more detailed data for MCO and FFS enrollees separately.

MCO Review: Whenever an MCO applies to be a part of the HealthChoice program, the application must undergo a completeness review. In FY 2012, Hilltop performed one such completeness review and assisted the Department in drafting its response to the MCO.

Behavioral Health Services: In FY 2012, Hilltop performed a number of special analyses as background to better understanding Medicaid beneficiaries' need for and utilization of mental health and substance abuse services. In addition, Hilltop continued to provide the Department with monthly data on Buprenorphine utilization by Medicaid enrollees. Hilltop identified persons in Medicaid with a mental health disorder (MHD) or substance use disorder (SUD), as well as the total number of Medicaid services used by these enrollees for FY 2008, FY 2009, and FY 2010. Hilltop updated this analysis to include utilization numbers for this population for 2011.

MCO Substance Abuse Treatment Costs: In 2009, the Maryland General Assembly enacted legislation effective January 1, 2010, that required HealthChoice and PAC MCOs to report to the Department the number of enrollees provided substance abuse treatment services and the total amount of money spent on substance abuse treatment. In FY 2012, Hilltop conducted a number of analyses on MCO SUD expenditures. Hilltop provided information on how it identifies outpatient SUD encounters submitted by MCOs for the Medicaid substance abuse cost reporting requirement. Hilltop compiled the outpatient SUD treatment encounters with a date of service between July 1, 2010, and December 31, 2010, as well as a few "run-out" encounters that may date as far back as the beginning of FY 2009 or July 1, 2008, that Amerigroup Community Care submitted to the MMIS2 to assist them with their semi-annual reporting responsibilities to the

Department. Hilltop also compiled the outpatient SUD treatment encounters with a date of service between January 1, 2011, and June 31, 2011, as well as a few "run-out" encounters that may date as far back as fiscal year 2009, that Medstar Family Choice submitted to the MMIS2 to assist them with their semi-annual reporting responsibilities to the Department. Hilltop assisted the Department in responding to a request from the General Assembly and provided aggregated payment data for outpatient SUD treatment services for FY 2009 and FY 2010. Hilltop followed up on this request by also providing data on unpaid outpatient SUD MCO encounters for FY 2009 and FY 2010 (July 1, 2008 - June 30, 2010).

Children in Foster Care: Hilltop performed an analysis for CY 2005 through CY 2011 to measure the percentage of all children in foster care aged 0 through 20 years who had at least one dental service during the calendar year, as well as the percentages by: county, region, race, and gender.

MCO Enrollment Compliance: In FY 2012, Hilltop performed an analysis to assist the Department in monitoring enrollment compliance of the MCOs. Hilltop analyzed MMIS2 data to find evidence that MCOs had initiated care delivery to newly assigned HealthChoice enrollees within the timeframe and according to health indicators designated by the Code of Maryland Regulations (COMAR), including performing health risk assessments.

Dental Service Utilization: In FY 2012, Hilltop conducted a number of analyses to assist the Department in learning more about dental service utilization. Hilltop conducted an analysis of dental services utilization by children aged 4 through 20 years for CY 2005 through CY 2010 that assessed the percentage of children in each MCO who received at least one dental service during the year, using different measures of enrollment (those who were enrolled in the same MCO for 320 or more days during the measurement year; enrolled in that MCO as of December 31 of the measurement year; had no more than one gap in enrollment during the calendar year, and the gap did not exceed 45 days; and were aged 4 through 20 years as of December 31 of the measurement year). Following up with a previous report, Hilltop analyzed enrollment and dental service use by Medicaid enrollees who reside in nine Maryland Eastern Shore counties for CY 2010. To assist the Department in responding to the Association of State and Territorial Dental Directors (ASTDD) State Synopsis Questionnaire 2012, Hilltop updated an analysis of Medicaid and MCHP enrollment and dental service utilization for children enrolled in the two programs in FY 2011 to include the number of Medicaid and MCHP enrollees, as well as information on Medicaid dental providers. Hilltop compiled data on dentists who provided services to children aged 0 through 8 years and 9 through 20 years in Medicaid in FY 2010, which included the: name, provider number, address, and phone number of all Medicaid dental providers; number of procedures by provider; number of unique patients for each procedure; amount billed; and amount reimbursed. In addition, Hilltop compiled information on dentists who provided services

to children in Medicaid aged 0 through 8 years and 9 through 20 years in FY 2011 that included the following: name, provider number, address, and phone number; number of claims by procedure code; number of unique patients by procedure code; amount billed by procedure code; amount reimbursed by procedure code; and a summary report of the number of claims, unique enrollees, amount billed, and amount reimbursed.

Dental Action Committee Annual Report: Hilltop also conducted a number of analyses to assist the Department in preparing its *Annual Report to the General Assembly on Dental Care Access in HealthChoice.* Hilltop analyzed dental service utilization by children in the REM program and in foster care for CY 2006 through CY 2010, based on the following measures: the percentage of children aged 0 through 20 years who received at least one dental service while enrolled in the REM program during the calendar year; the percentage of children aged 0 through 3 years who received at least one dental service while enrolled in the REM program during the calendar year; the percentage of children aged 0 through 20 years, by region, who received at least one dental service while enrolled in the REM program during the calendar year; dental expenditures for children aged 0 through 20 years, by region, who were enrolled in the REM program for any period in the calendar year; the percentage of children in foster care aged 0 through 20 years who had at least one dental service while in foster care during the calendar year; the percentage of foster care children aged 0 through 3 years who had at least one dental service while in foster care during the calendar year; the percentage of foster care children aged 0 through 20 years, by region, who had at least one dental service while in foster care during the calendar year; and dental expenditures for foster care children aged 0 through 20 years, by region, who were in foster care during the calendar year. Hilltop also analyzed dental utilization and provider data for the same time period based on the following measures: the percentage of children aged 0 through 20 years who had at least one dental visit while enrolled in HealthChoice for any period in the calendar year; the percentage of children aged 0 through 20 years who received a preventive/diagnostic dental visit followed by a restorative dental visit while enrolled in HealthChoice for any period in the calendar year; the number of ED visits with any dental diagnosis or procedure for children aged 0 through 20 years who were enrolled in HealthChoice for any period in the calendar year; the number of dentists billing one or more services to HealthChoice in the calendar year; and the number of dentists billing $10,000 or more to HealthChoice in the calendar year. Finally, Hilltop analyzed dental services utilization of pregnant women during CY 2006 through CY 2010 for the following measures: the percentage of pregnant women aged 21 years and older who received at least one dental encounter or claim while enrolled in Medicaid for at least 90 days in the calendar year; and the percentage of pregnant women aged 14 years and older who received at least one dental encounter or claim while enrolled in Medicaid for any period in the calendar year.

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 its validity. Encounter data were used not only to evaluate access to care and network adequacy, but also 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 the identification of 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; cohorts by risk-adjusted category assignments; and comparison of encounters for specialized AIDS services with encounters in specific AIDS diagnostic categories. The process Hilltop continued to follow for continuously monitoring and validating encounter data was described in a November 2005 report. A major accomplishment in this validation process that occurred in CY 2006 was that default provider IDs would no longer be accepted in the institutional data, dental data, or professional data, thus increasing the amount of useful information on each encounter. In 2007, the Department began to receive encounters with National Provider Identifiers (NPIs). In addition, Hilltop began to analyze PAC encounter data. The reports concluded that the completeness and accuracy of encounter data continue to improve. Maryland continues to be recognized nationally for the completeness and quality of its encounter data.

In FY 2012, Hilltop produced two encounter data validation reports for CY 2010—one on MCO encounters and one on PAC encounters. At the request of the Department, Hilltop also provided the Delmarva Foundation with a random sample of HealthChoice encounter records from the hospital inpatient, outpatient, and physician services that occurred in CY 2010 for the purpose of describing the sample sizes and listing the data fields provided for validation.

Work Groups: In FY 2012, Hilltop staff participated with Department staff in monthly MCO Internal Work Group meetings and monthly MCO Liaison meetings. In addition, Hilltop attended the Maryland Medicaid Advisory Committee meetings to keep abreast of Departmental activities and information pertinent to Hilltop's work.

Childhood Lead Reporting: Maryland law requires all lead tests performed on children aged 0 through 18 years to be reported to the Maryland Department of the Environment (MDE) Childhood Lead Registry (CLR). At the Department's request, Hilltop performs this task by utilizing 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 number and percentage of blood lead testing rates and elevated

blood lead levels among them, and allows the Department to report these rates to MDE quarterly. The results of the lead tests are then reported to the MCOs in order to facilitate their follow-up for children with high lead levels. Hilltop began this analysis and quarterly reporting process in the first quarter of FY 2009 and continued to produce these quarterly reports for the Department in FY 2012. In addition, Hilltop 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 sent to MDE, in addition to an annual list of lead tests identified in the Medicaid claims and encounter data that are not identified in the CLR in order to help MDE improve reporting performance and identify laboratories that fail to report lead tests. In analyzing the data, MDE requested additional variables to help them identify the sources of discrepancies between the Medicaid and CLR data, and Hilltop provided a data set with the additional variables.

Value-Based Purchasing (VBP): In FY 2012, Hilltop prepared the HealthChoice VBP targets for CY 2012. The targets for the seven existing VBP measures were based on the VBP results from CY 2009. Hilltop used the same formulas from CY 2010 to set the CY 2012 targets. Hilltop revised the technical encounter data specifications for the CY 2011 ambulatory care measure; completed the ambulatory care measure among HealthChoice enrollees with disabilities; and compiled the data used to calculate the denominator and numerator for both Amerigroup's and Coventry's preliminary run of the ambulatory care and lead VBP measures for enrollees with disabilities. Hilltop provided the data used to compile the ambulatory care VBP measures for Coventry Health so that they could review it for discrepancies against the data they provided. Hilltop compared alternative measures of the lead VBP measure for CY 2010. Hilltop also completed the preliminary lead VPB measure for CY 2011, 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. The measure was revised in 2012 to exclude children who disenrolled from a HealthChoice MCO before their first birthday.

Managing for Results (MFR): In FY 2012, Hilltop prepared annual asthma and diabetes MFR measures for CY 2010. For HealthChoice adult enrollees diagnosed with diabetes or child enrollees diagnosed with asthma (in accordance with HEDIS enrollment and clinical criteria), Hilltop analyzed the number of avoidable hospital admissions for both conditions. Hilltop also prepared the CY 2010 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 2010. Hilltop also prepared racial disparities MFR measures for CY 2010. Hilltop analyzed the birth weight of newborns in the HealthChoice program during CY 2009 and CY 2010 and estimated the weights for CYs 2011 and 2012.

Long-Term Services and Supports
Program Development, Policy Analysis, and Financial Analytics

Hilltop supported the Department in activities required under the new State Balancing Incentive Payment (BIP) Program, continued its support of the Money Follows the Person (MFP) Rebalancing Demonstration Program; enhanced the various waiver tracking systems; began the development of an integrated long-term services and supports (LTSS) tracking system, *LTSSMaryland*; released a third series of chart books on Medicaid LTSS in Maryland; participated in the MFP/BIP Advisory Committee and the Community First Choices Advisory Committee; and continued to build Hilltop's capacity to carry out research and policy analysis related to Medicare-Medicaid enrollees.

LTSS Reform Support

MFP/BIP Program Support: Maryland is one of eight states whose applications for the BIP Program were approved in 2012. BIP was authorized by the ACA and is aimed at providing additional support for state efforts to provide a greater proportion of care in the community. In FY 2012, Hilltop conducted analyses and provided support to the Department in its application to CMS for its BIP grant. As of the start date for this program—April 1, 2012—Hilltop has been working with the Department to support the structural changes needed to implement BIP. BIP builds on the Department's MFP program and Hilltop continued to assist the Department with its statewide Medicaid MFP Rebalancing Demonstration. Enacted by the Deficit Reduction Act of 2005 and reauthorized and expanded by the ACA, the MFP Demonstration assists states with rebalancing their LTSS systems by reducing institutional bias while developing and enhancing home- and community-based LTSS options for older adults and individuals with disabilities. In Maryland, MFP Medicaid enrollees transition from institutions to the community as Medicaid waiver enrollees or state plan service recipients. In FY 2012, Hilltop participated in Advisory Group meetings focused on MFP and BIP that provided a forum for the Department's staff to inform stakeholders of updates and programmatic changes and allowed stakeholders to give feedback on the Demonstration's progress.

Standardized Assessment Tool: As part of the set of structural changes being made through BIP, the Department is adopting a core standardized assessment tool. Building on exploratory work performed in FY 2011, Hilltop provided research, consultation, and technical assistance to the Department as it adapted the interRAI tool for use in Maryland. To assure smooth implementation of the new tool, the assessment outcomes between the new tool and the existing assessment process should be comparable. During FY 2012, Hilltop designed a pilot study to compare the "level of care" determinations of the interRAI tool with the determinations made by

Maryland's current tool. (Deliverables to the Department as a result of this study will be reported in the FY 2013 Annual Report.) Hilltop staff provided extensive support during a series of requirements-gathering meetings held throughout the spring and summer of 2012 to plan the assessment tool implementation.

Medicare-Medicaid Enrollees: Hilltop continued to develop linked Medicare and Medicaid claims data as a resource for analytical purposes designed to better understand the characteristics and needs of Maryland's Medicare-Medicaid enrollees—individuals eligible for both Medicare and Medicaid. These linked data, along with other state and federal data sources, were used, for example, to explore how coverage by both Medicare and Medicaid impacts the utilization, delivery, and costs of services. Together, these files provided a vast resource for program and policy research, enabling Hilltop to track demographic, diagnostic, and utilization patterns over time and across settings and payers. Among other activities, two additional years of data have been assimilated into the analysis files, which now reflect linked data through CY 2009. In FY 2012, Hilltop analyzed these data to assist the Department in their efforts to project future costs and savings to the state in serving these enrollees.

LTSS Program and Policy Analysis

MFP Benchmarks: Hilltop continued to produce semi-annual reports 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 (MSIS) files. Files required by Mathematica for each MFP participant are: a finders file containing demographic and eligibility information; a participation data file, which holds more specific information on the participant than the finders file holds; and a service file with claims data.

Managing For Results: In FY 2012, in order to assist the Department in completing its MFR reports, Hilltop provided monthly point-in-time (June) data on individuals enrolled in waiver programs, MFP, and nursing facilities for 2008 through 2012.

Chart Books: In FY 2012, Hilltop released the 2010 set of chart books, entitled *Medicaid Long-Term Services and Supports in Maryland*, that summarize demographic, service utilization, and expenditure data for state FYs 2007 through 2010 among Maryland Medicaid recipients of LTSS. Volume I related to three Maryland Medicaid waiver programs—the Older Adults Waiver (OAW), the Living at Home (LAH) Waiver, and the Medical Day Care Services Waiver—and nursing facility utilization. Volume II related to the Autism Waiver. The chart books were

modified from the previous year and condensed into two volumes to better meet the needs of the Department.

Personal Care Assessment: At the request of the Department, Hilltop examined a sample of Statewide Evaluation and Planning Services (STEPS) assessments that determine the level of personal care/attendant care services for participants in the LAH Waiver and OAW, as well as various levels of Maryland Medicaid State Plan personal care, to determine whether the authorized service level matched actual Medicaid claims and whether deficiencies in activities of daily living (ADLs) and instrumental activities of daily living (IADLs) were related to authorized service levels.

Nursing Home and Program for All-Inclusive Care for the Elderly (PACE) Rate Setting: In FY 2012, Hilltop continued to develop Medicaid reimbursement rates for Maryland nursing homes and PACE. Hilltop provided analyses of rate setting logic as needed, calculated the Medicare upper payment limit, evaluated alternative models, and trained Departmental staff. In addition, Hilltop continued to facilitate the electronic submission of cost reports by nursing home providers.

Traumatic Brain Injury: In FY 2012, Hilltop performed a number of analyses on services for persons with traumatic brain injury (TBI). Hilltop performed an analysis of the proposed Brain Injury Bridge program in order to address the HCBS needs of Marylanders with a TBI who do not meet the technical, medical, or financial criteria for the traditional TBI Waiver. The analysis examined Medicaid- and Mental Health Administration-funded expenditures and service utilization of participants in the program. The Department did not implement the program. Hilltop also conducted a study to identify the number of Medicaid beneficiaries with a TBI diagnosis and to analyze their Medicaid service utilization patterns and expenditures.

HCBS Waiver Reporting: In FY 2011, Hilltop produced a number of waiver reports for the Department. Hilltop analyzed the OAW and LAH Waiver Interest List data to determine the number of individuals currently receiving Medicaid services who had a Medicaid-paid nursing facility stay, were enrolled in a Medicaid HCBS waiver, were receiving Maryland Medicaid State Plan personal care services, and were receiving community Medicaid. Hilltop provided the statistics for a Fact Sheet on the number of waiver participants receiving Medicaid LTSS, FY 2007-FY 2010; the total Medicaid expenditures for waiver participants, by waiver and service category, FY 2010; Medicaid nursing facility expenditures, FY 2007-FY 2010; and the number of Medicare-Medicaid enrollees by waiver, FY 2010. Hilltop also produced a summary of FY 2010 waiver utilization based on various procedure codes.

OAW: In FY 2012, Hilltop completed an analysis of individuals who were sent applications to participate in the OAW to determine the number of application recipients who were enrolled in Medicaid, the number with nursing facility claims, and the number who were enrolled in a waiver program as of February 1, 2012.

Autism Waiver: In FY 2012, using the reporting mechanism it developed for the Department, Hilltop analyzed 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 the Maryland State Department of Education (MSDE) for the cost of all Autism Waiver services and for state plan services for the grey area population. Hilltop produced the quarterly reports to support the Department's invoicing to MDSE.

StateStats: Hilltop produced monthly updates for Maryland's StateStats website on cumulative enrollment from January 1, 2001, to July 31, 2012, for the OAW, LAH Waiver, and Autism Waiver.

CMS 372: In FY 2012, Hilltop produced the CMS 372 waiver reports for FY 2011. Hilltop produced reports for the OAW, LAH Waiver, TBI Waiver, Community Pathways Waiver, Medical Day Care Services Waiver, New Directions Waiver, Autism Waiver, and Model Waiver. In addition, Hilltop produced an ad-hoc report.

Developmental Disabilities Administration (DDA): In FY 2012, Hilltop assisted the Department in its efforts to learn more about the recipients of services from the DDA. Hilltop analyzed DDA registry data to determine how many were receiving Medicaid, what their eligibility category was, and how many were enrolled in waiver services. Hilltop reviewed the literature on HCBS supports waivers for individuals with intellectual and developmental disabilities and presented its findings to the Developmental Disabilities (DD) Stakeholders Group. Hilltop attended DD Stakeholders Group meetings throughout FY 2012, provided consultation as needed, and made presentations on child supports waivers and model state supports waivers. Hilltop also reviewed design characteristics of HCBS waivers for persons with developmental disabilities in operation in "leader" states to inform Maryland of some of the topics that it would need to consider in developing a supports waiver. Maryland decided not to proceed with a supports waiver during FY 2012.

Waiver Tracking System Support

MFP Tracking System: Hilltop continued to develop and maintain the *MFP Tracking System*, a web-based system used statewide to manage MFP business processes. This system enables users to identify potential MFP enrollees, document person-centered pre-transition support and

education, and maintain data on participant demographics and program participation. It is linked to the other waiver tracking systems (see below) so that MFP participant information only needs to be entered once. In FY 2012, Hilltop made several modifications, including developing new peer supports and options counseling modules with new database tables, user interfaces, and accompanying forms and reports. New forms and reports include: resident and non-resident contact sheets, peer characteristics forms, options counseling summary reports, application assistance summary reports, and referral reports. The options counseling module went live on March 1, 2012. The peer supports module is expected to be live in FY 2013.

MDS Assessment/MFP Tracking Integration: On October 1, 2010, MDS 3 replaced MDS 2, and as a result, many processes were and continue to be updated. In FY 2012, Hilltop devoted considerable effort to updating the MDS process to reflect changes to the standard MDS assessment form. The introduction of MDS 3, with its more stringent completion requirements, has eliminated the need to continue with the laborious refinement process used with the last generation of MDS data. All United States nursing home residents are assessed using the MDS instrument at admission, discharge, and quarterly evaluation; residents with a significant change in health status are also assessed. In *Section Q: Participation in Assessment and Goal Setting*, nursing home residents can indicate their desire to return to a community-based setting, and the nursing home is required by law to refer this individual to the state's designated "local contact agency" for community options counseling within "a reasonable amount of time." In FY 2012, Hilltop continued to participate in planning meetings with the Office of Health Care Quality and the Department to prepare for the next iteration of MDS (3.0) implementation and data transfer. Hilltop also produced models for the integration of the nursing facility MDS data submission process with the MFP tracking system. To facilitate the process, Hilltop analyzed the Section Q responses of individuals by county for June, July, and August 2011 and entered into a data use agreement with Myers and Stauffer, LC, Certified Public Accountants, to enable secure transfer of the data.

Waiver Tracking Systems: In FY 2012, Hilltop supported, maintained, and provided ongoing system modifications to the *OAW Tracking System*. The OAW Tracking System, which was developed by Hilltop, is used by the Department, the Department of Eligibility and Waiver Services (DEWS), Delmarva, all Area Agencies on Aging, and Adult Evaluation and Review Services (AERS) agencies to process approximately 200 applications each month and maintain information on approximately over 3,000 individuals enrolled in the OAW. Hilltop also continued to support, maintain, and provide ongoing system modifications for the *LAH Waiver Tracking System* that is used by the Department, DEWS, AERS, Delmarva, and The Coordinating Center. The LAH Waiver Tracking System processes approximately 55

applications per month and maintains information on approximately 600 individuals enrolled in the LAH Waiver.

In FY 2012, several system modifications were developed, including a new activity tracking module with accompanying reports (the administrative case management invoice, comprehensive case management invoice, and case manager activity report). Case managers access the activity module directly through the OAW Tracking System. The LAH case management agency provides a monthly file that is used to update the LAH activity module for each client. Hilltop added activity module reports to include the case status report and the case manager productivity report. In FY 2012, the OAW and LAH Waiver Tracking Systems were updated with the new FY 2012 provider rates, modifications to the process to assign case managers, level of care dates, and initiating redeterminations. In addition, a new error reporting tool was added that includes the ability to provide feedback to users who have submitted a system error. Hilltop made additional modifications to the LAH Waiver Tracking System that were necessary to finalize the increased community service (ICS) program module. In addition, a view of the MDS data that gives approved users access to completed MDS assessments was added to the LAH Waiver Tracking System.

Quality Care Review (QCR) Tracking System: In FY 2012, Hilltop supported, maintained, and provided ongoing system modifications for the *QCR Tracking System*. This system generates a list of potential OAW or LAH Waiver participant quality reviews, imports data from either the OAW or LAH Waiver Tracking System, and allows the Quality Review Team to evaluate and document the quality of services received by waiver participants. When applicable, the system generates reports that are distributed to the Maryland Department of Aging, the case manager, and the participant's assisted living facility.

LTSS Information System Development

Integration of the LTSS Tracking Systems into an Information System: In FY 2012, Hilltop continued and expanded its role in support of the Department's creation of an integrated LTSS information system. The web-based system under development will integrate separate tracking systems for several HCBS waivers and will provide functionality for additional LTSS reform modules. In FY 2012, Hilltop carried out an array of functions related to the new system under the MOU and a modification to the MOU signed in February 2012. The modification provided for development and testing activities for the new system and supported the use of supplemental development expertise through a sub-contract. Creation and implementation of the LTSS information system will be a multi-year process and much of the work carried out in FY 2012 provides an underpinning for continued work in FY 2013 and subsequent years.

In FY 2012, at the request of the Department, Hilltop coordinated the development of a sub-contract with FEi, the software development company that will develop and install the platform for the integrated system. Hilltop developed a plan for the project; coordinated the activities among the three partners (the Department, Hilltop, and FEi); developed and negotiated the FY 2012 statement of work and budget with FEi and the Department; developed draft statements of work and budget for 2013; and provided oversight of FEi's work.

In FY 2012, Hilltop gave sustained attention to requirements analysis, creation of use cases, development of user interfaces, and systems testing. These activities provide a foundation for implementation of the new system scheduled for FY 2013. In FY 2012, Hilltop, along with the Department and FEi, made significant progress on three modules within the integrated system—the base waiver tracking system, a new client assessment tool, and a new tool to monitor home care workers.

Hilltop worked with its partners to create a single user interface for the existing LTSS waiver tracking systems. Then, Hilltop and its partners developed an algorithm for a new Core Standardized Assessment for persons seeking LTSS. To ensure that the new assessment met the needs of the Department and clients, Hilltop and its partners conceived and conducted a pilot study comparing the client scores and level of care determinations of this assessment tool with those of the state's existing tool. The purpose of this activity was to ensure that clients who would have been determined eligible for services previously would also be determined eligible through the new tool. Finally, Hilltop and its partners developed a new tool to verify that home care plans are carried out by personal care workers. The new tool, called the In-home Supports Assurance System (ISAS), supports real-time check-in and check-out of home care workers and allows payments to be linked to an individual's presence in the home.

Data Management and Web-Accessible Databases

For research and data analysis, Hilltop uses MMIS2 and other data acquired under data use agreements with CMS and other state and federal agencies. Hilltop has considerable expertise in website development and information architecture; web reporting, query, and tracking systems; and web-based surveys.

MCO Reporting: In FY 2012, Hilltop continued the refinement of MCO reporting (on both MCO and PAC usage) on the DSS site, which included counts of enrollees and received encounters, as well as analysis of service counts. Hilltop calculated MCO inpatient kick payments. Hilltop also provided reference materials on procedure codes, fatal error codes, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) journal, the FQHC site, and MCO date-of-service charts.

PAC Reporting: In FY 2012, Hilltop continued the development and refinement of the PAC reporting on the DSS site provided under the MCO reporting system. Hilltop completed the development of both usage and service reports by calendar year as well as by fiscal year.

NPI: The NPI is a standard, unique identifier for covered health care providers, health plans, and health care clearinghouses. NPI use was adopted under HIPAA for all electronic administrative and financial transactions. The Department required the inclusion of NPIs on Maryland Medicaid claims and HealthChoice encounters by July 1, 2008. Hilltop has been receiving claims and encounter data with NPIs since that time.

Maryland Medicaid Data: Hilltop continued to maintain Maryland Medicaid data from as far back as 1991 and receive data electronically from the Department on a monthly basis. Included in the data transmissions were FFS claims (medical, institutional, and pharmacy), MMIS eligibility, encounters (HCFA, Pharmacy, and UB92), and PAC data. Hilltop continued to receive and update provider data quarterly. Hilltop processes over 12 million Medicaid records each month, creating yearly databases in excess of 150 million records. The encounter database is the largest—with over 100 million records—followed by the FFS database—with more than 40 million records and over 500 variables processed annually.

HSCRC Data: Hilltop continued to maintain hospital inpatient and outpatient HSCRC data from 2006 through 2012. These data were used for HealthChoice analyses; case counts and cost studies; analyses by diagnosis related group (DRG), and studies on nursing home discharges, ED admissions, and hospital admissions.

MDS: MDS assessments are federally mandated and completed for all residents of certified nursing homes, regardless of payment source. Hilltop continued to maintain MDS data from nursing homes in Maryland for all residents. The MDS assessments contain resident identification, demographic data, information on the patient's physical and mental state, and ADLs. Hilltop updates MDS data files on a monthly basis (see MDS Refinement in the Long-Term Services and Supports section of this report).

Databases Developed and Maintained for the Department

Hilltop has developed a number of 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; health risk assessment (HRA); and end-stage renal disease (ESRD). In addition, Hilltop continued to maintain and support previously developed database applications, including: Early and Periodic Screening, Diagnosis, and Treatment (EPSDT), REM, and Waiver Tracking Systems.

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

Waiver Tracking Systems: In FY 2012, Hilltop continued to develop and maintain tracking systems for the Medicaid HCBS waivers. For a complete description of activities, see Waiver Tracking Systems in the Long-Term Services and Supports section of this report.

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

Health Services Needs Information: In FY 2012, Hilltop continued working with the Department to clarify issues pertaining to HRA data and logic used to review overall compliance, as well as compliance with specific regulations and enrollment. In addition, Hilltop continued to produce quarterly reports.

Data Requests

Throughout FY 2012, Hilltop prepared hundreds of ad hoc data analyses and reports for the Department to support policy and financial analyses conducted not only by Hilltop, but also by the Department. Exhibit 1, below, lists just a few examples. Hilltop also responded to many external requests for Medicaid data (examples of which are listed in Exhibit 2 below).

Exhibit 1
Selected Ad Hoc Data Requests and Reports for the Department, FY 2012

- Provided the data for the annual HealthChoice evaluation.
- Provided data for the analysis of service utilization data for beneficiaries who were enrolled in the Family Planning program.
- Provided data required to complete the annual Title V Block Grant Application.
- Provided the REM annual trend data, which included cost, enrollment, and utilization data from FY 2008 – FY 2012.
- Performed the preliminary and final ambulatory care VBP measures for enrollees with disabilities enrolled in HealthChoice for CY 2011.
- Performed the preliminary and final lead screening VBP measure for children enrolled in HealthChoice in CY 2011.
- Prepared the quarterly reports and data files on childhood lead testing and elevated blood lead for MDE's Lead Poisoning Grant.
- Provided FY 2012 monthly Buprenorphine prescription data for *StateStat*.
- Provided the following MFR data for CY 2011: lead testing, asthma and diabetes avoidable admissions, and ambulatory care racial disparities.
- Performed the quarterly Medicaid Expansion hospital reports for FY 2010 through FY 2012. Files were created for each Maryland hospital and were uploaded to their corresponding file transfer protocol (FTP) servers.
- Provided SUD data for FY 2010 and FY 2011. These data were sent to each MCO for the substance use disorder 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 (undocumented aliens) in CY 2010 and CY 2011.
- Provided data used in the analysis of children enrolled in the Baltimore City School Lunch Program who were not enrolled in Medicaid.
- Performed a data analysis on dental service utilization and dental disparities for children and pregnant women enrolled in HealthChoice and MCHP.

Exhibit 1, continued
Selected Ad Hoc Data Requests and Reports for the Department, FY 2012

- Provided Medicaid data for Built Environment Obesity Study - residential data.
- Provided the Department and Delmarva with data used to identify the number of EPSDT recipients with childhood obesity. Assisted in resolving problems with the obesity and Healthy Kids data sets for CY 2009 and CY 2010.
- Provided Medicaid Expansion enrollment data by local access area and county for FY 2012.
- Provided data on setting, type of service, and prior coverage group for newly enrolled waiver participants prior to enrolling in the OAW, LAH, Autism, and Medical Day Care Services Waivers.
- Provided reports on number of unduplicated users and Medicaid expenditures for persons receiving Maryland Medicaid State Plan personal care services not enrolled in a waiver during the same fiscal year.
- Provided information on Length of Stay for current OAW, LAH, Autism, and Medical Day Care Services Waiver participants.
- Provided reports on the types of Attendant Care provided for LAH Waiver participants from FY 2008 to FY 2011.
- Provided the number of visits by coverage group and providers for Medicaid enrollees.
- 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 FY 2012.
- Provided colorectal cancer screening data of Medicaid recipients aged 50-56.
- Provided data on REM recipients identified as having ESRD for FY 2010.
- Provided reports on top DRGs and the total visits per top DRG by hospital in specific counties.
- Provided data to use in administering the 2012 CAHPS® satisfaction surveys to eligible HealthChoice enrollees.
- Provided data to use in administering the 2012 PAC satisfaction surveys to eligible PAC enrollees.

Exhibit 1, continued
Selected Ad Hoc Data Requests and Reports for the Department, FY 2012

- Provided a data set with a random sample of enrollees for Delmarva's annual HealthChoice managed care encounter validation report.
- Performed an analysis of primary care providers in Baltimore City who serve Medicaid enrollees for the Maryland Community Health Resources Commission.
- Performed the ongoing FY 2012 PAC ED services reports for the Department and HSCRC. Files were created for each Maryland hospital and were delivered to them for analysis.
- 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 (EHR) incentive payment initiative.
- Provided data sets and a data dictionary for analysis of enrollees in the Employed Individuals with Disabilities program.
- Merged taxpayer data provided by the Comptroller with the MMIS2 and conducted ongoing analyses of Medicaid enrollment as a result of the Kids First tax mailing.
- Provided enrollment data to Mathematica Policy Research as part of the national express lane eligibility evaluation.
- Provided data sets and a data dictionary on Medicaid enrollees with diabetes for CYs 2004-2010.
- Performed an analysis of dental service utilization and provider data to respond to the ASTDD survey.
- Performed the final evaluation of the ED Diversion Grant.
- Performed the lead quarterly match and prepared the lead quarterly and annual reports for the MDE Lead Poisoning grant. Generated county-based analysis of lead testing rates for children aged 12 to 23 months and 24 to 35 months.

Exhibit 2
Selected External Data Requests at the Request of the Department, FY 2012

- **Maryland Women, Infants, and Children (WIC) Program:** Provided Medicaid enrollment information for potentially WIC-eligible population to Maryland WIC program to assist them in planning future locations of clinics. The WIC-eligible population includes: pregnant women, post-partum women up to six months after birth of child, breastfeeding women up to one year after birth of child, and children up to five years of age.

- **CAHPS®:** Provided data on adult and child Maryland Medical Assistance enrollees and primary care providers in the seven HealthChoice MCO networks for an annual study of consumer health plans.

- **Cancer Screening Rates:** Provided data to facilitate the calculation of colorectal cancer screening rates in the Maryland Medicaid population, and to assist in the identification of individuals who are not up to date with screening.

- **Buprenorphine Study:** Performed matching of Maryland Medicaid data to the bSAS and SMART databases provided by Health Analytics in a study to determine if Buprenorphine is a cost-effective treatment for opioid dependence in Baltimore City.

IT Architecture and Platform

Hilltop is a business associate of the Department and therefore is required to follow HIPAA regulations regarding electronic security. To this end, Hilltop has implemented several initiatives designed to protect the data warehouse and provided tools that will allow Hilltop staff to move data and share protected health information (PHI) with their clients and peers in a secure fashion. A three-tiered electronic defense and surveillance system that protects against all known types of malware (viruses and other electronic attacks) has been implemented. Tier One is a firewall/IPS (intrusion prevention system) to protect the system against attacks from the Internet and is located on the UMBC campus. Tier Two is a firewall/IPS designed to protect Hilltop from threats emanating from outside Hilltop's network. Tier Three is a software-based firewall/IPS designed to monitor and protect Hilltop's own network. Additionally, all servers and workstations receive updates from a local server that distributes updates on virus definitions and operating system security patches.

Beginning in FY 2008, several additions to the infrastructure were added, most notably the SharePoint server and the VPN. SharePoint enabled Hilltop's business units to add external users to collaborative workgroup websites that offer discussion lists, document drop-boxes, task lists, calendars, and other features. The VPN allows for remote access for both work-at-home scenarios and disaster recovery operations, as well as for increasing protection of web-based applications that collect PHI. In FY 2011, Hilltop isolated WebFocus, the waiver tracking systems, and remote access from the Internet via the VPN. Other additions to the Windows infrastructure included a new Storage Area Network (SAN), along with a high-speed tape backup unit. Hilltop's virtual infrastructure (VMWare) resides on the SAN and has become a solid production environment with several development and production servers located there, including the SharePoint server. In the web development area, Hilltop also added WebFocus servers intended to improve efficiency in building new websites in the DSS.

In FY 2010, Hilltop provided further protection to its infrastructure by migrating its data warehouse to a new hardware and software platform. In FY 2011, Hilltop implemented a "DMZ" on the UMBC campus in order to isolate its mail and public web servers and reduce the probability of intrusions into the network. In FY 2011, Hilltop further strengthened data security with the addition of a new security information and event management (SIEM) system, which collects and monitors 1.4 million system activity records each day. The addition of the SIEM system greatly increased awareness of network security. In FY 2012, Hilltop added the *LTSSMaryland* website, https://ltssmaryland.org, used for tracking applications to Maryland's Medicaid waiver programs. Security on all these sites has been a priority; the sites have been implemented in a separate Windows domain and are only accessible through the Hilltop VPN.

Selected Publications, Presentations, and Reports Produced to Fulfill the FY 2012 MOU

Note: the publications and presentations listed below are available on Hilltop's website at http://www.hilltopinstitute.org/publications.cfm.

1. *Report on the Maryland Medical Assistance Program and Maryland Children's Health Program—Reimbursement Rates,* January 2012.
2. *BIBLIOGRAPHY, Evaluating Maryland's Kids First Act Outreach Initiative, Budget, and Maryland Kids First Act Evaluation: Final Results Report*, final documents for the Kids First Outreach Evaluation, June 30, 2012.
3. *Analysis of the Basic Health Program,* January 17, 2012.
4. *Evaluation of the HealthChoice Program,* March 30, 2012
5. *Overview of Supports Waivers,* presentation to DD Stakeholders Group by Donna Folkemer and Aaron Tripp, April 25, 2012.
6. *Overview of Child Supports Waivers*, presentation to DD Stakeholders Group, June 12, 2011.
7. *Model States' Supports Waivers*, presentation to the DD Stakeholders Meeting by Aaron Tripp and Donna Folkemer, May 30, 2012.
8. *Medicaid long-term supports and services in Maryland: Volume 1,* a chart book, April 16, 2012.
9. *Medicaid long-term supports and services in Maryland: The Autism Waiver*, a chart book, March 9, 2012.

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