The Hilltop Institute

analysis to advance the health of vulnerable populations

Maryland Department of Health and Mental Hygiene
FY 2008 Memorandum of Understanding
Annual Report of Activities and Accomplishments

September 2008

UMBC

The Hilltop Institute was formerly the Center for Health Program Development and Management.

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Highlights

The Hilltop Institute at UMBC

The Hilltop Institute is a nationally recognized research organization for health policy, with a nationally renowned expertise in Medicaid. We provide the information our clients need to form evidence-based health policy decisions. We seek to contribute to the national understanding of how better to serve vulnerable populations.

Hilltop's work with Maryland Medicaid is supported through an annual Memorandum of Understanding (MOU) with the Department of Health and Mental Hygiene. This report discusses activities and accomplishments under the FY 2008 MOU. Below are the highlights.

Medicaid Acute Care Program Development and Policy Analysis

- Prepared the seventh annual report for the Maryland legislature on the Reimbursement Rates Fairness Act

- Prepared quarterly analytic reports and an annual trends report for the Rare and Expensive Case Management (REM) program

- Performed special analyses on Medicaid beneficiaries' utilization of behavioral health services and began analysis of beneficiaries served by three departmental administrations that provide services to these beneficiaries(Medical Assistance, the Mental Health Administration, and the Alcohol and Drug Abuse Administration)

- Provided analysis and developed regulatory changes for the Employed Individuals with Disabilities (EID) program

- Studied the appropriateness and urgency of emergency room usage by Medicaid enrollees

- Studied all persons diagnosed with Hepatitis C receiving Medicaid

- Analyzed inpatient and outpatient hospital utilization data to assist the Maryland Health Services Cost Review Commission (HSCRC) in developing a methodology to adjust the uncompensated care rates for Maryland hospitals

- Analyzed costs of alternative service configurations in preparation for the Medicaid expansion

- Analyzed habilitative service utilization and costs for a cohort of persons with certain medical conditions

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HealthChoice Program Support, Evaluation, and Monitoring

- Partnered with the Department on the renewal application to the Centers for Medicare and Medicaid Services (CMS) for the Section 1115 waiver that funds the HealthChoice program, as well as the REM, PAC, EID, and Family Planning programs

- Performed analyses for the Dental Action Committee (DAC) to determine the utilization or lack of utilization of dental services of children and pregnant women enrolled in HealthChoice, as well as to determine the number of providers who serve these children and pregnant women

- Performed analyses for the Department of child HealthChoice beneficiaries to study their dental access and utilization.

- Verified the completeness, correctness, and reliability and validity of encounter data

- Set the Value Based Purchasing targets for each service type and recommended which VBP measures were most promising to use in the program

- Analyzed the number of avoidable asthma and diabetes inpatient claims and avoidable hospital admissions and prepared racial disparities measures for the Management for Results initiative

- Analyzed the utilization of health care services by children in foster care

- Analyzed the utilization of OB-GYN services

Long-Term Supports and Services

- Assisted with the development of an operational protocol for the Money Follows the Person Demonstration

- Studied Medicaid beneficiaries with traumatic brain injury living in nursing homes

- Estimated cost savings to other home- and community-based waiver programs if expansions were undertaken under MFP

- Maintained and modified waiver tracking systems, adding an electronic Plan of Care, and began the development of the MFP tracking system and the Quality Care Review tracking systems

- Began automation of the CMS 372 waiver reports

- Continued to develop refined Minimum data set files used to aid the analysis of NF services

- Studied the options available to the state to increase access to long-term services for persons at high risk for institutionalization and reported to the Legislature pursuant to House Bill 594

- Further developed linked Medicare and Medicaid data to assist in the analysis of the needs of dual eligibles and developed *The Hilltop Crossover Framework,* which provides

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a context to examine the relationship between Medicare and Medicaid claims for this population

- Completed annual long-term care management reports, which analyze trends in long-term supports and services

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 HSCRC's review of providers

- Analyzed MCO performance and prepared the HealthChoice Financial Monitoring Report, and developed a complete, consolidated reporting package for the MCOs

- Analyzed the budget neutrality of the Section 1115 waiver and prepared the report to the Legislature

- Analyzed physician fees and modeled increases based on reimbursement levels, and analyzed dental provider fees and developed new rates for certain dental procedures

- Developed a rate methodology for benefits in the Primary Adult Care 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

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 1996-2007

- Maintained MDS data from nursing homes for all residents

- Continued the development of the PAC reporting site

- Continued to link Medicare and Medicaid data

- Maintained and upgraded the EPSDT and REM databases, as well as the waiver tracking systems and the immunization registry

- Improved the Decision Support System 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 requests to support the work of the MOU

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IT Architecture and Platform

- Provided a protected IT architecture and platform to insure adherence to HIPAA regulations regarding electronic security

- Utilized a three-tiered electronic defense and surveillance that protect the information and data from outside UMBC, outside the Hilltop network, and within the Hilltop network

- Added a SharePoint server, enabling Hilltop's business units to add external users to collaborative workgroup websites

- Added WebFocus servers intended to improve efficiency in building new websites in the DSS

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The Hilltop Institute at UMBC

The Hilltop Institute is a nationally recognized research organization for health policy, with a nationally renowned expertise in Medicaid. We provide the information our clients need to form evidence-based health policy and financing decisions. We seek to contribute to the national understanding of how better to serve vulnerable populations.

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 Hilltop in 1994 as the Center for Health Program Development and Management at the request of the Maryland Department of Health and Mental Hygiene (the Department). Initially chartered to design and manage Maryland's High-Risk Patient Management Initiative, Hilltop's responsibilities evolved as the state's Medical Assistance Program (Medicaid) was expanded. Hilltop was instrumental in the 1997 launch 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 managed care initiatives with the Department and warehouses all of the state's Medicaid claims, eligibility, provider and other data. The Department is Hilltop's founding partner, and this successful state/university partnership remains the mainstay of Hilltop's work.

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Hilltop also provides and has provided services to other Maryland state agencies, including the Maryland Health Care Commission, the Maryland Community Health Resources Commission, the Maryland Department of Aging, the Maryland State Department of Education, and the Maryland AIDS Administration. In addition, Hilltop works and has worked with local government and health and human services agencies in Maryland, as well as with other states, the federal government, and foundations

Memorandum of Understanding

Hilltop's work with Maryland Medicaid is supported through an annual Memorandum of Understanding (MOU) with the Department of Health and Mental Hygiene. This report presents activities and accomplishments of the FY 2008 MOU.

On July 1, 2008, the Center for Health Program Development and Management changed its name to The Hilltop Institute.

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Medicaid Acute Care Program Development and Policy Analysis

During FY 2008, 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 session and Chapter 464 (Senate Bill 481) of the 2002 session, Hilltop prepared the seventh 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 examined physician participation in Maryland Medicaid and compared Maryland Medicaid fees with Medicare fees and Medicaid fees in other states.

Primary Adult Care Program (PAC): Launched in 2006, PAC provides primary care physician office visits, prescription drugs, outpatient mental health care, and some other limited health care services to low-income adults in Maryland. In FY 2008, Hilltop reviewed and updated the PAC managed care organization (MCO) application packets, assessed the completeness of the program's data, analyzed the number of services as a ratio of the number of enrollments for each participating MCO, and completed the development of quality assurance and performance measurement strategies for the program.

Rare and Expensive Case Management (REM): REM serves persons with multiple and severe health care needs. In FY 2008, 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 2006 program trends report. In addition, Hilltop performed an analysis on enrollment data to assist the Department in preparing its renewal of the HealthChoice waiver.

Behavioral Health Services: Hilltop carried out 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 2008, Hilltop analyzed the coordination of care for persons with mental health and substance use disorders across the three administrations that provide services to this population—Medical Assistance Program, the Mental Hygiene Administration (MHA), and the Alcohol and Drug Abuse Administration (ADAA). The databases of the three administrations were analyzed from FY 2001-FY 2005 to determine the number of persons with co-occurring mental health and substance use disorders who were receiving services from two or more of these agencies during the same fiscal year. A further analysis of the population served by ADAA and Medical Assistance was conducted. Hilltop also reviewed inpatient and outpatient substance use detoxification (detox) claims and encounters from FYs 2005 and 2006. For

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preparation of the first meeting of the Department's Substance Abuse Work Group, Hilltop developed summary demographic and utilization information regarding HealthChoice and PAC enrollees with substance use disorder (SUD) of all types except tobacco use or addiction. The analysis included FY 2006 and FY 2007 data for all coverage groups in HealthChoice and in PAC in FY 2007.

Employed Individuals with Disabilities (EID) Program: Hilltop provided analysis and developed regulatory changes for the Employed Individuals with Disabilities (EID) Medicaid "Buy-In" program, which was originally implemented in 2006 by means of an amendment to the state's Section 1115 waiver. The changes in FY 2008 will allow the EID program to be operated under the Medicaid state plan.

Emergency Room Use: Hilltop studied the appropriateness and urgency of emergency room (ER) usage by Medicaid enrollees. Hilltop conducted a preliminary study to analyze the frequency of ER use by persons with disabilities compared to persons without disabilities in the HealthChoice population and found that ER use by persons with disabilities was considerably higher.

Hepatitis C: Hilltop identified all persons diagnosed with Hepatitis C receiving Medicaid (HealthChoice or FFS) or Maryland Children's Health Program (MCHP) services for each year from FY 2005-FY 2007 as well as all recipients with acute, chronic, and unspecified diagnoses stratified by age group, race, sex, and county. This study found that approximately 80 percent of these recipients were between the ages of 40 and 64 and over 60 percent resided in Baltimore City.

Hospital and Outpatient Utilization: At the request of the Department, Hilltop analyzed inpatient and outpatient hospital utilization data for selected eligibility groups in Maryland's Medicaid and Children's Health Programs (MCHP) for FY 2007 for the purpose of helping Maryland Health Services Cost Review Commission (HSCRC) develop a methodology to adjust the uncompensated care rates for Maryland hospitals in anticipation of the Medicaid expansion to parents with incomes at or below 116 percent of the federal poverty level that would begin July 1, 2008.

Medicaid Expansion: Hilltop analyzed the costs of, and take-up rates associated with, alternative service configurations to assist 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. This analysis helped to support the coverage expansion efforts of the legislature and Governor. In addition, Hilltop provided cost estimates for the fiscal note of HB 1404, which would provide 12

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months of guaranteed continuous eligibility for children (up to age 19) at each eligibility determination as well as provide presumptive eligibility for children.

Habilitative Services: Hilltop analyzed habilitative service utilization and Medicaid payments for a cohort of participants with ten identified conditions who were enrolled in Medicaid at any time during CY 2006. The cohort was composed of anyone in the Medicaid claims files (FFS) aged 19-64 who had any of the primary diagnoses of these conditions.

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HealthChoice
Program Support, Evaluation, and Monitoring

In FY 2008, 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 and Section 1115 Waiver Renewal Application: As in previous years, Hilltop partnered with the Department to monitor and report on the performance of the HealthChoice program. In FY 2008, Hilltop collaborated with the Department on the renewal application to the Centers for Medicare and Medicaid Services (CMS) for the Section 1115 waiver that funds the HealthChoice program, as well as the REM, PAC, EID, and Family Planning programs. The HealthChoice evaluation update, covering CYs 2002-2006, was the foundation for the application. The major findings of the evaluation were that HealthChoice served as the platform for a major program expansion of over 100,000 new enrollees in MCHP; helped more people—particularly children—access health services overall, saved money relative to the Medicaid FFS model, thus adding value for consumers, providers, and the state; and specialty physician participation could be threatened if fees were not increased. In addition, the evaluation found that while enrollment in the program has grown since 2002, mostly in the Families and Children population, growth tapered off a bit in 2006; and the financial stability of the program was significantly better during this period than previous periods. Access to ambulatory care continued to improve from CY 2002-2006 in all regions of the state, with the greatest improvement for children. Access to well-child visits increased for all eligible age groups, and while ER utilization increased, utilization of ambulatory case sensitive hospitalizations decreased from 2002-2006.

HealthChoice MCOs: In FY 2008, Hilltop reviewed and completed a comprehensive update of the program's MCO application packets and reviewed MCO provider contracts for HealthChoice compliance.

Dental Service Utilization: At the request of the Dental Action Committee (DAC), Hilltop analyzed dental service utilization by selected groups of beneficiaries enrolled in MCHP and Medical Assistance (Maryland's Medicaid program). The analysis included: the number of individuals who had a preventive or diagnostic visit that may have led to a restorative visit in the same year; the number of dental diagnoses associated with ER visits; and the number of providers who billed at least one dental encounter by county. The groups studied were children aged 0-20 enrolled in HealthChoice: REM children aged 0-20; foster children aged 0-20; and pregnant women enrolled in HealthChoice. In addition, a study of dental diagnostic codes was

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performed to give the DAC a picture of the types of dental issues that were present in children utilizing the ER. The analysis of providers found that there were 579 unique HealthChoice dental providers in the state in July of 2006 as compared to 360 the previous year. Also at the request of the DAC, Hilltop analyzed dental service utilization by selected groups of beneficiaries enrolled in MCHP and Maryland's Medical Assistance Program for baseline patient utilization, provider participation, safety net clinic use, and dental care expenses. In addition, Hilltop estimated the cost of providing fluoride varnish to children aged 1-14; counted the number and payment source (HealthChoice or FFS) of active dentists and pediatricians in Baltimore City, Caroline County, Dorchester County, and Talbot County; reported dental utilization rates for children aged 0-20 in HealthChoice for CYs 2002, 2003, and 2004 by age, MCO, and county; analyzed the use of dental services for 22,555 children aged 5-14 who were continuously enrolled in the HealthChoice program for three years beginning April 1, 2004, but did not have any dental encounters between April 1, 2004, and April 30, 2007; and analyzed the number of adults with dental extractions by procedure code, MCO, and recipient pregnancy status. Finally, Hilltop analyzed the use of dental services of children aged 5-20 who were continuously enrolled in a Medicaid MCO between February 2004 and February 2008 (4 years of continuous MCO enrollment) and between February 2005 and February 2008 (3 years of continuous MCO enrollment) to assist the Department in responding to a Congressional request.

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 showed services available by county. Annual reports focused on the ratio of service users to enrollees; the distribution of diagnoses; diagnoses per claim; and cohorts by risk-adjusted category assignments. The process Hilltop continued to follow for continuously monitoring and validating encounter data was described in a November 2005 report. Maryland continues to be recognized nationally for the completeness and quality of its encounter data. In FY 2008, Hilltop also performed an assessment of how encounter data could be utilized to complement data from the Health Effectiveness Data and Information Set (HEDIS).

Work Groups: In FY 2008, 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.

Value-Based Purchasing: In FY 2008, Hilltop produced a report setting the 2008 value-based purchasing (VBP) targets for each performance measure. Hilltop completed an ambulatory care

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value-based purchasing analysis for children and adult beneficiaries with disabilities enrolled in HealthChoice; completed an analysis of VBP data to investigate 25 enrollees who were not showing up in an MCO's files. In addition, Hilltop reviewed HealthChoice utilization data for Chlamydia screening rates and HIV/AIDS services to identify measures for the Department's possible provider level incentive program within HealthChoice, reviewed the same measures for possible addition to the current VBP program, and made recommendations to the Department on the most promising measures to use in the programs.

Management for Results: In FY 2008, Hilltop prepared annual asthma and diabetes Management for Results (MFR) measures for CY 2004 through CY 2006. 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 racial disparities MFR measures for CY 2006 and found that access to care continued to increase for all racial categories during this period. Finally, Hilltop prepared a presentation on assessing racial and ethnic health disparities in the HealthChoice program for the deputy secretary for financing that was presented at the Office of Minority Programs and Health Disparities Fifth Annual Health Disparities Conference in April 2008.

Children in Foster Care: At the request of the Department, Hilltop completed an analysis comparing utilization of selected health care services by foster children before and after becoming eligible for foster care to determine if utilization rises during an episode of Medicaid coverage while a child is in foster care. Hilltop found that service use of ambulatory visits intensified by 57 percent and service use of outpatient and physician mental health services intensified by 74 percent for this cohort once children entered foster care.

OB-GYN Services: In FY 2008, Hilltop performed a number of analyses on OB-GYN services, including OB coding among HealthChoice MCOs to better understand the codes used to record pre-natal services and deliveries. Data were reviewed for the volume of specific obstetric and delivery procedure codes, unduplicated counts of women with pregnancy related diagnoses, and the frequency of preventive and evaluation and management procedure codes from CY 2004 to CY 2006. In addition, fees for OB-GYN services were analyzed and rates were adjusted based on facility and non-facility service provision.

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Long-Term Supports and Services

Hilltop provided support to the Department on the development of the Money Follows the Person Demonstration Program, studied the length of stay in nursing facilities, continued the production of the Consolidated Long-Term Care (LTC) Management Report for Calendar Year 2006, and continued to build Hilltop's capacity to carry out research and policy analysis related to dual eligibles.

Money Follows the Person: Hilltop continued to assist the Department in the development of its statewide Money Follows the Person (MFP) Demonstration for Maryland, the purpose of which is to help eligible persons transition from nursing facilities (NFs) and intermediate care facilities for people with mental retardation to community-based services. Hilltop collaborated with the Department on preparation of the Operational Protocol for the program, which was completed on January 31, 2007, and has now been approved by CMS. Hilltop participated in once- or twice-monthly stakeholder meetings that updated stakeholders on program progress and provided a forum for their feedback, as well as in monthly inter-agency staff meetings throughout the year that guided program development and management. In FY 2008, Hilltop began the development of the ***MFP Tracking System***, a web-based system for ongoing management of the MFP business processes, which will continue in FY 2009. The MFP business processes include peer outreach, administration of Quality of Life surveys, management of the transitions from state residential centers, guidance of MFP participants through the transition process, and the long-term peer support. The system will facilitate the reporting of benchmarks and quality measures to CMS, as well as long-term program analysis. Hilltop also participated in monthly meetings of the Behavioral Health Workgroup throughout the year, and conducted a study for the group to provide a better understanding of service utilization by Medicaid beneficiaries with brain injury residing in nursing facilities. This study's preliminary findings were similar to those in the Long-Term Care Management Report in that they also suggested that, while NF utilization by persons who are less medically involved are decreasing, utilization by more medically involved individuals are increasing and driving the cost increases in these services.

Home- and Community-Based Waivers: To assist the Department in its planning process, Hilltop performed analyses regarding the Older Adult Waiver (OAW), the Living at Home Waiver (LAH), and the Community Pathways/New Directions (DD) waivers. These analyses included various effects of the federal MFP demonstration.

Tools to Assess Long-Term Supports and Services: Hilltop collected LTC assessment tools used by other states to investigate "best practices" in assessment for long-term supports and services. The report will be available in FY 2009.

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Waiver Tracking Systems: In FY 2008, Hilltop maintained and provided system modifications for the OAW tracking system that is used by six agencies to processes approximately 200 applications each month and maintains information on approxomately 2,900 individuals receiving OAW services. This web-based system, developed by Hilltop, tracks the flow of OAW waiver 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. In FY 2008, Hilltop added an electronic plan of care (ePOC) to the OAW tracking system, which documents diagnoses, services, and providers, and automatically calculates cost neutrality. Hilltop completed the development of a similar tracking system for the LAH Waiver that is used by five agencies. The LAH tracking system has the same features as the OAW system and also provides additional decision support functionality for enrollment and developing the plan of service, as well as the inclusion of an electronic Adult Evaluation and Review Services (AERS) plan of care. In addition, Hilltop began the development of the MFP Tracking System and Quality Care Review (QCR) Tracking System, which are web-based systems used for daily operations and for ongoing management of the MFP and QCR programs. Development and implementation for both systems will continue in FY 2009.

Automation of the CMS 372 Waiver Reports: In FY 2008, Hilltop began work to automate the completion of the CMS 372 reports for all seven current home- and community-based waivers—OAW, LAH, Autism, Traumatic Brain Injury (TBI), Model Waiver, Community Pathways, and New Directions—and for the new Adult Day Care Waiver to be added next year. Hilltop will be responsible for all CMS 372 reports beginning in FY 2009.

Quality Care Reviews: In FY 2008, Hilltop assisted the Division of Long Term Care and Waiver Services in redesigning the content of the evaluation and quality review instrument used by the Quality Care Review Team in their annual review of the home and community based waivers. The redesign provided for a more qualitative and quantitative process. The instrument was also reformatted to allow for its automation.

Refined Minimum Data Set (**MDS) Data:** In FY 2008, Hilltop continued to refine 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. Hilltop studied all admissions to NFs from March to September 2007 and found that approximately 81 percent were Medicare admissions and approximately 30 percent of those persons had Medicaid. Hilltop analyzed the number of NF

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admissions in FY 2007 broken down by LOS categories using 30-day increments to determine stays by Medicare status, age category, and age category and Medicare. Hilltop also made a presentation to the MFP Interagency Work Group that provided the results of analyses using refined MDS data of nursing home stays and length of stay that were most likely to be at issue for that program.

House Bill 594: House Bill (HB) 594 required the Department to study and analyze the options that may be available to the state to increase access to long-term services, including home- and community-based services, such as adult medical day care, for individuals at high risk of institutionalization because of cognitive impairments, mental illness, traumatic brain injury, or other conditions, who meet financial eligibility criteria in effect as of June 1, 2007. At the Department's request, Hilltop undertook this study, including a comparative study of other states, feasibility studies of different models of service development, and cost analyses of those models. Hilltop then made recommendations to the Department and the Legislature about different options to increase services to this population, and testified before the General Assembly on the findings in the study.

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"—those 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 2008, Hilltop was awarded a substantial grant on behalf of the Department from the Robert Wood Johnson Foundation Changes in Health Care Financing and Organization (HCFO) program for funding to support additional analyses. 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. In the first phase of this project, Hilltop developed *The Hilltop Crossover Framework*, which provides a context to examine the relationship between Medicare and Medicaid claims for dual eligibles.

Long-Term Care Management Reports: Hilltop completed an annual analysis of NF utilization among Maryland Medicaid beneficiaries. In FY 2008, the section detailing the under-65 cohort was expanded to include diagnostic and activities of daily living (ADL) data. The report was expanded to include information about LOS for NF residents discharged in CY 2006 and non-NF Medicaid costs, including Medicare cost share for dual eligibles residing in an NF. Hilltop also completed analyses of enrollment, utilization, and costs of the LAH Waiver, the OAW, and the Medicaid Autism Waiver.

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Medicaid Rate Setting
Payment Development and Financial Monitoring

In FY 2008, Hilltop reported on the budget neutrality of the HealthChoice waiver and 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 2008, 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 2008, the state paid $1.9 billion in capitation payments to the seven MCOs participating in HealthChoice, providing insurance for more than 615,000 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 FY 2008, a supplemental analysis was made of specific variances for PSOs. Hilltop prepared an annual report 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 2008, Hilltop developed a complete, consolidated reporting package for the MCOs and developed capitation payment and enrollment monitoring reports.

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.

Budget Neutrality: As a condition of Maryland's Section 1115 federal HealthChoice waiver, the state must demonstrate that the program is budget neutral to the federal government; i.e., any expansion programs or services funded through the HealthChoice waiver (such as PAC) must be

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financed through savings achieved as a direct result of the HealthChoice program. The budget neutrality test is a cumulative test, over the entire lifetime of the HealthChoice waiver. *The Joint Chairmen's Report, Operating Budget* of April 2007 required the Department to formally report on the status of the budget neutrality test. To provide an independent evaluation of the methodology as well as the budget neutrality calculation itself, the Department tasked Hilltop to produce this report. The report was submitted to the Legislature for the 2008 session.

Physician Fees: Throughout FY 2008, Hilltop continued to analyze physician fee increases and model the projected impact on Medicaid expenditures and physician participation as the Department considered a number of strategies for increasing fees over time. Hilltop analyzed physician fees and recommended adjusted fees accordingly. In addition, Hilltop analyzed and adjusted physician fees for OB-GYN procedures performed both in and outside facilities. Two special reports modeled increases based on stratification of providers by reimbursement levels.

Dental Provider Fees: At the request of the DAC, Hilltop worked with the Department and a DAC subcommittee to develop new dental rates for certain dental procedures.

Primary Adult Care (PAC) Program: Hilltop continued the development of a rate methodology for PAC benefits in FY 2008, 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 2008, Hilltop continued to develop Medicaid reimbursement rates for Maryland nursing homes and PACE. Hilltop provided analyses of rate setting logic, 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 2008, Hilltop continued to calculate the reimbursement rates from the Trauma and Emergency Medical Fund on a monthly and annual basis.

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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 2008, Hilltop modified the UCR website based on specification changes and to allow nursing homes to use the system.

PAC Reporting: In FY 2008, Hilltop continued the development and refinement of the PAC reporting site in the MCO reporting system.

Maryland Databases Warehoused 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 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 2007. 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 Medicare and Medicaid linked data to support Medicaid program research, especially related to the development of managed long-term

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care for dual eligibles, was advanced in FY 2008 through a grant from the Robert Wood Johnson Foundation.

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; and HRA. In addition, Hilltop continued to maintain and support previously developed database applications including: EPSDT, REM, and Waiver Tracking Systems.

EPSDT: In FY 2008, 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 REM reports and fixed faulty installations of REM software at the Department in FY 2008. Hilltop also updated and modified the REM Quality Improvement (QI) Tool to reflect changes in the QI indicators, and developed and provided REM system training. Modifications were also made to revise the reporting functions in order to facilitate provider reporting. 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. In FY 2008, Hilltop continued to make improvements to the DSS and provide technical assistance to Department staff using the system. Hilltop began a restructuring project of the DSS to include updating ColdFusion and HTML files to ensure the consistency of the format for data in result table cells. Working with the Department, Hilltop identified new content areas to add to the DSS, increased functionality, improved site navigation, and added several new reports, including PAC eligibility and enrollment, professional services, and provider applications. Hilltop enhanced the DSS to facilitate MCO reporting and automated much of the reportage to enable timelier data posting. Hilltop continued to update the dental and professional services application. Hilltop continued to provide training to the Department through CDs, online tutorials, and classes. Currently, 134 Department staff members are registered to use the DSS. *Eye on Medicaid,* an interactive site on

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the DSS, offers county- and statewide 3D graphics with statistical data; five-year trend bar charts with rollover pop-ups and drill down tables; and county maps with rollover pop-ups and drill down tables showing coverage group, region, age, gender, and race/ethnicity categories. In FY 2008, Hilltop revamped this site to convert the "Physician" section to "Professional Services". Hilltop also maintaind *Maryland Medicaid eHealth Statistics* (www.hilltop-ehealth.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 Medicaid health statistics.

Waiver Tracking Systems: In FY 2008, Hilltop continued to develop and maintain tracking systems for the Medicaid 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 (HRA): In FY 2008, Hilltop began 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 2008, 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 by the Department as well. 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.

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Exhibit 1

Selected Ad Hoc Data Requests and Reports for the Department, FY 2008

- Report on the total of unique dental services providers compared to totals for dental participation
- Report on dental providers with payments greater than $1 million and greater or equal to $5 million between October 1, 2005 and September 30, 2006
- Reports on dental service utilization and dental disparities of children and pregnant women HealthChoice recipients, and children enrolled in MCHP
- Report to identify the number of dental services provided in the ER in CY06
- Reports on service utilization by children in foster care
- Report on ER utilization by Medicaid enrollees with disabilities
- Report on non-NF Medicaid costs for NF participants by source and age group
- Reports on OB-GYN visits
- Reports on ICF-MR transitions into the community
- Reports to identify the number of EPSDT recipients with childhood obesity
- Report to identify all children under 20 with end stage renal disease (ESRD)
- Reports on service utilization and costs of persons receiving medical day care
- Report to identify number of enrollees with traumatic brain injury (TBI)
- Reports on mental health and substance abuse treatment
- Reports on enrollees served by MA, ADAA, and MHA
- Report to determine the number of children enrolled in an MCO for 90 days receiving a blood lead test
- Report to identify results on the nine indicators of the MCH Block Grant for the Department's application

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Exhibit 2
Selected External Data Requests at the Request of the Department, FY 2008

- **Maryland Legislature-Dental Action Committee**: Medicaid data provided to support a study of dental service utilization

- **University of Maryland School of Pharmacy**: Created 18 databases for a study on racial/ethnic disparities in mental health treatment

- **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

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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.

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 Tb of disk space, to be operational in FY 2009.

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