Maryland Department of Health and Mental Hygiene
FY 2007 Memorandum of Understanding

Annual Report
of
Activities and Accomplishments

September 2007

UMBC
AN HONORS UNIVERSITY IN MARYLAND

CENTER FOR HEALTH PROGRAM
DEVELOPMENT AND MANAGEMENT

Table of Contents

Executive Summary

The Center for Health Program Development and Management (Center), located at the University of Maryland, Baltimore County (UMBC), works with public agencies and nonprofit community-based agencies in Maryland and elsewhere to improve the health and social outcomes of vulnerable populations in a manner that maximizes the impact of available resources. Since its inception in 1994, the Center has maintained a successful, nationally recognized partnership with the Maryland Department of Health and Mental Hygiene (Department) to analyze state health policies and address issues and develop solutions for the Maryland Medicaid program.

The Center's interdisciplinary team of almost 60 professionals includes clinicians, economists, attorneys, statisticians, social scientists, and computer programmers. While Medicaid remains the central focus, the Center has grown to address issues that touch upon other publicly administered programs such as aging services, public health, behavioral health, Medicare, and federally funded AIDS initiatives. The Center is committed to addressing complex issues through informed, objective, and innovative research and analysis.

Within the framework of its Memorandum of Understanding (MOU) with the Department, the Center performed a wide range of services in FY 2007. Selected activities are reported below and then discussed in greater depth in subsequent sections of this annual report.

Medicaid Program Development and Policy Analysis: The Center's executive director participated on the Department's transition team for the new state administration. The Center modeled physician fee increases and projected the impact on Medicaid expenditures and physician participation in the Medicaid program. The Center continued to support Maryland's new Primary Adult Care (PAC) Program by beginning the development of quality assurance and performance measurement strategies. The Center carried out a number of special studies: a sickle cell analysis; a study to analyze the fiscal impact on Medicaid if the Department established programs that encourage healthy behaviors; an analysis of program trends for rare and expensive case management (REM); a number of special analyses as background to better understanding Medicaid beneficiaries' need for and utilization of behavioral health services; and an analytical brief regarding Section 6068 of the Deficit Reduction Act. The Center also reported on trauma services, conversion of coverage, processing of applications for the Older Adult Waiver, and Medicaid reimbursement rates.

HealthChoice: Program Support, Evaluation, and Monitoring: The Center evaluated the performance of HealthChoice and reported on improvements. The Center continued to monitor, report, and validate managed care organization (MCO) encounter data and provide technical assistance to MCOs in data collection and processing. The Center produced reports on value-based purchasing and management for results measures. The Center analyzed dental service utilization, estimated Medicaid capacity, and reviewed the methodology for the Montgomery County cost allocation plan. In addition, the Center performed studies on Early and Periodic

Screening, Diagnosis, and Treatment (EPSDT) and reviewed proposed regulations. The Center carried out special analyses on well child visits, outpatient visits, Medicaid enrollment by zip code, and eligibility decisions for benefits under the Older Adult Waiver.

Long-Term Supports and Services: The Center successfully assisted the Department in its application to develop a statewide Money Follows the Person Demonstration for Maryland, and performed a number of analyses to assist the Department's development of the operational protocol. The Center studied the length of stay in nursing facilities, and continued to participate on the aged, blind, and disabled work group. The Center continued to link data on nursing facility residents to develop a better understanding of the characteristics and needs of Maryland's dual Medicare/Medicaid recipients. The Center produced annual long-term care management reports on nursing facility utilization and the Living at Home, Older Adults, and Autism waivers.

Managed Care Financing: Payment Development and Financial Monitoring: The Center continued to work with the Department to develop risk-adjusted capitation payments for MCOs participating in HealthChoice, and compiled the annual HealthChoice Financial Monitoring Report. The Center developed a rate setting methodology and set six month rates for PAC. Payment rates were developed for Medicaid nursing facilities and the Program of All-Inclusive Care for the Elderly (PACE).

Data Warehouse and Web-Accessible Databases: The Center continued to house Maryland Medicaid data, processing 10 million records each month and creating yearly databases in excess of 60 million records. The Center also maintained inpatient and outpatient hospital data from the Health Services Cost Review Commission, Minimum Data Set (MDS) data, and the Department's EPSDT and REM databases. Capabilities of the Decision Support System (DSS) were upgraded and enhanced and Department staff were trained to use the system. Eye on Medicaid was developed and implemented, and a new module was developed for PAC. The Center carried out troubleshooting and maintenance for the OAW application tracking system and continued the development of a similar system for the LAH Waiver. The Center responded to numerous ad hoc requests for data and analysis from the Department, as well as external organizations.

The Center looks forward to continuing its partnership with the Department in FY 2008. The Center values its relationship with the Department and the opportunity to contribute informed, objective analysis to health policy decision-making in Maryland.

The Center for Health Program Development and Management: Overview and Background

The Mission of the Center for Health Program Development and Management is to work with public agencies and nonprofit community-based agencies in Maryland and elsewhere to improve the health and social outcomes of vulnerable populations in a manner that maximizes the impact of available resources.

Located at UMBC, the Center is Maryland's premier public applied research organization in health. The Center strives to be a source of objective information for state policy makers and seeks to contribute to the national understanding of how better to serve vulnerable populations. To fulfill its mission, the Center:

- Analyzes federal and state health care policies to optimize access to services, quality of care, provider performance, and purchaser value.
- Develops, implements, and evaluates new delivery and financing models for publicly funded health insurance programs.
- Designs and maintains state-of-the-art, interactive, web-based data management systems that provide easy access to comprehensive information on Medicaid and other public health insurance programs in order to inform policy-making.
- Assesses the health of communities, which involves monitoring health outcomes and designing new programs that enhance access to—and the quality of—health services.

UMBC established the Center in 1994 at the request of the Maryland Department of Health and Mental Hygiene. Initially chartered to design and manage Maryland's High-Risk Patient Management Initiative, the Center's responsibilities evolved as the state's Medicaid managed care programs developed. The Center was instrumental in the 1997 launch of HealthChoice, Maryland's Medicaid managed care program. Today, the Center continues to conduct research and policy analysis for HealthChoice and develops capitated payment rates for HealthChoice providers. The Center develops other managed care initiatives with the Maryland Department of Health and Mental Hygiene and warehouses all of the state's Medicaid claims and encounter data.

The Center also provides 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, the Center works with local government and health and human services agencies in Maryland, as well as other states, the federal government, and foundations.

The Center's work with Maryland Medicaid is supported through an annual MOU with the Department of Health and Mental Hygiene. This report discusses activities and accomplishments under the FY 2007 MOU.

FY 2007 MOU Activities and Accomplishments

Medicaid Program Development and Policy Analysis

During FY 2007, the Center participated on the Department's transition team, modeled the cost of physician fee increases, and conducted other special studies and analyses of the Maryland Medicaid program at the Department's request.

Participation on the Department's Transition Team: In December 2006, the Center's executive director accepted the invitation to be a member of the Department's transition team for the new state administration. The Center's contribution was an analysis of the infrastructure of the Department as it specifically related to the Medicaid Administration. The submission discussed what changes might be needed in order to execute the new governor's vision successfully.[1] In addition, the Center's executive director participated in the team's planning process that resulted in the full report.[2]

Physician Fee Increases: Throughout FY 2007, the Center continued to model physician fee increases and the projected impact on Medicaid expenditures and physician participation as the Department considered a number of strategies for increasing fees over time. This work culminated in a preliminary plan for physician fee increases for FY 2008 through FY 2010 that continue to move physician fees toward Medicare levels.[3]

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 2007, the Center began the development of quality assurance and performance measurement strategies for the program.

Sickle Cell Analysis: The Maryland General Assembly passed House Bill 851, which required the Department to provide a report on adults with sickle cell to the legislature by December 1, 2006. The Center prepared data on the adult sickle cell population enrolled in Medicaid in calendar years 2004 (CY 04) and 2005 (CY 05). The data analysis described the demographics of this population and compared those receiving services through HealthChoice with those receiving services on a fee-for-service basis.[4] The Department used the data analysis in its preparation of the report to the legislature.[5]

Encouraging Healthy Behaviors: In FY 2007, the Department requested the Center's assistance in their response to the mandate by the Joint Chairmen and committees to explore the fiscal impact on Medicaid were the Department to establish programs that encourage healthy

[1] DHMH Transmission Team Submission, transmitted by e-mail from Chuck Milligan on December 21, 2006.
[2] Report to the New Secretary, Maryland Department of Health and Mental Hygiene: on Behalf of the O'Malley/Brown Transition department of Health and Mental Hygiene Work Group, February 9, 2007.
[3] "Plan for Future Physicians' Fee Increases in FY 08-10," e-mail attachment to Mary Mussman from Hamid Fakhraei, January 26, 2007.
[4] Sickle Cell Analysis, memo and tables, transmitted by to Alycia Steinberg from Ann Volpel, August 14, 2006. Sickle Cell Analysis, memo to Alycia Steinberg from David Idala, September 13, 2006.
[5] DHMH, 2006. Legislative Report: The Study of Adult Sickle Cell Disease in Maryland, December 2006.

behaviors. The committees directed the Department to study methods for rewarding Medicaid enrollees who engage in healthy behaviors, study the feasibility of establishing a health savings account through which enrollees can access rewards earned, study the potential impact of additional cost-sharing on enrollee health, and analyze the fiscal impact of the options examined. The Center analyzed different options available to Maryland and what other states have achieved in this area. The Center also discussed the fiscal impact of the various options. The report concluded that Maryland had already made great strides in cost savings through various recent Medicaid initiatives, that the options examined might have a greater fiscal impact on the state than desired, and that other options to change enrollee behavior should be examined before any are adopted.[6]

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, the Center prepared the sixth annual report for the Maryland legislature. The report addresses progress the state has made in updating fee-for-service Medicaid reimbursement rates to promote provider participation in the Medicaid program. Specifically, the report examines physician participation in Maryland Medicaid and compares Maryland Medicaid fees with Medicare fees and Medicaid fees in other states.[7]

Rare and Expensive Case Management (REM): REM serves persons with multiple and severe health care needs. The Center made a presentation to the Department regarding REM program trends from FY 2004 through FY 2006. The analysis found that although the number of enrollees rose by less than 1 percent, the per-person-per-month rates rose by approximately 6 percent each year. Moreover, spending for home-and community-based services (HCBS) increased while spending for inpatient services decreased.[8]

Behavioral Health Services: The Center carried out a number of special analyses as background to better understanding Medicaid beneficiaries' need for and utilization of behavioral health services. The Center analyzed the use of the emergency room (ER) for mental health services by Medicaid and Maryland Children's Health Program (MCHP) recipients, and compared the rates across different hospital facilities at which ER visits for mental health services resulted in a hospital admission.[9] The Center provided the Department with demographic data regarding the number of adults with schizophrenia prescribed new generation medications served through the state's Mental Health Block Grant for FY 2004 and FY 2006, and compared it to data collected by the University of Maryland.[10]

Decreasing Medical Errors: The Center reviewed the literature on medical errors to examine and present opportunities for the Department in its efforts to increase patient safety. The report

[6] Encouraging Healthy Behaviors and Proper Utilization of Services, Report transmitted by e-mail from Todd Eberly to Chuck Milligan on January 18, 2007.
[7] *Report on the Maryland Medical Assistance Program and Maryland Children's Health Program—Reimbursement Rates Fairness Act*, December 2006
[8] REM Program Trends: FY 04 through FY 06. Presentation made to DHMH by the Center in April 2007.
[9] Mental Health/ ER Analysis, memo to Alycia Steinberg and Tricia Roddy from David Idala, June 19, 2007.
[10] Adults with Schizophrenia served in FY2006, memo from Michael Abrams to Tim Santoni, November 22, 2006.

presented an overview of the problem, non-health industry efforts, issues in various health industry venues, approaches for specific types of error reduction, efforts in Maryland, and options for the Maryland Medical Assistance Program.[11]

Applications for the Older Adult Waiver: The Center analyzed the processing of applications to the OAW determining the average processing time to assist the Department in its efforts to serve its clients more efficiently.[12]

Conversion of Coverage: The Center studied patterns of conversion to Medicaid coverage for people in nursing facilities and for those who were not and related those data to the number of persons on spend-down.[13]

Deficit Reduction Act: In October 2006, the Center submitted an analytical brief to the Department that examined various factors to estimate the potential impact to the Maryland Medicaid program were Section 6068 of the Deficit Reduction Act to be adopted and utilized in lieu of the HCBS Waiver. The analysis determined that this option could be more costly for the Department, and the Center made the recommendation that the Department not adopt this option.[14]

Trauma Services: As a result of legislation passed during the 2003 session (SB479), the Maryland Medicaid program is required to pay enhanced fees for trauma-related services. The program is then reimbursed for the enhanced fees through the Trauma and Emergency Medical Fund, also established by the 2003 legislation. Each month during FY 2007, the Center evaluated the trauma claims paid by Medicaid to determine the reimbursement amount that is due to Medicaid from the fund. Monthly reports were submitted to the Maryland Health Care Commission, which administers the fund along with Maryland Health Services Cost Review Commission.

[11] *Reducing Medical Errors: Opportunities for Maryland's Medical Assistance Program*, December 2006. Draft Report transmitted to Tricia Roddy by Annette Snyder on December 8, 2006.
[12] OAW State Stat Report, June 2007.
[13] "Spenddown (again)", e-mail sent from Tony Tucker to Tricia Roddy on January 19, 2007.
[14] *Deficit Reduction Act, Section 6086,Home- and Community-Based Services for the Elderly and Disabled: An Analytical Brief*, October 16, 2006, submitted by e-mail from Chuck Milligan to Tricia Roddy October 31, 2006

HealthChoice: Program Support, Evaluation, and Monitoring

In FY 2007, the Center 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: In March of 2007, the Center reported on the performance of HealthChoice for calendar years 2002 through 2005. The evaluation found that access to health services continued to improve from CY 2002-2005, with the greatest improvement for children. In addition, access to ambulatory services improved for all age groups and in every region of the state. Furthermore, access to dental services increased steadily, with the 45.8 percent access rate for CY 2005 more than double the access rate under the fee-for-service program in FY 1997 (19.9 percent). The evaluation concluded that the Department has worked closely with the MCOs to improve access to quality care and create a prevention-oriented delivery system.[15]

Special Needs Children Advisory Committee: The Center continued to provide staff support to the Department for the Special Needs Children Advisory Committee, established to ensure that the health needs of these children were met as they transition to HealthChoice.

Dental Service Utilization: At the request of the Dental Action Committee (DAC), the Center analyzed dental service utilization by selected groups of beneficiaries enrolled in the Maryland Children's Health Program (MCHP) and Medical Assistance (Maryland's Medicaid program) for: baseline patient utilization, provider participation, safety net clinics, and dental care expenses. The groups studied were children aged 0-20 enrolled in HealthChoice, pregnant women enrolled in HealthChoice, children in Foster Care, Rare and Expensive Case Management (REM), Safety Net Clinics, and dentists who billed at least $10,000 to HealthChoice.[16] In addition, the Center provided information to the Department on the utilization of dental services by HealthChoice enrollees for CY 2005 and compared CY 2005 dental procedure counts with those from CY 2001,[17] as well as information on the number of enrollees in HealthChoice aged 5 to 18[18] years who had at least one dental visit compared to those who did not.[19] The Center analyzed the use of the dental services by REM, foster care, and HealthChoice at large beneficiaries to compare dental access rates for enrollees in the three groups. The analysis was prepared to test the Department's hypothesis that REM and foster care would have higher dental access rates than the HealthChoice population at large because of their access to case managers who assist in coordinating care. While the hypothesis proved true for foster

[15] *HealthChoice Evaluation*, March 2007.
[16] Dental Action Committee Data Request, memo transmitted by e-mail from David Idala to Tricia Roddy and Alycia Steinberg on July 19, 2007.
[17] Utilization of Dental Services in HealthChoice, CY 2005, memo to Alycia Steinberg from Ann Volpel, April 18, 2007, transmitted by e-mail.
[18] Age as of April 30, 2007.
[19] Dental Visits for Children Aged 5-18, May 17, 2007. Memo from David Idala and Ann Volpel to Tricia Roddy, transmitted by e-mail.

children, it was not upheld for the REM population.[20] The Center provided the Department with CDs to be distributed to the MCOs with information on current HealthChoice enrollees that had no dental services between April 2004 and April 2007.[21]

Encounter Data Reporting and Validation: Through monthly, quarterly, and annual reports to the Department and MCOs, the Center verified the completeness, correctness, and reliability of encounter data. Encounter data is used not only to assess access to care and network adequacy, but also to develop payment rates for HealthChoice. Monthly reports consist of date of service analyses and MCO data submission projections. Quarterly reports show services available by county. Annual reports focus on the ratio of service users to enrollees; the distribution of diagnoses; diagnoses per claim; and cohorts by risk-adjusted category assignments. The process the Center follows for continuously monitoring and validating encounter data is described in a November 2005 report.[22] Maryland is recognized nationally for the completeness and quality of its encounter data. As part of the validation process in FY 2007, the Center established the sample size needed in order to insure statistical accuracy.[23]

Provider Reporting: The Center also prepared a series of reports on HealthChoice providers. Quarterly reports provide data on the number of providers and primary care providers by region and by MCO; enrollment for primary care providers by region and by MCO; and specialists by region and by MCO specialty network.

Work Groups: In FY 2007, Center 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.

Estimation of Regional Medicaid Capacity: The Center estimated the local and regional Medicaid capacity as of June 2006. The population was limited to HealthChoice providers and analyzed patient/provider ratios as well as payments and services for FY 2005.[24]

Montgomery County Cost Allocation Plan: At the request of the Department, the Center reviewed the methodology for the Montgomery County cost allocation plan. The review assisted the county in clarifying the methodology, thereby increasing its ability to reach the desired outcomes.[25]

[20] REM, Foster Care, and HealthChoice Dental Analysis, June 28, 2007. Memo from David Idala to Tricia Roddy, transmitted by e-mail.
[21] Dental Data, June 1, 2007. Cover Memo and CDs to Tricia Roddy from Ann Volpel.
[22] *Encounter Data Validation Report CY 2004*, November 2005.
[23] Sample Size Needed for Encounter Data, Report transmitted by e-mail from Susan Tucker to Tricia Roddy on January 31, 2007.
[24] Local and Regional Estimation of Medicaid Capacity as of June 2006, Report transmitted by memo from Todd Eberly to Rosemary Murphey on October 11, 2006.
[25] Montgomery Cost Allocation Plan, May 24, 2007. Memo from Farhad Khalatbari to Hank Fitzer transmitted by e-mail from Ann Volpel to Hank Fitzer on May 25, 2007.

Value-Based Purchasing: In September 2006, the Center produced a report setting the 2007 value-based purchasing targets for each service type.[26] The Center produced reports for two MCOs with enrollee-specific detail for two value-based purchasing measures. The Center also drafted a program to mimic the Department's Value-Based Purchasing Dental Measure to help them identify the source of data discrepancies between data submitted by the MCOs and their original data run.

Management for Results: In FY 2007, the Center prepared annual asthma and diabetes Management for Results measures for CY 2003 through CY 2005. For HealthChoice enrollees diagnosed with diabetes or asthma (in accordance with HEDIS®[27] enrollment and clinical criteria), the Center analyzed the number of avoidable asthma or diabetes inpatient claims and the number of avoidable hospital admissions.[28] In addition, the Center prepared annual measures for race and ethnicity.[29] The Center also calculated the percentage gap between the access rate to ambulatory care services for Caucasians and the access rate for African Americans for the Department's management for results report.

EPSDT Reviews: The Center developed a methodology to identify the appropriate sample size for conducting the annual EPSDT audit for 2005. In addition, the Center continued to conduct the annual EPSDT inter-rater reliability study.[30]

Monthly Reconciliation Reports: At the request of the Department, the Center began providing monthly reconciliation reports of the Medicaid payments for physician fee-for-service (FFS) claims submitted by the University of Maryland Physicians Incorporated.[31]

Regulatory Issues: The Center provided the Department with an analysis of a proposed regulation entitled "Medicaid Program: Cost Limit for Providers Operated by Units of Government and Provisions to Ensure the Integrity of Federal-State Financial Partnership."[32]

Special Analyses: In FY 2007, the Center conducted a number of special analyses requested by the Department:

- **Well Child and Evaluation and Management (E&M) Visits**: The Center analyzed the number of well child visits and E&M visits that children enrolled in HealthChoice made during CY 2005 to compare the percentages of children who had both types of visits to those

[26] CY 2007 VPB Target Values, Report submitted by e-mail to Alycia Steinberg by Todd Eberly on September 26, 2007.
[27] Health Plan Employer Data and Information Set.
[28] "Management for Results Data (Asthma and Diabetes)," memo and tables to Alycia Steinberg from David Idala and Ann Volpel, September 15, 2006.
[29] Race/ Ethnicity MFR Measure, e-mail from Todd Eberly to Alycia Steinberg on September 6, 2006.
[30] CY 2006 Maryland EPSDT Inter-Rater Reliability Study, Based on Percentage of Agreement Among Nurse Reviewer Pairs, June 2007.

[31] U2 Modifier Memo transmitted by e-mail to Robert Zielaskiewicz from David Idala, August 28, 2006.
[32] "Medicaid Program; Cost Limit for Providers Operated by Units of Government and Provisions to Ensure the Integrity of Federal-State Financial Partnership." Memo transmitted by e-mail from Susan Tucker to Tricia Roddy on January 30, 2007.

who just had E&M visits or well child visits. Data were also broken down by age group and by the MCO serving the children.[33]

- **Well Child and Ambulatory Visits**: The Center analyzed the number of well child visits and ambulatory visits that children in foster care made during CYs 2002 through 2005 and compared these data with that for all children receiving Medicaid for the same time period. In addition, the data were compared for foster children living in Baltimore City and three other geographically exclusive regions of the state. The study determined the level of access to and utilization of both types of visits for youth in foster care.[34]
- **Outpatient Visit Analysis**: The Center analyzed the number of outpatient visits, including emergency room visits, and the corresponding number of revenue codes for the years 2004, 2005, and 2006.[35]
- **Zip Code Analysis**: The Center analyzed the Medicaid and MCHP enrollment as of March 2007 by zip code for the Greater Baltimore area.[36]
- **Review of Delmarva's Eligibility Decisions:** The Department asked the Center to review data from the Maryland Department of Aging (MDoA) regarding the decisions by Delmarva to deny benefits under the OAW. The Center utilized data from the OAW tracking system to verify the accuracy of the MDoA data and found similar results. The review found that although the number of denials increased, the percentage of applications that resulted in a denial actually decreased from 2005 to 2006.[37]

[33] Well Child/Evaluation and Management Data Request, two memos from David Idala to Marti Grant, February 2, 2007 and March 5, 2007
[34] Well-child and Ambulatory Visits for Foster Care Children, memo from Michael Abrams to Alycia Steinberg, November 29, 2006. Transmitted by e-mail.
[35] Outpatient Visit Analysis transmitted by e-mail from Ann Volpel, May 2007.
[36] Zip Codes for Medicaid Grant, transmitted by e-mail from Ann Volpel on June 1, 2007.
[37] Waiver for Older Adults: Delmarva Decisions, February 12, 2007. Memo to Jill Spector from Ann Volpel transmitted by e-mail.

Long-Term Supports and Services

The Center 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 Report for Calendar Year 2005, and continued to build the Center's capacity to carry out research and policy analysis related to dual eligibles.

Money Follows the Person (MFP): The Center assisted the Department in its application to develop a statewide Money Follows the Person Demonstration for Maryland.[38] The application was successful and on July 1, 2007, the Department began the development of the operational protocol for the program. MFP will help eligible persons transition from nursing facilities (NFs) and intermediate care facilities for persons with mental retardation to community-based services. The Center developed a structural outline for preparing the operational protocol that the participating state departments could use to begin the consensus building process for this project.[39] The Center analyzed the demographics and characteristics of individuals who transitioned from NFs in FY 2006 into either the OAW (for those aged 50 or older), or the LAH Waiver (for those aged 18–59) in an effort to assist the state in identifying individuals residing in institutions who are candidates for transitioning back to the community.[40] The Center also compared institutional costs with community-based costs for FYs 2002 through 2006.[41] In addition, the Center identified and catalogued the licensed assisted living settings across the state,[42] and analyzed the level of care for those individuals who transitioned from NFs in FY 2006 into very small assisted living residences.[43]

Nursing Facility Length of Stay: The Department of Aging asked the Center to study the length of stay in nursing facilities by persons who were admitted from senior housing. The Center analyzed Minimum Data Set (MDS) files from October 1998 through early May 2006 and found that there were two groups of individuals that fit the above description: those who experienced many short stays, and those who experienced much longer stays. The Center also found that the differences between short stays and long stays, however defined, are likely more about the diagnostic, functional, and informal support characteristics of the individuals than the source of pay for their nursing home stays.[44]

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[38] *Rebalancing Long Term Care in Maryland: On the Road to Community Living*, November 1, 2006. Application for a Money Follows the Person Demonstration Program.
[39] A Proposed Structural Outline for Preparing the Money Follows the Person Demonstration Operational Protocol**,** transmitted by e-mail from Wayne Smith to Tricia Roddy and Stacey Davis on April 18, 2007.
[40] *Characteristics of Nursing Facility Residents who Transitioned to the OAW or the LAH Waiver in FY 2006.* May 15, 2007. Report
[41] Community and Institutional Service Costs, Spreadsheet transmitted by e-mail to Susan Tucker, Tricia Roddy, Stacey Davis; S. Orion Courtin; Jill Spector; and Mark Leeds on May 15, 2007.
[42] Assisted living providers used by transitioned individuals in FY06. Transmitted by e-mail to Stacey Davis and S. Orion Courtin on May 15, 2007.
[43] Last NF Level of Care for NF Transitions to Assisted Living Settings of 4 or Fewer Persons—MFP, e-mail from Wayne Smith to Susan Tucker; Tricia Roddy; S. Orion Courtin; Stacey Davis; Jill Spector on May 30, 2007.
[44] *An Analysis of Length of Stay in Medicaid Nursing Facilities—Individuals from Maryland Senior Housing Program*. December 22, 2006. Report transmitted by e-mail from Wayne Smith to Ilene Rosenthal. "Some fast numbers" e-mail from Tony Tucker to Mark Leeds on January 22, 2007.

Dual Eligibles: To develop a better understanding of the characteristics and needs of Maryland's "dual eligibles"—those individuals eligible for both Medicare and Medicaid—the Center continues to link Medicaid and Medicare claims data, data from the federal government's MDS on nursing facility residents, and the monthly Medicare Modernization Act file, which includes details on dates for Medicare and associated group health plan enrollment. Linking these data sets for Maryland Medicaid enrollees provides a better understanding of how coverage by both Medicaid and Medicare impacts utilization, delivery of services, and costs. Together, these files provide a vast resource for program and policy research, enabling the Center to track demographic, diagnostic, and utilization patterns over time and across settings and payers.

During FY 2007, the Center continued to develop linked Medicare and Medicaid data as a resource for analytical purposes including, for example, establishing new and revised data use agreements with CMS, requesting additional years of Medicare data,[45] and submitting a substantial grant proposal on behalf of the Department for funding to support additional analyses. If funded, the proposed study will examine interactive effects of providing long-term care supports and services under Medicaid on Medicare and Medicaid acute care resource use; will look at those effects in the context of a sub-sample of Medicaid recipients for whom the state has additional information on functional status and informal community supports; and will update and extend existing analysis regarding rate-setting alternatives for Medicaid coordinated care in the context of the Medicare Special Needs Plans.[46] The grant proposal also serves as a tentative outline for continuing analyses designed to support the development and assessment of Medicaid program alternatives to coordinate more effectively the provision of Maryland state benefits for dual Medicare/Medicaid recipients generally, and long-term supports and services in particular.

Long-Term Care Management Reports: The Center completed an annual analysis of nursing home utilization among Maryland Medicaid beneficiaries[47] and analyses of enrollment, utilization, and costs of the LAH Waiver,[48] the OAW,[49] and the Medicaid Autism Waiver.[50] These reports, prepared annually, alert the Department to trends in long-term supports and services. This year the reports highlighted the fact that costs for the waiver programs increased, while the numbers of participants remained virtually the same, and in some cases, decreased. These findings point to the challenge the state continues to face in reducing admissions and returning nursing home residents to the community.

Aged, Blind, and Disabled (ABD) Work Group: The Center continued to participate on this work group, which was established to address the health care needs of the ABD population in Maryland.

[45] Request for Medicare Claims Data on Maryland Dual Eligible for 2005-2008, October 18, 2006, Letter from Anthony Tucker to Carleen Basso, Center for Medicare and Medicaid Services.
[46] *Analyses Related To The Coordination Of Medicare And Medicaid Services In Maryland*, January 25, 2007.
[47] Medicaid Nursing Facility Report, DHMH Long-Term Care Management Report for CY 2005.
[48] Medicaid Living at Home Waiver, DHMH Long-Term Care Management Report for CY 2005.
[49] Medicaid Waiver for Older Adults, DHMH Long-Term Care Management Report for CY 2005.
[50] Medicaid Autism Waiver, DHMH Long-Term Care Management Report for CY 2005.

Managed Care Financing:
Payment Development and Financial Monitoring

In FY 2007, the Center developed capitation rates for HealthChoice, the Primary Adult Care (PAC) Program, nursing homes, and the Program for All-Inclusive Care for the Elderly (PACE).

HealthChoice: In FY 2007, the Center continued to work with the Department to develop risk-adjusted capitation payments for MCOs participating in HealthChoice.[51] 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. The Center subcontracts 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 2007, the state paid $1.8 billion in capitation payments to the seven MCOs participating in HealthChoice, providing insurance for more than 607,000 Medicaid beneficiaries.

The HealthChoice Financial Monitoring Report, which the Center compiles annually, examines MCO performance on selected measures to better understand cost differences among MCOs and the impact of capitation rates on plan performance.[52] The report also compares the performance of provider-sponsored organizations (PSOs) to non-PSOs. The Center prepares 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.[53]

Primary Adult Care (PAC) Program: The Center developed a rate methodology and set six month rates for services under this program for 2007.[54] The capitation rates are for MCOs qualified to participate in HealthChoice. The Center will institute more traditional rate setting methods in the third year of the program, basing rates on actual utilization and costs during the first two years.

Nursing Home and Program for All-Inclusive Care for the Elderly (PACE) Rate Setting: In FY 2005, the Center continued to develop Medicaid reimbursement rates for Maryland nursing homes and PACE. In addition, the Center continued to facilitate the electronic submission of cost reports by nursing home providers.

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[51] See "Calendar Year 2008 HealthChoice Rate Setting Work Plan," March 2, 2007.
[52] Analysis of Calendar Year 2004 HFMR Data to Evaluate Differences in Cost of Medical Care among Maryland MCOs. Presentation, September 2006
[53] *FY 2007 Capitation Payment Monitoring Report as of June 30, 2007*, report to Audrey Richardson from Chuck Milligan.
[54] MERCER, Maryland Primary Adult Care (MPAC) Rate Development, Memo to Chuck Milligan from Tim Doyle, March 12, 2007

Data Warehouse and Web-Accessible Databases

The research and analysis performed by the Center would not be possible without the rich data sources warehoused by the Center. The Center also has considerable expertise in website design and information architecture; web-accessible reporting, query, and tracking systems; and web-based surveys.

Uniform Cost Report Website: In FY 2007, the Center provided technical support for the UCR website and fixed a number of errors.

PAC Reporting: In FY 2007, the Center added a PAC module to the MCO reporting system, and began the development of a PAC reporting site in this system.

The Center's data warehouse functions are described below, along with the Decision Support System and waiver tracking systems developed by the Center.

Databases Warehoused by the Center

- **Maryland Medicaid Data:** The Center maintains Maryland Medicaid data from as far back as 1991. The Center receives data electronically from the Department on a monthly basis. Included in the data transmissions are FFS claims (medical, institutional, and pharmacy) and MMIS-eligibility and encounter data. The Center receives and updates provider data quarterly. The Center processes 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:** The Center currently maintains hospital inpatient and outpatient HSCRC data from 1996 through 2006. These data are 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. The Center maintains 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 ADLs. The Center updates MDS data on a quarterly basis.

- **Linked MDS, Medicare, and Medicaid Data:** Work continues at the Center to link MDS data to Medicare and Medicaid claims files to support Medicaid program research, especially related to the development of managed long-term care for dual eligibles.

Databases Developed and Maintained for the Department

- **EPSDT:** In FY 2007, the Center continued to maintain and add new features to this database for the Maryland Healthy Kids program, including information on practices and National Provider IDs. The database enables the program to determine whether providers are complying with program requirements and facilitates studies of inter-rater reliability.

- **REM:** The Center built a new version of the REM database in FY 2007, reporting enrollment, utilization, and cost data to the Department. The Center submitted a trend analysis to the Department in February 2007, and provided quarterly reports in FY 2007 with expenditure data to the case management organizations.

- **Sentinel Birth Defects:** In FY 2007, the Center continued to maintain the database on sentinel birth defects for the Department as part of an initiative of the Centers for Disease Control and Prevention.

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 2007, the Center continued to make improvements to the DSS and provide technical assistance to Department staff using the system. Working with the Department, the Center identified new content areas to add to the DSS, increased functionality, improved site navigation, and upgraded the mapping capability using Instant Atlas. The Center enhanced the DSS to facilitate MCO reporting and automated much of the reportage to enable timelier data posting. The Center added a new physician application that shows services provided by physicians. In addition, a new mental health application was developed, the PAC enrollment and eligibility modules were completed, site-wide navigation was upgraded for Internet Explorer 7, and the web page was re-vamped to make it more user friendly. The Service Count category now displays a series of quarterly analyses and gives a choice of viewing by either calendar or fiscal year. The Center continues to provide training to the Department through CDs and online tutorials. Training was held for MCOs in FY 2007 on the use of the new MCO Reports application. Currently, 113 Department staff members are registered to use the DSS.

Eye on Medicaid, a new interactive site on the DSS, was developed and fully implemented in FY 2007. This site 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.

The Center also maintains *Maryland Medicaid eHealth Statistics* (www.chpdm-ehealth.org), a public website providing a subset of the data available on the DSS. This website allows researchers, community leaders, practitioners, and the public at large to access Medicaid health statistics.

Waiver Tracking Systems: In FY 2007, the Center maintained and provided troubleshooting for the OAW application tracking system, which processes about 200 applications each month

and maintains information on about 2,800 individuals receiving waiver services. This web-based application, developed by the Center, tracks the flow of waiver applications, increasing agency efficiency, reducing application processing time, and providing real-time access to information on waiver applicants. Six agencies are now using the system. The Center is in the final stage of development of a similar application tracking system for the LAH Waiver that will be used by five agencies.

Immunization Registry: The Center continued to prepare and import immunization data for Medicaid beneficiaries to the Maryland Immunization Registry. The Center pulls 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 provide demographic and other information on persons who have an immunization procedure.[55] The Center updated this database in FY 2007. The Center continued to house Maryland Medicaid data, processing over 10 million records each month and creating yearly databases in excess of 60 million records.

Data Requests: In FY 2007, the Center prepared numerous ad hoc data analyses and reports for the Department (Exhibit 1). The Center also responded to many external requests for Medicaid data, as directed by the Department (Exhibit 2).

Exhibit 1
Ad Hoc Data Requests and Reports for the Department, FY 2007

- Reports on the volume of services provided in hospital outpatient departments for both fee-for-service and encounter data for CY04, CY05, and CY06.
- Reports to identify the number of mental health emergency department visits by hospital.
- Reports on dental service utilization by 5-14 year old HealthChoice recipients.
- Report on utilization of services by foster children during CY05.
- Report to identify number of enrollees with illnesses related to smoking and cancer.
- Reports to determine the number of breast cancer and cervical cancer screenings performed.
- Reports on mental health and substance abuse treatment.
- For Medicaid fee-for-service, the total discharges, sources of admissions, and discharges by length of stay in the hospital.
- Reports on Medicaid participants who received medical day care services, their procedure codes and revenue codes.
- Report to compare the number of low birth rate babies to normal birth rate babies and the total costs by group.
- Reports delineating specific vaccine procedures for FY05.
- For REM enrollees, a report on their status at time of referral.

[55] Data for Immunization Registry, May 11, 2007. Memo from Hamid Fakhraei to Jennifer Edwards.

Exhibit 2
External Data Requests, FY 2007

- **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.

- **Johns Hopkins University—Adjusted Clinical Groups (ACGs)**: Medicaid data for technical assistance with risk-adjusted rate setting for HealthChoice and CommunityChoice.

- **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.

- **Mercer**: Medicaid data for actuarial analysis and certification of payment rates for HealthChoice.

IT Architecture and Platform

The Center is a business associate of the Department and therefore is required to follow the HIPAA regulations regarding electronic security. To this end, the Center has implemented several initiatives designed to protect the data warehouse as well as provide tools that will allow Center 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 the Center from threats emanating from outside the Center's network. Tier Three is a software-based firewall/IPS designed to monitor and protect the Center'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 2007, several new features were added to the Center network. The remote access system has recently been rolled out to users to enable them to work from offsite and to enable the Center's disaster recovery plan. Extensive measures have been taken to ensure that data remains secure; for example, users with access to PHI have been equipped with encrypted laptops to ensure confidentiality of data. Additionally, a secure file transfer protocol (SFTP) server has been installed that allows for encrypted communication between the Center and all of its clients, including the Department.

Selected Publications and Reports Produced to Fulfill the FY 2007 MOU

1. "Plan for Future Physicians' Fee Increases in FY 08-10," Report transmitted by e-mail to Mary Mussman from Hamid Fakhraei, January 26, 2007.
2. DHMH, 2006. *Legislative Report: The Study of Adult Sickle Cell Disease in Maryland,* December 2006.
3. *Encouraging Healthy Behaviors and Proper Utilization of Services,* Report transmitted by e-mail from Todd Eberly to Chuck Milligan on January 18, 2007.
4. *Report on the Maryland Medical Assistance Program and Maryland Children's Health Program—Reimbursement Rates Fairness Act,* December 2006
5. REM Program Trends: FY 04 through FY 06. Presentation made to DHMH by the Center in April 2007.
6. Mental Health/ ER Analysis, Memo to Alycia Steinberg and Tricia Roddy from David Idala, June 19, 2007.
7. Adults with Schizophrenia served in FY2006, Memo from Michael Abrams to Tim Santoni, November 22, 2006.
8. *Reducing Medical Errors: Opportunities for Maryland's Medical Assistance Program,* December 2006. Draft Report transmitted to Tricia Roddy by Annette Snyder on December 8, 2006.
9. OAW State Stat Report, June 2007.
10. *Deficit Reduction Act, Section 6086,Home- and Community-Based Services for the Elderly and Disabled: An Analytical Brief,* October 16, 2006, submitted by e-mail from Chuck Milligan to Tricia Roddy October 31, 2006
11. *HealthChoice Evaluation*, March 2007.
12. Dental Action Committee Data Request, memo transmitted by e-mail from David Idala to Tricia Roddy and Alycia Steinberg on July 19, 2007.
13. Utilization of Dental Services in HealthChoice, CY 2005, memo to Alycia Steinberg from Ann Volpel, April 18, 2007, transmitted by e-mail.
14. Dental Visits for Children Aged 5-18, May 17, 2007. Memo from David Idala and Ann Volpel to Tricia Roddy, transmitted by e-mail.
15. REM, Foster Care, and HealthChoice Dental Analysis, June 28, 2007. Memo from David Idala to Tricia Roddy, transmitted by e-mail.
16. Dental Data, June 1, 2007. Cover Memo and 9 CDs to Tricia Roddy from Ann Volpel.
17. *Encounter Data Validation Report CY 2004*, November 2005.

18. Montgomery Cost Allocation Plan, May 24, 2007. Memo from Farhad Khalatbari to Hank Fitzer transmitted by e-mail from Ann Volpel to Hank Fitzer on May 25, 2007.
19. CY 2007 VPB Target Values, Report submitted by e-mail to Alycia Steinberg by Todd Eberly on September 26, 2007.
20. Health Plan Employer Data and Information Set.
21. "Management for Results Data (Asthma and Diabetes)," memo and tables to Alycia Steinberg from David Idala and Ann Volpel, September 15, 2006.
22. CY 2006 Maryland EPSDT Inter-Rater Reliability Study, Based on Percentage of Agreement Among Nurse Reviewer Pairs, June 2007.
23. "Medicaid Program; Cost Limit for Providers Operated by Units of Government and Provisions to Ensure the Integrity of Federal-State Financial Partnership." Memo transmitted by e-mail from Susan Tucker to Tricia Roddy on January 30, 2007.
24. Well Child/ Evaluation and Management Data Request, two memos from David Idala to Marti Grant, February 2, 2007 and March 5, 2007
25. Well-child and Ambulatory Visits for Foster Care Children, memo from Michael Abrams to Alycia Steinberg, November 29, 2006. Transmitted by e-mail.
26. Outpatient Visit Analysis transmitted by e-mail from Ann Volpel, May 2007.
27. *Rebalancing Long Term Care in Maryland: On the Road to Community Living*, November 1, 2006. Application for a Money Follows the Person Demonstration Program.
28. *Characteristics of Nursing Facility Residents who Transitioned to the OAW or the LAH Waiver in FY 2006*. May 15, 2007. Report
29. *An Analysis of Length of Stay in Medicaid Nursing Facilities—Individuals from Maryland Senior Housing Program*. December 22, 2006. Report transmitted by e-mail from Wayne Smith to Ilene Rosenthal. "Some fast numbers" e-mail from Tony Tucker to Mark Leeds on January 22, 2007.
30. *Analyses Related To The Coordination Of Medicare And Medicaid Services In Maryland*, January 25, 2007.
31. Medicaid Nursing Facility Report, DHMH Long-Term Care Management Report for CY 2005.
32. Medicaid Living at Home Waiver, DHMH Long-Term Care Management Report for CY 2005.
33. Medicaid Waiver for Older Adults, DHMH Long-Term Care Management Report for CY 2005.
34. Medicaid Autism Waiver, DHMH Long-Term Care Management Report for CY 2005.
35. Analysis of Calendar Year 2004 HFMR Data to Evaluate Differences in Cost of Medical Care among Maryland MCOs. Presentation, September 2006