

The Hilltop Institute



analysis to advance the health of vulnerable populations

**Maryland Department of Health and Mental Hygiene
FY 2009 Memorandum of Understanding
Annual Report of Activities and Accomplishments**

CELEBRATING 15 YEARS

September 2009

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Highlights

The Hilltop Institute at UMBC

The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) is a nationally recognized research organization for health policy, with a nationally renowned expertise in Medicaid. Hilltop provides the information its clients need to form evidence-based health policy decisions. Hilltop seeks to contribute to the national understanding of how better to serve vulnerable populations.

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 FY 2009 MOU. Below are the highlights.

Medicaid Acute Care Program Development and Policy Analysis

- Prepared the eighth annual report for the Maryland legislature on the Reimbursement Rates Fairness Act.
- 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.
- Performed a study that explored options available to the state with regard to identifying children who may be eligible for Medicaid (Medical Assistance) or Maryland's State Children's Health Insurance Program, known as the Maryland Children's Health Program (MCHP), by relying on existing electronic data sources.
- Developed and submitted an application for funding on behalf of the Department, to the Robert Wood Johnson Foundation, 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 MCHP; and began implementation of the study.
- Conducted the first comprehensive evaluation of the PAC program. Findings covered all individuals enrolled in PAC over the 18-month period of July 2006 through December 2007.
- Prepared quarterly analytic reports and an annual trends report for the Rare and Expensive Case Management (REM) program.
- Performed special analyses on Medicaid beneficiaries' need for and utilization of behavioral health services and continued analysis of service utilization through the



Alcohol and Drug Abuse Administration by persons who were also Medicaid beneficiaries.

- Analyzed the benefits provided to deaf and hard-of-hearing children to assist the Department in its report to the legislature.
- Evaluated the feasibility of creating a uniform statewide non-emergency medical transportation (NEMT) program in Maryland; any potential cost savings or potential for quality improvement; and the potential impact of the creation of such a program on local health departments.
- Presented the findings of the study of the appropriateness and urgency of emergency room (ER) usage by Medicaid enrollees—that almost half of ER visits could have been avoided or prevented with timely and quality primary care—to the Medicaid Advisory Committee.
- Reported on the progress of the nine indicators measured by the federal government for the Maternal and Child Health Block Grant to assist in the Department’s application process.
- Provided recommendations for an algorithm to identify foster care-eligible children enrolled in Medicaid in Baltimore City who are medically fragile, have frequent hospitalizations, have chronic conditions that render them medically at-risk, or who otherwise might benefit most from additional case management services to be provided by Baltimore City Department of Social Services (DSS).

HealthChoice: Program Support, Evaluation, and Monitoring

- Prepared the HealthChoice Evaluation report, covering CYs 2002-2007, which provided an update on overall HealthChoice performance regarding key access and utilization indicators.
- Provided an overview of HealthChoice provider network standards, and delineated roles and responsibilities among the Department, the Maryland Insurance Administration (MIA), and Hilltop in reviewing managed care organization (MCO) qualifications.
- Analyzed dental service utilization by children aged 5-14 years enrolled in HealthChoice.
- Conducted a number of analyses of child HealthChoice beneficiaries, foster children, and children in the REM program for CY 2007 to support the Department in preparation of its 2008 Annual Report to the General Assembly on Dental Care Access in HealthChoice.
- Verified the completeness, correctness, and reliability and validity of encounter data through monthly, quarterly, and annual reports to the Department and MCOs.
- Conducted an inter-rater reliability analysis of 14-16 year-olds in the Health Kids program to determine the consistency of early and periodic screening, diagnosis and treatment (EPSDT) scoring among nurse reviewers.



- Developed a program to implement an enhanced Childhood Lead Registry/Medicaid data matching process, and began to produce quarterly reports on children with high blood lead levels.
- Set the Value Based Purchasing (VBP) targets for each service type and indicated which VBP measures were most promising to use in the program. Also developed a lead measure for Maryland.
- Analyzed the number of avoidable asthma and diabetes inpatient claims and avoidable hospital admissions and prepared racial disparities measures for the Managing for Results (MFR) initiative.
- Prepared a report on the utilization of HIV/AIDS drugs by HealthChoice enrollees from July 2007 through June 2008, and the impact that instituting a co-pay requirement had on this utilization.
- Analyzed utilization of preventive services by children aged 0 to 18 years residing in Baltimore City and enrolled in HealthChoice.
- Analyzed the birth weight of newborns in the HealthChoice program during CY 2006 and CY 2007.

Long-Term Supports and Services

- Continued to assist the Department in the development and implementation of its statewide Medicaid Money Follows the Person (MFP) Demonstration.
- Continued development of the *MFP Tracking System*, a web-based system used statewide to manage MFP business processes.
- Produced semi-annual reports for the Centers for Medicare and Medicaid Services (CMS) on the state's progress in achieving MFP benchmarks.
- Prepared MFP reporting files for submission and devised a system to facilitate ongoing quarterly reporting to the national MFP program evaluator.
- Studied Medicaid beneficiaries with traumatic brain injury living in nursing homes.
- Began a study of Medicaid beneficiaries with brain injuries who also have severe neurobehavioral issues.
- Continued to assist the Department in planning for the expansion of its home and community-based services (HCBS) waivers by estimating the potential costs involved in offering waiver services to those listed on the registries for the Older Adults Waiver (OAW) and Living at Home (LAH) Waiver.
- Collected long-term care (LTC) assessment tools used by other states and investigated "best practices" in assessment for long-term supports and services.



- Produced a matrix comparing managed long-term care programs currently operating in eight states: Arizona, Florida, Massachusetts, Minnesota, New Mexico, New York, Texas, and Wisconsin.
- Maintained and modified waiver tracking systems, adding a continued stay review process, developing several reports, updating and correcting system errors, and incorporating MFP processes into the LAH Waiver.
- Developed programming for production of CMS 372 reports for the OAW, the LAH Waiver, the Community Pathways Waiver, the New Directions Waiver, the Autism Waiver, and the Model Waiver, and produced the FY 2008 reports for these waivers.
- Launched the Quality Care Review Tracking System.
- Continued to develop refined long-term care Minimum Data Set (MDS) files to support a variety of administrative research.
- Used refined MDS data to study patterns of payment source, admissions, utilization, and length of stay (LOS) of nursing facility (NF) residents, as well as to support preliminary analysis as part of the Department's wider efforts to examine and review long-term care payments under Medicaid.
- Assisted the Department in the preparation of the House Bill (HB) 946 report in analyzing the number of nursing home residents who expressed a preference to return to the community.
- Continued to develop linked Medicare and Medicaid data to assist in the analysis of the needs of dual eligibles to explore how coverage by both Medicare and Medicaid impacts the utilization, delivery, and costs of services.
- Prepared a resource guide intended for analysts who plan to integrate data on Medicare and Medicaid service use and costs, and introduced the *The Hilltop Crossover Framework*, which provides a context to examine the relationship between Medicare and Medicaid claims for dual eligibles.
- Analyzed Medicare hierarchical condition category (HCC) relative risk as a basis for a capitation rate to cover Medicare patient liability (crossover) costs on behalf of Medicaid recipients in Medicare Advantage Special Needs Plans (SNPs).
- Redesigned the annual long-term care management reports, which analyze trends in long-term supports and services.
- Produced monthly updates for Maryland's StateStats website on cumulative HCBS waiver enrollment since January 2001.
- Provided staff support for and participated in meetings of the Long-Term Care Reform Committee.



Medicaid Rate Setting: Payment Development and Financial Monitoring

- 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 Health Services Cost Review Commission (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 calendar years 2005 and 2006; and prepared a complete financial report package analyzing MCO underwriting.
- Prepared a report on the status of encounter data for analysis and rate setting activities.
- Continued to analyze physician fees and assisted the Department in adjusting the fees for various physician services that were necessary to achieve the fee reduction that it implemented beginning January 2009.
- Estimated the cost of increasing audiology procedure exception rates for FY 2010.
- Estimated payments for dental services by HealthChoice MCOs in FY 2007 and FY 2008, and analyzed the cost of raising the reimbursements for certain dental procedures to the 50th percentile of the American Dental Association (ADA) charges.
- Estimated payments for substance abuse services by HealthChoice MCOs and by fee-for-service (FFS) in FY 2007 and estimated the costs of increasing fees for substance abuse procedures.
- Continued the development of a rate methodology for benefits in the PAC program, as well as reimbursement rates for nursing homes, the Program for All-Inclusive Care for the Elderly (PACE), and the Trauma and Emergency Medical Fund.
- Investigated Medicaid NF rate setting methodologies used by other states.
- Undertook a study of pharmacy dispensing fees.

Data Management and Web-Accessible Databases

- Maintained and managed all of Maryland's Medicaid data, processing 5 million records monthly and creating yearly databases in excess of 50 million records.
- Maintained HSCRC hospital data from 1996 through 2008.
- Maintained MDS data from nursing homes for all residents.
- Continued the development of the PAC reporting site.
- Continued to link Medicare and Medicaid data.
- Modified the Uniform Cost Report (UCR) website to allow nursing homes to use the system.



- Began receiving claims and encounters data with National Provider Identifier (NPI) numbers and analyzed the impact on accuracy of these data as a result.
- Maintained and upgraded the EPSDT and REM databases, as well as the waiver tracking systems and the immunization registry.
- Improved the Decision Support System (DSS) by updating ColdFusion and HTML files, increasing functionality, improving site navigation, and automating reportage.
- Updated the *Eye on Medicaid* site.
- 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 Health Insurance Portability and Accountability Act (HIPAA) 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.
- Added 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 protection of web-based applications that collect protected health information (PHI).



The Hilltop Institute at UMBC

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Mission

The Hilltop Institute works with public and non-profit community-based agencies at the national, regional, and local levels to improve the health and social outcomes of vulnerable populations in a manner that maximizes the impact of available resources.

Hilltop accomplishes its mission by:

- Analyzing federal and state health care policies to optimize access to services, quality of care, provider performance, and purchaser value
- Analyzing and recommending Medicaid payment rates
- Developing, implementing, and evaluating new delivery and financing models for acute care, behavioral health, long-term supports and services, and oral health
- Designing and hosting state-of-the-art, interactive, web-based data management systems on Medicaid and other public health insurance programs in order to inform policy-making
- Assessing the health needs, health status, and health resources of communities through primary data collection and analysis

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. 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 as well as financially indigent—to access the healthcare services they needed. This population not only had multiple, complex healthcare needs, but the cost to the state of providing services to them was extremely high. The Department had two goals: help this population access healthcare and 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 very special program, but would also provide research and analytics to determine if the program was accomplishing its goals. Hilltop provided case management for this program, now called the Rare and Expensive Case Management (REM) program, until 2004 when this task was taken over by the Department. Hilltop still provides 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 Maryland's Medical Assistance Program (Medicaid) as that program expanded. Hilltop collaborated with the Department in the development of HealthChoice, Maryland's Medicaid mandatory managed care program. 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 waivers; and provides analysis to assist the Department in its planning efforts for such things as Medicaid expansion of benefits or to new populations.

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

Becoming The Hilltop Institute

FY 2009 marked the 15th anniversary of the founding of The Hilltop Institute, and the 15th anniversary of a successful partnership with the Department. This gave Hilltop cause for reflection. Hilltop's work and relationship with the Department have evolved in significant ways since the first Memorandum of Understanding (MOU) together in 1994. Not only had its work in Maryland grown and changed, but Hilltop also was performing a much wider variety of health services research activities. Thus, on July 1, 2008, the Center for Health Program Development and Management changed its name to The Hilltop Institute. The tagline *analysis to advance the health of vulnerable populations* was added to explain Hilltop's work.

The Department is Hilltop's founding partner, and this successful state/university partnership remains the mainstay of Hilltop's work. Hilltop looks forward to a continuing collaboration.



Memorandum of Understanding

Hilltop's work with Maryland Medicaid is supported through an annual MOU with the Department. This report presents activities and accomplishments of the FY 2009 (July 1, 2008, through June 30, 2009) MOU.



Medicaid Acute Care Program Development and Policy Analysis

During FY 2009, Hilltop prepared annual and quarterly reports, and conducted other special studies and analyses of the Maryland Medicaid program at the Department's request.

Reimbursement Rates Fairness Act: Pursuant to Chapter 702 (House Bill 1071) of the 2001 legislative session and Chapter 464 (Senate Bill 481) of the 2002 session, Hilltop prepared the eighth 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 discussed the progress of establishing the rate-setting process; comparison of Maryland Medicaid's reimbursement rates with the rates of other states and Medicare; the schedule for bringing Maryland's reimbursement rates to a level that assures provider participation in the Medicaid program; and the estimated costs of implementing the schedule and proposed changes to the fee-for-service reimbursement rates.

Medicaid Expansion: In FY 2009, Hilltop 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 PAC program. Hilltop analyzed enrollment data at various times during the fiscal year to determine the level of enrollee participation in the program. Hilltop analyzed the enrollment in the Medicaid Expansion program to determine in what coverage groups the children of the parents in the Medicaid Expansion program were enrolled; how many of the adults enrolled in the Medicaid Expansion program transferred directly from another coverage group in Medicaid, and, if so, from which coverage groups they transferred; and how many of the current program enrollees had any prior Medicaid enrollment or disenrollment. Hilltop also analyzed children whose parents (heads of households) were enrolled in the Medicaid Expansion program to determine if the children were enrolled in the same coverage group and/or coverage type as their parents. In addition, Hilltop provided data pertaining to the number of children newly enrolled in Medicaid and the length of their enrollment to assist the Department in projecting the impact of granting 12 months of guaranteed eligibility for certain children enrolled in Medicaid.

Kids First Act: House Bill 1391, The Kids First Act (the Act), added §10-211.1 of the Tax-General Article (the statute) to the Annotated Code of Maryland effective July 1, 2008. The 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, including the feasibility of facilitating outreach or auto-enrollment through linkages with other electronic data sources." To assist the Department with this



requirement, Hilltop performed a study that explored options available to the state of Maryland with regard to identifying children that may be eligible for Medicaid (Medical Assistance) or MCHIP by relying on existing electronic data sources. Hilltop studied potential processes for improving eligibility and enrollment procedures through linkages with other sources, including, but not limited to, enrollment in other public service programs such as Supplemental Nutrition Assistance Program (SNAP, or Food Stamps), the National School Lunch Program (NSLP), and Temporary Assistance for Needy Families (TANF). In addition, 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 SCHIP. Hilltop developed and submitted the application for funding on behalf of the Department, and began implementation of the study.

Primary Adult Care Program (PAC) Evaluation: Launched in 2006, PAC provides primary care physician office visits, prescription drugs, outpatient mental health care, and some other limited health care services to adults with low incomes in Maryland. In FY 2009, Hilltop conducted the first comprehensive evaluation of the PAC program. Findings covered all individuals enrolled in PAC over the 18-month period of July 2006 through December 2007. All enrollment and enrollment trends data reported included individuals enrolled in PAC for one or more months in that 18-month timeframe. For all measures of health service or prescription utilization, the analysis also reflected individuals enrolled in the same PAC MCO for at least 11 months. This methodology allowed the closest approximation of HEDIS, while taking into account the start-up phase of the program. Key findings of the evaluation showed that: over 38,170 individuals had at least one month of enrollment in PAC over the 18-month period of July 2006-December 2007; monthly PAC enrollment grew from 7,217 in July 2006 to 27,503 in December 2007; relatively few PAC enrollees had prior enrollment in Medicaid in the timeframes studied (only 13.9 percent were enrolled in an eligibility group as of June 2006); fifty-nine percent of enrollees transitioning out of the PAC program were not in any Medicaid coverage group during the month following their last month of PAC enrollment; sixty-two percent of PAC enrollees had at least one ambulatory care visit in the 18-month period; seventeen percent of females aged 41-69 received at least one mammogram to screen for breast cancer while enrolled in the PAC program; twenty-one percent of females aged 21-64 received at least one cervical cancer screening Pap test while enrolled in PAC; sixty-seven percent of PAC enrollees identified with diabetes received at least one HbA1c screening and 65 percent received at least one LDL-C screening while enrolled in PAC; seventy-four percent of PAC enrollees utilized the prescription drug benefit while enrolled in PAC from July 2006-December 2007; and service utilization for preventive screening tests and ambulatory care visits varied across MCOs.



PAC Technical Assistance: In FY 2009, Hilltop continued its review of the application by Amerigroup to participate in the PAC program and reviewed the transition plan. In addition, Hilltop recommended regulatory changes that would update PAC subcontracting requirements.

Rare and Expensive Case Management (REM): REM serves persons with multiple and severe healthcare needs. In FY 2009, 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 developed an FY 2004 through FY 2007 program trends report. In addition, Hilltop performed an analysis of total expenditures for the program for FY 2008 and FY 2009 through April 30, 2009.

Behavioral Health Services: 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 FY 2009, in order to assist the Department in determining the impact of a possible Medicaid fee increase, Hilltop used the Alcohol and Drug Abuse Administration (ADAA) database from FY 2007 to describe the revenue sources of the clinic transactions this database tracks. Hilltop summarized the data for all American Society of Addiction Medicine (ASAM) treatment levels by insurance source information tied to all selected transactions recorded in the ADAA database, by provider type, by days in treatment, and by estimated treatment dollars spent. Hilltop also calculated cost increase estimates for three types of Medicaid providers: ADAA-funded by block grant funds; ADAA-tracked in the ADAA SMART database, but not ADAA-funded; and Medicaid-only (unique to the MMIS system with no observed ADAA data record). Hilltop continued to perform a number of analyses using merged data from FY 2007 Medicaid and ADAA. Hilltop developed a methodology used to estimate the number of persons, days, and services in ADAA admissions records that suggested an opportunity for Medicaid recovery as a third-party payer; estimated the dollars that could be saved by ADAA; and categorized the admission counts by ASAM level, provider, and Medicaid eligibility category. In addition, Hilltop analyzed FY 2007 FFS data on methadone utilization to determine the total number of services provided, the number of persons receiving these services, and the total cost for providing these services. At the request of the Department, Hilltop categorized FY 2003, 2004, and 2005 mental health and substance abuse data for all beneficiaries with specialty mental health claims aged 60 years or older in preparation to transfer those data to the Mental Health Authority in Washington County, Maryland.

Deaf Children: In FY 2009, Hilltop analyzed the benefits provided to deaf and hard-of-hearing children to assist the Department in its report to the legislature.

Non-Emergency Medical Transportation: In FY 2009, Hilltop prepared a report on Medicaid Non-Emergency Medical Transportation (NEMT) in Maryland on behalf of the Department.



House Bill 235, passed in the 2008 legislative session, mandated a study on the creation of a uniform statewide NEMT program, with findings to be reported to the legislature by October 1, 2008. Hilltop conducted the study, which evaluated the feasibility of creating a uniform statewide NEMT program in Maryland; any potential cost savings or potential for quality improvement; and the potential impact of the creation of such a program on local health departments. To conduct the study, Hilltop surveyed local jurisdictions and state administrators of NEMT programs across the country, and assured stakeholder involvement by presenting the study design and incorporating comments gathered at an NEMT stakeholder's meeting, the Medicaid Advisory Committee, and the Money Follows the Person Committee. In addition, Hilltop presented the findings of the study to the Transportation Association of Maryland at their 20th Annual Fall Conference.

Emergency Room Use: In FY 2008, Hilltop conducted a study to analyze ER utilization among enrollees in HealthChoice with disabilities, and the findings suggested that focused efforts to reduce inappropriate ER utilization by HealthChoice program enrollees could target over 50 percent of ER utilization. In FY 2009, Hilltop presented the study's findings to the Medicaid Advisory Committee. In addition, the analyses conducted by Hilltop about ER use and avoidance helped the Department formulate a call for proposals to reduce unnecessary ER use and improve access to primary and specialty physician care for the uninsured, underinsured, and Medicaid population.

Maternal and Child Health Block Grant: In FY 2009, Hilltop produced a report for the Department on the progress of the nine indicators measured by the federal government for the Maternal and Child Health Block Grant to assist in the application process.

Children in Foster Care: At the request of the Department, Hilltop provided recommendations for an algorithm to identify foster care-eligible children enrolled in Medicaid in Baltimore City who are medically fragile, have frequent hospitalizations, have chronic conditions that render them medically at-risk, or who otherwise might benefit most from additional case management services to be provided by Baltimore City Department of Social Services (DSS). The purpose of the DSS project was to reach each child in foster care through DSS case management as resources allow. Due to the structure of DSS case management services, Hilltop developed separate algorithms for identifying children based on somatic conditions and behavioral and psychiatric conditions. Hilltop identified children determined to be most in need of case management services and determined the numbers and utilization levels of foster children with specific diagnoses and variables (select somatic diagnoses and utilization events, select psychiatric/behavioral diagnoses, summary variables related to co-morbidities and utilization, and select pregnancy-related diagnoses and co-morbidities, summary variables related to co-morbidities and utilization, dental utilization and co-morbidities, and demographic and



enrollment characteristics). Hilltop's analysis presented a description of the use of antipsychotic drugs among children with foster care eligibility in Baltimore City. In addition, Hilltop analyzed the sub-population of foster care-eligible females aged 14 through 20 years who experienced a diagnosis related to pregnancy complications, as well as youth aged 14 through 20 years who utilized family planning services.



HealthChoice

Program Support, Evaluation, and Monitoring

In FY 2009, Hilltop continued its key role in supporting HealthChoice, Maryland's managed acute care program, by assisting the Department in collecting and validating encounter data, monitoring program performance, and carrying out special policy studies and analyses.

HealthChoice Evaluation: As in previous years, Hilltop partnered with the Department to monitor and report on the performance of the HealthChoice program. In FY 2009, Hilltop prepared the HealthChoice Evaluation report, covering CYs 2002-2007, which provided an update on overall HealthChoice performance regarding key access and utilization indicators. Hilltop analyzed a variety of performance measures, including overall service utilization trends and access to care for selected populations. The major findings of the evaluation indicated that between CY 2003 and CY 2007, utilization of health services improved under HealthChoice in a number of important areas, including ambulatory care, well-child visits, dental services, prenatal care, and blood lead testing. Increases in utilization within these categories occurred even as the number of HealthChoice enrollees continued to grow. Enrollee utilization rates have shown the greatest gains for children. Other notable findings were that: since CY 2003, HealthChoice enrollment increased approximately 4 percent; most program enrollment growth during the study period occurred among children enrolled in MCHP; in CY 2007, nearly 80 percent of all HealthChoice enrollees were children under age 19; the percentage of enrollees receiving an annual ambulatory care visit increased from 68.6 percent in CY 2003 to 73.3 percent in CY 2007; the percentage of children receiving a well-child visit increased from 50.4 percent in CY 2003 to 56.0 percent in CY 2007; the percentage of children aged 4 through 20 years enrolled for at least 320 days who received a dental visit increased from 43.2 percent in CY 2003 to 51.5 percent in CY 2007; the percentage of children aged 12 through 23 months receiving a lead test increased from 46.8 percent in CY 2003 to 52.7 percent in CY 2007; children in foster care continued to receive preventive services, such as well-child and dental visits, at higher rates than other children enrolled in HealthChoice; overall emergency department (ED) use among HealthChoice enrollees increased between CY 2004 and CY 2006 and remained stable between CY 2006 and CY 2007; racial and ethnic groups that have historically experienced health disparities, such as Black/African American (Black) and Hispanic populations, continued to experience increases in access to preventive services; access to preventive services for White/Caucasian (White) and Asian enrollees increased as well; and the proportion of Black and White racial and ethnic groups enrolled in the program decreased during each year in the study period, whereas the proportion of Hispanic and "Other" racial and ethnic groups increased. The report concluded with a discussion of the Department's ongoing quality assurance activities.



HealthChoice MCO Reviews: In FY 2009, Hilltop provided an overview of HealthChoice provider network standards (applied by The Hilltop Institute) in its review of provider data submitted to the Department by an MCO applicant. Hilltop also delineated roles and responsibilities among the Department, the Maryland Insurance Administration (MIA), and Hilltop in reviewing MCO qualifications.

Dental Service Utilization: At the request of the Department, Hilltop analyzed dental service utilization by children aged 5-14 years enrolled in HealthChoice. The analysis included two cohorts of children: those who were enrolled in HealthChoice continuously for three years beginning April 1, 2004; and those who were enrolled in the HealthChoice program at the time of the analysis who had been continuously enrolled for the past two years. The analysis delineated these children by receipt or non-receipt of a dental visit. Hilltop also prepared four datasets that provided detailed information on children from both of these cohorts who did not receive a Medicaid service, as well as those who did not have a dental encounter. Hilltop performed two analyses of the frequency of dental encounters and claims for children under age 21 and pregnant women in Maryland's Medical Assistance and MCHP programs: one for CY 2007 and one for FY 2007. In order to support the Department in preparation of its 2008 Annual Report to the General Assembly on Dental Care Access in HealthChoice, Hilltop conducted a number of analyses for CY 2007. Hilltop determined the number of dentists participating in HealthChoice; the percentage of children aged 0-20 years enrolled in HealthChoice who had at least one dental encounter, sorted by age group; the number of children enrolled for any period; the number of children, aged 0-20 years, enrolled in HealthChoice for any period, with a preventive or diagnostic visit followed by a restorative visit; the number of HealthChoice ER visits with a dental diagnosis by children in this age group enrolled for any period in HealthChoice; and the percentage of pregnant women, over the age of 14 years, enrolled for any period receiving dental services. Hilltop performed two special studies to support this annual report on the utilization of dental service data by children aged 0 through 20 enrolled in the REM program and foster care during CY 2007. In addition, Hilltop analyzed provider data by county and by region and found that 671 dentists provided at least one dental service through HealthChoice, and 364 dentists billed HealthChoice for more than \$10,000 during CY 2007.

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, as well as regular review of 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.), then calculated a ratio of services



per enrollee; validated inpatient encounters; and identified the use or overuse of default provider numbers for physician services. Annual reports focused on the identification of the percent 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 particular 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 Identifier (NPI) numbers. 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.

Healthy Kids: In FY 2009, Hilltop conducted an inter-rater reliability analysis of the 14-16 year old age group to determine the consistency of EPSDT scoring among nurse reviewers. The study was used internally for training and improving the consistency of the application of the review tool used to assess provider compliance with the program's child health screening requirements.

Work Groups: In FY 2009, Hilltop staff participated with Department staff in monthly MCO Internal Work Group meetings, monthly MCO Liaison meetings, and semi-annual MCO Encounter Data Work Group meetings.

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). In the fourth quarter of FY 2008, the Department transferred the task of lead data programming and analysis to Hilltop under the MOU. To meet this new responsibility, Hilltop developed a program 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 for the Department to report these rates to MDE. In addition, results of 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 is continuing to produce these quarterly reports for the Department. In addition, Hilltop prepared the annual county-based analysis of lead testing results for HealthChoice children aged 12-23 months and 24-35 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.

Value-Based Purchasing: In FY 2009, Hilltop prepared the HealthChoice value-based purchasing (VBP) targets for CY 2009. The targets for the seven existing VBP measures were based on the VBP results from CY 2006, and the targets for the three new VBP measures were based on CY 2006 Healthcare Effectiveness Data and Information Set (HEDIS) scores. Hilltop used the same formulas from CY 2008 to set the CY 2009 targets. In addition, Hilltop revised an immunization measure to include the pneumococcal conjugate vaccine (PCV). Hilltop also revised two codes in the ambulatory care measure to capture ambulatory surgical procedures performed in a physician's office or home setting and to allow federally qualified health centers (FQHCs) to bill for certain ambulatory care services that they could not bill for previously. Hilltop completed the ambulatory care measure among HealthChoice enrollees with disabilities and completed an analysis on the ambulatory care measure among HealthChoice enrollees with disabilities who are also enrolled in Jai Medical Systems (Jai). In its efforts to promote increased quality of care and improved program performance, the HealthChoice program has included a lead screening measure in its VBP initiative since the initiative's inception in 2002. In the absence of a HEDIS lead screening measure, Maryland developed its own measure. The primary data sources for this measure are Medicaid administrative data and data from the CLR maintained by MDE, discussed in the section above. In 2008, however, HEDIS established a new measure—lead screening in children—which calculates the percentage of children who have had one or more capillary or venous blood lead tests for lead poisoning by the time they are two years old. In FY 2009, Hilltop compared the new HEDIS measure with Maryland's existing VBP lead screening measure. At the request of the Department, Hilltop tested alternate methodologies for the lead VBP measure to address concerns of the possibility of both duplication of services and the inability to accurately count services. In addition to the lead reporting related to the CLR, Hilltop also measured the performance of MCOs for CY 2008 in assessing lead levels of children between 12 and 35 months of age enrolled in HealthChoice.

Managing for Results: In FY 2009, Hilltop prepared annual asthma and diabetes Managing for Results (MFR) measures for CY 2007. For HealthChoice enrollees diagnosed with diabetes or 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 2007 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 2007. The measures were performed by county as well as by selected Baltimore City ZIP codes. Hilltop also prepared racial disparities MFR



measures for CY 2003 through CY 2007 and found that access to care continued to increase for all racial categories during this period.

HIV Drug Co-Pay: In FY 2009, Hilltop prepared a report on the utilization of HIV/AIDS drugs by HealthChoice enrollees from July 2007 through June 2008, and the impact that instituting a co-pay requirement had on this utilization. Hilltop found that instituting a co-pay requirement did not decrease HIV/AIDS drug utilization.

Preventive Service Utilization by Baltimore City's Children: On behalf of the Department, at the request of the Family League of Baltimore City's Healthy Children Committee, Hilltop analyzed utilization by children aged 0 to 18 years residing in Baltimore City and enrolled in HealthChoice in the following areas: overall enrollment in HealthChoice; ambulatory care visits; dental visits; lead testing; well-child visits; asthma-related avoidable admissions; ER visits; and classification of ER visits.

Newborns: At the request of the Department, Hilltop analyzed the birth weight of newborns in the HealthChoice program during CY 2006 and CY 2007. Analyses were conducted based on the mother's coverage group as well as newborn payment rates to determine the ratios of very low birth weight newborns to normal and low birth weight newborns. In addition, Hilltop analyzed data on the mothers of very low birth weight newborns in CY 2006 and CY 2007 to determine whether the newborns were multiple gestations/births, and whether the mothers had given birth within a year before or after the very low birth weight baby.



Long-Term Supports and Services

Hilltop provided support to the Department on the continued development of the Money Follows the Person Demonstration Program; analyzed service utilization for persons with traumatic brain injuries; studied admissions, utilization, and length of stay in nursing facilities; continued the development of the annual Consolidated Long-Term Care (LTC) Management Report; produced a guide to integrate data on Medicare and Medicaid service use and costs; and continued to build Hilltop's capacity to carry out research and policy analysis related to dual eligibles.

Money Follows the Person (MFP) Program Development: Hilltop continued to assist the Department in the development and implementation of its statewide Medicaid Money Follows the Person (MFP) Demonstration. Enacted by the Deficit Reduction Act of 2005, the purpose of the MFP Demonstration is to assist states with rebalancing their long-term care systems by reducing institutional bias, while developing and enhancing home and community-based long-term care options for older adults and individuals with disabilities. In Maryland, MFP Medicaid enrollees transition from long-term care institutions—i.e., nursing facilities (NFs), intermediate care facilities for the mentally retarded (ICFs/MR) also known as State Residential Centers (SRCs), institutions for mental disease (IMDs), and chronic hospitals—to the community as Medicaid waiver enrollees or State Plan service recipients. In FY 2009, Hilltop participated in once- or twice-monthly Stakeholders Advisory Group meetings that provided a forum for the Department's MFP staff to inform stakeholders of updates and programmatic changes, and allowed stakeholders to give feedback on the Demonstration's progress.

MFP Tracking System: Hilltop continued development of the *MFP Tracking System*, a web-based system used statewide to manage the MFP business processes. This web-based system enables users to identify potential MFP enrollees, document person-centered pre-transition efforts, and maintain participant demographic data and other pertinent personal information. Operational tracking system modules include peer outreach, program education, application assistance, and transition case management as well as a program management module developed for the Developmental Disabilities Administration (DDA), and a module to facilitate administration of the Quality of Life Survey required of all MFP participants by the Centers for Medicare and Medicaid Services (CMS). Eventually, the system will have modules for housing assistance and ongoing community peer support for participants. The tracking system imports monthly data updates of MFP-eligible individuals from Maryland's Medicaid Management Information Systems (MMIS) database. It also produces summary statistical and management reports for tracking system users, the Department, and CMS. Hilltop's tracking system development team convened twice-monthly development meetings with MFP staff throughout FY 2009. User manuals were completed for the DDA module (November 2008), peer outreach



module (April 2009), and program education, application assistance, and case management modules (July 2009). Hands-on training was conducted for four DDA staff in November 2008 and five contractors using the peer outreach module in April 2009. As of June 30, 2009, the tracking system had 13 users. Development of the tracking system will continue into FY 2010 and staff from the state's Area Agencies on Aging (AAAs) will be trained to use the system.

MFP Evaluation: Hilltop produced semi-annual reports for CMS on the state's progress in achieving MFP benchmarks. 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 in the finders file; and a service file with claims data. Hilltop consulted with Mathematica and Department programmers to develop algorithms for converting the files and devised a system to facilitate ongoing quarterly reporting to Mathematica.

Persons with Traumatic Brain Injuries: The Department, on behalf of the MFP demonstration, requested that Hilltop conduct a study to provide a better understanding of service utilization by Medicaid beneficiaries with traumatic brain injury (TBI) who reside in nursing facilities. This study examined nursing facility service utilization and costs for individuals with a diagnosis of TBI, anoxia, or both TBI and anoxia. Hilltop concluded that for Maryland's MFP demonstration to succeed in its goal of transitioning persons with brain injury from institutional settings to the community, it will be important to ensure that appropriate community-based mental health services, occupational/physical/speech therapies, and durable medical equipment are available to this population. In addition, because psychotropic medication utilization is significant among this population, medication use must be carefully managed and monitored. In addition, the Department requested that Hilltop conduct a study of Medicaid beneficiaries with brain injuries who also have severe neurobehavioral issues. Because of this population's multiple and severe needs, they are often institutionalized because there are no other viable options for care, yet many times the institutions are not equipped to care for them. Many linger in acute care or chronic hospitals because there are no nursing homes that can accommodate them. In FY 2009, Hilltop undertook a study to identify previously unknown individuals in this target population and to report on the services, providers, and costs associated with them.

Home and Community-Based Services (HCBS) Waiver Expansion: In FY 2009, Hilltop continued to assist the Department in its planning process by estimating the potential costs involved in offering waiver services to all those who were listed on the registries for the Older Adults and Living at Home waivers at the time of the Department's request. The estimates



reflected considerations that were outlined in Hilltop's report pursuant to HB 594 but reflected current participation and determination levels.

Comprehensive Assessments: Hilltop collected LTC assessment tools used by other states and investigated "best practices" in assessment for long-term supports and services. The report identified trends and emerging best practices in comprehensive assessments for HCBS. Assessment instruments from 13 states are included in the analysis.

Managed Long-Term Care Programs: In FY 2009, Hilltop produced a matrix comparing managed long-term care programs currently operating in eight states: Arizona, Florida, Massachusetts, Minnesota, New Mexico, New York, Texas, and Wisconsin. The programs were compared based on the following parameters: implementation date; mandatory/voluntary geographic coverage; waiver authority; eligibility; NF level-of-care required; enrollment; Medicare integration; health plans; covered Medicaid services; risk for NF care; capitation rate methodology; and rate cells.

Waiver Tracking Systems: In FY 2009, Hilltop supported, maintained, and provided on-going system modifications for the *Older Adults Waiver (OAW) Tracking System*. The OAW Tracking System is used by the Department, the Department of Eligibility and Waiver Services, KePro, all county AAAs, and Adult Evaluation and Review Services agencies to process approximately 200 applications each month and maintain information on approximately 3,029 individuals enrolled in the OAW program. This web-based system, developed by Hilltop, tracks the flow of OAW applications, increasing agency efficiency, reducing application processing time, and providing real-time access to information on waiver applicants, as well as providing increased state oversight. Hilltop also continued to support, maintain, and provide on-going system modifications for the *Living at Home (LAH) Waiver Tracking System* that is used by the Department, DEWS, AERS, KePro, and The Coordinating Center. The LAH Tracking System processes approximately 65 applications a month and maintains information on approximately 570 individuals enrolled in the LAH Waiver program. The LAH Tracking System has features similar to the OAW system, providing additional decision-support functionality for enrollment and development of the plan of service, as well as including an electronic Adult Evaluation and Review Services (AERS) plan of care. In FY 2009, Hilltop added a continued stay review process, developed several reports, updated and corrected system errors, and incorporated MFP processes into LAH.

CMS 372 Waiver Reports: In FY 2009, Hilltop became responsible for the production of the CMS 372 reports, previously produced by the Department. Hilltop developed programming for production of reports for the OAW, the LAH Waiver, the Community Pathways Waiver, the



New Directions Waiver, the Autism Waiver, and the Model Waiver, and produced the FY 2008 CMS 372 reports for these waivers.

Waiver Reporting: In FY 2009, Hilltop produced a number of waiver reports. Hilltop calculated the number of Community Pathways Waiver enrollees on July 1, July 10, August 1, and August 15, 2008. Hilltop also prepared cost neutrality expenditure updates for the Autism Waiver. In addition, Hilltop analyzed enrollment and utilization data for waiver participants of medical day care and updated the DSS to support the new Medical Day Care Waiver to enable utilization and expenditure reporting.

Quality Care Reviews (QCR): In FY 2009, Hilltop launched the *QCR Tracking System*. The QCR system generates a list of potential OAW or LAH participant quality reviews, imports data from either the OAW or LAH 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 Maryland Department on Aging, the case manager, and the participant's assisted living facility. The QCR system will be enhanced in FY 2010 to also include the Autism Waiver Review forms.

Refined Minimum Data Set (MDS) Data: In FY 2009, Hilltop continued to develop refined long-term care MDS files to support a variety of administrative research. The Hilltop MDS refinement process involved checking for changes in MDS resident identification numbers over time; updating Medicaid ID numbers, which are not dependably reported in the data; refining the data to account for factors that complicate making associations across records; and then “rolling-up” refined assessment data into stay records that reflect discrete periods of care. Specific analyses provided to the Department covered issues such as patterns of payment source, admissions, utilization, and length of stay (LOS) of NF residents. The data were also used to support preliminary analysis as part of the Department's wider efforts to examine and review long-term care payments under Medicaid. One aspect of that effort involved two presentations by Hilltop staff to the Department in early 2009 regarding how resource utilization groups (RUGs) are used to adjust Medicare and Medicaid nursing facility payments.

House Bill (HB) 946: Hilltop assisted the Department in the preparation of the HB 946 report in analyzing the number of nursing home residents who expressed a preference to return to the community. The analysis covered CY 2000 through CY 2008, and found that the number of those who expressed this preference remained fairly stable over the years covered.

Dual Eligibles: 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 “dual eligibles”—individuals eligible for both Medicare and Medicaid. These linked



data, along with other federal and state 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. In FY 2009, Hilltop continued work on the Robert Wood Johnson Foundation Changes in Health Care Financing and Organization (HCFO) grant project. The purpose of the study is to examine interactive effects of providing long-term care supports and services under Medicaid on Medicare and Medicaid resource use. Hilltop prepared a resource guide intended for analysts who plan to integrate data on Medicare and Medicaid service use and costs. *The Hilltop Crossover Framework* was introduced in the guide as an orienting reference device for linked Medicare and Medicaid claims. The term “crossover” refers to Medicaid claims that reflect Medicare patient liability costs that state Medicaid programs cover on behalf of dual eligibles. The guide is also a general introduction to Medicare and Medicaid benefits and attendant relationships for analysts who may be less familiar with one or both programs.

Medicare Advantage Special Needs Plans: Hilltop analyzed Medicare hierarchical condition category (HCC) relative risk as a basis for a capitation rate to cover Medicare patient liability (crossover) costs on behalf of Medicaid recipients in Medicare Advantage Special Needs Plans (SNPs), determined that another method might be more efficient, and provided alternative methods.

Long-Term Care Reports: Hilltop convened a series of meetings with Department staff in the fall of 2008 to discuss the audience, purpose, and format for the reports Hilltop prepares annually on nursing facilities, the OAW, the LAH Waiver, and the Autism Waiver, which examine trends in utilization and Medicaid expenditures. As a result of these meetings, the reports are being produced as a series of chart books, and reporting will be based on state fiscal year rather than calendar year as in the past. In preparing the reports, Hilltop significantly reprogrammed and expanded the Decision Support System to facilitate the change to reporting by state fiscal year and to include most of the data that will be in the chart books. The FY 2008 reports will be available in the fall of 2009.

StateStats: Hilltop produced monthly updates for Maryland’s StateStats website on cumulative enrollment since January 2001 for the OAW, the LAH Waiver, and the Autism Waiver.

Long-Term Care Reform Committee: In FY 2009, Hilltop provided staff support for and participated in meetings of the Long-Term Care Reform Committee.



Medicaid Rate Setting

Payment Development and Financial Monitoring

In FY 2009, Hilltop developed capitation rates and monitored the finances for HealthChoice, PAC, nursing homes, the Program for All-Inclusive Care for the Elderly (PACE), and the Trauma and Emergency Medical Fund.

HealthChoice: In FY 2009, 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 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 Mercer, to secure actuarial certification, which is required to obtain federal financial participation in HealthChoice. In FY 2009, the state paid \$2.2 billion in capitation payments to the seven MCOs participating in HealthChoice, providing insurance for more than 699,000 Medicaid beneficiaries. Hilltop continued to staff the Department's MCO Rate Setting Committee, provide consultation to the MCOs, and support HSCRC's review of providers.

HealthChoice Financial Monitoring Report: Hilltop examined MCO performance on selected measures to better understand cost differences among MCOs and the impact of capitation rates on plan performance, and reported the findings to the Department. The report also compared the performance of provider-sponsored organizations (PSOs) to non-PSOs. In FY2009, Hilltop analyzed specific variances in membership, premium income and cost of medical care between CY 2005 and CY 2006. 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, in FY 2009, Hilltop prepared a complete financial report package analyzing MCO underwriting performance.

Monthly Reconciliation Reports: At the request of the Department, Hilltop continued providing monthly reconciliation reports of the Medicaid payments for physician FFS claims submitted by the University of Maryland Physicians Incorporated with services incurred prior to July 1, 2008.

Encounter Data Analysis: Hilltop prepared a report on the status of encounter data for analysis and rate setting activities, which described the history of the development of the methods used to



analyze and set rates; examined various issues pertinent to the use of encounter data; and made recommendations to the Department on the use of encounter data in its rate setting activities.

Physician Fees: Throughout FY 2009, Hilltop continued to analyze physician fees and assisted the Department in adjusting the fees for various physician services that were necessary to achieve the fee reduction which it implemented beginning January 2009. In addition, Hilltop set separate fees for different sites of service so that physician fees would have site of service differentials for facilities (e.g., hospitals) and non-facilities (e.g., offices).

Audiology Procedure Fees: Hilltop estimated the cost of increasing audiology procedure exception rates for FY 2010, and compared Maryland's FY 2009 fees for certain audiology procedures with those of neighboring states and the District of Columbia, Maryland's FY 2010 estimates, and Medicare.

Payments for Dental Services: At the request of the Department, Hilltop estimated payments for dental services by HealthChoice MCOs in FY 2007 and FY 2008. In addition, at the request of the Dental Action Committee (DAC), Hilltop analyzed the cost of raising the reimbursements for certain dental procedures to the 50th percentile of the American Dental Association (ADA) charges and presented options to increase reimbursements in consideration of budget limitations.

Payments for Substance Abuse Services: At the request of the Department, Hilltop estimated payments for substance abuse services by HealthChoice MCOs and by FFS in FY 2007 broken out by procedure code, as well as by provider type. In addition, Hilltop estimated the costs of increasing fees for substance abuse procedures broken out by procedure group, as well as by individual providers within and across different Maryland counties.

PAC Program: Hilltop continued the development of a rate methodology for PAC benefits in FY 2009, basing rates on actual utilization and costs during the program's first two years. Hilltop began maintaining quarterly PAC financial monitoring reports and reports to measure the variance between planned enrollment and capitation payments to results. In addition, Hilltop evaluated the budget implications of benefit expansion and evaluated PAC encounter reports in comparison to MCO financial reporting.

Nursing Home and PACE Rate Setting: In FY 2009, 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, evaluated alternative models, and trained departmental staff. In addition, Hilltop continued to facilitate the electronic submission of cost reports by nursing home providers.



Trauma and Emergency Medical Fund: In FY 2009, Hilltop continued to calculate the reimbursement rates from the Trauma and Emergency Medical Fund on a monthly and annual basis.

Nursing Home Rate Study: At the Department's request, Hilltop investigated Medicaid nursing facility rate setting methodologies used by other states. All 50 states and the District of Columbia were studied. Hilltop found that methodologies differ markedly from state to state, as do the rates paid to nursing facilities.

Dispensing Fee Study: The 2008 Joint Chairmen's Report required the Department to determine a reasonable level for pharmacy dispensing fees. To assist the Department in this effort, Hilltop undertook a study that highlighted the findings from two dispensing fee studies (one local and one national); compared current Maryland Medicaid fees to Medicaid fees in other states; reviewed the new CMS rule that affected dispensing fees; and provided a discussion and an analysis of determining a reasonable dispensing fee.



Data Management and Web-Accessible Databases

For research and data analysis, The Hilltop Institute 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.

Uniform Cost Report (UCR) Website: In FY 2009, Hilltop modified the UCR website based on specification changes as well as to allow nursing homes to use the system. These modifications included modifying the import function, updating the list of nursing facilities, and adding a link to the Infection Control Survey.

PAC Reporting: In FY 2009, Hilltop continued the development and refinement of the PAC reporting site in the MCO reporting system.

National Provider Identifier: The National Provider Identifier (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 encounters data with NPI numbers since that time. Hilltop analyzed the impact on accuracy of data as a result of this change, and alerted the Department.

Maryland Databases Maintained by Hilltop

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 fee-for-service (FFS) claims (medical, institutional, and pharmacy) and MMIS-eligibility and encounter data. Hilltop continued to receive and update provider data quarterly. Hilltop processed 5 million Medicaid records each month, creating yearly databases in excess of 50 million records. The FFS database is the largest, with over 500 variables and more than 30 million records processed annually.

Health Services Cost Review Commission (HSCRC) Data: Hilltop continued to maintain hospital inpatient and outpatient HSCRC data from 1996 through 2008. These data were used for HealthChoice analyses; case counts and cost studies; analyses by diagnostic related group (DRG); and studies on nursing home discharges, emergency room admissions, and hospital admissions.



Minimum Data Set (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, regardless of payer. The MDS assessments contain resident identification, demographic data, information on the patient's physical and mental state, and activities of daily living (ADLs). Hilltop updated MDS data on a quarterly basis.

Linked Medicare and Medicaid Data: Hilltop's use of linked Medicare and Medicaid data to support Medicaid program research, especially related to the development of managed long-term care for dual eligibles, continued in FY 2009. This work included analysis of the implications of using risk adjustment methods applied under the federal Medicare Advantage program to establish capitation rates to cover Medicaid costs for Medicare cost sharing (crossover costs) paid the Medicare Advantage plans. Work also continued under the Department's grant from the Robert Wood Johnson Foundation to look at interactive effects of Medicare and Medicaid services use, including two reports.

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 Encounters, Capitation, and Claims; PAC Eligibility, Enrollment, and Encounters; 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: EPSDT, REM, and Waiver Tracking Systems.

Early Periodic Screening, Diagnosis, and Treatment (EPSDT): In FY 2009, Hilltop continued to maintain and add new features to this database for the Maryland Healthy Kids program, and provided consultation to the Department to allow staff to install the EPSDT application on desktop and laptop/notebook computers. The database enables the program to determine whether providers are complying with program requirements and facilitates studies of inter-rater reliability. Throughout the year, Hilltop performed various extractions and reformatting of these data to assist both the Department and providers in assessing compliance.

REM: Hilltop installed upgrades to the REM MIS database and REM reports database and fixed faulty installations of REM software at the Department in FY 2009. Hilltop also provided REM system training, data trouble-shooting, and guidance. Modifications were also made to revise the reporting functions in order to facilitate provider reporting. Hilltop assisted the Department with restoring access to the SQL server when the database stopped working. Additionally, Hilltop provided quarterly expenditure reports to the case management organizations.



Decision Support System (DSS): This system, password-protected and maintained for the exclusive use of the Department, provides easy access to data on Medicaid program eligibility, enrollment, service utilization, and payments. Currently, 130 Department staff members are registered to use the DSS. In FY 2009, Hilltop continued to make improvements to the DSS and provide technical assistance to Department staff using the system. Hilltop continued to offer training to the Department through CDs and online tutorials. Working with the Department, Hilltop identified new content areas to add to the DSS, increased functionality, and added new reports. The majority of new development was related to Medicaid waivers programs. The Waivers application on the DSS was redesigned to allow for fiscal year reporting, where previously it had only allowed calendar year reporting. This required modifications to SAS, Cold Fusion and SQL Server components of the update stream. At the request of the Department, data related to the Medical Day Care Waiver was incorporated into the DSS. Tabular and graphical data on this new waiver program (started in July 2008) is now available in the Waivers application. Hilltop also upgraded the hardware and memory in the server used for DSS processing, thus reducing the overall time needed for posting monthly and quarterly updates. 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 2009, Hilltop continued to develop and maintain tracking systems for the Medicaid Home and Community-Based Waivers. For a complete description of activities, see Waiver Tracking Systems in the Long-Term Supports and Services 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 beneficiary who had an immunization procedure during the period reported. These data provided demographic and other information on persons who had an immunization procedure. Hilltop updated this database semi-annually.

Health Services Needs Information: In FY 2009, 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.



Data Requests

Throughout FY 2009, 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 at the request of the Department, examples of which are listed in Exhibit 2.

Exhibit 1 Selected Ad Hoc Data Requests and Reports for the Department, FY 2009
<ul style="list-style-type: none"> ▪ Report on PAC services, specifically diabetes, cervical cancer, breast cancer, prescriptions and ambulatory care ▪ Report to study the impact of Medicaid expansion ▪ Reports on dental service utilization and dental disparities of children and pregnant women enrolled in HealthChoice, and children enrolled in MCHP ▪ Report on cost of dental care in CY 2007 ▪ Reports on service utilization by children in foster care ▪ Reports on OB-GYN visits ▪ Reports on pregnancy trends and low birth weight/ very low birth weight ▪ Reports to identify the number of EPSDT recipients with childhood obesity ▪ Report on Sickle Cell, specifically adult enrollment, utilization, and demographics ▪ Report to identify number of enrollees with traumatic brain injury (TBI), prior to or during a nursing home stay ▪ Reports on mental health and substance abuse treatment ▪ Reports to examine overlap in services between MA and ADAA ▪ Report on REM per member per month trends for FY 2007 ▪ Report to identify results on the nine indicators of the MCH Block Grant for the Department's application ▪ Report on Private Duty Nursing to determine the impact of increased usage from FY 2005 through FY 2008



<p style="text-align: center;">Exhibit 2 Selected External Data Requests at the Request of the Department, FY 2009</p>
<ul style="list-style-type: none">▪ Maryland Legislature-Dental Action Committee: Medicaid data provided to support a study of dental service utilization▪ CAHPS®: 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▪ Maryland Health Care Commission: Medicaid monthly eligibility counts used by the Commission to track state managed care enrollment and to conduct an annual analysis of state health care expenditures▪ Maryland Comptroller's Office: Report on total HealthChoice eligibility of children, aged 0-20 years and MCHP eligibility



IT Architecture and Platform

Hilltop is a business associate of the Department and therefore is required to follow the HIPAA regulations regarding electronic security. To this end, Hilltop has implemented several initiatives designed to protect the data warehouse as well as provide tools that will allow Hilltop employees to move data and communicate protected health information (PHI) with their clients and peers in a secure fashion. A three-tiered electronic defense and surveillance system has been implemented that protects against all known types of malware (viruses and other electronic attacks). 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 to virus definitions and operating system security patches.

Beginning in FY 2008, several additions to the infrastructure were added, most notably the SharePoint server. 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. 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. The UNIX host has also been equipped with an additional 7 terabytes (Tb) of disk space.

In FY 2009, Hilltop added 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 protection of web-based applications that collect PHI. Hilltop's WebFocus, waiver tracking systems, and remote access will soon be completely isolated from the Internet via the VPN.





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