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# STATE OF MISSISSIPPI
# OFFICE OF THE GOVERNOR
# DIVISION OF MEDICAID

Cost Effectiveness Study Report for Mississippi Coordinated Access Network (MississippiCAN)

DEDICATED TO GOVERNMENT HEALTH PROGRAMS

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## Glossary

- **Actual-to Expected Ratio (A/E ratio)** – The A/E ratio compares the number of actual events such as PPAs or PPVs to the expected number of events for a population with the same risk profile. The A/E ratio provides a risk-adjusted measure of performance for each of the categories of potentially preventable events (PPEs).
- **Access** – A patient's ability to obtain medical care determined by the availability of medical services, their acceptability to the patient, the location of health care facilities, transportation, hours or operation, and cost of care.
- **All Patient Refined – Diagnostic Related Group** (APR-DRG) – A system used throughout the United States to adjust inpatient claims data for severity of illness (SOI) and risk of mortality (ROM). Public and commercial organizations in more than 30 states use the APR DRG methodology for payment or public quality reporting.
- **Beneficiary (Also Eligible; Enrollee; Member)** – Any person enrolled in Medicaid services, both fee for services and managed care services.
- **Benchmark** – A standard or reference by which to measure or judge.
- **Benefits** – Benefits are specific areas of the Care Coordination Organization's coverages, such as outpatient visits, hospitalization, and so forth, which make up the range of medical services that a payer offers to its beneficiaries.
- **Capitation** – A per member monthly payment to a provider or Care Coordination Organization that covers contracted services and is paid in advance of its delivery. In essence, a provider agrees to provide specified services to Medicaid Members for this fixed, predetermined payment for a specified length of time (usually a year), regardless of how many times the Member utilizes the service. The rate can be fixed for all Members or it can be adjusted for the age and sex of the Member, based on actuarial projections of medical utilization.
- **Care Management** – A set of beneficiary-centered, goal oriented, culturally relevant, and logical steps to assure that a beneficiary receives needed services in a supportive, effective, efficient, timely, and cost-effective manner. Care Management is also referred to as Care Coordination.
- **Category of Eligibility (COE)** – Refers to covered groups of people who qualify for Medicaid or managed care health benefits, if eligible under the appropriate income limits and other qualifications.
- **Centers for Medicare & Medicaid Services (CMS) Medicaid Managed Care Final Rule** – This final rule modernizes the Medicaid managed care regulations to reflect changes in the usage of managed care delivery systems. The final rule aligns many of the rules governing Medicaid managed care with those of other major sources of coverage; implements statutory provisions; strengthens actuarial soundness payment provisions to promote the accountability of Medicaid managed care program rates; and promotes the quality of care and strengthens efforts to reform delivery systems that serve Medicaid and Children's Health Insurance Program (CHIP) Beneficiaries. It also ensures appropriate beneficiary protections and enhances policies related to program integrity.

- **CFR** – Code of Federal Regulations.
- **Children's Health Insurance Program (CHIP)** – This program provides insurance coverage for uninsured children up to age 19 whose family does not qualify for Medicaid and whose income does not exceed 200 percent of the federal poverty level.
- **Conduent (formerly known as Xerox)** – The Fiscal Agent Contractor (FAC) for the state of Mississippi.
- **Coordinated Care Organization (CCO)** – A private organization that has entered into a risk-based contractual arrangement with the Mississippi DOM to obtain and finance care for enrolled Medicaid Members. CCOs receive a capitation or Per Member Per month (PMPM) payment from the DOM for each enrolled Member. Magnolia Health Plan (Magnolia Health) and United Healthcare Community Plan (UHC) are the two CCOs operating under contract in Mississippi.
- **Division of Medicaid (DOM)** – The Division under the Office of the Governor within the state of Mississippi that oversees and administers Medicaid and the state's Children's Health Insurance Program.
- **Enhanced Ambulatory Care Grouping (EAPG)** – EAPGs are similar to APR-DRGs, but used in the ambulatory care setting. EAPGs classify patients according to the amount and type of resources used in an ambulatory visit. Services in each EAPG have similar clinical characteristics and similar resource use and cost. EAPGs encompass the full range of ambulatory settings—including same day surgery units, hospital emergency rooms, and outpatient clinics among others—and are used here to support risk adjustment. EAPGs are assigned at the line level of an ambulatory care claim, with some services identified as "bundled" into the overall visit. EAPG weights reflect the relative intensity of resource use expected for a given service.
- **Encounter** – A medical service provided to a member, by a unique provider, on a single date of service, whether paid or denied by a Coordinated Care Organization. One patient encounter may result in multiple encounter records. For example, a member may have one inpatient hospital stay (encounter), but receive multiple services from different provider types during their stay, resulting in multiple encounter records.
- **Encounter Data** – Claims that have been adjudicated by the CCOs or subcontracted vendors (e.g., vision, pharmacy, dental services vendors) to health care providers that have provided health care services to Members enrolled with the CCO. These claims are submitted to DOM via the FAC for the DOM's use in rate setting, federal reporting, program oversight and management, tracking, accounting, and other ad-hoc analyses.
- **External Quality Review Organization (EQRO)** – An organization that meets the competence and independence requirements set forth in 42 CFR §438.354, and performs external quality review (EQR) or other EQR-related activities as set forth in 42 CFR §438.358, or both.
- **External Quality Review (EQR)** – The analysis and evaluation by an EQRO, of aggregated information on quality, timeliness, and access to the health care services that CCOs, or their contractors, furnish to Medicaid Beneficiaries.

- **Fee-For-Service (FFS)** – A method for the administration of the Medicaid program where provider participation is open to all providers who meet state requirements, providers are reimbursed based on the volume of services provided, and decisions about policy, coverage, and the rate of reimbursement are made by the staff of the Medicaid agency. FFS programs may contract for administrative functions such as claims processing or disease management. However, these contracts are typically not on an at-risk basis**.**
- **Fiscal Agent Contractor (FAC)** – A contractor selected to design, develop, and maintain the claims processing Medicaid Management Information System (MMIS); Conduent is the current FAC. Also known as a fiscal intermediary (FI).
- **Healthcare Effectiveness Data and Information Set (HEDIS®)** – A set of performance measures used in the managed care industry.
- **Initial Admission** – Within a PPR analysis, an initial admission is a hospital admission that is not excluded from the PPR analysis, but does not meet the criteria to be a readmission.
- **Magnolia Health Plan (Magnolia Health)** – A coordinated care organization (CCO) participating in the Mississippi Medicaid managed care program.
- **Medical Loss Ratio (MLR)** – The proportion of premium revenues spent on clinical services and quality improvement by the Contractor as calculated in accordance with the requirements of 42 C.F.R. §438.8. The Contractor is required to rebate a portion of the Capitation Payment to the Division in the event the Contractor does not meet the eighty-five percent (85 percent) minimum MLR standard.
- **Medicaid Management Information System (MMIS)** – The claims processing system used by the FAC to adjudicate Mississippi Medicaid fee-for-service claims and CCO capitation payments. CCO submitted encounters are also loaded into this system and assigned a unique claim identifier.
- **Mississippi Coordinated Access Network (MississippiCAN)** – The state of Mississippi's Medicaid managed care program. The program began on January 1, 2011 with voluntary enrollment, and was phased in over several years. During this time, significant expansion of covered beneficiaries and services occurred in CY 2013 through CY 2016 which included the movement of certain groups from voluntary to mandatory enrollment. Effective July 1, 2014, and renewed effective July 1, 2017, the Mississippi DOM started a contract with two CCOs, who are responsible for coordinating services for Mississippi Medicaid Beneficiaries.
- **National Committee for Quality Assurance (NCQA)** – A non-profit organization dedicated to improving health care quality, which accredits health care organizations, and develops and maintains HEDIS® measures.
- **Non-Emergency Transportation (NET)** – A ride, or reimbursement for a ride, provided so that a member with no other transportation resources can receive services from a medical provider. NET does not include emergency or ambulance transportation.
- **Per Member Per Month (PMPM)** – Can refer to either monthly CCO capitation payments paid by DOM to the CCOs or the amount paid by the CCO each month to network

providers for each Member for whom the CCO is responsible for providing health care services under a capitation agreement.

- **Potentially Preventable Admission (PPA)** – A hospital admission is considered potentially preventable if it likely represents a failure to access primary care, or inadequate coordination of outpatient services. PPAs focus on ambulatory-sensitive conditions such as asthma, where exacerbations can be reduced by adequate monitoring and follow up care, including medication management.
- **Potentially Preventable Ancillary Service (PPS)** – PPSs are ancillary services such as diagnostic tests, laboratory tests, therapy services, and radiology services that may not be necessary for diagnosis and management. These tests and services may be redundant or otherwise not necessary for providing treatment.
- **Potentially Preventable Emergency Department Visit (PPV)** – PPVs are emergency department (ED) visits that represent a failure to access primary care or an inadequate coordination of ambulatory care. They focus on ambulatory-sensitive conditions such as asthma. ED visits after hospitalizations could reflect poor care during the hospitalization or a lack of coordination of post-discharge care.
- **Potentially Preventable Events (PPEs)** – An overall term to describe healthcare events that may be preventable with high-quality healthcare and good coordination of care. PPEs include potentially preventable admissions, ED visits, ancillary services, and readmissions.
- **Potentially Preventable Re-admission (PPR)** – A PPR is a hospital admission within 15 days of a previous hospital admission that is clinically related to the initial admission. While not all readmissions are preventable, many may be prevented through better care and improved care coordination after discharge.
- **Quasi-CHIP** – Refers to members who previously qualified for CHIP, age 6-19, 100-133 percent Federal Poverty Level, but under the Affordable Care Act now qualify for Medicaid.
- **Re-admission** – A hospital admission that occurs within 15 days of a prior admission and is clinically related to the prior admission.
- **SSI** – Supplemental Security Income (SSI) is income provided by the U.S. Government to needy aged, blind, and disabled persons administered by the Social Security Administration.
- **TANF** – Temporary Assistance for Needy Families (TANF) is an income assistance program for certain low income families.
- **Utilization** – Use of services.
- **Utilization Management** – Managing the use of medical services to ensure that a patient receives necessary, appropriate, high-quality care in a cost-effective manner. As it applies to a pharmacy benefit, utilization management is any of a number of measures used to ensure appropriate medication utilization. Such measures may include quantity limitations, step-therapy, prior authorization, and/or additional steps as deemed appropriate by the CCO and agreed upon by the State.

- **Validation** – The review of information, data, and procedures to determine the extent to which encounter data is accurate, reliable, free from bias, and in accord with standards for data collection and analysis.

# Executive Summary

The Mississippi Division of Medicaid (DOM) engaged Myers and Stauffer LC (Myers and Stauffer) to coordinate a cost effectiveness study of the Mississippi Medicaid managed care program known as MississippiCAN. DOM used existing agency contractors to prepare various components of the study. Myers and Stauffer's primary role was to assemble the analytical components completed by different DOM contractors. Due to time constraints explained in the *Purpose and Approach* section, Myers and Stauffer was not engaged by DOM to fully validate the information provided by each contributing contractor. Instead, Myers and Stauffer has cited the specific contractor providing the component as the source of information and analysis.

This study presents 10 analytical components to assess cost effectiveness in four areas:

1) The appropriateness of coordinated care organization (CCO) capitation payments relative to actual CCO expenditures for MississippiCAN beneficiaries.
2) The impact of managed care on Medicaid expenditures.
3) The impact of managed care on potentially preventable events (PPEs) such as emergency department visits and inpatient hospital admissions.
4) The impact of managed care on health outcomes over time and compared to peer states.

## Key Cost Effectiveness Study Factors and Considerations

Determining Medicaid managed care cost effectiveness is a complex process. There are many different factors and considerations that must be taken into account in order to provide a constructive assessment. Factors such as the evolution of beneficiary and service coverage, federal requirements, the state's health care status, and access to care must be considered when analyzing and interpreting data.

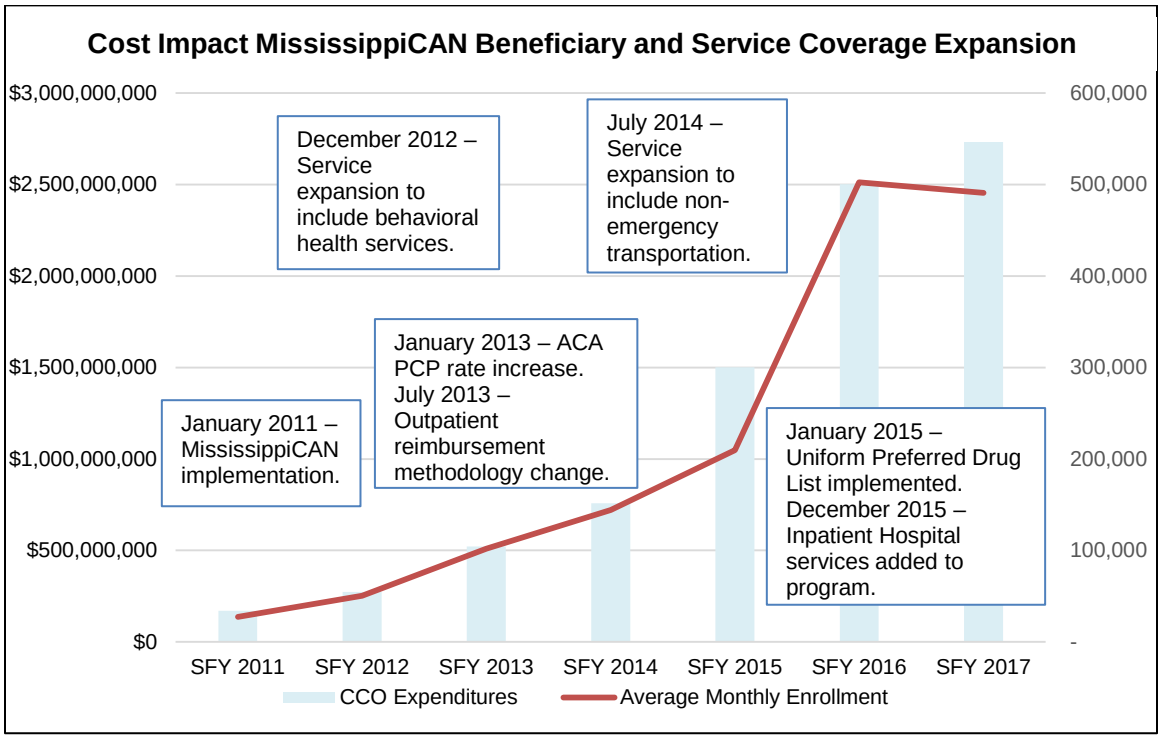
The study findings must also be viewed in the context of Mississippi's health status relative to other states' and national data. Mississippi has ranked the lowest in the nation in terms of overall health and on numerous health indicators such as obesity, infant mortality, cardiovascular disease, and diabetes.[1] Mississippi's health status has been attributed to behavioral risk factors, poverty, lack of access to primary and specialty care, and inadequate supply of health professionals throughout much of the state[2]. This situation creates unique challenges for improving the health of MississippiCAN beneficiaries and the overall cost effectiveness of the program.

The evolution of the MississippiCAN program in terms of beneficiary and service coverage has taken place over several years, with major expansions occurring between calendar year (CY) 2013 and CY 2016. The magnitude and timing of these expansions is a major factor when assessing program cost effectiveness. Nearly 300,000 children were transitioned into the program during the period of May through July 2015, more than doubling the total number of

[1] United Health Foundation. America's Health Rankings. https://www.americashealthrankings.org/
[2] Mississippi Department of Health. Building a Healthier Mississippi from the Ground UP State Health Assessment and Improvement Plan May, 2016

covered beneficiaries. More significantly, inpatient hospital services were added to the program in December 2015. Prior to the inclusion of inpatient care, CCOs had few incentives to prevent hospitalizations which are typically a large contributor to overall health care costs. *Figure 1* illustrates the evolution of MississippiCAN beneficiary and service expansion between SFY 2011 through SFY 2017.

*Figure 1. Cost Impact MississippiCAN Beneficiary and Service Coverage Expansion*




## Cost Effectiveness Findings

Overall, the study results indicate that MississippiCAN is cost effective in terms of the appropriateness of CCO capitation payments and the impact on Medicaid expenditures. In addition, actuarial analysis indicates that MississippiCAN has saved $369.1 million in total funds and $285.5 million in state funds between January 1, 2011 and June 30, 2017. In terms of the program's impact on health outcomes and PPEs such as inpatient admissions and emergency department visits, the results are mixed. Further in-depth study with longer term data should be used to assess these two areas of cost effectiveness.

### *Appropriateness of CCO Capitation Payments*

The analytical components used to assess the appropriateness of CCO capitation payments compared to actual CCO provider payments for beneficiary services indicate program cost effectiveness. Specific findings include:

- CCO capitation rates have been developed appropriately and substantially align to the CCO's payments to providers on behalf of MississippiCAN beneficiaries. Between CY 2011 and CY 2015 there was a 0.7 percent difference between actuarial assumptions

built into the CCO rates and actual CCO payments. This difference was driven by the use of FFS data for new populations added to the program. Furthermore, the capitation rates are best estimates of future activity.

- A review of the increase in capitation payments between state fiscal year (SFY) 2015 and SFY 2017, indicates that increases were passed on to providers.
- A review of the SFY 2017 capitation rate development process indicates that DOM and its actuary complied with federal regulations, Centers for Medicare & Medicaid Services (CMS) requirements, and actuarial standards. In addition, it appears that defendable assumptions for the cost of care were the basis of the SFY 2017 recommended capitation increase.

***MississippiCAN Impact on Medicaid Expenditures and Beneficiary Costs***

The analytical components used to assess the impact of MississippiCAN on Medicaid expenditures and beneficiary costs indicate program cost effectiveness. Specific findings include:

- The significant enrollment growth that occurred in SFY 2014 and SFY 2015 could have greatly increased costs under an unmanaged FFS system. Instead, Mississippi Medicaid inflationary costs ran mostly below the CMS medical inflation projection for SFY 2011 through SFY 2017. In the years where the Mississippi inflationary costs ran above CMS medical inflation, it was due to state and federal program and policy changes.
- The cumulative difference in total Medicaid spending for SFY 2011 through SFY 2017 was $147.7 million total funds less than what would have been spent at the national medical inflation level.
- Enrollment growth, primarily due to the federal Patient Protection and Affordable Care Act (ACA), was the main driver of cost increases between SFY 2011 and SFY 2017.
- A comparison of state Medicaid managed care cost rankings for SFY 2016 shows that Mississippi, relative to other states, ranks 28th in terms of overall costs[3]. For Medicaid administrative costs, Mississippi had the third lowest cost in the nation.
- MississippiCAN generated $188.2 million in net revenues through the state insurance premium tax between January 2011 through June 2017. This additional source of state revenue would not have been generated under a traditional FFS system.

***MississippiCAN Impact on Potentially Preventable ED Visits, Inpatient Hospital Admissions, and Duplicative or Unnecessary Services***

The analysis on MississippiCAN's impact on PPEs such as ED visits, inpatient hospital admissions, and duplicative or unnecessary services indicates mixed results for cost effectiveness. The analysis reviewed data for December 2013 through November 2016. A major limitation of this analysis is there is only one year of data where hospital admissions were reimbursed by CCOs. Analysis resulted in the following findings:

[3] Public Consulting Group, Inc. Analysis of Medicaid and CHIP Payment and Access Commission (MACPAC) MACStats data. Refer to Appendix E.

- MississippiCAN showed a decrease in potentially preventable inpatient hospital admissions throughout the study timeframe, while FFS held steady.
- MississippiCAN showed an increase in potentially preventable ED visits, while FFS held steady throughout the study timeframe. This could be attributable to the expansion of MississippiCAN beneficiary coverage between CY 2013 and CY 2016.
- MississippiCAN appears to perform worse than FFS in terms of reducing duplicative or unnecessary services, but was closing the gap by the end of the study timeframe.
- The MississippiCAN reduction in inpatient hospital admissions appears more favorable than in FFS. This may indicate that the program's care coordination efforts are having a positive impact. However, the differences in the demographics of the MississippiCAN and FFS populations must also be considered when reviewing this data. Therefore, a more in-depth review of the data is recommended.

***MississippiCAN Impact on Trends in Beneficiary Health over Time and Compared to Peer States***

MississippiCAN is starting from a more challenging position relative to its health status, poverty rate, and health care professional workforce shortages when compared to other states. However, for the 15 categories of health measures reviewed, MississippiCAN results are low but appear to be gradually improving in some areas.

- Compared to the national average and peer states (Georgia, Michigan, and Tennessee), MississippiCAN's performance on the timeliness of prenatal care was at the national average and better than the peer states. MississippiCAN showed trending improvement in well child visits for children and adolescents, screening programs, and the timeliness of prenatal care.
- While well child visits are trending up for MississippiCAN members, the program still lags below the national average and peer states.
- The data showed a declining trend in dental visits and postpartum care.
- In terms of access to primary care physicians (PCPs), the program was also above the national average, but performed below the peer states which are older, more established managed care programs.
- This high-level assessment of MississippiCAN's impact on beneficiary health indicates that health outcomes are improving, which should promote cost effectiveness over time. However, given the transition of beneficiaries and services into MississippiCAN, the utilization needs time to stabilize in order to conduct a more comprehensive analysis of this impact. Trends based on later data should be assessed to establish a firm conclusion regarding health outcomes and cost effectiveness.

## Medicaid Managed Care Systems Compared to FFS

Managed care provides the following tools to improve cost effectiveness, which would not be available in FFS:

- Managed care programs offer additional services such as patient-centered medical homes, care coordination, disease management, 24-hour nurse call lines, educational programs, member education, member and provider incentive programs, and the ability to provide other in lieu of services permitted under the 2016 Medicaid managed care final rule.
- States have the ability to offer financial incentives to their managed care plans to improve beneficiary health. Such incentives tie annual performance targets to contractually-specified goals and outcomes. If performance targets are met, the plan receives either a portion of withheld capitation payments, shared savings, or additional payments. If the plan does not meet the target, they are ineligible for payment and the state retains the funds. Currently, MississippiCAN does not have any incentive payments, though contractually DOM maintains the option.
- Medicaid managed care plans also have the opportunity to offer financial incentives at the provider level for making improvements in service delivery. These incentives may be aligned with the managed care plan's contractual obligations to the state to produce certain outcomes.
- Medicaid managed care programs are subject to extensive federal regulatory requirements regarding plan performance, access to care, quality of care, financial management, collection of data, member services, program integrity, and program oversight. In 2017 and 2018, in order to promote transparency, the federal government is requiring states to post specific content on their public websites including an annual managed care program report, network adequacy standards, state-determined managed care plan quality rating, quality measures and performance outcomes, annual external quality review (EQR) reports, and the State Quality Strategy. This level of transparency and accountability is not currently required in FFS.
- The Medicaid managed care system provides states with contractual leverage, through sanctions and incentives, to hold the managed care plans accountable for member health outcomes, network access, data and reporting, financial performance, and overall program performance.
- Medicaid managed care also generates state revenues since the managed care plans are subject to the state insurance premium tax. These revenues cannot be generated in FFS since the premium tax only applies to health insurance plans.

## Recommendations to Promote Cost Effectiveness

The following high-level recommendations are proposed to improve MississippiCAN cost effectiveness:

- CMS is encouraging states to adopt their annual Core Set of Health Care Quality Measures for Adults and Children. This core set includes and will increase the number of Healthcare Effectiveness Data and Information Set (HEDIS®) performance measures

being tracked for MississippiCAN. DOM representatives advised that effective January 1, 2018, DOM will adopt the CMS core set. In addition, given the higher cost typically associated with the Supplemental Security Income (SSI) population, DOM should consider including additional measures specific to this population group. SSI and SSI-related populations are typically the highest utilizers of services and account for a significant percentage of savings opportunity in managed care.

- DOM should develop and routinely share CCO dashboards with DOM leadership. The dashboards serve as a management tool and are a distillation of critical information from the many CCO reports. DOM can use the dashboards to follow program trends, set program goals, and identify quality improvement strategies and delivery system changes to improve health outcomes. DOM can then use this information, not only to monitor performance, but to collaborate with health plans on areas of improvement. Some states also post public dashboards on their websites in order to increase program transparency and inform public stakeholders.
- DOM should exercise its contractual option to implement a value-based payment (VBP) aligned to target health outcomes for MississippiCAN beneficiaries. This will involve DOM researching and identifying specific performance measures, payment approach, and inclusion of this provision in the rate setting process by DOM's actuary.
- A key consideration in monitoring cost effectiveness is having access to complete and accurate claims history data. This is an area where DOM has been proactive by implementing bi-monthly reconciliations of encounter claims to the CCOs' (and/or respective sub-contractor's) cash disbursement journals. DOM should continue to perform encounter data reconciliations and validation.
- To ensure cost effectiveness, DOM should review and evaluate its current oversight and monitoring procedures for the CCOs. Should performance issues be identified, assurances should be made that CCOs are performing consistent with contractual obligations, and full remediation and remedy strategies are deployed.

### Recommendations for Future Cost Effectiveness Studies

Due to the limited time to conduct this study, it is recommended that DOM consider additional cost effectiveness reviews in the following areas:

- An assessment of the most feasible and appropriate approach for implementing a MississippiCAN VBP program.
- A more in-depth review of PPEs stratified by population and service type, and covering a later timeframe. The study should also include a focus on why emergency department visits increased in MississippiCAN between December 2013 and November 2016.
- A study of FFS health care outcomes for MississippiCAN beneficiaries prior to their coverage in the MississippiCAN program to use for baseline measurement.
- An in-depth study of best practices related to population health initiatives to address Mississippi Medicaid health challenges such as obesity, women's health, prenatal care, low birth weight deliveries, and chronic diseases such as diabetes.

These recommended studies will help inform DOM for compliance with reporting requirements mandated under the federal managed care rule (42 CFR 438). The rule was significantly updated in 2016. States now have requirements to perform the following studies and/or reporting, and must post the findings on their public websites. These requirements will promote program transparency and opportunities to identify areas of improvement for managed care cost effectiveness. Depending on the reporting requirement, the initial website posting dates occur on different timeframes.

- Annual managed care program report that includes financial performance, encounter data reporting, enrollment, benefits covered, grievances and appeals, availability and accessibility of covered services, evaluations of plan performance on quality measures, and sanctions or corrective action plans. Report due date is pending CMS guidance.
- Statewide network adequacy requirements to be posted in SFY 2019.
- Accreditation status of the CCOs to be posted in SFY 2018.
- Quality rating given by the state to each managed care plan to be posted in SFY 2019.
- State quality strategy to be posted by July 1, 2018.
- Quality measures and performance outcomes to be posted by July 1, 2018.
- Annual EQR technical reports to be posted by July 1, 2018.

## Purpose and Approach

The SFY 2018 Legislative Medicaid appropriations bill, House Bill 1510, required the Mississippi DOM to commission a cost effectiveness study of the Mississippi Medicaid managed care program known as the Mississippi Coordinated Access Network (MississippiCAN). The study was to be performed and submitted to the legislature by November 1, 2017 and $250,000 state dollars were earmarked. Initially, DOM issued a Request for Proposals for a qualified vendor to perform the entire study. However, all interested bidders cited the condensed timeline as a barrier and the received bid was deemed unresponsive due to the requirements of the work not being met due to timing concerns. As a result, DOM revised its approach by separating the study into 10 analytical components. By matching the component analysis to existing contractors, DOM determined the work was achievable and the contractors agreed to perform the component analysis under a very short deadline. Because of the lengthy procurement process required by the state and the study deadline, the only viable way to present the compilation of the component information by year end was to use an existing contract as the vehicle for the work performance. All associated contractors with relevant knowledge were asked to submit a quote for the study compilation.

DOM awarded the second solicitation to Myers and Stauffer. Specifically, Myers and Stauffer was engaged to assemble the analytical components completed by different DOM contractors and to present findings and recommendations. Due to time constraints in providing meaningful information to the legislature prior to the start of the 2018 session, Myers and Stauffer was not engaged to fully validate the information provided by each contributing DOM contractor and has cited the specific contractor providing the component as the source of information and analysis.

The contractors submitting cost effectiveness component information and analysis are:

- Milliman, Inc.
- Conduent, Inc.
- Public Consulting Group, Inc.
- Cornerstone Healthcare Financial Consulting, LLC.
- Gary L. Owens, LLC.

For this study, Myers and Stauffer also conducted a high-level analysis of existing health outcomes for members enrolled in MississippiCAN compared to select peer states with reasonably comparable demographics and readily available public information. Myers and Stauffer also provided an overview of best practices for evaluating and improving the Mississippi Medicaid managed care program’s cost effectiveness.

## Cost Effectiveness Study Components

The components of this cost effectiveness study are based on recommendations from a 2016 report submitted to the legislature and entitled the Mississippi Operational and Performance Assessment of the Governor's Office, Division of Medicaid[4]. One of the report findings recommended an assessment of the MississippiCAN program cost effectiveness. The assessment would evaluate the appropriateness of CCO capitation payments and the impact of managed care on Medicaid expenditures, beneficiary costs, and beneficiary health outcomes. There are 10 specific components covered in this report:

- Actuarial calculations to determine whether past projections used for capitation rate development align with actual CCO experience.
- Comparison of risk-adjusted costs per beneficiary to determine MississippiCAN impact on beneficiary acuity.
- MississippiCAN impact on duplicative or unnecessary services, ED visits, and inpatient stays.
- MississippiCAN impact on potentially preventable hospital and ED admission among CCO beneficiaries, with comparisons to previous years for FFS beneficiaries of the same population.
- The decrease in inpatient hospital utilization attributable to Medicaid beneficiaries over time, in order to assess the efficacy of MississippiCAN toward coordination of care, the treatment of chronic conditions, and reductions in readmissions.
- Comparison of MississippiCAN per member per month (PMPM) and non-claims costs to peer states, DOM's FFS beneficiaries of the same populations, and to national benchmarks.
- The necessity and/or benefit of DOM increasing SFY 2017 payments to the CCOs following a legislative session that funded DOM at approximately $75 million below spending projections for SFY 2017.
- Comparison of annual growth in Medicaid and MississippiCAN spending to medical cost inflation, and the impact of enrollment changes on MississippiCAN and Medicaid spending.
- Extent to which CCO payments increased after DOM provided increases to the annual capitation rates.
- Trends over time in MississippiCAN health outcome results and compared to peer states.

This report also reviews Medicaid managed care best practices to improve cost effectiveness and makes recommendations specific to the MississippiCAN program.

A glossary of terms and acronyms is available beginning on page 6 for the convenience of the reader.

[4] Navigant Consulting. Mississippi Operational and Performance Assessment of the Governor's Office, Division of Medicaid (DOM). Prepared for the Mississippi State Legislature in response to Mississippi Regular Session 2016 House Bill 1650. February 28, 2017.

# MississippiCAN – Background and History

## Background on MississippiCAN

MississippiCAN is a risk-based Medicaid managed care program serving Mississippians enrolled in the publicly-funded Medicaid program at a cost of $2.8 billion in total funds in SFY 2017. The program began halfway through SFY 2011 on January 1, 2011 with voluntary enrollment, and was phased in over several years. During this time, significant expansion of covered beneficiaries and services occurred in CY 2013 through CY 2016 which included the movement of certain groups from voluntary to mandatory enrollment. The program was relatively small at four percent of fiscal year average Medicaid beneficiaries and four percent of fiscal year Medicaid expenditures, when it began in January 2011. Since that time, beneficiary participation and covered services have grown. As of SFY 2017, MississippiCAN covered 69 percent of Medicaid beneficiaries and accounted for 47 percent of Medicaid expenditures.

As MississippiCAN has grown, FFS has likewise decreased as an overall share of program enrollment and expenditures. *Figure 2* and *Figure 3* depict how enrollment and expenditures have changed in MississippiCAN and FFS during this timeframe. Please refer to the *MississippiCAN History of Beneficiary and Service Coverage* section of this report for further details.

***Figure 2. MississippiCAN Enrollment as a Share of Total Medicaid Enrollment***

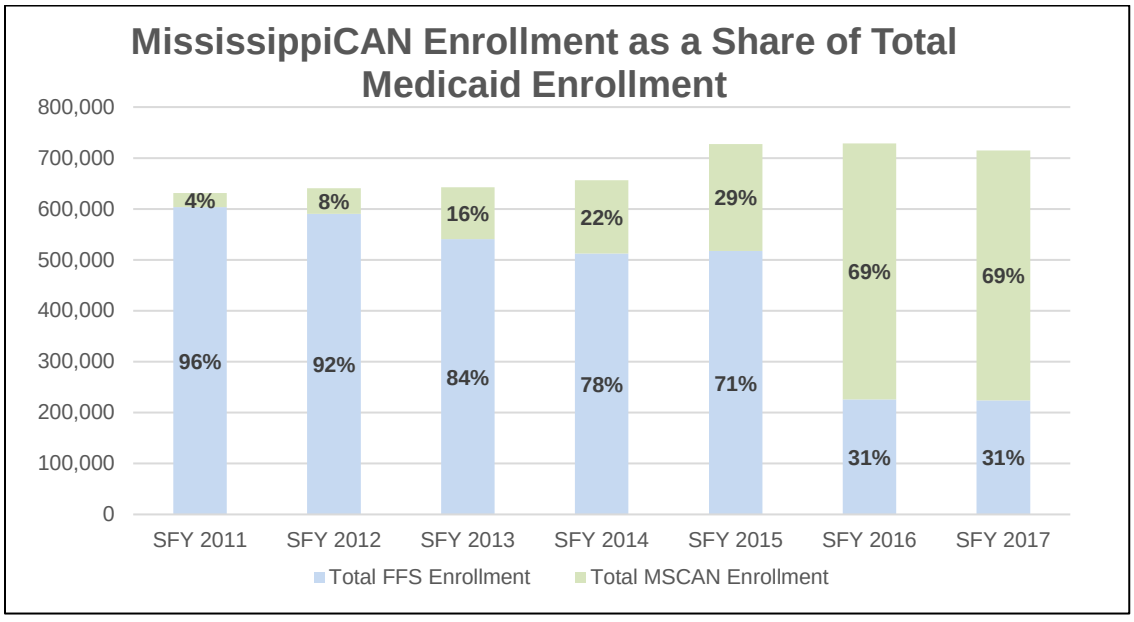
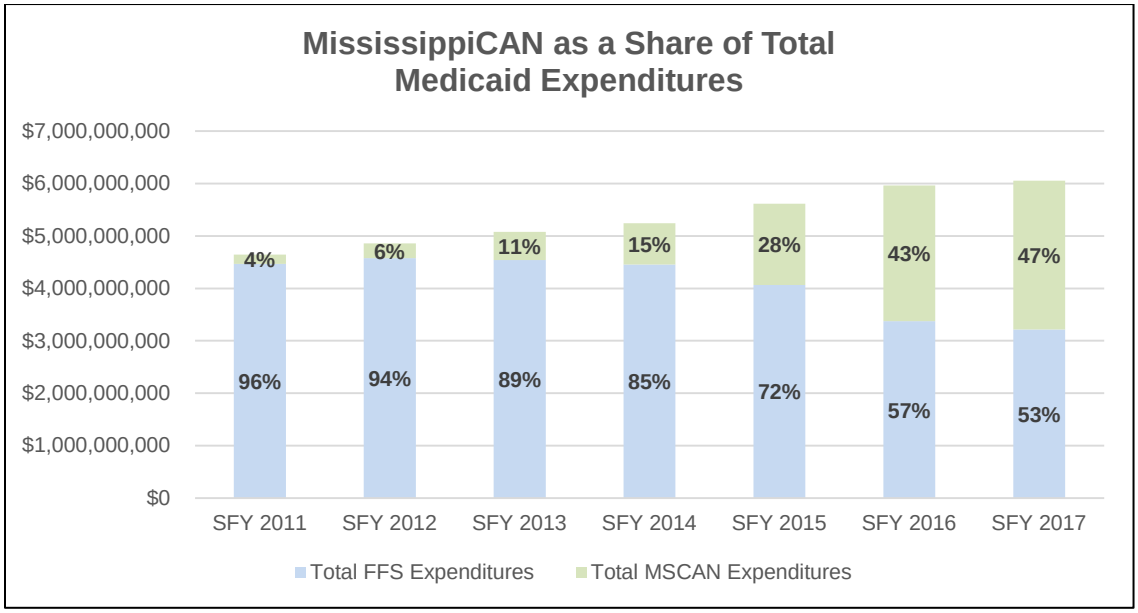


*Figure 3. MississippiCAN Enrollment as a Share of Total Medicaid Expenditures*




***MississippiCAN Contracted Health Plans and Program Goals***

The state of Mississippi, through DOM, contracts with two CCOs that are responsible for and accept full financial risk for providing medical services to beneficiaries in exchange for a pre-paid monthly payment. DOM contracts with United Health Care Community Plan (UHC) and Magnolia Health Plan (Magnolia Health, a product of Centene Corporation). The CCO contract was renewed effective July 1, 2017 for a three-year term with two optional one year extensions. Effective October 1, 2018, an additional CCO, Molina Health, will be added to the program.

The intent of MississippiCAN is to improve beneficiary health through care coordination and disease management with an emphasis on preventive care, and to slow the rate of expenditure growth in the Medicaid program. Specifically, the program goals include:

- **The improvement of beneficiary access to necessary medical services.** This goal is addressed by connecting the targeted beneficiaries with a medical home, increasing access to providers, and improving beneficiaries' use of primary and preventive care services.
- **Improvement in the quality of care for Medicaid beneficiaries.** This goal is addressed by providing supportive services, including disease state management, and other programs that allow beneficiaries to take increased responsibility for their health care.
- **Increase the cost efficiency and effectiveness in the delivery of beneficiary care.** This goal is achieved by contracting with CCOs on a risk-based capitated basis, monitoring the CCO performance, and developing appropriate incentives and sanctions to ensure an efficient and effective program.

***Medicaid Managed Care versus FFS***

Traditionally, Medicaid has been provided through a FFS delivery system in which the state Medicaid agency pays providers for each service delivered to a beneficiary. Under FFS, because provider payments are based on the volume of services provided, there is an economic incentive to deliver more services, which contributes to increased Medicaid costs, but not necessarily improved beneficiary health. As a result, many states have implemented risk-based managed care for their Medicaid programs, with the goal of controlling costs, improving beneficiary health, and providing a more accountable and coordinated system of care that emphasizes preventive services. As of July 2017, 39 states, including Mississippi, have some form of risk-based managed care in their Medicaid programs.

Under a risk-based managed care program, states contract with a managed care organization (MCO), or in Mississippi, a CCO, to provide a specific set of Medicaid services to beneficiaries in exchange for a set payment per beneficiary per month – referred to as a capitation rate – to provide these services. The CCO then typically provides care coordination with an emphasis on preventative services as a way of managing the risk that the monthly capitation payment will be adequate to cover actual beneficiary costs.

Some of the major differences between Medicaid managed care and FFS include:

- Managed care programs offer additional services not typically allowed by CMS under FFS, such as a patient-centered medical home, care coordination, disease management, 24-hour nurse call lines, educational programs, member incentive programs, and the ability to provide other in lieu of services permitted under the 2016 Medicaid managed care final rule.
- States have the ability to offer financial incentives to the CCOs to improve beneficiary health. Such incentives, or VBPs, tie annual performance targets to contractually-specified goals and outcomes. If performance targets are met, the CCO receives either a portion of withheld capitation payments, shared savings, or additional payments. If the CCO does not meet the target, they are ineligible for payment and the state retains the funds.
- The CCOs also have the opportunity to offer financial incentives at the provider level for making improvements in service delivery. These incentives may be aligned with the managed care plan's contractual obligations to the state to produce certain outcomes.
- Medicaid managed care programs are subject to extensive federal regulatory requirements regarding plan performance, access to care, quality of care, financial management, collection of data, member services, program integrity, and program oversight. Beginning in 2017 and 2018, in order to promote transparency, the federal government is requiring states to post specific content on their public websites, including an annual managed care program report, network adequacy standards, state-determined managed care plan quality rating, quality measures and performance outcomes, annual EQR reports, and the State Quality Strategy. This level of transparency is not currently required in FFS.
- The Medicaid managed care system provides states with contractual leverage, through sanctions and incentives, to hold the CCOs accountable for member health outcomes,

network access, data and reporting, financial performance, and overall program performance.

- Medicaid managed care also generates state revenues since the CCOs are subject to the state insurance premium tax. These revenues cannot be generated in FFS since the premium tax only applies to health insurance plans.

***MississippiCAN Target Population***

Participation in MississippiCAN is mandatory for low income children, Temporary Assistance for Needy Families (TANF) adults, pregnant women, disabled adults (SSI adults), and members with breast or cervical cancer. Disabled (SSI) children and foster care children are also eligible for MississippiCAN, but may voluntarily opt out of the program and participate in FFS. Persons in an institution such as a nursing facility or intermediate care facility for individuals with intellectual disabilities (ICF/IID), dual eligible (Medicare and Medicaid), and waiver members are excluded from the program regardless of the category of eligibility. The majority of members, 74 percent, are children and were transitioned into the program between May and July 2015. *Table 1* provides a breakdown of CCO enrollment.

*Table 1. Breakdown of MississippiCAN Membership*

| Breakdown of MississippiCAN Membership | | |
|---|---|---|
| **Member Type** | **Percentage** | **Required to Participate** |
| Children* | 74% | Mandatory |
| SSI – Disabled Adults and Children; Breast and Cervical Cancer | 13% | Mandatory – Adults<br>Voluntary – Children |
| TANF Adults | 10% | Mandatory |
| Pregnant Women | 2% | Mandatory |
| Foster Care Children | 1% | Voluntary |
| | | |
| *Excluded Mississippi Medicaid Member Types:* | | |
| • Beneficiaries in any waiver programs: Elderly and Disabled (ED), Independent Living (IL), Traumatic Brain Injury/Spinal Cord Injury (TBI/SCI), Assisted Living (AL), Intellectual Disabilities/Developmental Disabilities (ID/DD), and Mississippi Youth Programs Around the Clock (MYPAC).<br>• Beneficiaries who have both Medicare and Medicaid.<br>• Beneficiaries who are in institutions such as: nursing facilities, ICF/IID, correctional facilities, and others. | | |
| ** Does not include children enrolled in the Children's Health Insurance Program (CHIP).* | | |

Please note, beneficiaries enrolled in the Children's Health Insurance Program (CHIP) are also enrolled in a separate managed care program. However, the CHIP program is not addressed in this Cost Effectiveness Report unless otherwise noted.

***MississippiCAN Services***

As of SFY 2017, most services available to beneficiaries covered in the FFS environment are also available through MississippiCAN. Inpatient behavioral health services and long-term care services and supports such as nursing home care and community-based services are carved out of the managed care program, but can be accessed through the FFS system. *Table 2* lists the services covered by MississippiCAN.

*Table 2. MississippiCAN Covered Services*

| MississippiCAN Covered Services as of November 2017 | |
|---|---|
| **Covered by CCOs** | **Not Covered by CCOs (Access through FFS)** |
| Inpatient Hospital Services<br>Outpatient Hospital Services<br>Physician Office Visits<br>Pharmacy Services<br>Dental Services (limited over 21 years)<br>Vision Services<br>Behavioral Health Services<br>Therapy Services<br>Hospice Services<br>Ambulance/Emergency Services<br>Non-Emergency Transportation<br>Durable Medical Equipment | Certain Inpatient Behavioral Health Services<br>Nursing Facility Services<br>Home and Community-Based Services Waiver<br>Psychiatric Residential Treatment Facilities (PRTF) |

Unlike the FFS environment, managed care members are required to select a PCP who acts as their medical home to better coordinate and manage beneficiary care. Non-emergency transportation (NET) services are also included in the program to ensure member access to necessary transportation.

Additional CCO services to enhance beneficiary health are also provided, such as a 24-hour nurse call line and educational programs. While some enhanced services are contractually required, others are provided by the CCO with the associated cost excluded from the capitation payment. *Table 3* details additional CCO beneficiary services.

*Table 3. CCO Enhanced Beneficiary Services*

| CCO Enhanced Beneficiary Services as of November 2017* | | |
|---|---|---|
| **Service** | **CCO**** | **Mississippi Medicaid** |
| Patient Centered Medical Home | Yes | No |
| Prescription Drugs | Additional Prescriptions | 5 per month *** |
| Doctor's Office Visits | Additional Visits | 12 per year *** |
| Adult Vision Care | | |
| Annual Eye Exam | 1 per year | No |
| Eye Glasses or Discount | Yes | 1 pair every 5 years |
| Care Management | Yes | No *** |
| Disease Management | Yes | No *** |
| Member Incentive Programs | Yes – rewards for healthy behaviors | No |
| 24-Hour Nurse Call Lines | Yes | No |
| Educational Program to Improve Health | Yes | No *** |

** The cost of enhanced services that are not contractually required is not included in the CCO capitation payment.*
*** Actual benefits vary by plan.*
**** Exceptions exist within the FFS model for selected eligibility segments and programs.*

## MississippiCAN History – Beneficiary and Service Coverage

The evolution of MississippiCAN in terms of beneficiary and service coverage has taken place over six years with major expansions between CY 2013 to CY 2016. The magnitude and timing of these changes is an important consideration when assessing MississippiCAN cost effectiveness and performance results. Nearly 300,000 children were transitioned into the program during the period of May through July 2015, more than doubling the total number of covered beneficiaries with the inclusion of this generally healthy population. Most significantly, inpatient hospital services were added to MississippiCAN in December 2015. Prior to the inclusion of inpatient care, the CCOs were not highly incentivized to prevent hospitalizations which are typically a large cost contributor in the health care delivery system. Thus, savings and cost effectiveness results must contain caveats based on these beneficiary enrollment shifts and service provision responsibilities.

*Table 4* details the program changes specific to each fiscal year and the associated change to the total Mississippi CAN share of enrollment and expenditures.

*Table 4. MississippiCAN Program Evolution and Changes in Enrollment and Expenditures by Year*

| MississippiCAN Program Evolution and Changes in Enrollment and Expenditures by Year | | | | | |
|---|---|---|---|---|---|
| **Year** | **MississippiCAN Program Description of Major Expansion Areas** | **Enrollment** | | **Expenditures** | |
| | | **Members** | **Share of Total Medicaid** | **Cost** | **Share of Total Medicaid** |
| **SFY 2011**<br>1/1/2011 | Statewide implementation for voluntary populations: SSI, disabled children living at home (DCLH), working disabled, breast and cervical cancer, and foster care IV-E child welfare services.<br><br>Excluded services – behavioral health, NET, inpatient hospital, inpatient psychiatric, and long-term care including waivers. | 27,372 | 4.0% | $175,785,514 | 4.0% |
| **SFY 2012** | No major changes other than normal adjustments for utilization and trend. | 50,428 | 8.0% | $281,776,211 | 6.0% |
| **SFY 2013**<br>12/1/2012<br><br><br><br><br>1/1/2013 | Population coverage expanded to foster care IV-E, pregnant women, newborns 0-12 months (non-SSI), and medical assistance (MA) adults. All populations became mandatory except: SSI children, DCLH, foster care children, and members of the Choctaw Indian Tribe.<br><br>Federal ACA requires increased Medicaid reimbursement for primary care practitioners (PCPs) to 106 percent of current year Medicare.<br><br>Outpatient hospital reimbursement methodology changed from a cost-to-charge structure to a case rate reimbursement equal to 100% of Medicare Ambulatory Payment Classifications (APCs).<br><br>Behavioral health services included.<br><br>Excluded services – hemophilia treatment, NET, inpatient hospital, inpatient psychiatric, and long-term care including waivers. | 101,826 | 16.0% | $537,006,961 | 11.0% |
| **SFY 2014**<br>1/1/2014<br><br><br><br>12/1/2014 | Federal ACA impacts, including increased Medicaid enrollment and imposition of the Health Insurance Provider Fee (HIF).<br><br>NET services included.<br><br>Population coverage expanded to include Quasi-CHIP children, formerly eligibility for CHIP under 133 percent federal poverty level (FPL). | 144,166 | 22.0% | $781,943,528 | 15.0% |

| MississippiCAN Program Evolution and Changes in Enrollment and Expenditures by Year | | | | | |
|---|---|---|---|---|---|
| **Year** | **MississippiCAN Program Description of Major Expansion Areas** | **Enrollment** | | **Expenditures** | |
| | | **Members** | **Share of Total Medicaid** | **Cost** | **Share of Total Medicaid** |
| | Excluded services – hemophilia treatment, inpatient hospital, inpatient psychiatric, long-term care including waivers. | | | | |
| **SFY 2015**<br>1/1/2015<br>5/1/2015 | Uniform preferred drug list (PDL) implemented. Resulted in a large increase in CCO pharmacy costs.<br><br>Population coverage expanded to include MA children under age 19. | 209,559 | 29.0% | $1,549,994,260 | 28.0% |
| **SFY 2016**<br>Through<br>7/31/2015<br>12/1/2015 | Population coverage expanded to include MA children under age 19 – transfer of children to CCO program continues through July 31, 2015.<br><br>Inpatient hospital services included. Mississippi Hospital Access Program implemented.<br><br>Newborn coverage begins in the CCO at the date of birth which is a cost shift from FFS.<br><br>Excluded services – hemophilia treatment, inpatient psychiatric, and long-term care including waivers. | 502,670 | 69.0% | $2,586,361,780 | 43.0% |
| **SFY 2017** | Increased expenditures driven by annualized cost of the transfer of all Medicaid children into MississippiCAN and annualized cost of the inclusion of inpatient hospital services.<br><br>Excluded services – hemophilia treatment, inpatient psychiatric, and long-term care including waivers. | 490,962 | 69.0% | $2,837,127,754 | 47.0% |
| **Note - does not include CHIP which was authorized to operate under a managed care delivery system at its inception.* | | | | | |

## MississippiCAN Estimated Program Savings – January 2011 to June 2017

Milliman, Inc. provides required actuarial services to DOM, including the development and certification of CCO rates. At the request of DOM, Milliman Inc. has projected the MississippiCAN financial impact for January 2011 through June 2017. Milliman estimated $369.1 million in total funds savings during this timeframe, of which $97.3 million were state funds. Mississippi realized additional financial benefit of $188.2 million in revenues generated by the state insurance

premium tax and the Mississippi Hospital Access Program (MHAP) premium tax. These revenues are not counted as part of total funds savings as they are effectively transfers from the federal to state government. The federal government saved $83.6 million after accounting for the revenue transfer associated with the premium tax. An overview of Milliman's analysis is presented below. Please refer to *Appendix A* for the detailed Milliman estimated program savings report.

*Table 5* displays the estimated cost savings to Mississippi for medical services from January 2011 to June 2017 for MississippiCAN enrolled populations relative to a projection of what their FFS costs would have been in the absence of managed care. While it is not possible to know with certainty what medical costs would have been if MississippiCAN had not been in place, Milliman examined the most recent FFS experience available for each population to make a "best estimate" projection using acceptable actuarial practices. The savings were calculated as reductions in medical costs relative to FFS, which are then partially offset by targeted CCO administrative costs and margin to provide more efficient and higher quality of care under managed care. In addition, beginning in January 2014, the HIF imposed under the ACA offset some program savings. This new annual fee on health insurance providers is based on their market share of net premiums written, or the sum of premiums earned from all policies, during the previous year including Medicaid. The fee is not tax deductible. Therefore, the Medicaid portion of the fee must be built into the capitation rates to maintain actuarial soundness which offsets some program savings.

***Table 5. MississippiCAN Estimated Program Savings Relative to Fee-for-Service January 2011 to June 2017***

| MississippiCAN Estimated Program Savings Relative to Fee-for-Service for January 2011 to June 2017 ($ in Millions) | | | | |
|---|---|---|---|---|
| **Capitated Population[1]** | **Projected FFS Claims w/o Managed Care** | **MSCAN Costs [2,3]** | **Total Fund Savings[4]** | **Mississippi Share of Savings** |
| SSI/Disabled, Foster Care, BCCP | $4,966.0 | $4,648.7 | $317.4 | $83.7 |
| MA Adults, Pregnant Women, Newborns | $2,505.1 | $2,449.7 | $55.3 | $14.4 |
| MA Children/Q-CHIP Children | $1,566.7 | $1,569.2 | ($2.5) | ($0.5) |
| MHAP | $1,066.1 | $1,067.2 | ($1.1) | ($0.3) |
| **Subtotal** | | | **$369.1** | **$97.3** |
| Net Premium Tax – Capitation | | | | $164.3 |
| Net Premium Tax Revenue – MHAP | | | | $23.9 |
| **Total Impact to Mississippi** | | | | **$285.5** |

*[1]Costs included for populations only during enrollment in MSCAN.*

*[2]MSCAN costs include both capitated services and inpatient services paid FFS prior to December 2015 for MSCAN members. Premium tax is not applied to inpatient services prior to inclusion in capitation rates in December 2015.*

*[3]MSCAN costs include the impact of the HIF beginning January 2014.*

*[4]Total funds savings of $369.1 million. Premium tax savings are effectively transfers from federal to state government and are not included in the total funds savings amount.*

*Table 5* also estimates the net revenue the state of Mississippi will realize through collection of the three percent premium tax on MississippiCAN capitation payments collected by the Department of Insurance (DOI). Since the capitation rates are funded by federal and state money based on the Federal Medical Assistance Percentage (FMAP), the federal government pays an equivalent of approximately 2.25 percent (assuming an average FMAP of 75 percent) and the state government (DOM) pays 0.75 percent. Therefore, the State realizes net proceeds from the MississippiCAN premium tax (DOI collections less DOM costs) equivalent to the 2.25 percent federal contribution. The timing of payments is not reflected in this analysis.

Concurrent with the inclusion of inpatient hospital services in MississippiCAN capitation rates effective December 1, 2015, the MHAP was established. This program helps to ensure sufficient access to inpatient hospital services for the Medicaid population by including enhanced hospital reimbursement in the capitation rates. Including these amounts in the capitation rates also subjects the amounts to state premium tax and potentially the HIF. *Table 5* displays the cost and net premium impact of MHAP separate from the MississippiCAN capitation rates.

*Table 6* summarizes the state share of savings and net premium tax revenue by capitation rate period from January 2011 to June 2015.

***Table 6. MississippiCAN Estimated Program Savings Relative to FFS January 2011 to June 2017 – State Share Only***

| MississippiCAN Estimated Program Savings Relative to FFS for January 2011 to June 2017 – State Share Only ($ in Millions) | | | |
|---|---|---|---|
| **Capitated Rate Period[1]** | **Mississippi Share of Savings** | **Net Premium Tax Revenue** | **Total Impact to Mississippi** |
| CY 2011 | $14.5 | $10.2 | $24.7 |
| CY 2012 | $15.6 | $9.8 | $25.4 |
| CY 2013 | $21.9 | $18.3 | $40.2 |
| January – June 2014 | $6.1 | $10.1 | $16.2 |
| SFY 2015 | $10.9 | $20.7 | $31.6 |
| SFY 2016 | $16.9 | $55.5 | $72.4 |
| SFY 2017 | $11.4 | $63.6 | $75.0 |
| ***January 2011 to June 2017*** | **$97.3** | **$188.2** | **$285.5** |

*[1]Costs included for populations only during enrollment in MississippiCAN.*

# Background on Peer States Selected for the Cost Effectiveness Study

## Mississippi Health Status

The United Health Foundation annually reports America's Health Rankings, which is an assessment of the nation's health on a state-by-state basis. The annual rankings are determined using a comprehensive set of behaviors, community and environmental conditions, policies, and clinical care data to provide an overall view of the health of the nation. Since at least 1990, Mississippi has consistently ranked between 48th and 50th in overall health, making it one of the least healthy states in the nation. In 2016, Mississippi was ranked 50th in overall health with challenges identified in many areas, including infant mortality, very low birth weight deliveries, obesity, diabetes, cardiovascular disease, diabetes, and physical inactivity.[5]

Mississippi is also consistently ranked as the one of the most impoverished states. The high poverty rate exacerbates health outcomes. Poverty increases the likelihood of poor health due to limited access to health care services and increases the influence of social determinants of health on health outcomes and health status. The influence of safety, food insecurity, homelessness, economic resources, education, transportation issues, and other non-medical factors are increasingly recognized as significant contributors to health and health status.

Mississippi's health status is also significantly impacted by a shortage of available health care professionals. America's Health Rankings show that for 2016, Mississippi ranked 48th in the nation in terms of the number of PCPs available per 100,000 population. The data showed Mississippi had 102.3 active PCPs per 100,000, compared to the national average of 145.3 per 100,000[6]. In addition, the Mississippi State Department of Health designated 77 out of 82 counties as Health Professional Shortage Areas for primary care and mental health professionals. One of the main reasons for the significant provider shortage is the mal-distribution of providers across rural verses urban areas. This creates an access to care issue which further challenges efforts to improve the state's health outcomes.

## Explanation of Peer State Selection

It must be emphasized that no two states are exactly the same. Each state's managed care population may vary widely. Some cover entire Medicaid populations, while others may only cover the generally healthy such as parents and children. This coverage variation may even vary within the selected populations, with certain services being carved out and covered in FFS. As such, any state-to-state comparison must be very carefully considered.

The states of Georgia, Michigan, and Tennessee were selected as peer states for comparison purposes to the MississippiCAN program. Input and approval of these peer states was obtained from DOM leadership. These states were deemed to have reasonably similar demographics and readily available public information and data. Additionally, each of these states is trying to

[5] United Health Foundation. America's Health Rankings. https://www.americashealthrankings.org/
[6] Ibid.

address physician workforce shortages, as well as key health indicators such as infant mortality, low birth weight babies, high poverty rates, and chronic disease. A high-level overview of Mississippi and peer state demographics and the history of their managed care programs is presented in *Table 7* and *Table 8*.

## Caveats Related to Peer State Comparisons

Peer state comparisons are based on publicly available data and are never 100 percent comparable due to the population makeup, covered services, program design, and member health status of each state's Medicaid program.

*Table 7. Mississippi Ranking versus Peer States*

| America's Health Rankings for 2016<br>Mississippi Ranking Compared to Selected States | | | | |
|---|---|---|---|---|
| **Measure** | **Mississippi Ranking** | **Georgia Ranking** | **Tennessee Ranking** | **Michigan Ranking** |
| Overall Health Status | 50 | 41 | 44 | 34 |
| Poverty Rate – Children | 48 | 49 | 41 | 38 |
| Access – PCPs per 100,000 population | 48 | 41 | 27 | 6 |
| Percent of Very Low Birth Weight Live Births | 50 | 47 | 41 | 32 |
| Preventable Hospitalizations – Discharges per 1,000 Medicare Enrollees | 48 | 32 | 44 | 39 |
| Percentage of Adults – Obesity | 47 | 31 | 42 | 35 |
| Percentage of Adults – Diabetes | 50 | 35 | 45 | 31 |
| Infant Mortality Rate – Death per 1,000 live births | 50 | 44 | 39 | 38 |
| Cardiovascular Deaths per 100,000 population | 50 | 36 | 45 | 42 |

*Source: United Health Foundation. America's Health Rankings 2016 Annual Report.*
*https://www.americashealthrankings.org/about/page/about-the-annual-report*

*Table 8. Managed Care Overview and History for Mississippi and Peer States*

| History and Characteristics of Managed Care in Mississippi and Peer States | | | | |
|---|---|---|---|---|
| **Medicaid Managed Care Program Area** | **Mississippi** | **Georgia** | **Tennessee** | **Michigan** |
| 1. Start Date of Program | 2011 | 2006 | 1994 | 1997 |
| 2. Program Phase In | Yes | Yes | Yes | Yes |
| a. By Enrollee Type | Yes | Yes | Yes | Yes |
| b. By Region | No | Yes | State was divided into 12 regions with enrollment capped at 1.775 million. | No |
| c. By Service | Yes | No | Yes | Yes |
| 3. Populations Covered as of 2017 | SSI, Foster Care Children, Disabled Child Living at Home, Working Disabled, Breast and Cervical Cancer, Pregnant Women and Infants, TANF Family/Children, Newborns, Quasi-CHIP, Transition Children. | TANF Adults and Children, CHIP, Pregnant Women, Breast and Cervical Cancer, Refugee, Foster Care, and Adoption Assistance. | Aged, Disabled Children and Adults, Children, Low Income Adults, Full Benefit Duals, Foster Care. | Aged, Disabled Children and Adults, Children, TANF, Foster Care Children, and Adoption Assistance. |
| 4. Populations Voluntarily Enrolled in Care | Yes – SSI Children, Foster Care, and Disabled Child Living at Home. | Yes – Adoption Assistance. | No – TennCare is mandatory for all Medicaid coverage groups. | Yes – Full Duals, Partial Duals, Children with Special Health Care Needs, Native Americans/Alaskan Natives. |
| 5. Medicaid Managed Care Population Penetration Rate (a/b) | As of July 1, 2017: Total population: 69% of which the majority (74%) were children. | As of July 1, 2017: Total Population: 73%<br>Children: 93.0%<br>Aged and Disabled: 0.0%<br>Other Adults: 73.0% | As of July 1, 2017: 100% total population including 100% of children, 100% aged and disabled; and 100% other adults. | FY 2016: 74.4%<br>July 1, 2017: 74.5% |
| a. Populations in Managed Care | SFY 2017: 490,961 | May 2016: 1.318 Million<br>73% of population is in managed care. | March 2017: 1.4 million<br>Children (0-20): 844,700<br>Adults (21-64): 554,400<br>Aged (65+): 67,900 | FY 2016: 1,727,941<br><br>March 2017: 1,757,412 |

| History and Characteristics of Managed Care in Mississippi and Peer States | | | | |
|---|---|---|---|---|
| **Medicaid Managed Care Program Area** | **Mississippi** | **Georgia** | **Tennessee** | **Michigan** |
| b. Total Medicaid Population | FY 2017: 711,538 | As of June 2017: 1.7 million children, pregnant women, adults, seniors, people with disabilities. | TennCare is the only program in the nation to enroll the state's entire Medicaid population in managed care. | FY 2016: 2,321,200 |
| 6. Services Carved Out | Inpatient Behavioral Health Services, Institutional Long-term Care Services and Supports (Nursing Facility Care and Home and Community Based Waivers). | Non-Emergency Transportation (NET) and Long-term Care Services and Supports. | Under TennCare II, the only services that remain carved out of the MCO scope of services are pharmacy benefits, dental benefits, and individuals with intellectual disabilities. | Institutional Long-term Care, Inpatient Behavioral Health Services, Dental. |
| 7. Number of Plans as of 2017 | 2 Plans (3rd plan to be added in October 2018) | 4 Plans | 4 Plans | 11 Plans |
| 8. Use of CMS Recommended Cost Quality Measures for Adults (Yes/No) | Yes | Yes | Yes | Yes |
| 9. Value-Based Purchasing and Quality Initiatives | No, but DOM contractually "reserves the right" to implement. | Yes | Yes | Yes |
| 10. Population Health Initiatives | Yes | Yes | Yes | Yes |

# Cost Effectiveness Study – Component #1

## Capitation Rate Alignment with Actual CCO Experience

The DOM's actuary, Milliman Inc., was asked to determine how past projections used for capitation rate development align with actual CCO experience. In basic terms, this is the service cost portion of the amount that DOM paid the CCOs, called the capitation rate, compared with the actual amount the CCOs paid to providers for beneficiary care for the same time period.

The analysis is calculated based on the PMPM medical portion of the capitation rate and is a composite of regional, risk-adjusted rates aggregated by enrollment for each year. The CCO expenditures were identified through a PMPM calculation based on CCO claims data and enrollment specific to each year. Please see *Appendix B* for the detailed Milliman report.

The data shows that over the five-year period from CY 2011 to CY 2015, the capitation rates were set within an acceptable range when compared to the actual CCO expenditures that occurred. While there are larger yearly gaps during the time period, the -0.7 percent difference from CY 2011 to CY 2015 shows that the capitation rate development process is within an acceptable range and aligns with actual CCO experience. The results of Milliman's analysis are presented below in *Table 9.*

***Table 9. Milliman Analysis Results***

| MississippiCAN<br>Comparison of Expenditure and Capitation Rates Per Member Per Month (PMPM)<br>for CY 2011 to CY 2015 | | | | | |
|---|---|---|---|---|---|
| **Time Period** | **CCO Member Months** | **Average Monthly Members*** | **PMPM CCO Expenditures** | **PMPM MississippiCAN Capitation Rates** | **Difference** |
| | A | A/12 | B | C | D = B/C-1 |
| CY 2011 | 632,866 | 52,739 | $382.85 | $422.27 | -9.3% |
| CY 2012 | 604,682 | 50,390 | $418,84 | $416.85 | 0.5% |
| CY 2013 (Enrollment Expansion) | 1,694,965 | 141,247 | $398.12 | $373.19 | 6.7% |
| CY 2014 (Enrollment Expansion) | 1,841,973 | 153,498 | $407.21 | $405.18 | 0.5% |
| CY 2015 (Enrollment Expansion) | 3,983,312 | 331,943 | $270.45 | $281.37 | -3.9% |
| **Total** | **8,757,798** | | **$342.29** | **$344.71** | **-0.7%** |

*See page 20 detailing the MississippiCAN enrollment history.*

*Source: Milliman Inc.*

**Myers and Stauffer added the conversion to average monthly members.*

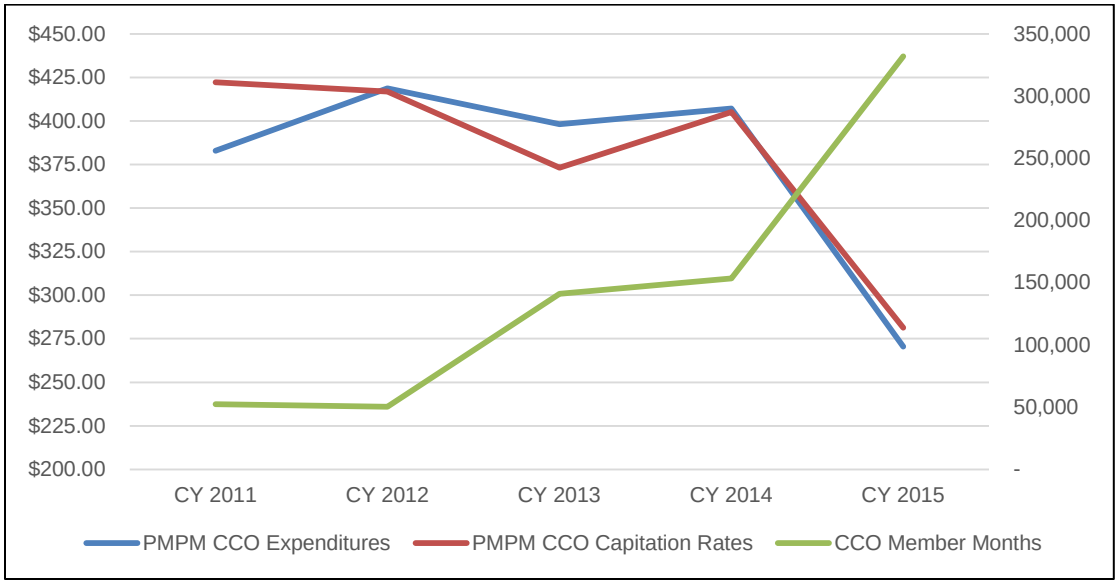
*Table 9* summarizes the CCO actual medical costs for CY 2011 to CY 2015 compared to the medical services portion of the capitation rates paid in the associated time period. Across the first five years of the program, the actual CCO service expenditures were 0.7 percent lower than

estimated in the MississippiCAN capitation rate development. The variation fluctuates by year with larger variances correlated with the implementation of significant enrollment expansions in the given time period (See *MississippiCAN History* page 20 for detail). When new populations or covered services move into managed care, the first two years of capitation rates are developed from historical FFS experience with an assumption for the managed care savings that the CCOs will be able to achieve for the population. Variances in the CCO expenditures versus the capitation rates are largely tied to how actual experience for these new populations or services run in their first year of managed care.

*Figure 4* depicts the changes in PMPM CCO expenditures and PMPM CCO capitation rates as MississippiCAN enrollment grew between CY 2011 and CY 2015. In CY 2011, about four percent of the Medicaid population was enrolled in MississippiCAN. By CY 2015, enrollment had expanded to cover 69 percent of the Medicaid population in MississippiCAN. The specific enrollment expansions are:

- January 2011 – MississippiCAN implemented as a statewide, voluntary program for certain disabled children, certain foster care children, and members with breast and cervical cancer.
- December 2012 (impact occurs in CY 2013) – Expansion to include mandatory enrollment of disabled adults, low income adults, newborns, and pregnant women. All disabled and foster children remain a voluntary population.
- December 2014 – Expansion to include Quasi-CHIP children.
- May to July 2015 – Expansion to include most Medicaid children.

***Figure 4. Managed Care Capitation Rates Compared to Actual CCO PMPMs***




As MississippiCAN expanded to cover children in 2015, the PMPM CCO expenditures and PMPM CCO capitation rates decreased. This was due to the addition of children, who are generally healthier, lower cost members and who comprise about 74 percent of MississippiCAN members.

## Implications for MississippiCAN Cost Effectiveness

The analysis indicates that the capitation rates have been set appropriately and are cost effective. As the MississippiCAN program stabilizes and matures, and the actual CCO encounter data is used to set rates for all populations, the capitation rates should continue to align to CCO experience.

# Cost Effectiveness Study – Component #2

## Risk-Adjusted Beneficiary Costs

Milliman was asked to summarize and compare historical CCO expenditures adjusted for changes in acuity and population mix over time. *Table 10* contains a summary of historical medical costs from CY 2011 to CY 2015 adjusted to align costs over time for acuity changes in the MississippiCAN population. Due to the numerous population expansions, service expansions, and reimbursement methodology changes since the inception of MississippiCAN in January 2011, it is difficult to draw conclusions about the impact of the managed care program on member acuity or underlying monthly service costs. Therefore, the yearly change presented in column E of *Table 10* is not representative of normal utilization and unit charge trends that may be observed in a mature Medicaid managed care program with consistent membership and services over time. Instead, yearly changes shown in Column E of *Table 10* demonstrate the change in CCO expenditures outside of the estimated acuity changes. Please refer to *Appendix C* for the detailed Milliman report and background on the risk adjustment methodology.

***Table 10. MississippiCAN Risk-Adjusted Expenditures for CY 2011 to CY 2015***

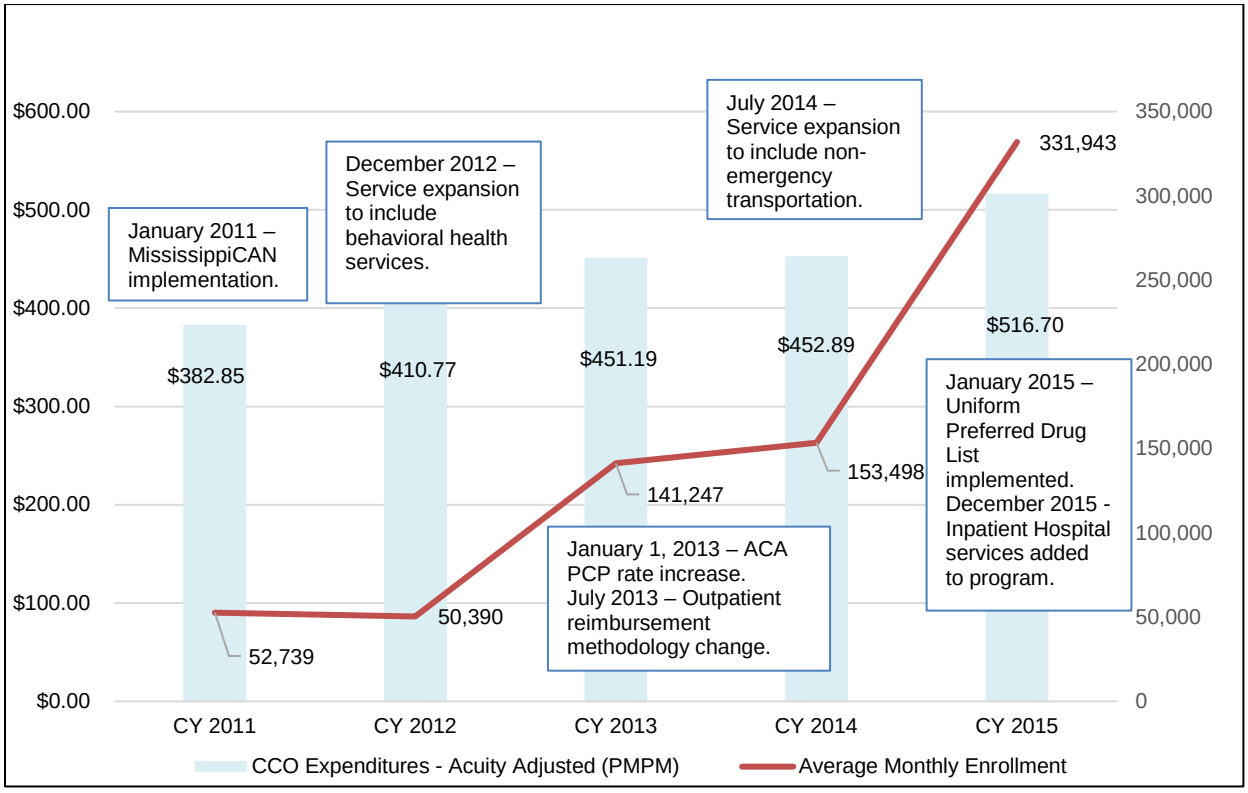
| MississippiCAN<br>Risk-Adjusted Per Member Per Month (PMPM) Expenditures for CY 2011 to CY 2015 | | | | | | |
|---|---|---|---|---|---|---|
| **Time Period[1]** | **CCO Member Months** | **Average Monthly Members** | **CCO PMPM Expenditures – Unadjusted** | **Acuity Adjustment** | **CCO PMPM Expenditures – Adjusted** | **Yearly Change** |
| | A | A/12 | B | C | D | $E = D^{n+1}/D^{n}-1$ |
| CY 2011 | 632,866 | 52,739 | $382.85 | 1.00 | $382.85 | 0.0% |
| CY 2012 | 604,682 | 50,390 | $418.84 | 1.02 | $410.77 | 7.3% |
| CY 2013 (Enrollment and Service Expansion) | 1,694,965 | 141,247 | $398.12 | 0.88 | $451.19 | 9.8% |
| CY 2014 (Service Expansion) | 1,841,973 | 153,498 | $407.21 | 0.90 | $452.89 | 0.4% |
| CY 2015 (Enrollment Expansion) | 3,983,312 | 331,943 | $270.45 | 0.52 | $516.70 | 14.1% |

*[1]Service expansions and reimbursement methodology changes are detailed in Figure 5.*

*Source: Milliman, Inc.*

*Figure 5. Managed Care Risk Adjusted Costs per Beneficiary with Average* Monthly Enrollment shows the acuity adjusted rates for CY 2011 through CY 2015 and details the major service expansions and reimbursement changes that took place during this time. The December 2015 inclusion of inpatient hospital services into MississippiCAN occurred after this analysis period.

*Figure 5. Managed Care Risk Adjusted Costs per Beneficiary with Average Monthly Enrollment*




In addition to the MississippiCAN service expansions and reimbursement methodology changes between CY 2011 and CY 2015, there were also major membership expansions that took place:

- January 2011 – MississippiCAN implemented as a statewide, voluntary program for certain disabled children, certain foster care children, and members with breast and cervical cancer.
- December 2012 – Expansion to include mandatory enrollment of disabled adults, low income adults, newborns, and pregnant women. All disabled and foster children are added but remain a voluntary population.
- December 2014 – Expansion to include Quasi-CHIP children.
- May to July 2015 – Expansion to include all Medicaid children.

## Implications for MississippiCAN Cost Effectiveness

Due to the numerous population expansions, service expansions, and reimbursement methodology changes since the inception of MississippiCAN in January 2011, it is difficult to draw conclusions about the impact of the managed care program on member acuity and underlying monthly service costs. MississippiCAN needs time to stabilize in terms of enrollment and services in order to more accurately assess membership acuity and underlying cost changes as a result of managed care. It is recommended that a similar analysis be performed with later data that includes sufficient trend to accurately reflect program impacts on acuity and cost.

# Cost Effectiveness Study – Component #3 through #5

## Impact on PPEs

***Component #3 – MississippiCAN Impact on Duplicative or Unnecessary Services, Emergency Department Visits and Inpatient Stays.***

***Component #4 – MississippiCAN Impact on Potentially Preventable Hospital and Emergency Department Admission among CCO Beneficiaries and Compared to Fee-for Services Beneficiaries of the Same Population.***

***Component #5 – The decrease in inpatient hospital utilization attributable to Medicaid beneficiaries over time, in order to assess the efficacy of MississippiCAN toward coordination of care, the treatment of chronic conditions and reductions in readmissions.***

DOM asked Conduent's Payment Method Development (PMD) team to analyze Components 3, 4, and 5 as described above. The Conduent methodology and findings are presented in the report *MississippiCAN Cost Effectiveness Prepared for the Mississippi Division of Medicaid, November 16, 2017, MSH17016.* This report is available in *Appendix D* of this document.

Conduent's approach focuses on PPEs, which are defined as possibly avoidable hospital admissions, ED visits, and hospital readmissions. They also reviewed potentially preventable ancillary services, to further compare potential differences due to managed care coordination between the CCO and the FFS populations. The Conduent analysis relies on 3M's PPE algorithm, which is a nationally recognized approach to identify and quantify potentially preventable episodes of care. Because of the overlap in the analysis necessary to address Components 3, 4, and 5, Conduent presented overall findings as they relate to PPEs instead of component specific findings. Therefore, these components are addressed together. Conduent has been preparing similar analyses for DOM in recent years because of the availability of more complete billing information from hospital providers due to changes in Medicaid payment methodology in SFY 2013. Preparing these portions of the cost effectiveness study was a natural fit because of their experience with DOM's data and the analysis tools.

***Conduent Methodology for Component 3, 4, and 5 Analysis***

The three components were analyzed by the Conduent PMD team. The PMD team used various methods to analyze the data for each component. All three components include the analysis of events that are deemed to be potentially preventable.

***Methodology for Population Based Analysis Coordinated Care Compared to Fee-for-Service***

For the population-based measures, potentially preventable hospital admissions (PPAs) and readmissions (PPRs), potentially preventable ED visits (PPVs), and potentially preventable ancillary services (PPSs), the MississippiCAN Cost Effectiveness Report (hereafter, the Report) includes analyses of the FFS and CCO populations of Mississippi Medicaid. These measures consider the Medicaid eligibility of the beneficiary as well as their claim history in the calculations.

Newborns 0-3 months are excluded from these measures since they do not meet the three-month lookback requirement of these measures[7]. The acuity of the FFS and CCO populations is assessed using analysis software developed by 3M. The beneficiaries are assigned to a clinical risk group (CRG) based on their clinical history. More specifically, the software uses four data elements: 1) principal and secondary diagnoses; 2) procedure codes; 3) age; and 4) sex[8]. These four data elements, which make up the clinical history of the beneficiary, are used to perform predictive analytics that estimate the beneficiary's chronic illness burden. Each beneficiary is assigned to one of 1,080 mutually exclusive CRGs. Conduent then combined the CRGs into 43 aggregate groups for risk adjustment purposes. Beneficiaries who are categorized into a specific CRG remain in that CRG for the balance of the given analysis year.

The 3M software also determines whether a given clinical event qualifies as a PPE (PPA, PPV or PPS). Using the aggregated CRG assignments, Conduent then calculated the expected number of PPAs, for example, based on the distribution of PPAs across the FFS and CCO populations in the first analytic year. They then compared that to the actual number of PPAs for either FFS or CCO patients in a given analytic year. This calculation results in an actual-to-expected ratio, or A/E ratio. The A/E ratio is then used to identify trends of PPEs within the FFS and CCO populations.

The A/E ratio was calculated based on the overall population, each aggregated CRG group, and patients' category of eligibility (COE) group. The Report shows the A/E ratio grouped by CRG, then subsequently grouped by COE.

In addition to the use of A/E ratios, a different type of methodology was used for population analysis wherein the PMD team calculated the number of PPAs per thousand member months (PPAs/K). This type of analysis was also done for PPVs per thousand member months (PPVs/K).

A similar analysis was done for potentially preventable readmissions, except that risk adjustment was performed based on the admission APR-DRG, age, sex, and mental health comorbidities. The measure, potentially preventable hospital readmissions (PPR), considers hospital admissions occurring within 15 days of a previous hospital stay that are clinically related to the initial admission. Unlike the population-based measures, this measure uses Medicaid claim history only, and has no requirements relating to a Medicaid eligibility period. It assigns an all-patient refined diagnosis-related group (APR-DRG) to each inpatient stay and looks for clinically related inpatient stays within a 15-day window.

***Methodology for Reporting Period***

The PMD team grouped the data into three one-year periods. Hospital admissions, ED visits, and ancillary services were grouped as follows:

| | |
|---|---|
| Year One | December 1, 2013 – November 30, 2014 |
| Year Two | December 1, 2014 – November 30, 2015 |
| Year Three | December 1, 2015 – November 30, 2016 |

[7] 3M recommends the use of three months of historical eligibility and data to assess a member's Clinical Risk Group.
[8] *3M™ Clinical Risk Groups: Measuring risk, managing care*

The time period of analysis for hospital readmissions differed from the three groups noted above because prior to December 1, 2015, all inpatient stays were covered by FFS. The majority of inpatient stays were paid through the CCO after this date. Due to this change, the first year of hospital readmissions is considered a reference year. The time period of analysis for hospital readmissions is as follows:

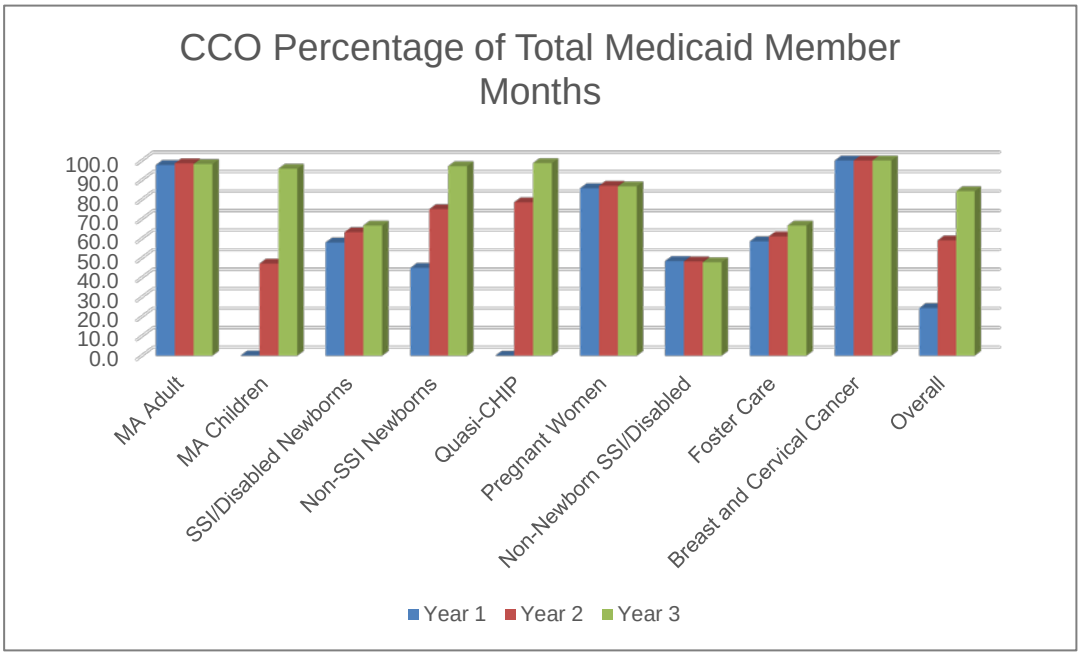
| | |
|---|---|
| Year One | December 1, 2014 – November 30, 2015 |
| Year Two | December 1, 2015 – November 30, 2016 |

***Limitations of the Analysis***

Both Conduent and Myers and Stauffer identified limitations related to this analysis which are presented below:

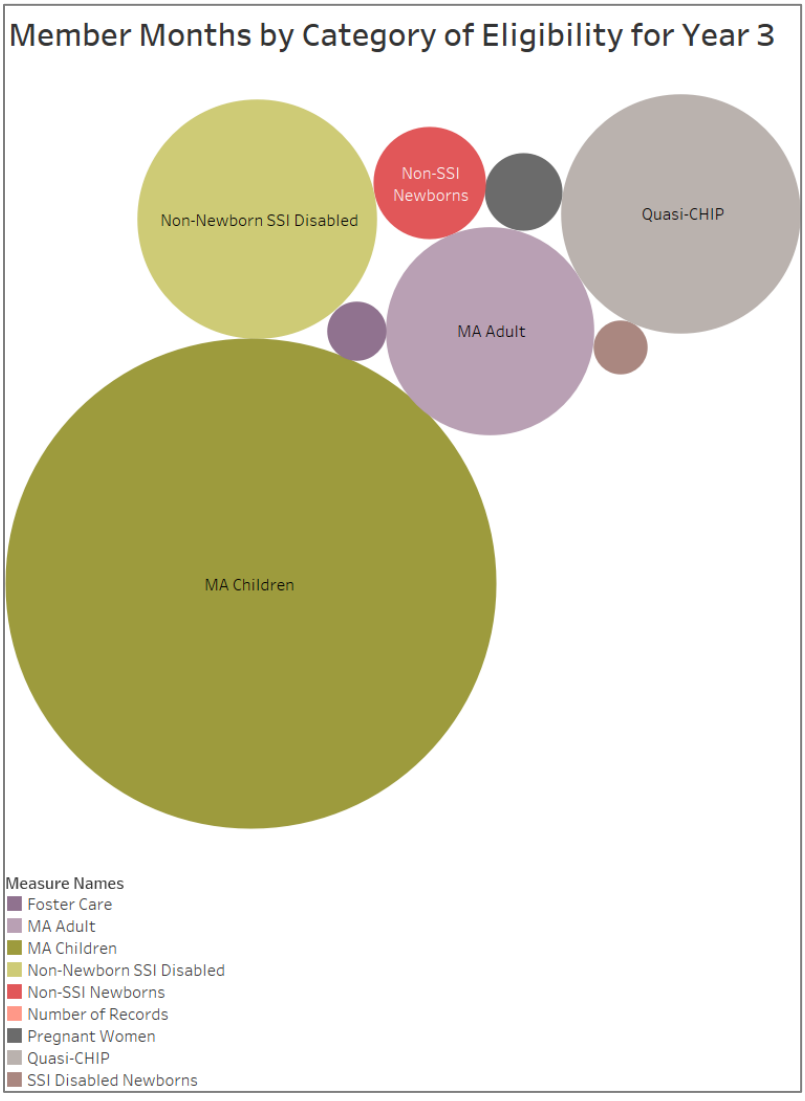
- The transition of Mississippi Medicaid beneficiaries from FFS to MississippiCAN (CCOs) does not exceed 50 percent of total Medicaid member months until Year 3 when it reaches 84.3 percent. This may be the first analysis year that the impact of MississippiCAN can reasonably be assessed relative to the pre-transition FFS beneficiaries. *Figure 6* illustrates the transition to CCOs for the different categories of eligibility. Note that several categories of eligibility such as SSI/Disabled, Newborns, and Non-Newborn SSI/Disabled have not moved significantly to CCOs as of Year 3. Analysis of these categories with respect to CCO impact may provide limited benefit. Likewise, the Non-Newborn SSI/Disabled and MA Adult categories may also provide limited comparisons to FFS since they were already in the CCO program prior to Year 1. The most dramatic transition occurred in the MA Children, Non-SSI Newborn, and Quasi-CHIP categories which may provide the best populations for assessing the impact of MississippiCAN.

*Figure 6. CCO Percentage of Total Medicaid Member Months*



- For the population-based measures, 3M recommends six months of eligibility during the analysis period to accurately capture population event rates. Additionally, it requires at least three months of Medicaid eligibility during the lookback period. Due to the FFS to CCO transition, this requirement resulted in high member month exclusions in the newborn, pregnant women, and children categories. To offset this effect, Conduent shortened the eligibility requirement from six months to three months for these categories. This limitation is described in the report and is not ideal since the particular categories it affects are the largest in terms of member months. However, the limitation is unavoidable given the time constraints of this study. It should also be noted that newborns aged 0-3 months are excluded from the analysis since they cannot meet the three-month lookback requirement. *Figure 7* illustrates the relative magnitude of the categories of eligibility in Year 3.

*Figure 7. Member Months by Category of Eligibility for Year 3*



- For the PPA measure, Conduent excluded claims from the analysis that were either denied, in the case of FFS, or no payment was made by the CCO in the case of managed care. This excluded approximately three percent of total inpatient admissions processed under CCOs in Year 3 and approximately 15 percent of total inpatient admissions processed under FFS in Year 1 and Year 2. For the PPV measure, the denied ED visits excluded from the CCO analysis appeared to be approximately two percent of the total ED visits processed under CCO. The exclusion of these denied claims could potentially underestimate the severity of illness and impact risk-adjustments and case mix-adjustments.
- Conduent noted that, because of changes in the categorization of enrollment, the Quasi-CHIP category of eligibility A/E ratios cannot be interpreted for the PPA Year 1 CCO and FFS measures, PPV Year 1 CCO measure, and PPR Year 3 FFS measure. There also appears to be a similar issue with the PPA/K and PPV/K results for the Quasi-CHIP category, such that the results for FFS Year 1 do not appear to be reasonable.
- Conduent reported that the Non-SSI Newborn category of eligibility showed a significant decrease in member months in CCO Year 3. This decrease should be researched further before making any inferences about this category for CCO Year 3.

***Findings and Recommendations for Component 3: MississippiCAN Impact on Duplicative or Unnecessary Services, Emergency Department Visits, and Inpatient Stays***

Conduent developed the study to evaluate the prevalence of duplicative and unnecessary care by identifying potentially preventable medical events. Due to time and data constraints, the analysis was limited in scope. Conduent relied on identifying and trending PPAs, PPVs, and PPSs, and compared FFS to MississippiCAN (CCO).

The Conduent analysis found that PPAs are lower for beneficiaries participating in MississippiCAN, while the expected number of PPAs in FFS has held steady. This suggests that MississippiCAN has reduced expected costs in relation to inpatient hospital services.

Next, Conduent examined ED visits. They noted increases in total visits, in PPVs and in cost per PPV. FFS appeared to have a lower than expected number of PPVs and the trend is relatively consistent over the study period. MississippiCAN has more than expected PPVs and the trend is for increasingly more PPVs.

Conduent also considered the MississippiCAN impact on PPSs. This is a group of potentially preventable services such as diagnostic testing, lab tests, radiology, and therapy services that may not necessarily improve a beneficiary's health outcome. PPS is a measure of duplicative or unnecessary ancillary services. This portion of the study was performed at a high level and it indicated that MississippiCAN was performing worse than FFS, although the gap was closing in Year 3 of the study.

Overall, the record is mixed on the impact of MississippiCAN based on the available claims history at this time. The available claims data shows that the number of managed care preventable hospital admissions appears to be lower when compared to FFS in the first year of available data. While it is possible that the decrease in preventable hospital admissions is being

offset by an increase in ED visits, a more in-depth analysis would be required to evaluate this trend.

***Findings and Recommendations for Component 4: MississippiCAN Impact on Potentially Preventable Hospital and Emergency Department Admission among CCO Beneficiaries, With Comparisons to Previous Years for FFS Beneficiaries of the Same Population***

Study findings that were used to address Component 3 are also used to answer Component 4. In short, the analysis indicates that MississippiCAN results show a decrease in PPAs, with emergency room usage trends increasing more than expected. As noted in the study, there could be offsetting increases in PPVs and PPSs as PPAs are reduced. A major limitation of the study is only one year of data where hospital admissions are paid for by the CCOs. Having more claims history in the future to compare the populations will allow a better understanding of MississippiCAN's impact on preventable services.

***Findings and Recommendations for Component 5: The Decrease in Inpatient Hospital Utilization Attributable to Medicaid Beneficiaries over Time, in Order to Assess the Efficacy of MississippiCAN toward Coordination of Care, the Treatment of Chronic Conditions, and Reductions in Readmissions***

As discussed in Components 3 and 4, MississippiCAN (CCOs) appeared to achieve lower-than-expected rates of preventable inpatient hospital admissions. Based on the study results, the trends in PPAs are more favorable in CCOs than in FFS. This supports the conclusion that MississippiCAN has a positive impact on beneficiary coordination of care.

Further evidence that CCOs positively impact beneficiaries' coordination of care is the fact that they have reduced re-admissions in the final year of the study by 15 percent when compared to FFS baseline. This pattern is also shown in the majority of the CRGs, implying that treatment of chronic conditions is positively impacted by the shift to CCOs.

## Component #4, #5, and #5 Implications for MississippiCAN Cost Effectiveness

Drawing conclusions of the cost effectiveness of MississippiCAN is difficult because of Mississippi's gradual enrollment of beneficiaries into the program. It is recommended that DOM continue monitoring PPEs as the population enrollment stabilizes. The most significant date in this analysis was December 1, 2015 – the date inpatient hospital services were rolled into MississippiCAN from FFS. As noted in the study, this change coincides with a significant decrease in PPVs for the CCOs, and an increase in other PPSs. This shift in PPEs was noted in the study as a positive sign that the plans are better coordinating beneficiaries' care. Once the CCOs were responsible for the costs of beneficiary hospitalization, the incentives were almost certainly better aligned to reduce these admissions. The study also notes that a shift away from hospitalizations may increase utilizations in other more cost-effective and appropriate service settings. This may explain the increase displayed in those preventable events. If this trend continues, then it is likely that MississippiCAN is doing a better job than FFS at controlling cost.

Conduent and Myers and Stauffer both recommend further monitoring of MississippiCAN and the FFS program in this area. Additional claims data history will be useful to better identify the cause

of changes in expected outcomes as well the trends in PPEs throughout the population. An additional review of duplicative and unnecessary services is also recommended. A more in-depth study could investigate the types of unnecessary services being provided, as well as why those services are being flagged as potentially duplicative or unnecessary.

In the near term, a more in-depth review to identify which kinds of preventable events are driving the utilization in Mississippi should be considered. Due to the time constraints of this report, Conduent focused on high-level information that is not as actionable as identifying what types of preventable events have a higher occurrence. Additionally, there may be regional trends that can be identified by spending more time looking into the data. Further analysis should be performed to see if there are regional differences in the prevalence of preventable events because each region may have different events driving the PPEs which may call for different approaches. By having this information, the CCOs can develop targeted plans to reduce key preventable events. Finally, assurances should be made that preventable service utilization is incorporated into the capitation rate setting process by the actuary.

# Cost Effectiveness Study – Component #6

## Comparisons of MississippiCAN PMPM and Administrative Costs

***Comparison to Peer States***

Public Consulting Group, Inc. (PCG) compiled data comparing the following SFY 2016 PMPM costs for Mississippi and three peer states (Georgia, Michigan, and Tennessee):

- FFS medical costs.
- Managed care medical costs.
- Administrative expenses.
- Total medical and administrative costs.

The selected peer states were agreed upon by DOM, PCG, and Myers and Stauffer due to their reasonably similar demographics compared to Mississippi and the availability of the applicable public data. Please refer to page 30 for details on the peer state selection.

The data source for this information is the federal Medicaid and CHIP Payment and Access Commission (MACPAC) statistical data book based on required state reporting and claims payment system data. The PCG-compiled data is presented in *Table 11. Appendix E* provides additional detail on the PCG approach.

***Table 11. PMPM Cost Comparison to Peer States***

| Mississippi PMPM Cost Comparison to Peer States for SFY 2016 | | | | |
|---|---|---|---|---|
| | **Mississippi** | **Georgia** | **Michigan** | **Tennessee** |
| FFS Medical Cost/PMPM | $1,080.38 | $900.18 | $439.64 | $1,520.49 |
| *50 State + D.C. Rank (High to Low)* | *23* | *29* | *44* | *16* |
| Managed Care Medical Cost/PMPM | $441.80 | $252.38 | $703.70 | $355.80 |
| *50 State + D.C. Rank (High to Low)* | *28* | *44* | *10* | *39* |
| Administrative Expense/PMPM | $19.80 | $26.75 | $26.39 | $24.76 |
| *50 State + D.C. Rank (High to Low)* | *49* | *33* | *36* | *42* |
| Total Medical Cost and Administrative Expense/PMPM | $664.91 | $491.19 | $635.73 | $528.99 |
| *50 State + D.C. Rank (High to Low)* | *26* | *50* | *29* | *44* |

*Source: MACStats Report 2016; compiled by Public Consulting Group, Inc. (PCG)*

The MACPAC data indicates that MississippiCAN ranks 28th, when ranked against all 50 states and Washington D.C., based on costs from highest to lowest. Mississippi's total medical and administrative costs are the median for the nation, with a ranking of 26. Given the challenges Mississippi faces in terms of being the poorest and least healthy state in the nation, the state's physician workforce shortage, and the relatively new managed care program, this ranking indicates a potential cost effectiveness relative to other states. In addition, the MACPAC data shows that Mississippi, ranked 49th, has the third lowest administrative cost in the nation.

Overall, it is difficult to draw conclusions concerning Mississippi's per member costs compared to other states due to the varying size and make up of each state's Medicaid population and services. Future studies of this kind will be more informative since the constraints related to the timing and phase in of the MississippiCAN-covered population and services (since the program began in January 2011) will gradually be reduced. SFY 2016 brought a major population and service expansion for MississippiCAN due to the inclusion of non-disabled children at the start of the fiscal year, and inpatient hospital services as of December 2015. In addition, there are differences across peer state managed care programs that impact the PMPMs as shown in *Table 11*. For example, Georgia does not included disabled adults and children in its managed care program while Mississippi, Michigan, and Tennessee do cover this group. This results in Georgia having a relatively lower managed care PMPM.

### Peer State Comparisons – FFS Medical Cost/PMPM

The data shows that Mississippi's FFS PMPM costs are higher than Georgia and Michigan, but lower than Tennessee. These differences are due to the population and service mix for each state in SFY 2016. Probably the most significant reason for Mississippi's high FFS cost relative to the other states is that inpatient hospital services were in FFS until December 2015, while the peer states all included non-disabled children and inpatient hospital in their managed care programs. Georgia also has a relatively high FFS cost due to the inclusion of its disabled population in FFS.

### Peer State Comparisons – Managed Care Medical Cost/PMPM

Mississippi's managed care medical PMPM costs are higher than that of Georgia or Tennessee, but lower than Michigan. The reason Georgia's managed care PMPM is so much lower than the other states is that its population does not include disabled children and adults or long-term care services and supports. In addition, Mississippi's managed care program is relatively young at six years of existence, compared to the more mature and stable programs in the peer states. Georgia's program is 11 years old, Michigan's program is 20 years old, and Tennessee's program is 23 years old. These states' PMPMs are more likely to reflect the impact of care coordination and other health management initiatives in their program costs. Given these considerations, MississippiCAN's SFY 2016 PMPM cost is ranked 28$^{th}$ in the nation, which, given the state's health status, indicates a level of cost effectiveness.

### Peer State Comparisons – Administrative Expense/PMPM

Mississippi's administrative cost PMPM was significantly lower than its peer states in SFY 2016 and was the third lowest cost in the nation according to MACPAC data. The reason for this difference requires a more detailed review than was available given the publicly available data and the limited timeframe for this study.

### Peer State Comparisons – Total Medical Cost and Administrative Expense/PMPM

Mississippi's total Medicaid Cost and Administrative Expense PMPM is higher than Georgia, Michigan, and Tennessee. This is due, in part, to the health status of Mississippi, which ranks the highest nationally in several key indicators such as diabetes, pre-term deliveries, obesity, and sickle cell disease.

***Comparison to National Benchmarks***

Using MACPAC data, PCG also compiled national benchmarks for medical and administrative expense PMPM costs for all 50 states and Washington, D.C. The national aggregate PMPM costs in *Table 12* were calculated by dividing the total medical costs and/or administrative expenses for the United States by the total number of Medicaid beneficiary member months. The results of this analysis and Mississippi's PMPM costs are summarized below.

*Table 12. PMPM Cost Comparison to National Benchmarks*

| SFY 2016 Mississippi PMPM Cost Comparison to National Benchmarks | | | |
|---|---|---|---|
| | **Mississippi** | **Mississippi MACPAC National Ranking (High to Low)** | **National Aggregate*** |
| FFS Medical Cost/PMPM | $1,080.38 | 23 | $856.09 |
| Managed Care Medical Cost/PMPM | $441.80 | 28 | $455.13 |
| Administrative Expense/PMPM | $19.80 | 49 | $30.20 |
| Total Medical Cost and Administrative Expense/PMPM | $664.91 | 26 | $661.64 |

**The National Aggregate was calculated by taking the total cost for the 50 states and Washington, D.C. divided by the total Medicaid beneficiary member months.*
*Source: MACStats Report 2016; compiled by Public Consulting Group, Inc.*

This comparison requires an understanding that FFS and managed care components vary from state to state. Nevertheless, Mississippi's managed care PMPM of $441.80 is relatively comparable with the national aggregate managed care PMPM of $455.13 or about three percent less than the national aggregate. The total Medical Cost and Administrative Expense/PMPM appears to be in line with the national aggregate as well. It is worth pointing out here that, given the health status of Mississippi, these aggregate comparisons to other states are not acuity-adjusted where Mississippi would expect to have higher costs associated with its higher medical acuity. However, Mississippi's ranking of 28$^{th}$ in terms of managed care PMPM, may be indicative of cost effectiveness, especially given the state's poor health status and poverty rate relative to the nation. In addition, the MACPAC data shows that Mississippi, ranked 49$^{th}$, has the third lowest administrative cost in the nation.

## Component #6 – Implications for MississippiCAN Cost Effectiveness

PMPM comparisons to other state Medicaid programs must be considered carefully due to the variation in state programs and population health. Mississippi Medicaid experienced significant change in SFY 2016 with the transfer of children into and the inclusion of inpatient hospital services in managed care. While the MACPAC data indicates potential cost effectiveness for MississippiCAN due to its managed care PMPM cost ranking of 28$^{th}$ in the nation, a more thorough analysis would need to be conducted to confirm this holds true. Therefore, any conclusion to be drawn from the PMPM comparisons and rankings may be premature and inconclusive. In fact, this may always be an issue in any state-to-state and national comparisons due to ongoing changes and differences across state Medicaid programs.

# Cost Effectiveness Study – Component #7

## The Necessity of Increasing SFY 2017 CCO Payments Following a Legislative Session That Reduced SFY 2017 Medicaid Funding Below Annual Projections

PCG was asked to evaluate the necessity and/or benefit of DOM increasing SFY 2017 CCO payments following a legislative session that funded Mississippi Medicaid at $75 million in state funds and $294 million total funds, below annual spending projections.

PCG reviewed DOM's annual capitation rate development process against federal regulations, CMS requirements, and actuarial standards. Their findings determined the action taken by DOM to increase capitation payments, despite its funding deficit, was necessary and appropriate.

PCG found that the capitation rates met the federal regulatory standards set forth in 42 CFR §438.6, and were developed in accordance with generally accepted actuarial practices and principles. The actuary who developed the rates met the qualification standards for the American Academy of Actuaries and complied with all generally recognized and accepted actuarial principles and practices. PCG noted that it appears that defendable assumptions for the cost of care for the MississippiCAN population were the basis of the recommended capitation payments.

Additionally, PCG noted that given the SFY 2017 capitation payments were certified by CMS, it demonstrates that DOM complied with all applicable laws and standards for both Medicaid managed care and the Medicaid program, including but not limited to, eligibility, benefits, financing, any applicable waiver or demonstration requirements, and program integrity. Because CMS approved the SFY 2017 capitation rates, DOM had the responsibility to implement them as the basis for payment to the CCOs.

PCG's detailed findings are presented in *Appendix F*.

Myers and Stauffer also notes that a $294 million reduction in total funds to MississippiCAN would have equated to an 11 percent cut to the program in SFY 2017 when compared to SFY 2016. This is particularly problematic for the following reasons:

- The annualized costs of the inclusion of inpatient hospital services and the coverage of newborns on their date of birth in managed care, both of which were not effective until December 2015, were not part of MississippiCAN SFY 2016 expenditures. This inclusion effectively transfers funds from FFS to managed care in SFY 2017 to represent a full year's cost. Therefore, MississippiCAN could not absorb the 11 percent reduction without cutting into the program's base costs for beneficiary care. As a result, the 11 percent reduction would also have to be taken from FFS spending.
- Mississippi law, 43-13-117 (H) (1) (c), requires that the CCOs must not pay providers at a rate that is less than the normal Medicaid reimbursement rate. This restricts the areas in which DOM can reduce MississippiCAN base rates to absorb the 11 percent cut.

Therefore, the 11 percent reduction would, again, also have to come out of the FFS program.

- In the event of a deficit, DOM must comply with 43-13-117 (F) that restricts the services and amount that may be reduced in order to absorb a Medicaid funding shortfall. The result would be overall reductions to provider payments in both MississippiCAN and FFS.

## Component #7 – Implications for MississippiCAN Cost Effectiveness

DOM's action to increase the SFY 2017 capitation rates was appropriate based on the actual review and analysis of MississippiCAN data and trends. DOM complied with all federal regulations, CMS requirements, and actuarial standards to develop SFY 2017 capitation rates. These rates were reviewed and approved by CMS, further indicating their compliance and appropriateness. In order for DOM to absorb the SFY 2017 reduction of $294 million total funds, the cut would had to have been taken from both MississippiCAN and FFS, and would likely have resulted in reductions to provider reimbursement across the board. Such reductions would impact overall Medicaid cost effectiveness by potentially restricting beneficiary access to care in both managed care and FFS. The resulting reduced access could increase costs due to beneficiaries being forced to obtain care through more expensive ED visits, less preventive care, poorer monitoring and management of chronic disease states, etc.

# Cost Effectiveness Study – Component #8

## Annual Growth Compared to Medical Inflation and Impact of Enrollment Changes on Spending

***Inflationary Trends***

Cornerstone Healthcare Financial Consulting, LLC, and Gary L. Owens, LLC compiled a detailed trend table comparing the annual growth in Medicaid, including MississippiCAN, to overall medical inflation. Their analysis is presented in *Table 13* and shows the annual Mississippi Medicaid PMPM increase in cost has tracked mostly below the annual medical consumer price index (CPI) inflation rate. The cumulative estimated difference in total Medicaid spending for SFY 2011 through SFY 2017 was $147,692,023 less than what would have been spent at the medical CPI level. On an annual basis, the two exceptions to this trend are for SFY 2013 when PMPM costs increased 4.2 percent while medical CPI grew 2.8 percent, and SFY 2016 when PMPM costs increased 5.9 percent while medical CPI increased 2.1 percent. An explanation of these fiscal years' variances are provided below. Please refer to *Appendix G* for the detailed Cornerstone Healthcare Financial Consulting, LLC, and Gary L. Owens, LLC analysis.

The most significant reason for the higher PMPM rate in SFY 2013, when compared to medical CPI, is increases in both hospital and nursing facility upper payment limit (UPL) supplemental payments; these totaled $138.5 million in funds. This cost was driven by the gap between the Medicare reimbursement rates and Mississippi Medicaid reimbursement rates. The increase in hospital UPL was primarily driven by an increase in Medicaid discharges which results in higher UPL payments. The nursing facility UPL gap grew primarily as a result of the Mississippi rates being held without change from 2010 through 2013, while Medicare rates increased over the same time period. The UPL payments are funded with provider taxes and contributions and require no additional direct state support.

There are numerous increasing and decreasing factors that make up the change in the FY 2015 and FY 2016 expenditures. The major causes of the SFY 2016 PMPM increase are detailed below:

- $88 million total funds increase related to the movement to a preferred drug list (PDL) across FFS and managed care. Although the movement to the uniform PDL increases managed care capitation costs, drug rebates, which offset cost for DOM outside of capitation, also increased.
- $70 million total funds for FFS run-out claims associated with the transfer of Medicaid children to managed care from FFS and the inclusion of inpatient hospital services in managed care. This one-time increase in cost is normal during the transition to managed care services since managed care capitation payments are made at the start of the covered month while FFS claims may be submitted for payment up to one year after the date of service. The inclusion of inpatient services in managed care has the potential to control costs and improve member health by incentivizing the CCOs to provide beneficiaries with access to preventative care.

- $35.6 million total funds due to the increased cost of the MississippiCAN three percent state premium tax and the federal HIF. The state premium tax amount is built into the CCO capitation rates and increased due to the inclusion of inpatient services in managed care, the expansion of the program to include all Medicaid children, and the MHAP. However, this increase generated revenue for the state because the federal government pays 74 percent of the cost, while the state pays 26 percent of the cost. In FY 2016, the premium tax paid by the CCOs was $62 million, but netted the state $46 million after accounting for the state portion of the tax. The HIF payment, which is built into the rates and is based on prior year CCO revenues, increased due to the growth in Medicaid enrollment.
- $49 million in total funds increase associated with FFS long-term care services and supports include Medicare premium increases, nursing facility rate increases, and increased trend associated with home and community-based services.
- $17.3 million total funds increase in DOM administrative costs associated with the Eligibility Modernization Systems Project.

***Impact of Enrollment Changes on Spending***

Cornerstone Healthcare Financial Consulting LLC and Gary L. Owens LLC also examined the impact of Medicaid enrollment changes on total Medicaid program spending. *Table 14* shows that the enrollment growth was a major driver of overall Medicaid program costs, resulting in an estimated $615,656,549 total fund increase in expenditures, or 13.3 percent, between SFY 2011 through SFY 2017.

*Table 13. Annual Growth in Medicaid Spending Compared to CMS Medical Inflation Rate*

| Annual Growth in Medicaid Spending Compared to CMS Medical Inflation Rate | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **SFY 2011** | **SFY 2012** | **SFY 2013** | **SFY 2014** | **SFY 2015** | **SFY 2016** | **SFY 2017** |
| Medicaid Member Months | 7,572,997 | 7,686,006 | 7,711,029 | 7,879,431 | 8,726,684 | 8,744,441 | 8,577,398 |
| Convert to Average Monthly Enrollment | 631,083 | 640,501 | 642,586 | 656,619 | 727,224 | 728,703 | 714,783 |
| *% Change* | | 1.5% | 0.3% | 2.2% | 10.8% | 0.2% | -1.9% |
| Total Medicaid FFS and MSCAN Spending (Less CHIP) | $4,641,936,036 | $4,856,651,422 | $5,079,073,048 | $5,239,376,263 | $5,614,755,316 | $5,960,098,612 | $6,050,845,185 |
| *% Change* | | *4.6%* | *4.6%* | *3.2%* | *7.2%* | *6.2%* | *1.5%* |
| Total Medicaid Cost/PMPM | $612.96 | $631.88 | $658.68 | $664.94 | $634.40 | $681.59 | $705.44 |
| *Annual Change in Cost/PMPM* | | $18.92 | $26.79 | $6.27 | ($21.54) | $38.19 | $23.85 |
| ***% Change in MS Cost/PMPM*** | | ***3.1%*** | ***4.2%*** | ***1.0%*** | ***-3.2%*** | ***5.9%*** | ***3.5%*** |
| ***CMS Annual Medical Inflation[1]*** | | ***3.5%*** | ***2.8%*** | ***2.4%*** | ***2.3%*** | ***2.1%*** | ***3.8%*** |
| Annual Difference Medicaid Rate and CMS Rate | | -0.4% | 1.4% | -1.4% | -5.5% | 3.8% | -0.3% |
| Total MS Medicaid Spending based on CMS annual inflation | | $4,876,098,117 | $5,008,891,978 | $5,314,555,367 | $5,936,214,908 | $5,744,329,968 | $6,068,401,531 |
| Annual Difference in MS Medicaid Spending at CMS Rate | | ($19,446,695) | $70,181,070 | ($75,179,104) | ($321,459,592) | $215,768,644 | ($17,556,346) |
| Cumulative Difference in MS Medicaid Spending | | ($19,446,695) | $50,734,375 | ($24,444,730) | ($345,904,321) | ($130,135,677) | ($147,692,023) |

*[1]Medical Consumer Price Index (CPI) Rates from 2016 CMS Actuarial Report*

*Source: Cornerstone Healthcare Financial Consulting, LLC / Gary L. Owens, LLC*

*Table 14. Medicaid Spending Based on Normalized Beneficiary Growth*

| Change in Medicaid Spending Based on Normalized Beneficiary Growth for SFY 2011 – 2017 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **SFY 2011** | **SFY 2012** | **SFY 2013** | **SFY 2014** | **SFY 2015** | **SFY 2016** | **SFY 2017** |
| Medicaid Member Months (MM) | 7,572,997 | 7,686,006 | 7,711,029 | 7,879,431 | 8,726,684 | 8,744,441 | 8,577,398 |
| Convert to Average Monthly Enrollment | 631,083 | 640,501 | 642,586 | 656,619 | 727,224 | 728,703 | 714,783 |
| *% Change in Enrollment* | | 1.5% | 0.3% | 2.2% | 10.8% | 0.2% | -1.9% |
| Total Medicaid FFS and MSCAN Spending (Less CHIP) | $4,641,936,036 | $4,856,651,422 | $5,079,073,048 | $5,239,376,263 | $5,614,755,316 | $5,960,098,612 | $6,050,845,185 |
| Total Medicaid Cost/PMPM | $612.96 | $631.88 | $658.68 | $664.94 | $634.40 | $681.59 | $705.44 |
| Total Normalized Base Period Medicaid Cost/PMPM (A) | | $612.96 | $612.96 | $612.96 | $612.96 | $612.96 | $612.96 |
| Annual Effect on Total Spending based on Change in Enrollment (Based on Average Annual Cost/PMPM * MMS in the Base Year SFY 2013 | | $69,269,874 | $15,338,071 | $103,223,507 | $519,331,281 | $10,844,311 | ($102,390,496) |
| **Cumulative Effect in Total Spending on Change in Enrollment** | | **$69,269,874** | **$84,607,945** | **$187,831,453** | **$707,162,734** | **$718,047,045** | **$615,656,549** |
| Total Member Month Change Between SFY 2011 and SFY 2017 | | | | | | | 1,004,4001 |
| Average Member Months Growth Per Year | | | | | | | 167,400 |
| Base Year Medicaid PMPM Cost | | | | | | | 612.96 |
| **Average Annual Growth in Medical Costs due to Beneficiary Growth** | | | | | | | **$102,609,425** |

*(A) This rate is held constant at the SFY 2011 base period to measure only the effect of changes in beneficiary growth.*

*Source: Compiled by Cornerstone Healthcare Financial Consulting, LLC / Gary L. Owens, LLC*

The enrollment growth that began in SFY 2014, and increased significantly in SFY 2015, was a major cost driver for Mississippi Medicaid enrollment. The cause of this significant enrollment growth was primarily due to the Patient Protection and ACA. While Mississippi did not expand its Medicaid population under the ACA, it did experience a "welcome-mat" effect meaning that Mississippians who were eligible under existing program rules, but had not previously enrolled, filed applications during and after open enrollment. In addition, the federally-mandated income limits softened, allowing more people to qualify under the program. The majority of these new beneficiaries were covered by MississippiCAN. The cause of this growth effect was due to:

- Increased outreach and enrollment efforts by the federal government to help connect eligible people to coverage. Leading up to and throughout the open enrollment period for the Health Insurance Marketplaces, there was significant outreach to encourage individuals to apply for coverage and an array of assistance was available to help individuals enroll. Because Medicaid enrollment is not limited to the Marketplace open enrollment period, Medicaid outreach and enrollment efforts continued year-round.
- The ACA simplified the enrollment and renewal processes for Medicaid by requiring states to modernize systems and utilize electronic verification sources in the enrollment process.
- The ACA based eligibility on Internal Revenue Service (IRS) household and income concepts. The change to modified adjusted gross income (MAGI) resulted in individuals ineligible prior to the ACA becoming newly eligible under IRS eligibility rules. The types of changes that increased the likelihood of eligibility include:
    - Common sources of income that are non-taxable, such as child support, contributions, workers' compensation, and veterans' benefits, are excluded in the eligibility determination. Social security benefits received by a child are also excluded as countable income.
    - The taxable earned or unearned income of a child in a filer or non-filer household is not considered in the eligibility determination unless the child is expected to be required to file a tax return to report the income.
    - Adult tax dependents, such as elderly parents or adult children, increase household size; however, taxable income a tax dependent receives is not considered for eligibility unless the tax dependent is expected to be required to file a tax return to report the income. Filing voluntarily for purposes of receiving a refund does not make the income countable.

## Component #8 – Implications for MississippiCAN Cost Effectiveness

The significant enrollment growth that occurred in SFY 2014 and SFY 2015 could have greatly increased costs under an unmanaged FFS system. Instead, Mississippi Medicaid inflationary costs ran mostly below the CMS medical inflation projection for SFY 2011 through SFY 2017. The cumulative difference in total Medicaid spending for this time period was $147,692,023 less than what would have been spent at the medical CPI level. Though other program changes contributed in this timeframe, this work indicates that managed care has been cost effective for Mississippi. In addition, the program has generated revenues for the state of Mississippi through the state insurance premium tax. Revenues are paid to the DOI and ultimately end up in state

coffers where they can be used to cover state government costs. Since the inception of managed care in 2011 through SFY 2017, the net premium tax benefit to the state of Mississippi has been $188.2 million. In addition, as MississippiCAN enrollment grows, the premium tax will continue to generate revenues for the state which could help offset some costs. This would not happen in the absence of managed care.

# Cost Effectiveness Study – Component #9

## Extent to Which CCO Payment to Providers Increased After DOM Provided Increases in Past Year Capitation Rates

Cornerstone Healthcare Financial Consulting, LLC, and Gary L. Owens, LLC, were asked to assess the extent to which annual CCO capitation increases were actually passed onto providers. Given the short deadline to complete this analysis, they applied two high-level approaches to address the question:

- **Approach 1** – A comparison of the annual year-over-year increase in the medical portion of capitation payments and provider payments.
- **Approach 2** – A review of each fiscal year's medical loss ratios (MLR) which is the ratio of what the CCOs actually spent on medical services compared to the adjusted capitation revenues received by the CCOs to provide beneficiary services.

Results are presented in *Table 15.*

***Table 15. Provider Payment Increases***

| Extent to which Provider Payments Increased after CCO Rate Increases – Preliminary Results for SFY 2016 and 2017 Total Funds | | | | |
|---|---|---|---|---|
| | **SFY 2015 (A)** | **SFY 2016 (B) (C)** | **SFY 2017 (C)** | **Cumulative for SFY 2016 and 2017** |
| Total Capitation Payments to CCOs (Revenues) | $1,060,212,656 | $2,024,161,135 | $2,253,913,486 | |
| Less allocations for: | | | | |
| Premium Tax/Health Insurer Fee | $47,154,779 | $92,735,568 | $87,557,414 | |
| Administrative Expenses | $96,244,792 | $154,131,493 | $142,323,664 | |
| **Total Adjusted Medical Payments to CCOs** | **$916,813,085** | **$1,777,294,074** | **$2,024,032,408** | |
| Annual Change in Medical Payments to CCOs | | $860,480,989 | $246,738,334 | $1,107,219,323 |
| CCO Medical Expenditures per MLR Reports | $919,266,350 | $1,838,718,216 | $2,069,549,096 | |
| Annual Change in CCO Medical Expenditures to Providers | | $919,451,866 | $230,830,880 | $1,150,282,746 |
| **Approach 1 - Percentage Ratio of CCO Medical Expenditures to Medical Payments (D)** | **100.3%** | **106.9%** | **93.6%** | **103.9%** |
| CCO Revenue Overage/(Shortfall) | ($2,453,265) | ($61,424,142) | ($45,516,688) | |
| **Approach 2 – MLRs** | **90.7%** | **95.2%** | **95.5%** | |

*(A) Amounts from CCO Medical Loss Ratio (MLR) Reports (SFY 2015 Audited)*

*(B) Amounts for SFY 2016 include six-month Audited MLR Report ended Dec. 2015 and Unaudited for Jan.-June 2016.*

*(C) Unaudited MLR Reports do not include a six-month "Run-out" period, but do include IBNR estimates.*

*(D) SFY 2015 percentage ratio calculated on the current base year and not on the annual change.*

*Source: Compiled by Cornerstone Healthcare Financial Consulting, LLC / Gary L. Owens, LLC*

***Medical Portion of the Capitation Rate***

It is important to understand that when DOM's actuaries set the annual capitation rates, they structure the rates with a targeted MLR of 88 percent. This means the medical portion of the capitation payment is 88 percent, and the remaining 12 percent are for administration, margin, and the insurance premium tax. The CCO is at risk when the MLR will exceed 88 percent. If the MLR is less than 88 percent, the CCO realizes the savings, but the capitation rates for the following year are adjusted. If the MLR drops below 85 percent, CCOs must rebate the funds back to DOM. To date, there have been no such rebates in MississippiCAN.

***Approach 1 Findings – Based on Annual Increase***

For SFY 2016, the data presented in *Table 15* shows the annual increase in CCO provider payments exceeded the annual increase in CCO revenues from the medical portion of the capitation rate by 106.9 percent. The annual increase in CCO capitation payment between SFY 2015 and SFY 2016 was $860,480,989 total funds, while CCO provider payments increased $919,451,866. This indicates that capitation rate increases were passed on to providers; however, it is not clear if this was due to increased payment rates, changes in utilization, or some combination of both. A more in-depth review of managed care claims would need to be performed to assess the reason for the increased payments.

In SFY 2017, the data shows the annual increase in CCO capitation payments fell short of the annual increase in CCO revenues from the medical portion of the capitation rate. The annual increase in CCO capitation payments between SFY 2016 and SFY 2017 was $246,738,334, while CCO provider payments increased by $230,830,880, or 93.6 percent of the annual capitation increase. This situation indicates that CCO provider payments decreased by $15,907,454 total funds, or -0.8 percent of capitation payments. The cause of this decrease was not part of this analysis, but could be due to better care management and decreased utilization. In a risk-based managed care program, if a CCO realized efficiencies, they retain the savings and DOM, through its actuary, adjusts the out year CCO capitation rates to reflect the decrease in CCO provider payments.

In order to show the potential effect of timing differences in the payment of claims over the two-year period, for the purposes of this comparison, the cumulative total amount of annual rate increase paid out in increased medical payments for SFY's 2016 and 2017, show a rate favorable to the state and providers of 103.9 percent. The CCOs received $1,107,219,323 increases in medical payments and paid out $1,150,282,746 to providers.

***Approach 2 Findings – Based on Annual MLR***

*Table 15* shows the MLR, the proportion of annual CCO payments for medical services, compared to the adjusted CCO capitation revenues (Total Capitation Payments minus Premium Tax/Health Insurer Fee) for SFY 2015, SFY 2016, and SFY 2017. The MississippiCAN capitation rates assume an 88 percent MLR. The data shows the following MLR results:

- SFY 2015 – 90.7 percent.
- SFY 2016 – 95.2 percent.
- SFY 2017 – 95.5 percent.

These results demonstrate the medical portion of the capitation payment to the CCO is being passed on to providers as expected.

### Component #9 – Implications for MississippiCAN Cost Effectiveness

The results of Approach 1 and 2 show that the CCO medical payments built into the annual capitation rates were passed through to providers. This indicates that MississippiCAN is cost effective in terms of the appropriateness of annual MississippiCAN capitation payments and reimbursement to the actual providers of beneficiary medical services.

# Cost Effectiveness Study – Component #10

## Trends in MississippiCAN Beneficiary Health Status over Time and Compared to Peer States

Myers and Stauffer was asked to review the trend in health outcomes for MississippiCAN beneficiaries over time and compare to peer states with similar demographics. For this analysis, 15 categories of health outcome measures were selected. The peer states were identified as Georgia, Michigan, and Tennessee, based on reasonably similar demographics and readily available public information. Please refer to page 29 for details on the peer state demographics and their Medicaid managed care programs.

The health outcome measures selected for review were also based on the availability of public data for Mississippi and the peer states. These measures are all HEDIS® which are commonly used by more than 90 percent of the nation's health plans and are designed to assess a range of health care interventions and outcomes for managed care populations. The current set of HEDIS® measures address member access to care, behavioral health, preventative series, and high-burden diseases such as diabetes, asthma, heart disease, and depression.

***MississippiCAN Performance on HEDIS® Measures Reviewed for this Study***

The MississippiCAN results for 15 categories of health outcomes are presented in *Table 16.* Please note that 20 measures are shown since some categories are broken out by age group. The results below are not presented against any national benchmarks or DOM-specific goals. They are intended to show trend only. It is very important to note that the significant expansion of beneficiaries into MississippiCAN may influence results. Between May 2015 and July 2015, nearly 300,000 children were transitioned from FFS into MississippiCAN. It is also important to consider that there is no prior FFS experience available to compare against the MississippiCAN results. HEDIS is not appropriate for use in the FFS population. Therefore, a complete picture of the managed care impact is not available.

For 12 of the 20 specific measures, there was an improvement in performance. For six measures, there was a decline in performance. The remaining two measures trended essentially flat between FY 2013 to CY 2016. The CY 2016 results are preliminary and have not been publicly validated by DOM's External Quality Review Organization (EQRO). As a result, the trend findings could change.

In general, MississippiCAN showed trending improvement in well child visits for children and adolescents. A well child visit is a routine doctor visit for comprehensive preventive health services, including physical exams and vaccinations. MississippiCAN also showed trending improvement in screening programs and the timeliness of prenatal care. However, the data showed a declining trend in dental visits and postpartum care.

*Table 16. HEDIS® CY Measure Results*

| MississippiCAN Selected HEDIS® Measure Results for CY 2013 to CY 2015 | | | | | |
|---|---|---|---|---|---|
| **Measure** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016 (Not Validated)** | **General Trend*** |
| Well Child Visits – First 15 Months of Life – Six or More Well Child Visits | - | 30.52 | 44.16 | 44.68 | Improvement |
| Well Child Visits – 3rd, 4th, 5th, and 6th Years and One or More Well Child Visits | 46.04 | 54.57 | 53.82 | 56.09 | Improvement |
| Well Child Visits – Adolescent At Least One Comprehensive Well Child Visit | 27.25 | 29.93 | 35.29 | 40.16 | Improvement |
| Childhood Immunization Status; Combo 2 | 88.36 | 78.36 | 79.04 | 74.57 | Decline |
| Timeliness of Prenatal Care | - | 89.66 | 79.91 | 91.04 | Improvement |
| Postpartum Visit Between 21 and 56 Days After Delivery | - | 61.25 | 58.23 | 55.24 | Decline |
| Annual Dental visit – Children (Total for All Ages) | 78.15 | 50.53 | 58.03 | 64.52 | Decline |
| Diabetes Care HbA1c Testing | - | - | 82.46 | - | Improvement |
| Lead Screening Rate in Children | 37.78 | 59.05 | 67.10 | 67.52 | Improvement |
| Breast Cancer Screening Rate | - | 45.24 | 51.83 | 54.22 | Improvement |
| Adult BMI Assessment Rate | - | 69.54 | 71.17 | 82.58 | Improvement |
| Controlling High Blood Pressure | - | 42.44 | 37.13 | 44.72 | Improvement |
| Use of Appropriate Medications for People with Asthma | 86.1 | 76.12 | - | 73.31 | Decline |
| Pharmacotherapy Management of COPD (PCE) Bronchodilators | - | 71.36 | 69.37 | 70.90 | Flat |
| Pharmacotherapy Management of COPD (PCE) Systemic Corticosteroid | - | 34.58 | 37.51 | 35.54 | Flat |
| Child and Adolescent Weight Nutrition and Counseling for Nutrition and Physical Activity - BMI Percentile Assessment (3-17 Years) | 29.42 | 37.70 | 29.21 | 45.95 | Improvement |
| Child and Adolescent Access to PCP up to 24 months | 97.79 | 96.87 | 96.21 | 97.03 | Decline |
| Child and Adolescent Access to PCP 25 months to 6 years | 89.05 | 87.73 | 90.53 | 87.77 | Decline |
| Child and Adolescent Access to PCP 7-11 years | 90.40 | 89.35 | 90.84 | 91.62 | Improvement |
| Child and Adolescent Access to PCP 12-19 years | 86.12 | 84.61 | 86.37 | 88.27 | Improvement |

| MississippiCAN Selected HEDIS® Measure Results for CY 2013 to CY 2015 | | | | | |
|---|---|---|---|---|---|
| **Measure** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016 (Not Validated)** | **General Trend*** |
| **Note – Trend fluctuations are tied to the transition of additional beneficiaries into MississippiCAN. Between May and July 2015, Medicaid children were transferred into the program which could skew results since it represents a previously unmanaged population.* | | | | | |
| *Source: Mississippi Division of Medicaid – data summary from CCOs.* | | | | | |

***MississippiCAN Performance on HEDIS® Measures Compared to Peer States for CY 2015***

For comparison purposes, *Table 17* provides the results for the 15 categories of health outcomes (i.e., a total of 20 measures with age breakdowns), for MississippiCAN and the peer states. CY 2015 results were highlighted, since more complete public information was available for the peer states. More detailed HEDIS® results by year for MississippiCAN and the peer states may be found in *Appendix H*.

For context in reviewing these comparisons, Mississippi ranks below most states for many key health status indicators. Mississippi also faces challenges with respect to the social determinants of health, such as poverty level and access to health care. This situation means Mississippi has more challenges to deal with than most states in improving health outcomes.

Overall, MississippiCAN was above the national average for five of the 20 specific measures. In addition, MississippiCAN's performance was in line with the national average (within two points), for another two of the 20 measures. When compared with the peer states, MississippiCAN results were higher for three of the 20 measures in CY 2015.

MississippiCAN's performance on the timeliness of prenatal care was at the national average and better than the peer states. In terms of access to PCPs, the program was also above the national average, but performed below the peer states. Finally, while well child visits are trending up for MississippiCAN members, the program still lags below the national average and peer states.

*Table 17. HEDIS® Peer State Measure Results*

| **MississippiCAN and Peer States Selected HEDIS® Measure Results for CY 2015* Unless Otherwise Noted** | | | | | |
|---|---|---|---|---|---|
| **Measure** | **National Average[1]** | **MS[2]** | **GA[3]** | **TN[4]** | **MI[5]** |
| Well Child Visits – First 15 Months of Life – Six or More Well Child Visits | 59.3 | 44.16 | 56.62 | 57.63 | 66.22 |
| Well Child Visits – 3rd, 4th, 5th, and 6th Years and One or More Well Child Visits | 71.3 | 53.82 | 61.12 | 68.01 | 75.11 |

| MississippiCAN and Peer States Selected HEDIS® Measure Results for CY 2015* Unless Otherwise Noted | | | | | |
|---|---|---|---|---|---|
| **Measure** | **National Average[1]** | **MS[2]** | **GA[3]** | **TN[4]** | **MI[5]** |
| Well Child Visits – Adolescent At Least One Comprehensive Well-Care Visit | 48.9 | 35.29 | 41.9 | 42.34 | 54.74 |
| Childhood Immunization Status; Combo 2 | 72.5 | 79.04 | - | - | 76.15 |
| Timeliness of Prenatal Care | 80 | 79.91 | 50.2 | 76.34 | 78.63 |
| Postpartum Visit Between 21 and 56 Days After Delivery | 60.9 | 58.23 | 34.64 | 55.57 | 61.73 |
| Annual Dental visit – Children (Total for All Ages) | - | 58.03 | 69.06 | - | - |
| Diabetes Care HbA1c Testing (GA data for CY 2016) | 86 | 82.46 | 79.71 | 82.59 | 86.89 |
| Lead Screening Rate in Children | 66.5 | 67.10 | 76.57 | 70.29 | 79.55 |
| Breast Cancer Screening Rate | 58.5 | 51.83 | 69.43 | 54.47 | 59.65 |
| Adult BMI Assessment Rate | 80.8 | 71.17 | 32 | 82.46 | 89.92 |
| Controlling High Blood Pressure | 54.7 | 37.13 | 41.68 | 55.10 | 55.54 |
| Use of Appropriate Medications for People with Asthma (CY 2014)** | 83.9 | 76.12 | 89.77 | - | 80.64 |
| Pharmacotherapy Management of COPD (PCE) Bronchodilators | 80 | 69.37 | 82.61 | 75.41 | - |
| Pharmacotherapy Management of COPD (PCE) Systemic Corticosteroid | 67.1 | 37.51 | 79.26 | 52.23 | - |
| Child and Adolescent Weight Nutrition and Counseling for Nutrition and Physical Activity - BMI Percentile Assessment (3-17 Years) | 64.4 | 29.21 | 43.77 | 69.55 | 74.93 |
| Child and Adolescent Access to PCP up to 24 months | 94.7 | 96.21 | 94.53 | 91.77 | 96.2 |
| Child and Adolescent Access to PCP 25 months to 6 years | 87.2 | 90.53 | 84.86 | 85.15 | 88.79 |
| Child and Adolescent Access to PCP 7 - 11 years | 90.2 | 90.84 | 88.75 | 91.15 | 90.85 |
| Child and Adolescent Access to PCP 12 - 19 years | 88.6 | 86.37 | 85.86 | 87.78 | 89.86 |

**Orange Shading – MS exceeds the National Average and/or MS results are higher than peer states.**

**Dark Grey Shading – MS results are in line with the National Average.**

**Note – CY 2015 results were selected for this comparison table, since more complete information was publically available for this time period.*

***Note – Results for this measure are from CY 2014; the most recent year for which data was available.*

[1] *National Source: 2016 NCQA State of Health Care Quality.*

| MississippiCAN and Peer States Selected HEDIS® Measure Results for CY 2015* Unless Otherwise Noted | | | | | |
|---|---|---|---|---|---|
| **Measure** | **National Average[1]** | **MS[2]** | **GA[3]** | **TN[4]** | **MI[5]** |

[2] *MS Source: Mississippi Division of Medicaid.*

[3] *GA Source: Georgia Medicaid Performance Measure Report for CY 2012 – CY 2015.*

[4] *TN Source: 2017 Annual HEDIS/CAHPS Report: Comparative Analysis of Audited Results from TennCare MCOs.*

[5] *MI Source: Michigan Medicaid HEDIS 2015 Results Statewide Aggregate Report.*

***DOM Strategy to Address MississippiCAN Health Outcomes and Performance***

DOM is updating the MississippiCAN measures to better align with CMS reporting requirements. Beginning January 1, 2018, MississippiCAN will use the Adult Core Set and the Child Core Set of Health Care Quality Measures for Medicaid which continues to include HEDIS® but also includes other measures related to areas such as low birth weight deliveries, depression screening, and patient satisfaction. The CMS intent behind the core set of measures is to encourage national reporting by states on a uniform set of measures and to support states in using these measures to drive quality improvement.

Though MississippiCAN is a relatively new program, DOM has already taken steps to utilize internal and external advisors to ensure a high level of monitoring and oversight related to quality. For example, the following groups advise and guide quality efforts pertaining to the MississippiCAN program.

- The Mississippi ***Medical Care Advisory Committee*** is comprised of 11 members appointed by the Governor, Lieutenant Governor, and the Speaker of the House of Representatives that are either a health care provider or consumer of health care services. The Medical Care Advisory Committee is required by federal regulation to advise the Mississippi DOM about health and medical care services per Miss. Code. Ann § 43-13-107(3).
- The ***Quality Leadership Team*** is a stakeholder group comprised of CCO CEOs, medical directors, quality managers, beneficiary representatives, provider representatives, various provider associations, and DOM. This team reviews MississippiCAN quality information, updates, and other topics.
- The ***Quality Task Force*** is comprised of CCO quality teams and DOM, which reviews quality measures and means of improving quality measures.
- The Mississippi DOM's ***Drug Utilization Review (DUR) Board*** is a quality assurance body which seeks to assure appropriate drug therapy to include optimal beneficiary outcomes and appropriate education for physicians, pharmacists, and the beneficiary. The DUR Board is composed of 12 participating physicians and pharmacists who are active Medicaid providers and in good standing with their representative organizations. The Board reviews utilization of drug therapy and evaluates the long-term success of the treatments.

- The Mississippi DOM's ***Pharmacy and Therapeutics (P&T) Committee*** is comprised of 12 participating physicians, nurse practitioners, and practicing pharmacists who are active Medicaid providers and in good standing with their representative organizations. The P&T Committee is an advisory panel that conducts in-depth clinical evaluations and recommends appropriate drugs for preferred status on DOM's PDL and/or drugs for prior authorization. Drugs and drug classes are evaluated for their safety, efficacy, and overall cost value, and the committee will make subsequent recommendations to the Executive Director regarding prior authorization criteria for these drugs and classes.
- DOM contracts with ***Utilization Management and Quality Improvement Organizations (UM/QIO)*** to perform pre-certification and concurrent reviews for various fee-for-service benefits and quality reviews for all Medicaid acute and ancillary health services and behavioral health services.

VBP is a common strategy used by most states for improving health outcomes and managed care performance. DOM has incorporated VBP language into the current managed care contract as an option. DOM should consider implementing a VBP program to positively impact health outcomes and cost effectiveness over time. The Best Practices section of this report, on page 66, describes the VBP approach.

### Component #10: Implications for MississippiCAN Cost Effectiveness

Improvement in health outcomes is an important measure of cost effectiveness and program quality. Since the MississippiCAN program was implemented, the state has seen improvement in many of the 15 categories of HEDIS® results examined in this report. Although Mississippi lags behind the peer states in several HEDIS® measures, Mississippi is ranked as one of the least healthy states in the nation with one of the highest poverty rates and highest physician workforce shortages in the nation. This status further compounds the state's challenge to improve health outcomes for its Medicaid members relative to other states.

In comparison to the peer states, MississippiCAN is a relatively new managed care program with the beneficiary groups and the types of services offered phased in over a period of six years. As a result, it will take time for the program to stabilize and generate reliable trend, especially given the large number of children transitioned into the program during the period May through July 2015 and the addition of inpatient hospital services in December 2015.

Overall, since this review was a high-level assessment of MississippiCAN's impact on beneficiary health, it can be generally stated that while some health outcomes are at low levels, many are improving which should promote cost effectiveness over time. However, given the transition of beneficiaries and service into MississippiCAN, the program needs time to stabilize. Trends based on later data should be assessed in order to establish a firm conclusion regarding health outcomes and cost effectiveness. It is recommended that DOM monitor health outcomes on a routine basis and institute a VBP structure tied to a selection of critical health outcomes.

# Best Practices for Cost Effectiveness Among States

Myers and Stauffer was asked to describe best practices for Medicaid managed care cost effectiveness. States use a variety of strategies to incentivize or require managed care plans to contain costs and improve the access, coordination, appropriateness, and quality of care, as well as health outcomes for Medicaid beneficiaries. In addition, robust state monitoring and oversight practices are critical for program cost effectiveness. A high-level overview of these best practices is presented below.

## Data Quality

Complete, accurate, and timely encounter data is a critical requirement for promoting managed care cost effectiveness. Encounter data is essential for measuring and monitoring plan quality, utilization, finances, and compliance with contract requirements. The data is also a critical source of information for setting capitation rates and performing risk adjustment to account for differences in beneficiary health status across plans. Therefore, states must routinely monitor and reconcile encounter data to the managed care plan's financial and claims records to ensure completeness, accuracy, and reliability.

## Quality Dashboards

Dashboards are a tool used to inform Medicaid agency leadership on a regular basis regarding managed care plan performance. Dashboards distill critical information from reports to advise leadership. There are no financial incentives directly tied to a dashboard, but it is used to identify trends, set program goals, and identify quality improvement strategies and delivery system changes to improve health outcomes. States can then use this information, not only to monitor performance, but to collaborate with health plans on areas for improvement. Some states also post public dashboards on their websites in order to increase program transparency and inform public stakeholders. As an example, California's Medicaid managed care dashboard is included in *Appendix I*.

## Coordinating Care for Individuals with Chronic Conditions

States can lower Medicaid spending by improving the care coordination and health outcomes of beneficiaries with chronic conditions who typically are high utilizers of health care. According to CMS, about one percent of Medicaid beneficiaries account for 25 percent of total Medicaid expenditures. Within this group, 83 percent have at least three chronic conditions, and 60 percent have five or more. Health homes are one approach to improve care coordination through the use of interdisciplinary teams of health care providers to coordinate primary, acute, and behavioral health services for individuals with chronic conditions. As of May 2017, 21 states and the District of Columbia have a total of 32 CMS-approved health home models. The majority of these states have health homes that focus both on chronic illness and serious mental illness.

## Quality Measures for Chronically Ill or Special Needs Beneficiaries

Some states require that managed care plans report specific health quality measures for beneficiaries who are chronically ill or have special needs. The disabled (SSI population) are typically the highest utilizers of services, so tracking their health outcomes can help identify

specific strategies to improve care. In Tennessee and Texas, managed care plans are required to report health outcomes by beneficiary type, meaning specific to children, adults, and members with special health care needs.

### VBP to Incentive Improved Health Outcomes

VBP programs represent a key best practice for promoting cost effectiveness through improved health outcomes. States have the ability to offer financial incentives to managed care plans to improve beneficiary health. VBPs tie annual performance targets to contractually-specified goals. If performance targets are met, the CCO receives either a portion of the withheld capitation payments, shared savings, or additional payments. If the CCO does not meet the target, they are ineligible for payment and the state retains the funds.

A March 2016 survey by the National Association of Medicaid Directors, in collaboration with the Commonwealth Fund, reported that of the 34 states that responded to the survey, 28 had developed or were in the process of developing a VBP. There are a range of VBP approaches across states intended to better align incentives for providers to deliver high quality care. One example is in Georgia. The Georgia Families and Georgia Families 360° Programs have in place a VBP program for a specified set of managed care performance targets. The VBP program is defined as:

> *"An enhanced approach to purchasing and program management that focuses on value over volume. It is part of a comprehensive strategy that aligns incentives for Members, Providers, Supplier, and the State to achieve the program's overarching goals. The impact of initiatives is measured in terms of access, outcomes, quality of care and savings."*

Georgia's VBP approach is to withhold five percent of the managed care plan monthly capitation payment. The withheld funds are booked as a liability and held in an interest bearing account until the Georgia Medicaid agency is ready to make payment. The withheld funds are paid after the 12-month measurement period based on actual managed care plan performance. A plan will only receive payment if it meets or exceeds the performance targets. *Appendix J* details Georgia's VBP performance measures.

### Initiatives to Increase Access to Appropriate Care and Reduce ED Visits

Increasing access to appropriate care and reducing inappropriate use of the ED by Medicaid beneficiaries is another way to promote cost effectiveness. Several states have reduced ED usage by expanding access to primary care services and targeting interventions at populations that frequently use the ED. Examples of such practices are detailed below.

- Integration of Physical and Behavioral Health – The federal Excellence in Mental Health Act created Certified Community Behavioral Health Clinics (CCBHC) as a new Medicaid provider type designed to provide outpatient behavioral health services and primary care screenings and monitoring for children, adults, and families. CCBHCs are currently a demonstration program and receive an enhanced Medicaid reimbursement rate based on their anticipated costs of care. CCBHCs are responsible for directly providing services,

with an emphasis on the provision of 24-hour crisis care, utilization of evidence-based practices, care coordination, and integration with physical health care. There are currently eight states participating in the CCBHC demonstration: Minnesota, Missouri, New Jersey, New York, Nevada, Oklahoma, Oregon, and Pennsylvania.

- Community Paramedicine Programs – Community paramedicine helps fill gaps in local health care by using existing providers in expanded roles. In addition to emergency response, community paramedics focus on providing primary care, post-discharge follow-up care, integration with local public health agencies, and providing education and health promotion programs. The skills of paramedics and EMTs in rural areas can be useful to them as providers of primary care. For example, the technique used to administer an injection in an emergency situation is also used for routine inoculations.
- Georgia used a $2.5 million CMS grant to implement an ED diversion project. The project established four primary care sites in rural and underserved areas of the state with extended or weekend hours to help redirect care from the ED to a more appropriate setting. The four sites delivered services to about 33,000 patients and are estimated to have saved $7 million over a three-year period.

## Population Health Initiatives

The following initiatives were highlighted in 2017 by the Institute for Medicaid Innovation, a nationally-recognized source of best practice information. The health indicators of obesity, women's health, and chronic diseases such as diabetes, are of critical importance to the MississippiCAN Medicaid population. While there are many different programs available to review and implement, Myers and Stauffer determined the most potential cost savings and improved quality of care opportunities may come from implementing similar population health initiatives. Examples are described below and in *Table 18.*

***Obesity***

In the area of obesity, there are several states that have implemented child-centered obesity programs. The intended purpose of this program is to help children reach a healthier weight and teach children the importance of having a healthier environment and behaviors at home involving the entire family. The goal is to reduce the number of children who have medical consequences from being obese (e.g., diabetes, hypertension, etc.), as well as reduce the likelihood of adult obesity and co-morbidities.

***Chronic Disease***

Many states have also seen an increase in cost related to chronic diseases and have innovated to control costs. Maryland adopted a program utilizing Community Health Workers (CHW) to provide home visits and phone contacts to teach patients with diabetes and/or hypertension to manage their illness, follow therapy and behavioral regimens, and maintain visits with a PCP. Each CHW had a caseload of two to 10 patients. The goal of hiring a CHW to work with patients who suffer from chronic diseases is to maintain and manage their illness, decrease the number of ED visits, and decrease the number of hospital admissions. At the time of the program (2003), Maryland saw a 40 percent decrease in ED visits, a 33 percent decrease in hospital admissions, and a 27 percent decrease in hospital admissions and Medicaid reimbursement. As such, there

was a $2,245 average savings per patient and $262,080 total savings. Additionally, there was evidence of improved quality of life.

*Table 18. Summary of Best Practice Examples in Other States*

| Population Health Best Practice Examples In Other States | | |
|---|---|---|
| **State** | **Description of Program or Initiative Including Population Served** | **Estimated Cost Savings Realized** |
| Kansas, Minnesota[1], Rhode Island, Texas | Initiatives Targeting Obesity – Children and parents/caregivers attend a series of 16 weekly one-hour group classes. An additional eight months of monthly maintenance is encouraged after completion.<br><br>Program is led by trained facilitators and cover topics such as reducing intake of less healthy food and drinks, getting and staying active, managing screen time, improving sleep habits, increasing fruit and veggie consumption, eating breakfast, and the link between mood and foods.<br><br>Program works with community partners (e.g., YMCA, Boys and Girls Clubs, federally qualified health centers [FQHCs], etc.) as well as locally with physicians, pediatricians, and school nurses.<br><br>The population served focused on children ages six to 17 years old who are overweight or obese (at or above 85$^{th}$ BMI percentile) and one caregiver. | Cost savings have not been measured; however, the quality improvement outcomes look promising.<br><br>After six months of participation, children experienced a 3.4 percentage point reduction in percentage overweight.<br><br>Children under 13 had a 4.3 percentage point reduction in percentage weight.<br><br>Children older than 13 had a 1.0 percentage point reduction.<br><br>Attendance is the largest predictor of success and 77 percent of families are attending more than four sessions (at time of study).<br><br>Those who attend more face-to-face group sessions experienced greater changes in weight loss.<br><br>There were significant improvements in quality of life among children as reported by both children and their caregivers. |
| South Carolina[2] | Initiatives Targeting Maternal and Child Health – Groups of pregnant women due within the same month attend monthly sessions.<br><br>Each session begins with a brief individual medical assessment followed by a 90-minute facilitated group discussion. Topics include pregnancy, labor, and delivery; nutrition; stress management; infant care and breastfeeding; and healthy relationships.<br><br>Members had to have started prenatal care before 20 weeks of pregnancy. Medical exclusions were pre-gestational diabetes or hypertension, multiple gestation, and a BMI greater than 45.<br><br>Eligible members were offered CenteringPregnancy™ for their prenatal care with a 30 percent adoption rate. | CenteringPregnancy™ newborns had a 3.5 percent neonatal intensive care unit (NICU) admission compared to 13.9 percent of individual care newborns. |

| Population Health Best Practice Examples In Other States | | |
|---|---|---|
| **State** | **Description of Program or Initiative Including Population Served** | **Estimated Cost Savings Realized** |
| | One hundred and seven members enrolled in CenteringPregnancy™. Eighty-five had four or more CenteringPregnancy™ visits. | |
| Maryland[3] | Initiatives Targeting Chronic Conditions – University of Maryland hired CHWs to provide home visits and phone contacts to teach patients with diabetes and/or hypertension to manage their illness, follow therapy and behavioral regimens, and maintain visits with a PCP.<br><br>Participants were African American Medicaid patients who were identified from hospital discharge rolls, ages 18 and up, and diagnosed with diabetes and/or hypertension. | 40 percent decrease in ED visits and 33 percent decrease in hospital admissions. 27 percent decrease in hospital admissions and Medicaid reimbursement.<br><br>Improved quality of life.<br><br>$2,245 average savings per patient and $262,080 total savings. |

[1] *Institute for Medicaid Innovation, Medicaid Managed Care Best Practices Compendium 2016 – 2017, Join For Me, A Weight Management Program For Kids And Teens, 2017 (http://www.medicaidconference.com/_images/content/IMI-best_practices__Updated_10.5_(resized)_.pdf).*
[2] *Institute for Medicaid Innovation, Medicaid Managed Care Best Practices Compendium 2016 – 2017, Reducing Newborn Hospitalization Costs Through Investing In CenteringPregnancy™ Group Prenatal Care , 2017 (http://www.medicaidconference.com/_images/content/IMI-best_practices__Updated_10.5_(resized)_.pdf).*
[3] *Worker Education & Resource Center, Inc., CHW Best Practices and Cost Effectiveness Information: Safety Net Systems and Medicaid.*

# Recommended Best Practices to Improve MississippiCAN Cost Effectiveness

The following high-level recommendations are proposed to improve MississippiCAN cost effectiveness:

- CMS is encouraging states to adopt their annual Core Set of Health Care Quality Measures for Adults and Children. This core set includes and will increase the number of HEDIS® performance measures being tracked for MississippiCAN. DOM representatives advised that effective January 1, 2018, DOM will adopt the CMS core set. In addition, given the higher cost typically associated with the SSI population, DOM should consider including additional measures specific to this population group. SSI and SSI-related populations are typically the highest utilizers of services and account for a significant percentage of savings opportunity in managed care.
- DOM should develop and routinely share CCO dashboards with DOM leadership. The dashboards serve as a management tool and are a distillation of critical information from the many CCO reports. The DOM can use the dashboards to follow program trends, set program goals, identify quality improvement strategies, and delivery system changes to improve health outcomes. DOM can then use this information, not only to monitor performance, but to collaborate with health plans on areas of improvement.
- DOM should exercise its contractual option to implement a VBP methodology aligned to target health outcomes for MississippiCAN beneficiaries. This will involve DOM researching and identifying specific performance measures, payment approach, and pricing by DOM's actuaries. The VBP approach should reinforce the state's Quality Strategic Plan which is currently under revision.
- DOM should research and consider adopting similar best practice initiatives from other states to address obesity, women's health, prenatal care, low birth weight deliveries, and chronic diseases such as diabetes.
- A key consideration in monitoring cost effectiveness is having access to complete and accurate claims history data. This is an area where DOM has been proactive by implementing bi-monthly reconciliations of encounter claims to the CCOs' (and/or respective sub-contractor's) cash disbursement journals. DOM should continue to perform encounter data reconciliations. To ensure cost effectiveness, DOM should review and evaluate its current oversight and monitoring procedures for the CCOs. Assurances should be made that CCOs are performing consistent with contractual obligations and full remediation and remedy strategies are deployed should performance issued be identified.

## Recommendations for Future Cost Effectiveness Studies

Due to the limited time to conduct this study, it is recommended that DOM consider additional cost effectiveness reviews in the following areas:

- An assessment of the most feasible and appropriate approach for implementing a MississippiCAN VBP.
- A more in-depth review of PPEs stratified by population and service type, and covering a later date timeframe.
- A study of FFS health care outcomes for MississippiCAN beneficiaries prior to their coverage in the MississippiCAN program for use as a benchmark in measuring MississippiCAN performance.
- An in-depth study of best practices related population health initiatives to address Mississippi Medicaid health challenges such as obesity, women's health, prenatal care, low birth weight deliveries, and chronic diseases such as diabetes.

These recommended studies will help compliance with reporting requirements mandated under the federal managed care rule (42 CFR 438). The rule was significantly updated in 2016. States are now required to perform the following studies and/or reporting and must post the findings on their public websites. These requirements will promote program transparency and opportunities to identify areas of improvement for managed care cost effectiveness. Depending on the reporting requirement, the website posting dates occur on different timeframes.

- Annual managed care program report that includes financial performance, encounter data reporting, enrollment, benefits covered, grievances and appeals, availability and accessibility of covered services, evaluations of plan performance on quality measures, and sanctions or corrective action plans. Report due date is pending CMS guidance.
- Statewide network adequacy requirements to be posted in SFY 2019.
- Accreditation status of the CCOs to be posted in SFY 2018.
- Quality rating given by the state to each managed care plan to be posted in SFY 2019.
- State quality strategy to be posted by July 1, 2018.
- Quality measures and performance outcomes to be posted by July 1, 2018.
- Annual EQR technical reports to be posted by July 1, 2018.

# Summary of MississippiCAN Cost Effectiveness Study Findings and Recommendations

*Table 19. Covered Initial Cost Effectiveness Study Findings*

| MississippiCAN Covered Initial Cost Effectiveness Study Findings | | | | |
|---|---|---|---|---|
| **Applicable Study Components** | **Findings** | **Implications for MississippiCAN Cost Effectiveness** | **Location in Report** | **Recommendations** |
| **1. Cost Savings** | | | | |
| *(Information/analysis from Milliman.)* | $285.5 million in state funds savings and $369.1 million total funds savings from January 1, 2011 to June 30, 2017. | Indicates cost effectiveness. | Page 36 | Continue to monitor annually. |
| **2. Appropriateness of CCO Capitation Payments** | | | | |
| Component 1 – Capitation Rate Alignment to Actual CCO Experience.<br><br>*(Information/analysis from Milliman.)* | CCO capitation rates have been developed appropriately and substantially align to CCO provider payment to providers on behalf of MississippiCAN beneficiaries. Between CY 2011 and CY 2015 there was a 0.7 percent difference between capitation rates and actual CCO payments for medical services. | Indicates cost effectiveness.<br><br>DOM and its actuaries monitor this annually as part of the CCO rate development process to set actuarially sound capitation rates. | Page 34 | Accurate, complete, and timely CCO encounter data is critical for managed care rate setting. DOM should continue to perform encounter data reconciliation and validation.<br><br>DOM should continue to work closely with actuaries to ensure rate development aligns with CCO experience and to monitor CCO payment performance through MLR studies. |
| Component 6 – Comparison of MississippiCAN PMPM and non-claims costs to peer states and national benchmark. | SFY 2016 MississippiCAN and Mississippi Medicaid medical and administrative (non-claims) PMPMs appear reasonable compared to peer states and national benchmarks. | Potentially cost effective.<br><br>No two states are exactly the same. | Page 46 | Accurate, complete, and timely CCO encounter data is critical for managed care rate setting. DOM should |

| MississippiCAN Covered Initial Cost Effectiveness Study Findings | | | | |
|---|---|---|---|---|
| **Applicable Study Components** | **Findings** | **Implications for MississippiCAN Cost Effectiveness** | **Location in Report** | **Recommendations** |
| *(Information/analysis from Public Consulting Group.)* | Mississippi ranks 28th in terms of managed care cost and is the third lowest in the nation for administrative costs. Given the state's health care challenges (population health status and access to care issues), this may indicate some degree of cost effectiveness. But state-to-state and national comparisons should be considered carefully given the variation in program services and covered populations. | State Medicaid managed care programs can vary widely. State-to-state comparisons should be carefully considered. | | continue to perform encounter data reconciliation and validation.<br><br>Having a more stable managed care program will contribute to more complete information for MS to use in benchmarking against other Medicaid programs. DOM could also continue to refine the PMPM cost information to ensure optimal presentation for comparison purposes. |
| Component 7 – Necessity and/or benefit of DOM increasing SFY 2017 CCO payments following a legislative session that funded Medicaid $75 million state funds below annual spending projections.<br><br>*(Information/analysis from Public Consulting Group.)* | DOM's annual capitation rate development process was reviewed against federal regulations, CMS requirements, and actuarial standards. DOM's action to increase capitation payments, despite its funding deficit, were necessary and appropriate. The cost of care assumptions are defensible and were approved by CMS indicating reasonableness and compliance. Because CMS approved the rates and they are actuarially certified, DOM was required to use them as the basis for SFY 2017 CCO payments.<br><br>The SFY 2017 reduction to DOM's budget was actually $294 million total | Indicates cost effectiveness. | Page 49 | No recommendation. |

| MississippiCAN Covered Initial Cost Effectiveness Study Findings | | | | |
|---|---|---|---|---|
| **Applicable Study Components** | **Findings** | **Implications for MississippiCAN Cost Effectiveness** | **Location in Report** | **Recommendations** |
| | funds and would have resulted in an 11 percent cut to MississippiCAN. Due to statutory requirements, this reduction would have to have been absorbed by both FFS and MississippiCAN. | | | |
| Component 9 – Extent to which CCO payment to providers increased after DOM provided increases in past year capitation rates. *(Information/analysis from Cornerstone Healthcare Financial Consulting, LLC and Gary L. Owens, LLC.)* | Results show that SFY 2015 and SFY 2017 increased capitation payments were passed onto providers for payment of beneficiary care. | Indicates cost effectiveness | Page 57 | Continue to monitor through quarterly MLR reports. Consider distilling MLR report information into a CCO dashboard report for DOM leadership. |
| **3. MississippiCAN Impact on Medicaid Expenditures and Beneficiary Costs** | | | | |
| Component 8 – Annual growth compared to medical inflation and impact of enrollment changes on spending. *(Information/analysis from Cornerstone Healthcare Financial Consulting, LLC and Gary L. Owens, LLC.)* | The significant enrollment growth that occurred in SFY 2014 and SFY 2015 could have greatly increased costs under an unmanaged FFS system. Instead, Mississippi Medicaid inflationary costs ran mostly below the CMS medical inflation projection for SFY 2011 through SFY 2017. This indicates that managed care has been cost effective for Mississippi. In addition, the program has generated revenues for the state of Mississippi through the state insurance premium tax. | Indicates cost effectiveness. | Page 51 | Track spending and enrollment information as part of a CCO dashboard report for DOM leadership. |
| **4. Impact on Beneficiary Health Outcomes and Reduction in Potentially Preventable Events such as Inpatient Stays and Emergency Department Visits** | | | | |
| Component 3 – MississippiCAN impact on duplicative or unnecessary services, ED visits and inpatient stays. | MississippiCAN shows a decrease in potentially preventable inpatient hospital admissions; however, emergency | Inconclusive. | Page 39 | It is recommended that PPEs be monitored, reported on, and tracked |

| MississippiCAN Covered Initial Cost Effectiveness Study Findings | | | | |
|---|---|---|---|---|
| **Applicable Study Components** | **Findings** | **Implications for MississippiCAN Cost Effectiveness** | **Location in Report** | **Recommendations** |
| *(Information/analysis from Conduent.)* | department visits have increased. For duplicative or unnecessary services, MississippiCAN appeared to perform worse than FFS but was closing the gap by the end of the study timeframe. | It is difficult to draw conclusions because of the gradual expansion of beneficiary coverage and services over time. | | on a routine basis as part of a CCO dashboard report. See *Appendix I* for examples.<br><br>It is also recommended that DOM implement a VBP that ties the reduction in PPEs to CCO reimbursement. |
| Component 4 – MississippiCAN Impact on potentially preventable hospital and ED admission among CCO beneficiaries and compared to FFS beneficiaries of the same population.<br><br>*(Information/analysis from Conduent.)* | MississippiCAN shows a decrease in potentially preventable inpatient hospital admissions; however, ED visits have increased. FFS held steady in both areas.<br><br>This may be due to CCOs diverting hospital admissions into other services and ED visits. A major limitation of the study is there is only one year of data where hospital admissions are paid for by the CCOs. Having more claims history to compare the populations would allow a better understanding of MississippiCAN's impact of preventable services. | Inconclusive.<br><br>See Component 3. | Page 39 | See Component 3. |
| Component 5 – The decrease in inpatient hospital utilization attributable to Medicaid beneficiaries over time, in order to assess the efficacy of MississippiCAN toward coordination of care, the treatment of chronic | The MississippiCAN reduction in potentially preventable hospital admissions appears more favorable than in FFS. This indicates that MississippiCAN's coordination of care efforts may be having a positive impact but requires further analysis. | Inconclusive. | Page 39 | See Component 3. |

| MississippiCAN Covered Initial Cost Effectiveness Study Findings | | | | |
|---|---|---|---|---|
| **Applicable Study Components** | **Findings** | **Implications for MississippiCAN Cost Effectiveness** | **Location in Report** | **Recommendations** |
| conditions and reductions in readmissions.<br><br>*(Information/analysis from Conduent.)* | | | | |
| Component 10 – Trends in MississippiCAN beneficiary health status over time and compared to peer states.<br><br>*(Information/analysis from Myers and Stauffer.)* | MississippiCAN is starting from a more challenging position relative to its health and poverty status and physician workforce shortage when compared to other states. However, for the 15 categories of health outcome measures reviewed, while results are at relatively low levels, MississippiCAN appears to be gradually improving. | Inconclusive. | Page 60 | DOM should adopt CMS Core Set of Child and Adult Heath Quality Measures and should ensure that there are an adequate number of measures to track outcomes for the disabled (SSI) populations.<br><br>DOM should monitor, report, and track key health measures on a routine basis as part of a CCO dashboard report. See *Appendix I* for examples.<br><br>DOM implement a VBP that ties to key performance measures. |

# Appendix A: Milliman Cost Savings

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November 8, 2017

Ms. Margaret King, CFO
Mississippi Division of Medicaid
Walter Sillers Building, Suite 1000
550 High Street
Jackson, MS 39201-1399

**Re: MississippiCAN Estimated Program Savings – January 2011 to June 2017**

Dear Margaret:

The Mississippi Division of Medicaid (DOM) retained Milliman to calculate, document, and certify to the MississippiCAN capitation rate development since the inception of the program in January 2011. This letter provides estimated cumulative MississippiCAN cost savings projections from January 2011 to June 2017, consistent with the capitation rate development for each rating period. We estimate DOM cost savings, excluding the impact of premium tax, and the net state government premium tax proceeds.

Table 1 below displays the estimated cost savings to Mississippi for medical services from January 2011 to June 2017 for MississippiCAN enrolled populations relative to our projection of what their fee-for-service (FFS) costs would have been in absence of managed care. While it is not possible to know with certainty what medical costs would have been if MississippiCAN had not have been in place, we examined the most recent FFS experience available for each population to make a "best estimate" projection using accepted actuarial practices. The savings were calculated as reductions in medical costs relative to FFS which are then partially offset by targeted CCO administrative costs and margin to provide more efficient and higher quality of care under managed care. In addition, beginning in January 2014, the Health Insurer Fee imposed under the Affordable Care Act offsets some savings.

Table 1 also estimates the net revenue the state of Mississippi will realize through collection of the 3% premium tax on MississippiCAN capitation payments collected by the Department of Insurance (DOI). Since the capitation rates are funded by federal and state money based upon the Federal Medical Assistance Percentage (FMAP), the federal government pays an equivalent of approximately 2.25% (assuming an average FMAP of 75%) and the state government (DOM) pays 0.75%. Therefore, the State realizes net proceeds from the MississippiCAN premium tax (DOI collections less DOM costs) equivalent to the 2.25% federal contribution. We did not reflect the timing of payments in our analysis.

Concurrent with the inclusion of inpatient hospital services in MississippiCAN capitation rates effective December 1, 2015, the Mississippi Hospital Access Program (MHAP) was established. This program helps to ensure sufficient access to inpatient hospital services for the Medicaid population by including enhanced hospital reimbursement in the capitation rates. Including these amounts in the capitation rates also subjects the amounts to state premium tax and potentially the Health Insurer Fee. Table 1 displays the cost and net premium tax impact of MHAP separate from the MississippiCAN capitation rates.

Milliman

Ms. Margaret King
Office of the Governor, Division of Medicaid
November 8, 2017


**Table 1**
**MississippiCAN Estimated Program Savings**
**January 2011 to June 2017**
**Total Expenditures (State and Federal)**
**Estimated Program Savings Relative to FFS**
**($ Millions)**

| Capitated Population[1] | Projected FFS Claims w/o Managed Care | MSCAN Costs [2,3] | Total Savings | Mississippi Share of Savings |
|---|---|---|---|---|
| SSI / Disabled, Foster Care, BCCP | $4,966.0 | $4,648.7 | $317.4 | $83.7 |
| MA Adults, Pregnant Women, Newborns | $2,505.1 | $2,449.7 | $55.3 | $14.4 |
| MA Children / Q-CHIP Children | $1,566.7 | $1,569.2 | ($2.5) | ($0.5) |
| MHAP | $1,066.1 | $1,067.2 | ($1.1) | ($0.3) |
| **Subtotal** | | | | **$97.3** |
| Net Premium Tax Revenue - Capitation | | | | $164.3 |
| Net Premium Tax Revenue - MHAP | | | | $23.9 |
| **Total Impact to MS** | | | | **$285.5** |

[1] *Costs included for populations only during enrollment in MSCAN.*
[2] *MSCAN costs include both capitated services and inpatient services paid FFS prior to Dec 2015 for MSCAN members. Premium tax is not applied to inpatient services prior to inclusion in capitation rates in Dec 2015.*
[3] *MSCAN costs include the impact of the Health Insurer Fee beginning January 2014.*

Table 2 summarizes the state share of the savings and net premium tax revenue by capitation rate period from January 2011 to June 2017.

**Table 2**
**MississippiCAN Estimated Program Savings**
**January 2011 to June 2017**
**State Share Only**
**Estimated Program Savings Relative to FFS**
**($ Millions)**

| Capitation Rate Period[1] | Mississippi Share of Savings | Net premium tax revenue | Total Impact to MS |
|---|---|---|---|
| CY 2011 | $14.5 | $10.2 | $24.7 |
| CY 2012 | $15.6 | $9.8 | $25.4 |
| CY 2013 | $21.9 | $18.3 | $40.2 |
| Jan - June 2014 | $6.1 | $10.1 | $16.2 |
| SFY 2015 | $10.9 | $20.7 | $31.6 |
| SFY 2016 | $16.9 | $55.5 | $72.4 |
| SFY 2017 | $11.4 | $63.6 | $75.0 |
| **January 2011 to June 2017** | **$97.3** | **$188.2** | **$285.5** |

[1] *Costs included for populations only during enrollment in MSCAN.*

Milliman

Ms. Margaret King
Office of the Governor, Division of Medicaid
November 8, 2017


**CAVEATS AND LIMITATIONS**

This letter is intended for the use of DOM in accordance with its statutory and regulatory requirements. Milliman recognizes the materials may be public records subject to disclosure to third parties; however, Milliman does not intend to benefit, and assumes no duty or liability to, any third parties who receive this letter and related materials. The materials should only be reviewed in their entirety. Milliman gives DOM permission to publicly release this letter.

This letter is designed to help estimate savings related to the MississippiCAN program from January 2011 to June 2017. This information may not be appropriate, and should not be used, for other purposes. This information should be viewed in conjunction with documentation of the development of January 2011 to June 2017 capitation rates by rating period for the MississippiCAN populations.

Differences between actual and expected capitation payments, premium tax payments, and FFS costs will depend on the extent to which future experience conforms to the assumptions we made to develop these savings calculations. It is certain that actual experience will not conform exactly to the assumptions used. Actual amounts will differ from projected amounts to the extent that actual experience is better or worse than expected.

In preparing this information, we relied on information provided by DOM and MississippiCAN coordinated care organizations. We accepted this information without audit, but reviewed the information for general reasonableness. Our results and conclusions may not be appropriate if this information is not accurate.

I am an actuary for Milliman, a member of the American Academy of Actuaries, and meet the qualification standards of the Academy to render the actuarial opinion contained herein. To the best of my knowledge and belief, this letter is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. The terms of Milliman's contract with DOM effective June 1, 2015 applies to this letter and its use.

❖ ❖ ❖ ❖ ❖

Sincerely,

Jill A. Bruckert, FSA, MAAA
Consulting Actuary

JAB/vrr

# Appendix B: Milliman Payment Analysis

Milliman

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Jill.bruckert@milliman.com

November 8, 2017

Ms. Margaret King, CFO
Mississippi Division of Medicaid
Walter Sillers Building, Suite 1000
550 High Street
Jackson, MS 39201-1399

**Re: MississippiCAN Historical Cost Summary**

Dear Margaret:

The Mississippi Division of Medicaid (DOM) retained Milliman to calculate, document, and certify to MississippiCAN capitation rate development and provide related actuarial services. This letter provides summarized data to determine how past projections used for capitation rate development align with actual coordinated care organization (CCO) experience.

Table 1 contains a summary of historical medical costs from calendar year (CY) 2011 to CY 2015 compared to the service portion of the capitation rates paid in the given time period. Across the first five years of the program the actual service expenditures for the CCOs was 0.7% lower than estimated in the MississippiCAN capitation rate development. This variance fluctuates by year, with larger variances correlated with the implementation of significant program enrollment expansions (as outlined later in this letter) in the given time period. When new populations move into managed care the first two years of capitation rates are developed from historical fee-for-service (FFS) experience with an assumption for the managed care savings that the CCOs will be able to achieve for the population. Variances in the CCO expenditures versus the capitation rates are largely tied to how actual experience for these new populations runs in their first year in managed care.

**Please see below Table 1 for a description of the methodology to develop each field.**

**Table 1**
**MississippiCAN**
**Service Expenditure and Capitation Rate PMPMs**
**CY 2011 to CY 2015**

| Time Period | CCO Member Months | CCO Expenditures | MississippiCAN Capitation Rates | Difference |
|---|---|---|---|---|
| | A | B | C | D = B / C -1 |
| CY 2011 | 632,866 | $382.85 | $422.27 | -9.3% |
| CY 2012 | 604,682 | $418.84 | $416.85 | 0.5% |
| CY 2013 | 1,694,965 | $398.12 | $373.19 | 6.7% |
| CY 2014 | 1,841,973 | $407.21 | $405.18 | 0.5% |
| CY 2015 | 3,983,312 | $270.45 | $281.37 | -3.9% |
| **Total** | **8,757,798** | **$342.29** | **$344.71** | **-0.7%** |

Milliman



**Time Period:** Information is summarized for the time period that Milliman has currently validated CCO experience between their audited financial statements and submitted encounter data. The following months of data are excluded from this analysis as this data has not directly been used in capitation rate development and therefore has not gone through our validation process. Please note that all of the metrics (expenditures, member months and capitation rates) are excluded from the analysis for these months.

- December 2012 for populations that were first enrolled in MississippiCAN in December 2012.
- December 2014 Quasi-CHIP data, the first month of enrollment of this population.
- December 2015 data for all populations, the first month of service expansion to cover inpatient services in MississippiCAN as well as enrollment expansion to cover newborns in MississippiCAN as of their day of birth.

**CCO Member Months:** Member months are summarized in Column A for individuals enrolled in a CCO in the given time period. Enrollees that opted out of MississippiCAN into FFS are not included in this summary. The following population changes have occurred since the inception of MississippiCAN, resulting in significant membership growth.

- January 2011 - MississippiCAN implementation
- December 2012 - Expansion to include MA adults, newborns, and pregnant women
- December 2012 - Mandatory enrollment in MississippiCAN unless protected by federal law
- December 2014 - Expansion to include Quasi-CHIP children
- May to July 2015 - Expansion to include MA children

**CCO Expenditures:** CCO medical and pharmacy service expenditures are summarized in Column B from data requests collected as part of capitation rate development. The financial information submitted reconciles to each CCO's CY audited financial statements. Non-benefit expenses, such as administrative costs, medical management, and taxes and fees are not included in this comparison. Costs are summarized in total across all MississippiCAN.

CCO expenditures on a PMPM basis fluctuate year to year due to the enrollment expansions outlined earlier in this letter, as well as normal utilization and unit cost trends and the following service expansions and reimbursement changes:

- December 2012 - Service expansion to include behavioral health services
- January 2013 – Outpatient reimbursement methodology changed from a cost to charge structure to case rate reimbursement equal to 100% of the Medicare Ambulatory Payment Classifications (APCs).
- January 2013 to June 2015 – Enhanced reimbursement for primary care physicians (PCPs) increased from 90% to approximately 106% of the Medicare Fee Schedule, as mandated by the Affordable Care Act (ACA).
- July 2014 - Service expansion to include non-emergency transportation services
- January 2015 – Uniform preferred drug list (PDL) implemented for MississippiCAN. This resulted in a large increase to CCO pharmacy costs as the PDL utilized more brand drugs with the states collecting the enhanced rebates.
- July 2015 – Enhanced reimbursement for PCPs remained at 100% of the Medicare Fee Schedule rather than reverting back to pre-ACA levels of 90%.
- Other periodic fee schedule updates implemented by DOM for services not tied to Medicare fee schedules.

**MississippiCAN Capitation Rates:** The medical and pharmacy service portion of MississippiCAN capitation rates for the given time period are summarized in Column C. The PMPMs shown are a composite of regional, risk-adjusted capitation rates aggregated by enrollment information summarized from Mississippi's MMIS data.

Milliman



**CAVEATS AND LIMITATIONS ON USE**

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Figures included in this letter are not projections. It is certain that future experience will vary from these figures due to changes in member utilization, provider practice patterns, provider reimbursement levels, MississippiCAN program changes and other issues. In preparing this information, we relied on enrollment, encounter, and financial information provided by DOM and CCOs. We accepted this information without audit, but reviewed the information for general reasonableness. Our results and conclusions may not be appropriate if this information is not accurate.

I am an actuary for Milliman, a member of the American Academy of Actuaries, and meet the qualification standards of the Academy to render the actuarial opinion contained herein. To the best of my knowledge and belief, this letter is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

The terms of Milliman's contract with DOM effective June 1, 2015 applies to this letter and its use.

❖ ❖ ❖ ❖ ❖

Margaret, please call me or Michael Cook at 262 784 2250 if you have questions.

Sincerely,

Jill A. Bruckert, FSA, MAAA
Consulting Actuary

JAB/vrr

# Appendix C: Milliman Acuity Adjusted

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November 9, 2017

Ms. Margaret King, CFO
Mississippi Division of Medicaid
Walter Sillers Building, Suite 1000
550 High Street
Jackson, MS 39201-1399

**Re: MississippiCAN Adjusted Historical Cost Summary**

Dear Margaret:

The Mississippi Division of Medicaid (DOM) retained Milliman to calculate, document, and certify to MississippiCAN capitation rate development and provide related actuarial services. This letter provides summarized historical CCO expenditures adjusted for changes in acuity and population mix over time.

Table 1 contains a summary of historical medical costs from calendar year (CY) 2011 to CY 2015 adjusted to align costs over time for acuity changes in the MississippiCAN population. Due to significant population and service expansions in MississippiCAN since its inception in January 2011 the year over year change in CCO expenditures has many moving parts that must be accounted for to try to estimate what pure utilization and cost trends have been for the program.

The yearly change shown in Column E of Table 1 demonstrates the change in CCO expenditures outside of estimated acuity changes, both in the health status of individuals within each rate cell as well as the overall mix of individuals enrolled in MississippiCAN.

**Please see below Table 1 for a description of the methodology to develop each field.**

**Table 1**
**MississippiCAN**
**Risk Adjusted Service Expenditures**
**CY 2011 to CY 2015**

| Time Period | CCO Member Months | CCO Expenditures - Unadjusted | Acuity Adjustment | CCO Expenditures - Adjusted | Yearly Change[1] |
|---|---|---|---|---|---|
| | A | B | C | D | $E = D^{n+1}/D^{n} - 1$ |
| CY 2011 | 632,866 | $382.85 | 1.00 | $382.85 | 0.0% |
| CY 2012 | 604,682 | $418.84 | 1.02 | $410.77 | 7.3% |
| CY 2013 | 1,694,965 | $398.12 | 0.88 | $451.19 | 9.8% |
| CY 2014 | 1,841,973 | $407.21 | 0.90 | $452.89 | 0.4% |
| CY 2015 | 3,983,312 | $270.45 | 0.52 | $516.70 | 14.1% |

*[1] Significant MississippiCAN program / reimbursement changes not adjusted for in yearly change (see remainder of letter for details)*

- *December 2012: Service expansion to include behavioral health services*
- *January 2013: Affordable Care Act enhanced PCP reimbursement*
- *July 2013: Outpatient reimbursement methodology change*
- *July 2014: Service expansion to include non-emergent transportation*
- *January 2015: Uniform PDL implemented resulting in increased pharmacy costs in capitation rates*

Milliman



**Time Period:** Information is summarized for the time period that Milliman has currently validated CCO experience between their audited financial statements and submitted encounter data. The following months of data are excluded from this analysis as this data has not directly been used in capitation rate development and therefore has not gone through our validation process. Please note that both expenditures and member months are excluded from the analysis for these months.

- December 2012 for populations that were first enrolled in MississippiCAN in December 2012.
- December 2014 Quasi-CHIP data, the first month of enrollment of this population.
- December 2015 data for all populations, the first month of service expansion to cover inpatient services in MississippiCAN, as well as enrollment expansion to cover newborns in MississippiCAN as of their day of birth.

**CCO Member Months:** Member months are summarized in Column A for individuals enrolled in a CCO in the given time period. Enrollees that opted out of MississippiCAN into FFS are not included in this summary. The following population changes have occurred since the inception of MississippiCAN, resulting in significant membership growth.

- January 2011 - MississippiCAN implementation
- December 2012 - Expansion to include MA adults, newborns, and pregnant women
- December 2012 - Mandatory enrollment in MississippiCAN unless protected by federal law
- December 2014 - Expansion to include Quasi-CHIP children
- May to July 2015 - Expansion to include MA children

**CCO Expenditures - Unadjusted:** CCO medical and pharmacy service expenditures are summarized in Column B from data requests collected as part of capitation rate development. The financial information submitted reconciles to the CCO's CY audited financial statements. Non-benefit expenses, such as administrative costs, medical management, and taxes and fees are not included in this comparison. Costs are summarized in total across all MississippiCAN enrollees.

CCO expenditures on a PMPM basis fluctuate year to year due to the enrollment expansions outlined earlier in this letter, as well as normal utilization and unit cost trends and the following service expansions and reimbursement changes:.

- December 2012 - Service expansion to include behavioral health services.
- January 2013 – Outpatient reimbursement methodology changed from a cost-to-charge structure to case rate reimbursement equal to 100% of the Medicare Ambulatory Payment Classifications (APCs).
- January 2013 to June 2015 – Enhanced reimbursement for primary care physicians (PCPs) from 90% to approximately 106% of the Medicare Fee Schedule, as mandated by the Affordable Care Act (ACA).
- July 2014 - Service expansion to include non-emergent transportation services.
- January 2015 – Uniform preferred drug list (PDL) implemented for MississippiCAN. This resulted in a large increase to CCO pharmacy costs as the PDL utilized more brand drugs with the rebates collected by the state, rather than the CCOs.
- July 2015 – Enhanced reimbursement for PCPs remained at 100% of the Medicare Fee Schedule rather than reverting back to pre-ACA levels of 90%.
- Other periodic fee schedule updates implemented by DOM for services not tied to Medicare fee schedules.

**Acuity Adjustment:** The acuity adjustment shown in Column D of Table 1 estimates the change in service costs on a PMPM basis over time due to acuity changes of the individuals enrolled in MississippiCAN. This adjustment is a combination of changes in the health status of individuals within each rate cell over time as well as changes in the overall acuity of MississippiCAN as enrollment was expanded to lower cost populations since the inception of the program.

Milliman



The following rate cells have been risk adjusted since their enrollment in MississippiCAN using the combined Chronic Illness and Disability Payment System and Medicaid Rx risk adjuster (CDPS + Rx) with custom cost weights developed using Mississippi FFS and encounter data.

**Table 2**
**MississippiCAN**
**Risk Adjustment**
**CY 2011 to CY 2015**

| Risk Adjusted Rate Cells | Non-Risk Adjusted Rate Cells |
|---|---|
| Non-Newborn SSI / Disabled | Foster Care |
| MA Adults | Breast and Cervical Cancer |
| MA Children | All Newborn Rate Cells |
| | Pregnant Women |
| | Quasi-CHIP Children |
| | Delivery Kick Payment |

Over time as population and service expansions have occurred in MississippiCAN the custom cost weights have been recalculated. In order to have risk scores on a consistent basis across all years for this analysis the cost weights from the most recent available risk adjustment period were applied to the demographic and disease category prevalence rates from all historical risk adjustment periods to calculate the unadjusted risk score.

Due to the significant expansion of MississippiCAN enrollees since the inception of the program in January 2011, as described earlier in this letter, it is also necessary to apply a population mix adjustment to service expenditures to review changes in costs year-to-year on a consistent basis. Significant changes in the population mix are outlined earlier in this letter.

**CCO Expenditures – Adjusted:** Column E of Table 1 adjusts the CCO expenditures by the acuity adjustment to put all years on a consistent basis. Due to the magnitude of the acuity adjustments required for this analysis, it is difficult to estimate historical annual trends with precision. The theoretical, actual annual trends may vary materially from these values if perfect knowledge of the MississippiCAN member health needs were available over time.

## CAVEATS AND LIMITATIONS ON USE

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Figures included in this letter are not projections. It is certain that future experience will vary from these figures due to changes in member utilization, provider practice patterns, provider reimbursement levels, MississippiCAN program changes and other issues. In preparing this information, we relied on enrollment, encounter, and financial information provided by DOM and CCOs. We accepted this information without audit, but reviewed the information for general reasonableness. Our results and conclusions may not be appropriate if this information is not accurate.

Milliman

Ms. Margaret King
Office of the Governor, Division of Medicaid
November 9, 2017
Page 4 of 4

I am an actuary for Milliman, a member of the American Academy of Actuaries, and meet the qualification standards of the Academy to render the actuarial opinion contained herein. To the best of my knowledge and belief, this letter is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

The terms of Milliman's contract with DOM effective June 1, 2015 applies to this letter and its use.

❖ ❖ ❖ ❖ ❖

Margaret, please call me or Michael Cook at 262 784 2250 if you have questions.

Sincerely,

Jill A. Bruckert, FSA, MAAA
Consulting Actuary

JAB/cm

# Appendix D: Conduent Cost Effectiveness Report

Conduent Government Healthcare Solutions
Payment Method Development

CONDUENT

## MississippiCAN Cost Effectiveness Report

Prepared for the Mississippi Division of Medicaid
November 16, 2017
MSH17016

Document Version: 1.0 (November 2017).

CONDUENT

Payment Method Development
34 N. Last Chance Gulch
Helena, MT 59601

# Letter of Transmittal

November 16, 2017

Margaret Corban King, CPA
*Deputy Administrator for Finance*
Office of the Governor, Division of Medicaid
550 High Street, Suite 1000
Jackson, MS 39201

**RE: MississippiCAN Cost Effectiveness Report**

Dear Ms. King,

Thank you for the opportunity to assist the Division of Medicaid (DOM) in its preparation of its MississippiCAN Cost Effectiveness Report to the Mississippi Legislature. Pursuant to DOM's request, Conduent has prepared the attached materials to address three tasks:

- Task 1: MississippiCAN impact on duplicative or unnecessary services, emergency department visits and inpatient stays
- Task 2: MississippiCAN impact on potentially preventable hospital and emergency department admission among CCO beneficiaries, with comparisons to previous years for FFS beneficiaries of the same population
- Task 3: The decrease in inpatient hospital utilization attributable to Medicaid beneficiaries over time, in order to assess the efficacy of MississippiCAN toward coordination of care, the treatment of chronic conditions and reductions in readmissions

This response is limited in both time and scope due to the short timeframe available for analysis. Further work that could be accomplished given additional time includes:

- Incorporation of additional data extending the analysis back to (and, for comparison, prior to) the beginnings of MississippiCAN
- Comprehensive analysis evaluating the drivers behind potentially preventable admissions, emergency department visits and ancillary services

Special thanks to John Andrews, Christine Bredfeldt, Kristi Sheakley, Lisa Nelson and Angela Sims for assistance with this report. If you have further questions please contact Deb Stipcich or Christine Bredfeldt.

Sincerely,

Debra Stipcich
Director, Client Services
Payment Method Development
Conduent

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# Table of Contents

## Acronyms

| | |
|---|---|
| A/E ratio | Actual-to-Expected ratio |
| CC | Coordinated Care |
| CCO | Coordinated Care Organization |
| EAPG | Enhanced Ambulatory Care Grouping |
| FFS | Fee-for-Service |
| PMD | Payment Method Development team at Conduent |
| PPA | Potentially Preventable Admission |
| PPE | Potentially Preventable Event |
| PPR | Potentially Preventable Readmission |
| PPS | Potentially Preventable Ancillary Service |
| PPV | Potentially Preventable Emergency Department Visit |

## Definitions

**Actual-to-Expected Ratio (A/E ratio):** The A/E ratio compares the number of actual events such as PPAs or PPVs to the expected number of events for a population with the same risk profile. The A/E ratio provides a risk-adjusted measure of performance for each of the categories of potentially preventable events.

**Enhanced Ambulatory Care Grouping (EAPG):** EAPGs are similar to APR-DRGs, but used in the ambulatory care setting. EAPGs classify patients according to the amount and type of resources used in an ambulatory visit. Services in each EAPG have similar clinical characteristics and similar resource use and cost. EAPGs encompass the full range of ambulatory settings—including same day surgery units, hospital emergency rooms, and outpatient clinics among others—and are used here to support risk adjustment. EAPGs are assigned at the line level of an ambulatory care claim, with some services identified as "bundled" into the overall visit. EAPG weights reflect the relative intensity of resource use expected for a given service.

**Potentially Preventable Ancillary Service (PPS):** PPSs are ancillary services such as diagnostic tests, laboratory tests, therapy services and radiology services that may not be necessary for diagnosis and management. These tests and services may be redundant or otherwise not necessary for providing treatment.

**Potentially Preventable Admission (PPA):** A hospital admission is considered potentially preventable if it likely represents a failure to access primary care, or inadequate coordination of outpatient services. PPAs focus on ambulatory-sensitive conditions such as asthma, where exacerbations can be reduced by adequate monitoring and follow up care, including medication management.

**Potentially Preventable Emergency Department Visit (PPV):** PPVs are emergency department visits that represent a failure to access primary care or an inadequate coordination of ambulatory care. They focus on ambulatory-sensitive conditions such as asthma. ED visits after hospitalizations could reflect poor care during the hospitalization, or a lack of coordination of post-discharge care.

**Potentially Preventable Event (PPE):** An overall term to describe healthcare events that may be preventable with high quality healthcare and good coordination of care. Potentially preventable events include potentially preventable admissions, emergency department visits, ancillary services and readmissions.

**Potentially Preventable Readmission (PPR):** A PPR is a hospital admission within 15 days of a previous hospital admission that is clinically related to the initial admission. While not all readmissions are preventable, many may be prevented through better care and improved care coordination after discharge.

**Initial Admission:** Within a PPR analysis, an initial admission is a hospital admission that is not excluded from the PPR analysis, but does not meet the criteria to be a readmission.

**Readmission:** A hospital admission that occurs within 15 days of a prior admission and is clinically related to the prior admission.

**PPR Chain:** A series of potentially preventable readmissions that are clinically related and begin within 15 days of the prior admission. The PPR rate is based on the number of PPR chains per total inpatient admissions to reduce the effect of heavy utilizers.

# 1 Overview

The Mississippi Legislature has requested a cost-effectiveness evaluation of the Mississippi coordinated care program, MississippiCAN, to be delivered to the legislature by December 1, 2017. A number of tasks have been identified as necessary for an understanding of MississippiCAN cost effectiveness. The Payment Method Development (PMD) team at Conduent has been asked to report on three of these tasks:

- **Task 1:** MississippiCAN impact on duplicative or unnecessary services, emergency department visits and inpatient stays.
- **Task 2:** MississippiCAN impact on potentially preventable hospital and emergency department admission among CCO beneficiaries, with comparisons to previous years for FFS beneficiaries of the same population.
- **Task 3:** The decrease in inpatient hospital utilization attributable to Medicaid beneficiaries over time, in order to assess the efficacy of MississippiCAN toward coordination of care, the treatment of chronic conditions and reductions in readmissions.

## 1.1 Approach to Analytic Tasks

The three tasks that PMD has been assigned are related, and we believe are best addressed with a study of potentially preventable events (PPEs): potentially preventable admissions, emergency department visits, and readmissions in the coordinated care (CC) and fee-for-service (FFS) populations. We also evaluated potentially preventable ancillary services, although due to time constraints and limited evidence in favor of this analytic strategy, this analysis was performed only at a very high level. All of these analyses take advantage of 3M's categorical Potentially Preventable Events[1] algorithms to both identify potentially preventable or duplicative services, and provide risk adjustment to make populations more comparable. These algorithms are in use in a number of states, and in particular have formed the basis of coordinated care performance measurement, notably in Florida and Texas.[2]

*Potentially Preventable Admissions (PPAs—Tasks 1, 2, and 3):* PPAs are hospital admissions, arising from ambulatory-care sensitive conditions, which could potentially have been avoided if high quality, coordinated care were provided in the community. Not all PPAs can be avoided, but higher than expected rates of PPAs may represent a failure of ambulatory care to adequately monitor and treat underlying conditions. For this analysis, we compare the actual rate of PPAs to the expected rate for each population risk group for the three twelve-month periods between 12/1/2013 and 11/30/2016, across FFS and CC. The actual-to-expected ratio (A/E ratio) serves as a standardized metric for comparing performance to expectation for all groups and payment arrangements. We found that the A/E ratio for PPAs is falling among CC patients, suggesting that CCOs are improving their care management strategies and increasing access to primary care.

*Potentially Preventable Emergency Department Visits (PPVs—Tasks 1 and 2):* Similar to PPAs, PPVs are emergency department visits for ambulatory-care sensitive conditions, where emergency treatment could potentially have been avoided through better care management in a non-emergency setting. As with PPAs, not all PPVs can be avoided, but higher than expected PPV rates for a particular population can suggest opportunities to improve ambulatory care management. We found that PPV rates have been increasing among CC patients, possibly signaling a shift from inpatient stays to ED utilization.

*Potentially Preventable Readmissions (PPRs—Task 3):* Preventing hospital readmissions represents an ideal intersection of improved care quality and reduced healthcare costs. While not all readmissions can be prevented, higher than expected rates of readmissions can represent a failure of discharge processes, as well as suboptimal care in the community. As with potentially preventable admissions, we found that PPRs are lower among the CC population, even after taking into account the lower casemix in CC as compared to FFS.

*Potentially Preventable Ancillary Services (PPSs—Task 1):* Diagnosis and treatment frequently require a range of diagnostic tests, laboratory tests and radiology services. While often necessary for patient care, unnecessary or duplicate services are frequently ordered due to poor coordination of care. PPSs evaluate ancillary services that may be redundant or unnecessary for the purpose of providing care and treatment. Evaluating whether rates of PPSs are decreasing with the transition to CC will indicate whether improved care coordination in MississippiCAN is reducing the amount of duplicative or unnecessary tests (Task 1). We found that, in the earliest years of the analysis, CC patients had a relatively high risk-adjusted rate of PPSs, although performance on this measure has improved somewhat in the third year of analysis.

In the sections that follow, we analyze PPAs, PPVs, PPRs and PPSs separately for FFS and coordinated care, and provide results broken down by the major categories of eligibility (COE). For both FFS and CC, we show:

- The number of candidate events (e.g., the total number of emergency department visits)
- The average casemix or EAPG weight for the population
- The number of potentially preventable events
- The rate of potentially preventable events
- The risk adjusted actual-to-expected ratio (A/E ratio) of potentially preventable events indicating performance relative to the average in the initial year of the study
- The percent of payments accounted for by potentially preventable events, and
- The average payment for a potentially preventable event

We also provide charts for each measure showing the change in the A/E ratio for both FFS and coordinated care over the three years of this study to provide insight for whether PPE performance is improving over time.

## 1.2 Population Analysis

All analyses are broken down by category of eligibility (COE) to allow an understanding of the effect of MississippiCAN on each of these distinct populations. Although Mississippi generally reports on newborns aged 0-3 months separately from other populations, they were excluded from our primary analyses of PPAs, PPVs and PPSs as they did not have the required eligibility history to assign a risk adjustment category. Newborns who were at least three months at the start of the study period were included in the newborn category.

For many COEs, the coordinated care and FFS populations differ in population acuity. 3M's PPE analysis software provides a risk adjustment score that allows us to assess the overall acuity of each population, and compare the actual number of PPEs to the expected number of PPEs for a population with similar acuity. This comparison is done using the actual-to-expected ratio, or A/E ratio. The A/E ratio allows us to compare PPE performance across FFS and CC, and across time, even allowing for shifts in the make-up of the population. An A/E ratio of 1 indicates that a population had exactly as many PPEs as was expected. A/E ratios between 0.9 and 1.1 represent performance that was about as expected for the population. A/E ratios less than 0.9 represent better than expected performance, while A/E ratios greater than 1.1 indicate worse than expected performance.

## 1.3 Data Availability and Limitations

A full historical analysis of the implementation of coordinated care in Mississippi is beyond the scope of the data readily available for this study. Although the first patients enrolled in MississippiCAN in January 2011, PMD currently only has inpatient, outpatient and professional services data with discharges/last date of service starting 10/1/2012. Furthermore, the risk adjustment algorithm for the PPE approach requires a year of data prior to the start of analysis in order to assess the patient's illness burden. For this reason, the current report is limited to the comparison of three one-year periods, beginning 12/1/2013.[3] In addition, to get an accurate picture of PPE rates in a population, 3M recommends that PPE analysis be restricted to patients who had at least six months of eligibility in the analytic year. This requirement was excessively restrictive for pregnant women, newborns and children, so for these populations the eligibility requirement was decreased to three months. The six months eligigility requirement was used for all adult populations except for pregnant women.

Despite this time-window limitation, however, our analysis is able to present an appropriate comparison of the two payment systems by calculating the actual-to-expected rate for each measure separately for FFS and coordinated care. In each case, the first year in the analysis, across CC and FFS, serves as the reference year for calculating the expected rate of PPEs.

As many coordinated care transitions took place on December 1, each analysis period covers the period December 1 through the following November 30. Allowing for one year of purely historical data to calculate risk scores, this analysis covers three time periods:

Year 1: 12/1/2013 – 11/30/2014

Year 2: 12/1/2014 – 11/30/2015

Year 3: 12/1/2015 – 11/30/2016

Each analysis period includes all claims with paid dates through October 23 of the following year for patients that met the eligibility requirements.

# 2 Potentially Preventable Admissions

## 2.1 Overall View

The three-year overview of potentially preventable inpatient admissions (PPAs) for Mississippi Medicaid presented in Table 2.1.1 shows considerable favorable change in Year 3 relative to earlier years.

There were 52,034 inpatient stays that occurred among the 425,583 unique members in the Year 1 analysis. Of these stays, 10,229 (approximately 20%) were PPAs—that is, admissions that were potentially preventable with adequate ambulatory care and monitoring in the community. The overall population rate of PPAs in Year 1 (across FFS and CC) was defined as the expected rate for further analyses, providing a reference point for comparisons with later years and between groups. Thus, the statewide A/E ratio for that year is 1.00. The average Medicaid payment for these stays was $4,180.

APR-DRG casemix gives us an estimate of how sick the inpatient population was. Here, the average casemix for PPAs is 0.62, and the overall casemix adjusted payment per PPA is $6,764 (roughly comparable to the Mississippi DRG base rate for hospital payments during that period.[4])

Overall figures for Year 2 closely resemble those for Year 1, with comparable rates of PPAs. The A/E ratio indicates that overall, the risk adjusted number of PPAs was similar to that seen in Year 1.

Data for Year 3, however, present a different (and notably more favorable) picture, with PPAs declining 14%, to 9,015 despite similar numbers of at-risk inpatient stays. The A/E ratio decreased to 0.85, which represents better than expected performance. Another key performance metric, the number of PPAs per thousand member months, at 1.77 is about 20% lower than that for the preceding two years. PPAs decreased from 20% to 17% of overall admissions. Though the average payment per PPA is similar to prior years, once the higher casemix is accounted for, adjusted payments are also substantially lower than in the preceding years ($6,363, vs. $6,762 in Year 2.)

Table 2.1.1
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1 - November 30

| | All Beneficiaries That Met The Criteria for Analysis | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Inpatient Admissions | CMI | Number of PPAs | PPAs/1000 Member Months | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Payment/ PPA | Casemix Adj Avg Payment/ PPA |
| 2013-2014 | 52,034 | 0.75 | 10,229 | 2.13 | 20% | 1.00 | 0.62 | $4,180 | $6,764 |
| 2014-2015 | 53,232 | 0.76 | 10,526 | 2.28 | 20% | 1.03 | 0.62 | $4,156 | $6,762 |
| 2015-2016 | 52,082 | 0.81 | 9,015 | 1.77 | 17% | 0.85 | 0.66 | $4,173 | $6,363 |

## 2.2 Actual-to-Expected Ratios

The A/E ratio, the most important standard metric in assessing PPA performance, is detailed by group in Tables 2.2.1, 2.2.2 and 2.2.3, below. As we have noted above, the A/E ratio is a risk-adjusted measure that compares the actual frequency of PPAs in a given group at a given time to the expectation for a similar population based on the overall experience across FFS and CC in Year 1.

Along with the overall decrease in PPAs, the downward trend in the A/E ratio for coordinated care, which in Year 3 includes 84% of member months and 90% of stays in the analysis, is very favorable. (Colors reflect Year 3 performance: more than 10% worse than expected; about as expected; more than 10% better than expected.) Over the three-year period, coordinated care performance relative to expectations has improved by 28%, from 1.15 to 0.83. This is shown graphically in Chart 2.2.1.

Table 2.2.1
Actual/Expected Trends and Overall PPAs

| | FFS A/E Ratio | | | | CC A/E Ratio | | | | Overall PPAs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Total | 0.81 | 0.95 | 0.97 | | 1.15 | 1.06 | 0.83 | | 10,229 | 10,526 | 9,015 | |

**Chart 2.2.1**
**Potentially Preventable Admissions: Performance**

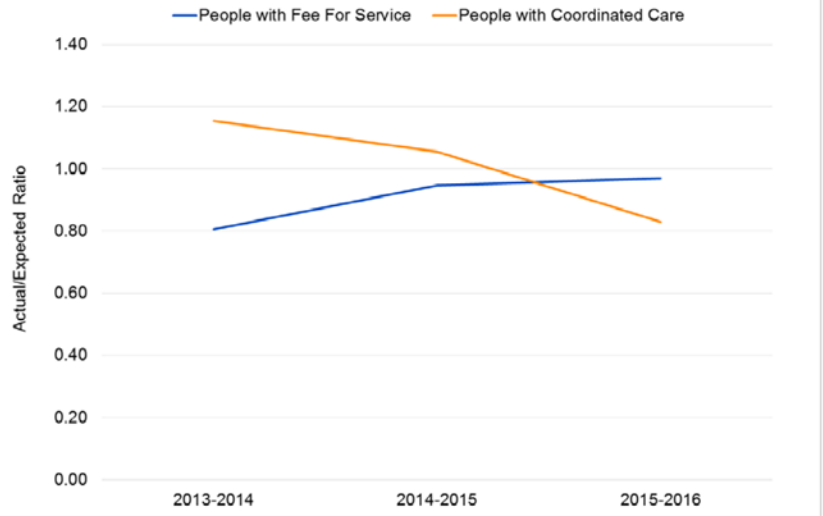

Table 2.2.2 presents a more detailed look at these data on the basis of Clinical Risk Groups (CRGs). CRGs provide a measure of a patient's illness burden, and assign patients to groups ranging from "Healthy" to "Catastrophic Conditions." Understanding PPA performance, or PPE performance more generally, by CRG provides insight into whether improvements are being achieved among patients with relatively routine care needs, or among those with more specialized or customized care management needs.

Table 2.2.2 indicates that, in general over the three-year period, A/E ratios have trended up in FFS (a less favorable result), and downward in CC. CC exceptions occur in two CRGs with low overall numbers of events—Minor Chronic Disease in Multiple Organ Systems (although performance remains about as expected based on a similar population in the reference year); and Malignancy, Under Active Treatment. For FFS patients an exception to the overall upward trend occurred in the Dominant Chronic Disease in Multiple Organ Systems category. In only two instances, however, are the Year 3 A/E ratios considerably worse than their expected values: in the History of Significant Acute Disease group for FFS (with 58 PPAs in Year 3) and Malignancy, Under Active Treatment group for CC (with 78 PPAs). Overall, these results indicate that PPAs have been dropping in CC across almost all patient risk groups.

Members in the Healthy CRG account for 33% of PPAs in the summary tables across the three years. Thus, the substantial reduction in PPAs in this group contributes especially heavily to the 12% reduction in the number of PPAs overall. The reduction in PPAs in this group has occurred simultaneously with a shift in enrollment to CC—while 18% of this group was enrolled in CC in Year 1, the CC share had increased to 83% in Year 3.Together, these two developments may reflect better coordination of care by CCOs than in FFS.

Table 2.2.2
Actual/Expected Trends and Overall PPAs by CRG

| | FFS A/E Ratio | | | | CC A/E Ratio | | | | Overall PPAs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Healthy | 0.74 | 0.99 | 0.95 | | 1.65 | 1.25 | 0.79 | | 3,428 | 3,566 | 2,799 | |
| Hx of Sig Acute Disease | 0.84 | 1.11 | 1.32 | | 1.20 | 1.03 | 0.82 | | 884 | 962 | 772 | |
| Single Minor Chronic Disease | 0.78 | 0.71 | 0.89 | | 1.14 | 0.94 | 0.72 | | 309 | 290 | 255 | |
| Minor Chronic Disease in Multiple Organ Systems | 1.03 | 0.30 | 0.65 | | 0.99 | 0.93 | 1.09 | | 65 | 57 | 64 | |
| Single Dominant or Moderate Chronic Disease | 0.79 | 0.92 | 0.98 | | 1.16 | 1.02 | 0.84 | | 1,759 | 1,782 | 1,586 | |
| Significant Chronic Disease in Multiple Organ Systems | 0.78 | 0.81 | 1.04 | | 1.08 | 1.06 | 0.79 | | 2,094 | 2,200 | 1,824 | |
| Dominant Chronic Disease in Multiple Organ Systems | 1.15 | 1.08 | 0.83 | | 0.97 | 0.94 | 0.92 | | 1,172 | 1,195 | 1,225 | |
| Malignancy, Under Active Treatment | 0.71 | 0.82 | 0.40 | | 1.09 | 1.13 | 1.46 | | 89 | 93 | 108 | |
| Catastrophic Conditions | 1.01 | 0.98 | 1.02 | | 0.99 | 0.84 | 0.89 | | 429 | 381 | 382 | |
| **Total** | **0.81** | **0.95** | **0.97** | | **1.15** | **1.06** | **0.83** | | **10,229** | **10,526** | **9,015** | |

Table 2.2.3 presents these same data, arrayed by category of eligibility. For both FFS and CC, results are generally consistent with or better than expectations in most areas. A key exception for both FFS and CC is in the Non-SSI Newborns group, which had substantially worse PPA performance than was expected based on statewide averages, although the overall number of PPAs for this group has decreased by 44%, from 1,175 to 653. It appears that changes in the categorization of enrollment contribute to this result--some newborns who would have been assigned to this group in earlier years are now counted under Quasi-CHIP, after the creation of a new category of eligibility. The high A/E ratio for newborns may also result in part from a lack of sensitivity of CRG assignment to the specific illness burden of newborns. Note that the newborn group excludes the births themselves, as babies who were born during the analytic year did not have the required Medicaid history to be able to assign a CRG. Performance is worse than expected, and declining significantly on average, for MA Children in FFS, but enrollment for this group shifted dramatically from FFS to CC during this period. Average CC performance for SSI Disabled Newborns has also gotten worse, to a point just outside the expected range in Year 3.

Table 2.2.3
Actual/Expected Trends and Overall PPAs by COE

| | FFS A/E Ratio | | | | CC A/E Ratio | | | | Overall PPAs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COE | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| MA Adult | 2.32 | 1.34 | 1.10 | | 0.77 | 0.67 | 0.64 | | 843 | 902 | 818 | |
| MA Children | 0.60 | 0.79 | 1.25 | | 0.00 | 0.80 | 0.56 | | 2,329 | 2,454 | 2,469 | |
| SSI/Disabled New borns | 1.03 | 1.14 | 1.08 | | 1.04 | 1.01 | 1.12 | | 370 | 386 | 363 | |
| Non-SSI New borns | 1.48 | 2.34 | 5.52 | | 2.11 | 2.12 | 2.12 | | 1,175 | 1,499 | 653 | |
| Quasi-CHIP | 0.21 | 2.11 | 0.51 | | 0.00 | 0.53 | 0.36 | | 4 | 54 | 109 | |
| Pregnant Women | 0.06 | 0.09 | 0.05 | | 0.26 | 0.23 | 0.36 | | 25 | 19 | 29 | |
| Non-New born SSI/Disabled | 1.10 | 0.96 | 0.93 | | 1.23 | 1.18 | 1.03 | | 5,372 | 5,082 | 4,480 | |
| Foster Care | 0.71 | 0.66 | 0.64 | | 0.64 | 0.74 | 0.58 | | 105 | 124 | 89 | |
| Breast and Cervical Cancer | 0.00 | 92.22 | 0.00 | | 0.58 | 0.39 | 0.73 | | 6 | 6 | 5 | |
| **Total** | **0.81** | **0.95** | **0.97** | | **1.15** | **1.06** | **0.83** | | **10,229** | **10,526** | **9,015** | |

## 2.3 PPAs per Thousand Member Months

Though it is not risk-adjusted for casemix, the measure of PPAs per thousand (PPAs/K) member months can be another useful measure of performance trends within each group, at least under circumstances when the casemix within the group is not likely to shift much over time. Caution is advised here, though, in that for some groups, sicker members may be steered toward one delivery system or the other as a matter of policy, so that comparisons between delivery systems may not be appropriate—and where enrollment shifts occur during the study period, these effects may also impact trend results within a given group/delivery system combination. On the other hand, the measure can be used to develop a sense of relative utilization of PPAs by the different groups.

As is evident in Table 2.3.1, more than 80% of all member months in these comparisons are attributable to the Healthy group of patients. In Year 1, only 18% of these were enrolled in CC, but as a result of policy-driven enrollment shifts, 83% of Healthy member months represented enrollment in CC in Year 3. It is therefore especially important that during that time period, PPAs/K member months in CC dropped by 64%, from 2.03/K to 0.73/K. Hypothetically, had this rate not declined as it did, this group might have added nearly 4,500 PPAs to the overall total.

Significantly, in only one group (the "Malignancy, Under Active Treatment" group) does CC show an increasing trend of PPAs/K member months over the three-year period. Patterns are more mixed for those in FFS, where rates increase for a number of groups over the period; however, because the share of patients in FFS has dropped in all CRG categories, from 76% FFS in Year 1 to 16% FFS in Year 3, the impact of increases in the FFS PPA/K member months measure are therefore much less consequential over the long run.

Table 2.3.1
PPAs Per Thousand Member Months and Overall Member Months by CRG

| | FFS PPAs / K Mbr Mos | | | | CC PPAs / K Mbr Mos | | | | Overall Member Months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Healthy | 0.62 | 0.71 | 0.40 | | 2.03 | 1.14 | 0.73 | | 3,951,183 | 3,763,480 | 4,143,208 | |
| Hx of Sig Acute Disease | 2.91 | 4.13 | 4.25 | | 3.62 | 3.39 | 2.47 | | 276,583 | 267,624 | 302,482 | |
| Single Minor Chronic Disease | 2.88 | 2.30 | 3.21 | | 3.64 | 3.09 | 2.30 | | 92,924 | 99,176 | 107,612 | |
| Minor Chronic Disease in Multiple Organ Systems | 5.12 | 1.74 | 3.88 | | 5.26 | 4.36 | 4.24 | | 12,434 | 14,116 | 15,192 | |
| Single Dominant or Moderate Chronic Disease | 6.07 | 6.84 | 6.86 | | 6.68 | 6.29 | 5.05 | | 274,657 | 276,683 | 301,483 | |
| Significant Chronic Disease in Multiple Organ Systems | 12.97 | 13.45 | 14.92 | | 15.46 | 15.22 | 11.05 | | 141,546 | 148,173 | 157,707 | |
| Dominant Chronic Disease in Multiple Organ Systems | 55.96 | 55.11 | 42.47 | | 44.05 | 42.55 | 41.81 | | 25,521 | 26,944 | 29,237 | |
| Malignancy, Under Active Treatment | 12.91 | 14.48 | 10.03 | | 18.24 | 18.60 | 22.15 | | 5,218 | 5,230 | 5,312 | |
| Catastrophic Conditions | 19.26 | 18.50 | 18.64 | | 26.27 | 20.82 | 19.64 | | 19,073 | 19,357 | 19,919 | |
| **Total** | **1.18** | **1.52** | **1.59** | | **5.07** | **2.80** | **1.81** | | **4,799,139** | **4,620,783** | **5,082,152** | |

With respect to COE groups, as shown in Table 2.3.2, the picture looks somewhat more varied. In CC, generally speaking, rates of PPAs/K member months have decreased or remained flat for the larger eligibility groups—an exception is the Quasi-CHIP group, where the rate has doubled between Years 2 and 3, but is still at a level far below other groups (see Section 2.2 above.) Rates in FFS tend to be increasing, likely reflecting a sicker population, but on a shrinking membership base.

Table 2.3.2
PPAs Per Thousand Member Months and Overall Member Months by COE

| | FFS PPAs / K Mbr Mos | | | | CC PPAs / K Mbr Mos | | | | Overall Member Months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COE | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| MA Adult | 4.97 | 3.68 | 3.74 | | 2.14 | 1.83 | 1.80 | | 382,115 | 485,137 | 446,697 | |
| MA Children | 1.06 | 1.24 | 2.06 | | 0.00 | 1.26 | 0.92 | | 2,201,778 | 1,966,304 | 2,541,685 | |
| SSI/Disabled Newborns | 8.79 | 9.14 | 8.02 | | 8.27 | 8.61 | 8.32 | | 43,606 | 43,841 | 44,149 | |
| Non-SSI Newborns | 3.58 | 5.34 | 9.75 | | 4.91 | 5.03 | 4.82 | | 280,949 | 293,384 | 131,606 | |
| Quasi-CHIP | 0.01 | 0.12 | 0.89 | | 0.00 | 0.09 | 0.18 | | 624,551 | 537,401 | 588,389 | |
| Pregnant Women | 0.10 | 0.12 | 0.11 | | 0.39 | 0.32 | 0.46 | | 72,231 | 64,910 | 70,367 | |
| Non-Newborn SSI/Disabled | 1.90 | 1.54 | 1.31 | | 7.61 | 7.27 | 6.33 | | 1,149,330 | 1,179,798 | 1,205,163 | |
| Foster Care | 3.38 | 3.30 | 1.86 | | 1.72 | 2.03 | 1.58 | | 43,548 | 49,087 | 53,253 | |
| Breast and Cervical Cancer | 0.00 | 111.11 | 0.00 | | 5.90 | 4.43 | 6.06 | | 1,017 | 921 | 825 | |
| **Total** | **1.18** | **1.52** | **1.59** | | **5.07** | **2.80** | **1.81** | | **4,799,139** | **4,620,783** | **5,082,152** | |

## 2.4 PPAs and Casemix

Especially given the major shifts in enrollment that have taken place during the study period, it is important to consider carefully the degree to which the disease burden in each group has shifted from FFS to CC (or vice versa). Casemix may also offer clues as to whether, for example, coordinated care is more effectively reducing PPAs for patients with higher or lower underlying acuity. In a CC setting, rising acuity trends, coupled with decreasing PPAs/K member months, might suggest that care management is successfully targeting patients with the lowest need of admission through better coordination or provision of ambulatory care services. By contrast, if the acuity rates are falling in parallel with PPAs/K member months, this might suggest that coordinated care is targeting some particular condition or set of conditions with a higher acuity level.

For the most part, Table 2.4.1 shows that the casemix index for PPAs is not shifting much within CRG groups. This is not surprising, since the CRG groups themselves reflect underlying health status. Exceptions of note occur in two groups: Minor Chronic Disease in Multiple Organ Systems, where the CC acuity is increasing as the utilization rate falls, and Malignancy, Under Active Treatment, where casemix for PPAs is increasing for CC, while decreasing in FFS. This result suggests that higher acuity patients may have shifted their enrollment from FFS to CC.

Table 2.4.1
Average Casemix and Coordinated Care Percent of Overall Member Months by CRG

| | FFS Average Casemix | | | | CC Average Casemix | | | | CC Percent of Overall Mbr Mos | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Healthy | 0.46 | 0.47 | 0.54 | | 0.58 | 0.52 | 0.52 | | 17.9% | 55.6% | 83.0% | |
| Hx of Sig Acute Disease | 0.47 | 0.45 | 0.60 | | 0.63 | 0.55 | 0.57 | | 40.5% | 72.8% | 95.5% | |
| Single Minor Chronic Disease | 0.51 | 0.60 | 0.56 | | 0.68 | 0.64 | 0.65 | | 58.8% | 78.9% | 92.8% | |
| Minor Chronic Disease in Multiple Organ Systems | 0.67 | 0.56 | 0.56 | | 0.66 | 0.74 | 0.88 | | 76.4% | 87.8% | 93.2% | |
| Single Dominant or Moderate Chronic Disease | 0.49 | 0.53 | 0.61 | | 0.69 | 0.63 | 0.64 | | 55.0% | 73.1% | 88.3% | |
| Significant Chronic Disease in Multiple Organ Systems | 0.64 | 0.67 | 0.76 | | 0.72 | 0.72 | 0.74 | | 73.1% | 79.1% | 86.7% | |
| Dominant Chronic Disease in Multiple Organ Systems | 0.85 | 0.82 | 0.86 | | 0.79 | 0.82 | 0.82 | | 84.2% | 85.7% | 86.8% | |
| Malignancy, Under Active Treatment | 0.79 | 0.80 | 0.53 | | 0.77 | 0.79 | 0.88 | | 77.7% | 80.2% | 85.0% | |
| Catastrophic Conditions | 0.86 | 0.89 | 0.97 | | 0.82 | 0.82 | 0.88 | | 46.1% | 51.1% | 53.7% | |
| **Total** | **0.53** | **0.56** | **0.71** | | **0.69** | **0.64** | **0.65** | | **24.4%** | **59.1%** | **84.3%** | |

With respect to eligibility groups, as shown in Table 2.4.2, the picture looks somewhat more varied. For CC, generally speaking, casemix for PPAs is increasing modestly for most groups, suggesting an improvement in ambulatory care services for relatively lower acuity patients that helps them forestall admission for an avoidable condition. There do not appear to be strong patterns on the FFS side.

Table 2.4.2
Average Casemix and Coordinated Care Percent of Overall Member Months by COE

| | FFS Average Casemix | | | | CC Average Casemix | | | | CC Percent of Overall Mbr Mos | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COE | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| MA Adult | 0.73 | 0.60 | 0.59 | | 0.64 | 0.64 | 0.69 | | 97.7% | 98.6% | 98.2% | |
| MA Children | 0.45 | 0.46 | 0.47 | | . | 0.45 | 0.47 | | 0.1% | 47.2% | 95.8% | |
| SSI/Disabled Newborns | 0.68 | 0.75 | 0.85 | | 0.59 | 0.64 | 0.72 | | 58.0% | 63.3% | 66.7% | |
| Non-SSI Newborns | 0.44 | 0.43 | 0.48 | | 0.45 | 0.44 | 0.48 | | 45.0% | 75.1% | 97.1% | |
| Quasi-CHIP | 0.43 | 0.41 | 0.37 | | . | 0.43 | 0.47 | | 0.0% | 78.6% | 98.7% | |
| Pregnant Women | 0.56 | 0.59 | 0.41 | | 0.50 | 0.54 | 0.62 | | 85.8% | 87.1% | 86.8% | |
| Non-Newborn SSI/Disabled | 0.72 | 0.73 | 0.78 | | 0.74 | 0.75 | 0.79 | | 48.5% | 48.3% | 47.9% | |
| Foster Care | 0.50 | 0.50 | 0.61 | | 0.51 | 0.51 | 0.58 | | 58.6% | 61.1% | 66.7% | |
| Breast and Cervical Cancer | 0.00 | 1.77 | 0.00 | | 0.77 | 0.65 | 0.99 | | 100.0% | 98.0% | 100.0% | |
| **Total** | **0.53** | **0.56** | **0.71** | | **0.69** | **0.64** | **0.65** | | **24.4%** | **59.1%** | **84.3%** | |

## 2.5 PPAs and Payments

As a whole, PPAs accounted for a lower share of payments in CC than in FFS, as shown in Table 2.5.1. In Year 3, across COEs, PPAs accounted for 11% of payments for inpatient stays that met the criteria for the analysis. In FFS for the same time period, PPAs accounted for 15% of payments for stays in the analysis. Lower payment for PPAs in CC was primarily due to a lower overall rate of PPAs in the population, as well as lower payments per stay. Note that these estimates likely overstate the proportion of payment accounted for by PPAs in the overall population of inpatient stays, as they don't include payments for births. Births were excluded from this analysis as newborns had no eligibility history, which is required for risk adjustment by CRG. Births by definition are not potentially preventable, so the overall PPA rate and proportion of payment accounted for by PPAs would be lower if births were included in the analysis. Note also that, until 12/1/2015, all inpatient stays were paid for by FFS. Payments are allocated to FFS or CC based on the coverage status of the patient, not the inpatient stay.

Table 2.5.1
Total Payments for PPAs

| | Patients with FFS | | | | Patients with CC | | | |
|---|---|---|---|---|---|---|---|---|
| Period | All Inpatient Stays | Stays in Analysis | PPAs | % Payment for PPAs | All Inpatient Stays | Stays in Analysis | PPAs | % Payment for PPAs |
| Year 1 | $356,695,561 | $90,169,953 | $16,211,416 | 18% | $302,960,144 | $221,731,483 | $26,541,258 | 12% |
| Year 2 | $346,267,315 | $73,101,097 | $11,593,484 | 16% | $327,912,912 | $253,907,827 | $32,157,037 | 13% |
| Year 3 | $190,535,377 | $42,499,713 | $6,291,853 | 15% | $457,571,344 | $278,025,300 | $31,329,002 | 11% |

Average casemix adjusted payments for inpatient stays among the CC population tended to be lower than average casemix adjusted payments for the FFS population, as shown in Table 2.5.2. This was due to a higher rate of behavioral health stays in the FFS population, which are paid with a 1.6 (adults) or 2.0 (pediatrics) policy adjustor, increasing the average payment.

Table 2.5.2
Average Payments (Casemix-Adjusted) for PPAs

| | FFS Casemix Adj Avg Pmt / PPA | | | | CC Casemix Adj Avg Pmt / PPA | | | |
|---|---|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Total | $7,128 | $7,254 | $7,217 | | $6,502 | $6,578 | $6,224 | |

# 3 Potentially Preventable Emergency Department Visits

## 3.1 Overall View

Mississippi Medicaid's recent experience in potentially preventable emergency department visits (PPVs) presented in Table 3.1.1 shows considerable room for further improvement. Overall, the number of PPVs for patients in Years 2 and 3 is about 33% higher than one would expect from the risk-adjusted Year 1 average. Although the average PPV rate has held roughly steady at just above 75%, the overall number of PPVs has increased 17% (from 382,671 to 446,539) as have ED visits overall. EAPG weights are noticeably higher across the board in Year 3, with an average EAPG weight of 0.32, up from the 0.27-0.28 range in Years 1 and 2. However, the increase in EAPG weight from Year 2 to Year 3 reflects a national recalibration of EAPG weights[5]. This is also reflected in the increase in the average EAPG weight for PPVs, which increased from 0.25 in Year 2 to 0.29 in Year 3. Average payments per PPV have also been rising, with an increase of 15% in Year 3 relative to Year 1.

Table 3.1.1
Summary of Mississippi Medicaid Potentially Preventable ED Visits December 1 - November 30

| | All Beneficiaries That Met The Criteria for Analysis | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Year | ED Visits | Average EAPG Weight | Number of PPVs | PPVs/ 1000 Member Months | PPV Rate | A/E Ratio | EAPG Average Weight for PPVs | Avg Payment/ PPV |
| 2013-2014 | 503,616 | 0.27 | 382,671 | 79.74 | 76% | 1.00 | 0.24 | $192 |
| 2014-2015 | 588,535 | 0.28 | 454,956 | 98.46 | 77% | 1.33 | 0.25 | $209 |
| 2015-2016 | 592,555 | 0.32 | 446,539 | 87.86 | 75% | 1.33 | 0.29 | $221 |

## 3.2 Actual-to-Expected Ratios

Tables 3.2.1, 3.2.2 and 3.2.3 show the A/E ratios for FFS and CC, detailed by group. As with PPAs, the A/E ratio is a risk-adjusted measure that compares the actual frequency of PPVs in a given group at a given time to the expectation for a similar population based on the overall experience in Year 1 across FFS and CC.

The total number of ED visits in the analysis increased by 18% over the three-year period of this study. PPVs have increased in parallel, by about 17% over the same period, even as enrollment has shifted from FFS to CC. In Year 1, roughly 52% of ED visits and PPVs were associated with CCO members, while in Year 3, the CC share has increased to 94%.This shift to CC has not been accompanied by a reduction in PPVs. PPV performance was considerably worse than expected in CC for all three years of the study, at nearly 40% above the expected rate. (In Table 3.2.1, colors reflect Year 3 performance: more than 10% worse than expected; about as expected; more than 10% better than expected.) FFS and CC trends are shown graphically in Chart 3.2.1. Even allowing for recalibration of the EAPG weights in Year 3, the CC performance is considerably worse than expected.

Table 3.2.1
Actual/Expected Trends and Overall PPVs

| | FFS A/E Ratio | | | | CC A/E Ratio | | | | Overall PPVs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Total | 0.80 | 1.16 | 0.83 | | 1.27 | 1.40 | 1.38 | | 382,671 | 454,956 | 446,539 | |

**Chart 3.2.1**
**Potentially Preventable Visits: Performance**

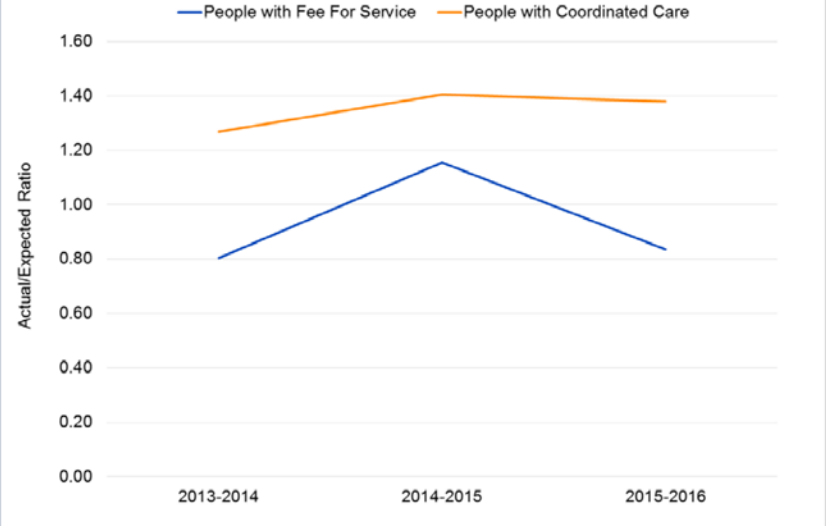


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Table 3.2.2 presents a more detailed look at these data on the basis of Clinical Risk Groups (CRGs). CRGs provide a measure of a patient's illness burden, and assign patients to groups ranging from "Healthy" to "Catastrophic Conditions." As with PPAs, understanding PPV performance by CRG provides insight into whether improvements are being achieved among patients with relatively routine care needs, or among those with more specialized or customized care management needs.

Table 3.2.2 indicates that, in general over the three-year period, A/E ratios have remained within or better than expectations in the FFS population—major exceptions being Healthy members, whose experience spiked in Year 2, and those with in the "History of Significant Acute Disease" group, where A/E performance in Year 3 has worsened over time, concurrent with a shift in member months to CC. (CCOs accounted for 40% of members in this group in Year 1, but 95% in Year 3.) In CC, by contrast, the overall A/E ratio has worsened for nearly all groups over time, with only one group (Minor Chronic Disease in Multiple Organ Systems) meeting expectations in Year 3.

Although the A/E ratio has improved slightly for CC members in the Healthy CRG group from 1.58 in Year 2 to 1.44 in Year 3, it is particularly disquieting to note that ratios for this group are in general the worst of all groups. The Healthy CRG group accounts for 57% of all PPVs and 83% of all member months, meaning that the high PPV rate in this group has considerable influence on overall PPV rates and costs. The CC share of member months has quadrupled (from 18% to 83% between Years 1 and 3.)

**Table 3.2.2**
**Actual/Expected Trends and Overall PPVs by CRG**

| | FFS A/E Ratio | | | | CC A/E Ratio | | | | Overall PPVs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Healthy | 0.86 | 1.34 | 0.86 | | 1.36 | 1.58 | 1.44 | | 215,678 | 265,518 | 253,869 | |
| Hx of Sig Acute Disease | 0.81 | 1.22 | 1.31 | | 1.26 | 1.36 | 1.36 | | 44,927 | 54,561 | 54,494 | |
| Single Minor Chronic Disease | 0.64 | 0.78 | 0.79 | | 1.22 | 1.25 | 1.24 | | 16,869 | 19,914 | 19,421 | |
| Minor Chronic Disease in Multiple Organ Systems | 0.41 | 0.51 | 0.37 | | 1.17 | 1.10 | 0.92 | | 4,155 | 4,585 | 3,711 | |
| Single Dominant or Moderate Chronic Disease | 0.67 | 0.87 | 0.73 | | 1.27 | 1.29 | 1.32 | | 48,973 | 55,148 | 55,128 | |
| Significant Chronic Disease in Multiple Organ Systems | 0.51 | 0.55 | 0.70 | | 1.18 | 1.20 | 1.31 | | 37,366 | 39,913 | 42,121 | |
| Dominant Chronic Disease in Multiple Organ Systems | 0.66 | 0.63 | 0.82 | | 1.07 | 1.07 | 1.42 | | 10,405 | 10,928 | 13,191 | |
| Malignancy, Under Active Treatment | 0.57 | 0.53 | 0.48 | | 1.13 | 1.06 | 1.20 | | 1,022 | 978 | 977 | |
| Catastrophic Conditions | 0.74 | 0.81 | 0.97 | | 1.22 | 1.27 | 1.50 | | 3,276 | 3,411 | 3,627 | |
| **Total** | **0.80** | **1.16** | **0.83** | | **1.27** | **1.40** | **1.38** | | **382,671** | **454,956** | **446,539** | |

Table 3.2.3 arrays the PPV data by category of eligibility. Both MA Adults and MA Children have notably unfavorable A/E ratios, which is especially problematic as both groups have high numbers of PPVs and relatively large populations. The CC Year 3 A/E ratio for MA Adults, a group for which 98% of all member months have occurred in CC over the three-year period, was 79% higher than the level expected from Year 1 statewide overall experience, and trending worse. Though the CC A/E ratio for MA Children has improved from 1.58 to 1.23 as enrollment of the group shifted from FFS to CC, the number of PPVs has continued to climb, from 141,861 in Year 1 to 200,959 in Year 3, a 42% increase.

As was true for PPAs as well, another key area for both FFS and CC is Non-SSI Newborns, who had far worse PPV performance than expected. As we noted above (in Section 2.2) with PPAs, the high A/E ratios for newborns may result from a lack of sensitivity of CRG assignment to the specific illness burden of newborns. The group has seen a 55% reduction in member months in Year 3 (see also Section 3.3, below), potentially as a result of enrollment shifts with Quasi-CHIP.

Performance is also worse than expected, and has worsened in Year 3, for Non-Newborn SSI Disabled members in CC, another large contributor to the overall total of PPVs. Enrollment for this group did not shift appreciably between FFS and CC during this period, nor did the frequency of PPVs change appreciably—however, the actual-to-expected comparison indicated considerably worse performance in Year 3.

FFS performed better than CC with regard to the frequency of PPVs. The only COE groups that were substantially worse than expected in Year 3 are groups where FFS represents less than 5% of their respective populations.

**Table 3.2.3**
**Actual/Expected Trends and Overall PPVs by COE**

| | FFS A/E Ratio | | | | CC A/E Ratio | | | | Overall PPVs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COE | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| MA Adult | 1.93 | 1.82 | 1.98 | | 1.58 | 1.60 | 1.79 | | 75,230 | 88,392 | 80,535 | |
| MA Children | 0.80 | 1.32 | 1.62 | | 1.58 | 1.42 | 1.23 | | 141,861 | 175,807 | 200,959 | |
| SSI/Disabled Newborns | 0.65 | 0.66 | 0.65 | | 0.85 | 0.88 | 0.96 | | 5,563 | 5,787 | 5,432 | |
| Non-SSI Newborns | 1.31 | 2.40 | 3.12 | | 1.81 | 2.32 | 3.01 | | 48,836 | 71,179 | 37,559 | |
| Quasi-CHIP | 0.64 | 1.66 | 1.08 | | 7.36 | 1.04 | 1.04 | | 476 | 3,369 | 10,894 | |
| Pregnant Women | 0.90 | 0.88 | 1.08 | | 0.72 | 0.78 | 0.96 | | 6,296 | 5,593 | 6,569 | |
| Non-Newborn SSI/Disabled | 0.50 | 0.50 | 0.57 | | 1.10 | 1.13 | 1.31 | | 102,236 | 102,438 | 102,138 | |
| Foster Care | 0.43 | 0.45 | 0.49 | | 0.58 | 0.62 | 0.68 | | 2,108 | 2,332 | 2,380 | |
| Breast and Cervical Cancer | 0.00 | 0.00 | 0.00 | | 0.37 | 0.38 | 0.55 | | 65 | 59 | 73 | |
| **Total** | **0.80** | **1.16** | **0.83** | | **1.27** | **1.40** | **1.38** | | **382,671** | **454,956** | **446,539** | |

## 3.3 PPVs per Thousand Member Months

Though it is not risk-adjusted, the measure of PPVs per thousand (PPVs/K) member months can be another useful measure of performance trends within each group, at least under circumstances when the casemix within the group is not likely to shift much over time. As with PPAs, caution is advised here that because of enrollment shifts, comparisons between delivery systems may not be appropriate—and where enrollment shifts occur during the study period, these effects may also impact trend results within a given group/delivery system combination. On the other hand, the measure can be used to develop a sense of relative utilization of PPVs by the different groups.

As we noted above, more than 80% of all member months in these comparisons are attributable to the Healthy group of patients. In Year 1, only 18% of these were enrolled in CC, but as a result of policy-driven enrollment shifts, 83% of Healthy member months represented enrollment in CC in Year 3. It is therefore especially important that during that time period, PPVs/K member months in CC dropped by 39%, from 115/K to 70/K.

Significantly, in only one group (the "Dominant Chronic Disease in Multiple Organ Systems" group) does CC show an increasing trend of PPAs/K member months over the three-year period. As was true for PPAs, patterns are more mixed for those in FFS, where rates increase or fluctuate for a number of groups over the period—however, because the share of patients in FFS has dropped in all CRG categories, from 76% FFS in Year 1 to 16% FFS in Year 3, the impact of increases in the FFS PPA/K member months measure have a relatively low impact on the total population PPV rate.

Table 3.3.1
PPVs Per Thousand Member Months and Overall Member Months by CRG

| | FFS PPVs / K Mbr Mos | | | | CC PPVs / K Mbr Mos | | | | Overall Member Months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Healthy | 41.45 | 52.88 | 18.72 | | 114.78 | 84.68 | 69.96 | | 3,951,183 | 3,763,480 | 4,143,208 | |
| Hx of Sig Acute Disease | 132.02 | 187.54 | 179.68 | | 207.15 | 209.98 | 180.18 | | 276,583 | 267,624 | 302,482 | |
| Single Minor Chronic Disease | 110.15 | 128.90 | 116.54 | | 231.47 | 220.00 | 185.46 | | 92,924 | 99,176 | 107,612 | |
| Minor Chronic Disease in Multiple Organ Systems | 131.70 | 155.45 | 106.80 | | 396.61 | 348.37 | 254.27 | | 12,434 | 14,116 | 15,192 | |
| Single Dominant or Moderate Chronic Disease | 122.88 | 150.05 | 109.80 | | 223.69 | 217.45 | 192.58 | | 274,657 | 276,683 | 301,483 | |
| Significant Chronic Disease in Multiple Organ Systems | 141.21 | 144.48 | 157.24 | | 309.06 | 302.41 | 283.94 | | 141,546 | 148,173 | 157,707 | |
| Dominant Chronic Disease in Multiple Organ Systems | 280.03 | 268.05 | 291.04 | | 431.58 | 428.61 | 475.55 | | 25,521 | 26,944 | 29,237 | |
| Malignancy, Under Active Treatment | 121.34 | 113.90 | 83.96 | | 217.21 | 205.05 | 201.60 | | 5,218 | 5,230 | 5,312 | |
| Catastrophic Conditions | 112.73 | 118.69 | 129.20 | | 240.79 | 231.23 | 227.72 | | 19,073 | 19,357 | 19,919 | |
| **Total** | **50.68** | **65.15** | **32.93** | | **169.61** | **121.46** | **98.06** | | **4,799,139** | **4,620,783** | **5,082,152** | |

With respect to eligibility groups, as shown in Table 3.3.2, the picture looks somewhat more varied. In CC, generally speaking, rates of PPAs/K member months have decreased or remained flat for the larger eligibility groups—an exception is the Non-SSI Newborn group, where the rate of PPVs/K member months has increased by 40% between Years 1 and 3, while enrollment dropped by 53%. Rates in FFS are quite varied, but on a shrinking membership base.

Table 3.3.2
PPVs Per Thousand Member Months and Overall Member Months by COE

| | FFS PPVs / K Mbr Mos | | | | CC PPVs / K Mbr Mos | | | | Overall Member Months | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COE | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| MA Adult | 224.32 | 191.23 | 189.49 | | 196.23 | 182.07 | 180.12 | | 382,115 | 485,137 | 446,697 | |
| MA Children | 64.35 | 86.05 | 90.65 | | 190.01 | 93.17 | 78.56 | | 2,201,778 | 1,966,304 | 2,541,685 | |
| SSI/Disabled Newborns | 106.59 | 98.35 | 83.89 | | 142.78 | 151.50 | 142.60 | | 43,606 | 43,841 | 44,149 | |
| Non-SSI Newborns | 148.17 | 229.56 | 242.49 | | 205.20 | 246.95 | 286.66 | | 280,949 | 293,384 | 131,606 | |
| Quasi-CHIP | 0.76 | 2.76 | 38.95 | | 1000.00 | 7.22 | 18.24 | | 624,551 | 537,401 | 588,389 | |
| Pregnant Women | 92.51 | 81.57 | 90.09 | | 86.28 | 86.85 | 93.85 | | 72,231 | 64,910 | 70,367 | |
| Non-Newborn SSI/Disabled | 22.18 | 19.80 | 17.74 | | 159.75 | 158.63 | 157.52 | | 1,149,330 | 1,179,798 | 1,205,163 | |
| Foster Care | 43.66 | 41.89 | 33.47 | | 51.76 | 51.08 | 50.30 | | 43,548 | 49,087 | 53,253 | |
| Breast and Cervical Cancer | 0.00 | 0.00 | 0.00 | | 63.91 | 65.34 | 88.48 | | 1,017 | 903 | 825 | |
| **Total** | **50.68** | **65.15** | **32.93** | | **169.61** | **121.46** | **98.06** | | **4,799,139** | **4,620,783** | **5,082,152** | |

## 3.4 PPVs and EAPG Weights

EAPG weights provide a measure of the relative resource intensity of a given ED visit. As we have noted above (Section 3.1), EAPG weights were recalibrated between Years 2 and 3, resulting in an increase in average EAPG weight of roughly 14% due solely to shifts in the EAPG weights themselves (independent of shifts in the population). As expected, average EAPG weight increases with illness burden; the average PPV EAPG weight is higher for Catastrophic Conditions than it is for healthy patients.

Table 3.4.1
EAPG Average EAPG Weight for PPVs and Coordinated Care Percent of Overall Member Months by CRG

| | FFS Average EAPG Weight | | | | CC Average EAPG Weight | | | | CC Percent of Overall Mbr Mos | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Healthy | 0.23 | 0.24 | 0.28 | | 0.23 | 0.24 | 0.28 | | 17.9% | 55.6% | 83.0% | |
| Hx of Sig Acute Disease | 0.22 | 0.24 | 0.28 | | 0.24 | 0.25 | 0.28 | | 40.5% | 72.8% | 95.5% | |
| Single Minor Chronic Disease | 0.23 | 0.25 | 0.29 | | 0.24 | 0.25 | 0.29 | | 58.8% | 78.9% | 92.8% | |
| Minor Chronic Disease in Multiple Organ Systems | 0.24 | 0.25 | 0.28 | | 0.25 | 0.27 | 0.30 | | 76.4% | 87.8% | 93.2% | |
| Single Dominant or Moderate Chronic Disease | 0.23 | 0.25 | 0.29 | | 0.25 | 0.26 | 0.29 | | 55.0% | 73.1% | 88.3% | |
| Significant Chronic Disease in Multiple Organ Systems | 0.25 | 0.26 | 0.31 | | 0.25 | 0.26 | 0.31 | | 73.1% | 79.1% | 86.7% | |
| Dominant Chronic Disease in Multiple Organ Systems | 0.26 | 0.26 | 0.32 | | 0.26 | 0.27 | 0.32 | | 84.2% | 85.7% | 86.8% | |
| Malignancy, Under Active Treatment | 0.25 | 0.26 | 0.30 | | 0.26 | 0.27 | 0.31 | | 77.7% | 80.2% | 85.0% | |
| Catastrophic Conditions | 0.24 | 0.26 | 0.30 | | 0.25 | 0.26 | 0.30 | | 46.1% | 51.1% | 53.7% | |
| **Total** | **0.23** | **0.24** | **0.29** | | **0.24** | **0.25** | **0.29** | | **24.4%** | **59.1%** | **84.3%** | |

As with the CRGs, EAPG weights vary somewhat across COEs, with MA Adults and Non-Newborn SSI/Disabled members presenting with a somewhat higher resource use than other groups.

Table 3.4.2
EAPG Average EAPG Weight for PPVs and Coordinated Care Percent of Overall Member Months by COE

| | FFS Average EAPG Weight | | | | CC Average EAPG Weight | | | | CC Percent of Overall Mbr Mos | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COE | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| MA Adult | 0.24 | 0.26 | 0.30 | | 0.24 | 0.26 | 0.30 | | 97.7% | 98.6% | 98.2% | |
| MA Children | 0.23 | 0.24 | 0.27 | | 0.24 | 0.24 | 0.28 | | 0.1% | 47.2% | 95.8% | |
| SSI/Disabled Newborns | 0.23 | 0.25 | 0.29 | | 0.23 | 0.24 | 0.28 | | 58.0% | 63.3% | 66.7% | |
| Non-SSI Newborns | 0.22 | 0.23 | 0.26 | | 0.22 | 0.23 | 0.26 | | 45.0% | 75.1% | 97.1% | |
| Quasi-CHIP | 0.24 | 0.26 | 0.30 | | 0.21 | 0.25 | 0.29 | | 0.0% | 78.6% | 98.7% | |
| Pregnant Women | 0.25 | 0.27 | 0.30 | | 0.24 | 0.26 | 0.29 | | 85.8% | 87.1% | 86.8% | |
| Non-Newborn SSI/Disabled | 0.24 | 0.26 | 0.30 | | 0.25 | 0.26 | 0.31 | | 48.5% | 48.3% | 47.9% | |
| Foster Care | 0.24 | 0.26 | 0.30 | | 0.23 | 0.25 | 0.28 | | 58.6% | 61.1% | 66.7% | |
| Breast and Cervical Cancer | | | | | 0.26 | 0.25 | 0.29 | | 100.0% | 100.0% | 100.0% | |
| **Total** | **0.23** | **0.24** | **0.29** | | **0.24** | **0.25** | **0.29** | | **24.4%** | **59.1%** | **84.3%** | |

## 3.5 PPVs and Payments

PPVs accounted for a similar or slightly higher proportion of payments in CC than they did in FFS, as shown in Table 3.5.1. In Year 3, across COEs, PPVs accounted for 67% of the CC ED visits in this analysis, but only 61% of the FFS ED visits. The higher proportion of payments accounted for by PPV in CC was largely due to a higher PPV rate, unadjusted for casemix.

Table 3.5.1
Total Payments for PPVs

| | Patients with FFS | | | | Patients with CC | | | |
|---|---|---|---|---|---|---|---|---|
| Period | All ED Visits | ED Visits in Analysis | PPVAs | % Payment for PPVs | All ED Visits | ED Visits in Analysis | PPVAs | % Payment for PPVs |
| Year 1 | $81,282,232 | $46,735,426 | $30,750,198 | 66% | $78,353,389 | $60,830,547 | $42,554,632 | 70% |
| Year 2 | $64,879,683 | $33,222,430 | $22,920,154 | 69% | $132,679,643 | $104,452,938 | $72,234,094 | 69% |
| Year 3 | $36,950,565 | $11,038,561 | $6,701,942 | 61% | $169,654,700 | $138,347,447 | $92,169,159 | 67% |

Average payments for PPVs held steady in CC, while increasing in FFS, as shown in Table 3.5.2. The increase in FFS average payments likely reflects the transition of healthier patients into CC, leaving sicker, more expensive patients in FFS.

Table 3.5.2
Average Payments for PPVs

| | FFS Avg Pmt / PPV | | | | CC Avg Pmt / PPV | | | |
|---|---|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Trend | Year 1 | Year 2 | Year 3 | Trend |
| Total | $167 | $186 | $256 | | $214 | $218 | $219 | |

# 4 Potentially Preventable Services

## 4.1 Overall View

PPSs consist of diagnostic tests, laboratory tests, therapy services and radiology services that may not be necessary for diagnosis and management. These tests and services may be redundant or otherwise not necessary for providing treatment. An example of a PPS is an MRI with an accompanying diagnosis of mild low back pain.

Due to the tight timeframe required for this report, a full analysis of potentially preventable services (PPSs) by CRG and COE was out of scope for this report. A high level analysis is shown in tables 4.1.1 and 4.2.1. Overall, there were slightly less than 3 million services per year that were considered at risk for being potentially preventable. Over the three years in this analysis, the proportion of those services that were paid by CCOs increased, from 56% in the first year of analysis, to 91% in the third year of analysis.

In general, about 38% of services in the analysis were considered potentially preventable in the first two years of analysis, dropping to 35% in the third year of analysis. Although the PPS rate was similar across FFS and CC (see Table 4.2.1), when adjusted for patient illness burden and service intensity, CC tended to perform worse. For the first two years of analysis, CC performed worse than expected compared to a similar population using norms from the first year of analysis. For the third year of analysis, CC performed about as expected based on the first year norms. FFS performed better than expected for the first and third years of analyses, although their performance worsened in the second year of analysis.

Despite having similar PPS rates, CC had a much higher rate of PPSs/K member months. This was because CC patients were much more likely to have a visit at which services could be provided, potentially due to closer monitoring and more well-visits. This was particularly in the first year a patient was enrolled in CC. In addition, slightly more services were provided at each visit. The increased monitoring in ambulatory care may have contributed to the lower rate of PPAs observed in that analysis.

**Table 4.1.1**
**Summary of Mississippi Medicaid Potentially Preventable Ancillary Services (PPSs) December 1 - November 30**

| | All Beneficiaries That Met The Criteria for Analysis | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Year | Number of Services | Avg EAPG Weight | Number of PPSs | PPSs/1000 Member Months | PPS Rate | A/E Ratio | EAPG Avg Weight for PPSs | Avg Payment/ PPS |
| 2013-2014 | 2,759,145 | 0.29 | 1,055,985 | 220.04 | 38% | 1.00 | 0.31 | $72 |
| 2014-2015 | 2,974,591 | 0.30 | 1,117,000 | 241.73 | 38% | 1.19 | 0.32 | $80 |
| 2015-2016 | 2,855,393 | 0.33 | 1,002,106 | 197.18 | 35% | 1.02 | 0.34 | $95 |

Table 4.2.1
Summary of Mississippi Medicaid Potentially Preventable Ancillary Services (PPSs) December 1 - November 30

| | People with Fee For Service | | | | | | | | People with Managed Care | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Number of Services | Avg EAPG Weight | Number of PPSs | PPSs/ 1000 Mbr Mos | PPS Rate | A/E Ratio | EAPG Avg Weight for PPSs | Avg Paymt/ PPS | Number of Services | Avg EAPG Weight | Number of PPSs | PPSs/ 1000 Mbr Mos | PPS Rate | A/E Ratio | EAPG Avg Weight for PPSs | Avg Paymt/ PPS |
| 2013-2014 | 1,203,109 | 0.26 | 442,613 | 122.05 | 37% | 0.88 | 0.33 | $60 | 1,556,036 | 0.31 | 613,372 | 523.07 | 39% | 1.12 | 0.29 | $80 |
| 2014-2015 | 770,700 | 0.32 | 307,583 | 162.94 | 40% | 1.23 | 0.36 | $73 | 2,203,891 | 0.30 | 809,417 | 296.15 | 37% | 1.17 | 0.31 | $82 |
| 2015-2016 | 252,104 | 0.41 | 95,461 | 120.02 | 38% | 0.96 | 0.42 | $94 | 2,603,289 | 0.32 | 906,645 | 211.50 | 35% | 1.03 | 0.34 | $96 |

# 5 Potentially Preventable Readmissions

## 5.1 Overall View

Potentially preventable readmissions are hospital admissions that occur within 15 days of a prior admission and are clinically related to the prior admission. PPR rates are evaluated as the proportion of initial admissions – admissions that are not preceded by a clinically related inpatient stay and that lead to a clinically related readmission. An initial stay could be followed by more than one PPR; the sequence of readmissions is referred to as a PPR chain. To reduce the impact of high utilizers on the PPR metric, the PPR rate measures the number of PPR chains (rather than the number of total PPR stays) divided by the number of initial admissions. As with the other PPEs, we risk adjust the PPR rate to obtain the A/E ratio as a measure of performance, allowing us to compare PPR performance across groups and across time. Risk adjustment for PPRs is based on the distribution of APR-DRGs in a given population, rather than the CRGs that are used in the population-focused preventable events described above.

Readmissions depend on both the care and discharge activities that were provided during the initial stay, and on the coordination of care received in the community after the initial stay. Because the risk of readmission depends so heavily on the care provided during the initial inpatient stay, and inpatient stays were exclusively paid for by FFS until 12/1/2015, we focused our analysis of PPRs in CC on the period from 12/1/2015 to 11/30/2016, or Year 3 in this report. For comparison purposes, we also evaluated PPR rates in the FFS population during the year prior (Year 2 in this report).

## 5.2 PPRs and Actual-to-Expected Ratio

As Table 5.2.1 indicates, the transition of stays from FFS to CC was accompanied by a 12% decline in the number of PPR chains. CC's Year 3 A/E performance is about 15% better than expected.

Table 5.2.1
Actual/Expected Trends and Overall PPR Chains

| | FFS A/E Ratio | | | CC A/E Ratio | | | Overall PPR Chains | | |
|---|---|---|---|---|---|---|---|---|---|
| | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend |
| Total | 1.00 | 1.00 | | | 0.85 | | 3,008 | 2,634 | |

Breaking these results out by CRG, CC performs at or better than expectations in all areas but Catastrophic Conditions. CC was responsible for roughly 3/5 of PPR chains in that category. Although FFS also performed well in Year 3 on the populations with a relatively low illness burden, for populations with significant illness FFS had more PPR chains than was expected—PPRs were worse than expected for four out of nine CRGs, all at the most medically complex end of the spectrum.

Table 5.2.2
Actual/Expected Trends and Overall PPR Chains by CRG

| | FFS A/E Ratio | | | CC A/E Ratio | | | Overall PPR Chains | | |
|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend |
| Healthy | 0.72 | 0.76 | | 0.70 | | | 415 | 378 | |
| Hx of Sig Acute Disease | 0.85 | 0.56 | | 0.77 | | | 114 | 92 | |
| Single Minor Chronic Disease | 0.88 | 0.89 | | 0.81 | | | 56 | 51 | |
| Minor Chronic Disease in Multiple Organ Systems | 1.19 | 0.77 | | 0.29 | | | 19 | 5 | |
| Single Dominant or Moderate Chronic Disease | 0.93 | 0.86 | | 0.71 | | | 389 | 305 | |
| Significant Chronic Disease in Multiple Organ Systems | 1.21 | 1.24 | | 0.98 | | | 825 | 678 | |
| Dominant Chronic Disease in Multiple Organ Systems | 1.32 | 1.18 | | 0.99 | | | 416 | 389 | |
| Malignancy, Under Active Treatment | 0.79 | 1.11 | | 0.99 | | | 9 | 14 | |
| Catastrophic Conditions | 1.35 | 1.47 | | 1.37 | | | 139 | 159 | |
| **Total** | **1.00** | **1.00** | | **0.85** | | | **3,008** | **2,634** | |

With COEs, the CCOs performed at or better than expectations with the exception of two groups. With SSI/Disabled Newborns, the CC had only slightly more PPR chains than was expected for a similar population, with an A/E ratio of 1.11. With Foster Children, their performance was considerably worse than expected with an A/E ratio of 1.31. FFS also did worse with both these groups, however, at 2.15 and 1.45, respectively. The consistently bad performance across FFS and CC for these two groups suggests there may be systemic factors affecting performance in these groups. FFS performance also was worse than expected for MA Children (1.25).[6]

Table 5.2.3
Actual/Expected Trends and Overall PPR Chains by COE

| | FFS A/E Ratio | | | CC A/E Ratio | | | Overall PPR Chains | | |
|---|---|---|---|---|---|---|---|---|---|
| COE | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend |
| MA Adult | 0.88 | 0.81 | | | 0.73 | | 437 | 417 | |
| MA Children | 0.82 | 1.25 | | | 0.70 | | 262 | 249 | |
| SSI/Disabled New borns | 1.10 | 2.15 | | | 1.11 | | 84 | 105 | |
| Non-SSI New borns | 1.02 | 0.99 | | | 0.96 | | 197 | 164 | |
| Quasi-CHIP | 0.83 | 0.89 | | | 1.03 | | 25 | 23 | |
| Pregnant Women | 0.95 | 0.79 | | | 0.84 | | 196 | 193 | |
| Non-New born SSI/Disabled | 1.05 | 0.96 | | | 0.87 | | 2,471 | 2,318 | |
| Foster Care | 1.43 | 1.45 | | | 1.31 | | 64 | 59 | |
| Breast and Cervical Cancer | * | * | | | * | | * | * | |
| **Total** | **1.00** | **1.00** | | | **0.85** | | **3,008** | **2,634** | |

**Note**
1.* Group size too small to be meaningful

## 5.3 Casemix Adjusted PPR Rate

A group's PPR rate is the number of initial stays followed by (at least) one readmission within 15 days, divided by the total number of initial stays. Successive readmissions are not considered in calculating the PPR rate. To make the PPR rate more comparable across time and groups, we calculated the casemix-adjusted PPR rate. The casemix-adjusted PPR rate is calculated by applying the observed PPR rate for each APR-DRG in a given group to the number of stays in that APR-DRG in the baseline data (Year 2 FFS data). For purposes of comparison, these rates are casemix adjusted to control for variations in the mix of DRGs in any given year or group. The casemix-adjusted rate indicates a group's PPR rate given a constant distribution of stays.

Casemix-adjusted PPR rates tend to be lowest for healthy populations, and relatively high for medically complex groups. CRGs vary widely in their casemix-adjusted PPR rates from a low of about 1.1% of initial stays (FFS, Minor Chronic Disease in Multiple Organ Systems) to a high of 35.5% (CC, Malignancy Under Active Treatment.) This is expected as sicker populations are known to be at higher risk for readmissions. Over all CRGs, the casemix-adjusted PPR rate is almost 20% lower in CC than in FFS for Year 3.

Table 5.3.1
Casemix Adjusted PPR Rate and Overall Admits by CRG

| | FFS Casemix Adj PPR Rate | | | CC Cmix Adj PPR Rate | | | Overall Initial Admits | | |
|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend |
| Healthy | 1.98% | 2.10% | | 2.39% | | | 21,525 | 19,702 | |
| Hx of Sig Acute Disease | 3.24% | 1.51% | | 2.83% | | | 4,217 | 3,655 | |
| Single Minor Chronic Disease | 3.00% | 1.80% | | 2.49% | | | 1,639 | 1,607 | |
| Minor Chronic Disease in Multiple Organ Systems | 4.63% | 1.07% | | 1.10% | | | 296 | 290 | |
| Single Dominant or Moderate Chronic Disease | 4.43% | 3.23% | | 3.11% | | | 7,015 | 6,650 | |
| Significant Chronic Disease in Multiple Organ Systems | 6.45% | 5.53% | | 5.76% | | | 8,366 | 7,475 | |
| Dominant Chronic Disease in Multiple Organ Systems | 9.49% | 12.68% | | 14.31% | | | 3,006 | 3,071 | |
| Malignancy, Under Active Treatment | 2.83% | 13.85% | | 35.47% | | | 171 | 162 | |
| Catastrophic Conditions | 5.74% | 5.91% | | 7.82% | | | 1,161 | 1,153 | |
| **Total** | **3.44%** | **3.65%** | | **2.97%** | | | **87,533** | **80,717** | |

Casemix-adjusted PPR rates do not vary as widely among COEs as among CRGs. Setting aside groups with small numbers (e.g., 2 PPRs in Year 3 in the Breast and Cervical Cancer group), these PPR rates in Year 3 range from 0.80% for Non-SSI Newborns to 4.71% for Non-Newborn SSI/Disabled members, with most groups falling in the 2-3% range. Note that births are included in the PPR dataset, and represent a large proportion of the stays in the Newborn category.

Non-Newborn SSI/Disabled members offer the largest improvement opportunity in this analysis. In this group particularly, for example, mental health and substance use are likely more prominent comorbidities that can exacerbate (and be exacerbated by) other, often chronic, health conditions.

Table 5.3.2
Casemix Adjusted PPR Rate and Overall Admits by COE

| | FFS Casemix Adj PPR Rate | | | CC Cmix Adj PPR Rate | | | Overall Initial Admits | | |
|---|---|---|---|---|---|---|---|---|---|
| COE | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend |
| MA Adult | 3.58% | 2.74% | | 2.82% | | | 10,787 | 9,780 | |
| MA Children | 1.40% | 3.18% | | 1.93% | | | 9,471 | 8,968 | |
| SSI/Disabled New borns | 2.66% | 3.69% | | 1.98% | | | 1,262 | 1,175 | |
| Non-SSI New borns | 0.92% | 0.70% | | 0.80% | | | 25,868 | 23,360 | |
| Quasi-CHIP | 1.78% | 2.29% | | 2.28% | | | 764 | 652 | |
| Pregnant Women | 6.61% | 1.63% | | 2.83% | | | 17,561 | 17,039 | |
| Non-New born SSI/Disabled | 5.11% | 4.65% | | 4.71% | | | 20,916 | 18,957 | |
| Foster Care | 4.84% | 3.38% | | 3.20% | | | 867 | 751 | |
| Breast and Cervical Cancer | * | * | | * | | | * | * | |
| **Total** | **3.44%** | **3.65%** | | **2.97%** | | | **87,533** | **80,717** | |

**Note**
1.* Group size too small to be meaningful

## 5.4 PPRs and Casemix

Across almost all CRGs, FFS casemix increases substantially from Year 2 to Year 3, while CC casemix in Year 3 is similar to FFS Year 2. This suggests that the enrollment shift from FFS to CC has left behind a population in FFS that is sicker than those who moved to CC. The effects of this shift illustrate why it is critical to perform casemix adjustment in comparing PPR rates.

The incorporation of inpatient stays into the CCO contracts appears to have had a positive effect on hospital readmissions. There is a drop in the number of PPR chains from Year 2 to Year 3 for every risk group except those with the most serious conditions.

Table 5.4.1
Average Casemix Index and Coordinated Care Percent of Overall Member Months by CRG

| | FFS Casemix Index | | | CC Casemix Index | | | Overall PPR Chains | | |
|---|---|---|---|---|---|---|---|---|---|
| CRG | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend |
| Healthy | 0.58 | 0.70 | | - | 0.59 | | 415 | 378 | |
| Hx of Sig Acute Disease | 0.63 | 0.74 | | - | 0.66 | | 114 | 92 | |
| Single Minor Chronic Disease | 0.73 | 0.86 | | - | 0.74 | | 56 | 51 | |
| Minor Chronic Disease in Multiple Organ Systems | 0.88 | 0.78 | | - | 0.87 | | 19 | 5 | |
| Single Dominant or Moderate Chronic Disease | 0.82 | 0.90 | | - | 0.81 | | 389 | 305 | |
| Significant Chronic Disease in Multiple Organ Systems | 0.86 | 0.99 | | - | 0.91 | | 825 | 678 | |
| Dominant Chronic Disease in Multiple Organ Systems | 0.99 | 1.17 | | - | 1.04 | | 416 | 389 | |
| Malignancy, Under Active Treatment | 0.95 | 1.11 | | - | 1.00 | | 9 | 14 | |
| Catastrophic Conditions | 1.35 | 1.71 | | - | 1.52 | | 139 | 159 | |
| **Total** | **0.57** | **0.93** | | **-** | **0.55** | | **3,008** | **2,634** | |

Similar observations can be made when data are arrayed by COE: except for the small Quasi-CHIP group, the CC Casemix Index values in Year 3 are generally similar to the Year 2 FFS values. Likewise, the number of PPR chains fell from Year 2 to Year 3, except for SSI/Disabled Newborns (84 in Year 2 to 105 in Year 3). The Breast and Cervical Cancer group had too few readmissions to provide meaningful numbers.

Table 5.4.2
Average Casemix Index and Coordinated Care Percent of Overall Member Months by COE

| | FFS Casemix Index | | | CC Casemix Index | | | Overall PPR Chains | | |
|---|---|---|---|---|---|---|---|---|---|
| COE | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend | Year 2 | Year 3 | Trend |
| MA Adult | 0.66 | 0.88 | | - | 0.67 | | 437 | 417 | |
| MA Children | 0.60 | 0.64 | | - | 0.61 | | 262 | 249 | |
| SSI/Disabled New borns | 1.42 | 1.69 | | - | 1.54 | | 84 | 105 | |
| Non-SSI New borns | 0.19 | 0.30 | | - | 0.18 | | 197 | 164 | |
| Quasi-CHIP | 0.62 | 0.65 | | - | 0.68 | | 25 | 23 | |
| Pregnant Women | 0.47 | 0.47 | | - | 0.47 | | 196 | 193 | |
| Non-New born SSI/Disabled | 0.98 | 1.20 | | - | 1.00 | | 2,471 | 2,318 | |
| Foster Care | 0.54 | 0.61 | | - | 0.58 | | 64 | 59 | |
| Breast and Cervical Cancer | * | * | | | * | | * | * | |
| **Total** | **0.57** | **0.93** | | **-** | **0.55** | | **3,008** | **2,634** | |

**Note**
1.* Group size too small to be meaningful

## 5.5 PPRs and Payments

CC paid less for PPRs as a proportion of total payment than FFS, as shown in Table 5.4.1. During Year 2 of the PPR analysis, the first year that inpatient stays were paid by CC, PPRs accounted for 4% of CC inpatient payments, as compared to 8% in FFS. The lower proportion of payment for PPRs was due to a combination of lower casemix and a substantially lower PPR rate. The lower PPR rate among CC stays likely reflects better community care and care coordination provided post-hospital discharge.

Table 5.5.1
Total Payments for PPRs

| | FFS Inpatient Stays | | | | CC Inpatient Stays | | | |
|---|---|---|---|---|---|---|---|---|
| Period | All Inpatient Stays | Stays in Analysis | PPRs | % Payment for PPRs | All Inpatient Stays | Stays in Analysis | PPAs | % Payment for PPRs |
| Year 2 | $674,180,226 | $429,221,635 | $22,589,575 | 5% | | | | |
| Year 3 | $190,535,377 | $91,863,348 | $6,924,772 | 8% | $457,571,344 | $303,414,795 | $13,606,450 | 4% |

Casemixadjusted average payments were also lower for CC PPRs than they were for FFS PPRs, as shown in Table 5.5.2. As with the other analyses, this likely reflects a different patient mix, with FFS serving more patients with behavioral health needs. Under the MS DRG payment method, behavioral health stays receive a policy adjustor (1.6 for adults, 2.0 for pediatrics) that increase payment and result in a higher casemix-adjusted average payment.

Table 5.5.2
Average Payments (Casemix-Adjusted) for PPRs

| | FFS Casemix Adj Avg Pmt / PPR | | CC Casemix Adj Avg Pmt / PPR | |
|---|---|---|---|---|
| Period | Year 1 | Year 2 | Year 1 | Year 2 |
| Total | $8,740 | $8,542 | | $7,723 |

# 6 Discussion

This report is intended to evaluate whether the MississippiCAN coordinated care program has had a positive effect in reducing unnecessary hospital admissions, ED visits, readmissions, and ancillary services. We applied the 3M potentially preventable event algorithms to identify hospital and ED utilization that could more appropriately be treated in primary care settings through better care management and access to primary care. We also evaluated potentially preventable readmissions, which are dependent on both the care received in the initial stay, and the care management provided in the community after the initial stay. In all cases, we used risk adjustment to make the results comparable across patient mix and time.

Our results suggest that, by the third year of the analysis, MississippiCAN had fewer PPAs than was expected for a similar population in the baseline year for all COE groups except for newborns and SSI disabled patients. Due to the decrease in PPAs, the share of hospital payments for potentially preventable hospital admissions for patients in CC was only 11%, compared to 15% for FFS patients in the same time period.

Hospital readmissions were also decreasing in CC. Four out of eight COE groups had fewer hospital readmissions than was expected for their patient mix, and another two performed about as expected. Overall, PPRs accounted for only 4% of CC hospital inpatient payments.

The improvements in hospital care may have come at the expense of some increases in non-inpatient utilization. Overall, CC patients had an increase in potentially avoidable ED visits, with 38% more potentially preventable ED visits in the third year of analysis than was expected based on the baseline year. The increases were most notable in the non-SSI newborn and non-SSI/disabled categories.

Finally, results from the ancillary services analysis were mixed. During the first two years of the analysis, CC patients had more potentially preventable services than was expected based on the baseline data. By the third year of the analysis, CC patients were performing about as expected based on the baseline year. Some increase in ancillary services may be expected if patients are accessing primary care instead of inpatient care.

Overall, results for the MississipiCAN program were mixed, with improvements in hospital admissions, and worsening performance in ED visits. A more in-depth study of potentially preventable ED visits would likely reveal the drivers behind the increase and suggest ways that CCOs could improve.

# Appendix A.1 Methods

This study evaluates the prevalence of unnecessary and/duplicative care in Mississippi's Fee-For-Service (FFS) and Coordinated Care (CC) programs through an analysis of potentially preventable events. We evaluated four types of potentially preventable events: hospital admissions, emergency department visits, ancillary services, and hospital readmissions. For all four types of events we applied 3M's potentially preventable event algorithms to identify events that might have been prevented with better coordination of care. Note that not all of the identified events could have been prevented, even with the best coordination and delivery of care. In addition, population acuity and risk varies from year to year, and across FFS and CC programs, making it difficult to accurately compare rates of preventable events across years and programs. Accordingly, we risk adjust the results to be able to more directly compare performance across years and across programs. We measure performance in terms of the actual-to-expected ratio of potentially preventable events, where the expected rate of potentially preventable events is calculated across both FFS and CC for the first year in each analysis.

**Time Periods in the Analysis:**

The Mississippi transition to CC occurred gradually beginning January 1, 2011 with the voluntary transition of Supplemental Security Income (SSI), Disabled Children Living at Home (DCLH), Working Disabled, Breast and Cervical Cancer, and Foster Care and continuing through December 1, 2015 with the inclusion of inpatient hospital stays. As of December 1, 2015, most patients and services have successfully transitioned to CC, with a small population remaining in FFS due to excluded conditions such as hemophilia. Due to the gradual transition, it's important to assess CC performance over time, as more people joined the program. Due to limitations on data availability, we started our analysis as of December 1, 2013. The time periods of analysis for each type of potentially preventable event are shown in Table A.1. Each analysis is broken down by year, and each year covers the time period of December 1 through the following November 30.

The first three analyses, potentially preventable hospital admissions (PPAs), potentially preventable Emergency Department Visits (PPVs), and potentially preventable ancillary services (PPSs), all measure performance on events that are highly influenced by the coordination and delivery of ambulatory care in the community. Accordingly, each of these analyses follows patients based on whether their ambulatory care was provided through FFS or CC. As ambulatory care began transitioning to CC in December of 2011, we began the analysis with the earliest data available. The fourth analysis, potentially preventable hospital readmissions (PPRs), is strongly influenced by the coordination and delivery of care during the initial hospital admission; thus, the PPR analysis follows patients based on whether the initial hospital stay was covered by FFS or CC. Because hospital admissions did not transition to CC until 12/1/2015, this analysis starts later than the other potentially preventable event analyses. The initial year of the PPR analysis (12/1/2014 – 11/30/2015) provides a reference year where all inpatient stays were covered by FFS.

This study was conducted using both Fee-for-Service (FFS) and Managed Care (CC) utilization and membership data. The study was restricted to paid claims, with paid dates on or before 10/23 of the year following the analysis period.

| Table A.1.1<br>Time Period of Analysis | |
|---|---|
| **Analysis** | **Time Period** |
| Hospital admissions | 12/1/2013 – 11/30/2016 |
| Emergency department visits | 12/1/2013 – 11/30/2016 |
| Ancillary services | 12/1/2013 – 11/30/2016 |
| Hospital readmissions | 12/1/2014 – 11/30/2016 |

**PPE Methodology**

Population Based Measures:

***Potentially Preventable Admissions (PPAs):*** A hospital admission is flagged as potentially preventable if it likely represents a failure to access primary care, or inadequate coordination of outpatient services. PPAs focus on ambulatory-sensitive conditions such as asthma, where exacerbations can be reduced by adequate monitoring and follow up care, including medication management. PPAs are identified by first assigning an APR-DRG to the hospital inpatient stay. If the APR-DRG is one of 26 ambulatory-sensitive conditions, it is identified as potentially preventable. Ambulatory-sensitive conditions are conditions that are sensitive to care coordination (e.g. diabetes), sensitive to ambulatory care availability (e.g. asthma), or represent potential areas of overuse. Areas of overuse identify procedures that have not been shown to be clinically effective, such as surgery for some forms of back pain.

***Potentially Preventable Emergency Department Visits (PPVs):*** Like PPAs, PPVs represent a failure to access primary care or an inadequate coordination of ambulatory care. They focus on ambulatory-sensitive conditions such as asthma. ED visits after hospitalizations could reflect poor care during the hospitalization, or a lack of coordination of post-discharge care. PPVs are identified by first assigning a primary EAPG to the ED visit. If the primary EAPG is one of 36 ambulatory-sensitive conditions, the ED visit is flagged as potentially preventable. Examples of ambulatory sensitive ED-visits include visits where the primary EAPG was for:

- Acute illness that can generally be treated in a primary care setting (i.e. abdominal pain)
- Acute infection that can generally be treated in a primary care setting (i.e. colds or flu)
- Malignancy-related chronic condition that can be managed through good coordination of care (Lymphoma)
- Chronic condition (not mental health, substance abuse or malignancy) that can be treated through good coordination of care
- MH/SA condition that can be treated in a primary care setting with good coordination of care
- Conditions and procedures that are not appropriate for an ED setting (cast removal)

***Potentially Preventable Ancillary Services (PPSs):*** PPSs consist of diagnostic tests, laboratory tests, therapy services and radiology services that may not be necessary for diagnosis and management. These tests and services may be redundant or otherwise not necessary for providing treatment. An example of a PPS is an MRI scan for back pain when there is no prior indication for back surgery.

***Risk Adjustment for Population Based Measures and Calculation of Expected Rates:*** Risk adjustment for population-focused preventable events is based on 3M's Clinical Risk Groups (CRG). CRGs are a categorical risk assignment model that captures a patient's chronic illness burden. CRGs relate the patient's clinical history to the amount and type of healthcare resources the patient is likely to consume. There are 1,080 mutually exclusive CRGs, which are combined into 43 aggregated risk groups that are used for risk adjustment.

Each patient is assigned a CRG based on the patient's history of utilization in the year prior to the analytic year, referred to as the lookback period. For example, for the PPA analysis covering 12/1/2013 – 11/30/2014, each patient's CRG would be based on utilization during the lookback period 12/1/2012 – 11/30/2013. Accurate CRG assignment requires a minimum of three months eligibility for Medicaid during the lookback period. Thus, for purposes of comparison, most analyses are limited to patients who had at least three months of Medicaid eligibility during the lookback period.

In addition to risk adjusting for patient acuity, hospital admissions, emergency department visits and services have varying levels of resource use. The national weights for APR-DRGs and EAPGs reflect the intensity of the visit or service; visits that use more resources are weighted more heavily than visits which use fewer services. Averaging the APR-DRG or EAPG weight over preventable events provides an estimate of the intensity of those preventable events.

Risk-adjusted performance is measured by comparing the actual rate of preventable events to the expected rate of preventable events for a population with the same risk profile (distribution of aggregated CRG categories). This is referred to as the actual-to-expected ratio (AE Ratio). The expected rate, or norm, was defined as the rate of potentially preventable events across FFS and CC in the reference year, or first year of the analysis (December 1, 2013 to November 30, 2014). To account for varying resource requirements, the actual and expected rates of preventable events are weighted by the national APR-DRG (for PPAs) or EAPG weights (for PPVs and PPSs). To obtain the expected weight per enrollee month for each CRG category, we calculate the total weight for each CRG category. We then divide the total weight by the number of enrollee months in each CRG category in the reference year. The expected rate of PPEs for a given analytic year is therefore the expected weight per enrollee month for each CRG category, multiplied by the number of enrollee months in that CRG category in the analytic year, summed across CRG categories.

***Eligibility requirements:*** Because assignment of a CRG is based on a patient's history of utilization, CRG-based risk adjustment requires that patients have at least three months of Medicaid eligibility during the lookback period. In addition, 3M recommends 6 months of eligibility during the analysis period to accurately capture population event rates. Due to transitions between FFS and CC, a six-month eligibility requirement led to a relatively high rate of exclusions for newborns (both SSI-newborns and non-SSI newborns), pregnant women and children (MA children and Quasi-CHIP). For these populations, we shortened the eligibility requirement to three months during the analytic period. All other populations were subject to the six-month eligibility requirement in the analytic period.

Data for the PPA, PPV and PPS Analyses:

Tables A.1.2 – A.1.4 indicate the number of patients and visits in the initial dataset, the dataset after eligibility and other exclusions, and the final dataset used in the analysis. Reasons for exclusion included: less than three months of eligibility during the lookback period; less than six months (MA Adults, non-newborn SSI-disabled, Foster Care, Breast and Cervical Cancer) or three months (pregnant women, MA children, SSI-newborns, non-SSI newborns, Quasi-Chip) eligibility during the analytic period; and visit not at risk for being potentially preventable. Emergency Department visits and ancillary services that were identified as not being at risk for being potentially preventable were determined to have occurred during an inpatient stay. Inpatient stays that were identified as not being at risk for being potentially preventable were not able to be grouped due to ICD-10 codes not being recognized by the grouper. These "ungroupable" stays only occurred in the final year of analysis, and made up a small proportion (1%) of total stays.

| Table A.1.2<br>Overview of Data: 12/1/2013 - 11/30/2014 | | | | | |
|---|---|---|---|---|---|
| | Number of Medicaid Members | Number of Member Months | Number of Inpatient Stays | Number of ED Visits | Number of Services |
| Starting dataset | 725,868 | 7,660,226 | 111,090 | 714,808 | 6,608,030 |
| Met the eligibility requirements | 425,583 | 4,799,139 | 52,034 | 513,693 | 4,287,466 |
| At risk for being a potentially preventable event | | | 52,034 | 503,616 | 2,759,145 |

| Table A.1.3<br>Overview of Data: 12/1/2014 - 11/30/2015 | | | | | |
|---|---|---|---|---|---|
| | Number of Medicaid Members | Number of Member Months | Number of Inpatient Stays | Number of ED Visits | Number of Services |
| Starting dataset | 763,499 | 8,037,518 | 110,926 | 802,252 | 6,852,632 |
| Met the eligibility requirements | 463,191 | 4,620,783 | 53,232 | 598,871 | 4,543,574 |
| At risk for being a potentially preventable event | | | 53,232 | 588,535 | 2,974,591 |

| Table A.1.4<br>Overview of Data: 12/1/2015 - 11/30/2016 | | | | | |
|---|---|---|---|---|---|
| | Number of Medicaid Members | Number of Member Months | Number of Inpatient Stays | Number of ED Visits | Number of Services |
| Starting dataset | 754,093 | 7,908,596 | 109,371 | 788,736 | 7,060,269 |
| Met the eligibility requirements | 468,202 | 5,082,152 | 52,870 | 604,814 | 4,823,471 |
| At risk for being a potentially preventable event | | | 52,082 | 592,555 | 2,855,393 |

***Potentially Preventable Readmissions (PPRs):*** A PPR is a hospital admission within 15 days of a previous hospital admission that is clinically related to the initial admission. While not all readmissions are preventable, many may be prevented through better care and improved care coordination after discharge. For this analysis, we chose a 15-day window for readmissions to put the emphasis on the impact of care and discharge strategies during the initial visit. An initial stay could be followed by more than one PPR; this is referred to as a PPR chain. To reduce the impact of high utilizers on the PPR metric, the PPR rate measures the number of PPR chains (rather than the number of total PPR stays) divided by the number of initial admissions.

To identify PPRs, each inpatient stay is first assigned an APR-DRG. Then, any inpatient stays that occur within a 15 day window after the initial stay are evaluated to determine if the APR-DRG is clinically related to the APR-DRG of the initial stay, in which case it is labelled a PPR. Several types of stays are excluded from analysis including:

- Neonatal stays
- Malignancies and other selected disorders that are expected to have an unavoidable high rate of readmission
- Admissions where the patient left against medical advice
- Transfer stays (the stay receiving the transfer can be considered for PPRs)

*Risk Adjustment and Calculation of Expected Rates for PPRs:* For PPRs, risk adjustment is based on the distribution of APR-DRGs, severity of illness, age and mental health status in the population. The first step was to calculate statewide averages in the reference year (12/1/2014 – 11/30/2015), calculated for each combination of base APR-DRGs and severity.

During the reference year all inpatient stays were FFS, thus the norm is based on the rate of PPRs in FFS inpatient stays. PPR performance was evaluated by comparing the actual number of PPR chains in FFS or CC with the expected number calculated based on the norm PPR rate, in a process called indirect rate standardization. In short, the expected rate of PPRs was multiplied by the actual number of inpatient admissions in the analytic period (separately for FFS and CC inpatient stays). This results in the expected number of PPRs. The actual-to-expected ratio (AE ratio) is computed by dividing the actual number of PPRs, summed across APR-DRG, by the expected number of PPRs.

*Eligibility requirements:* There were no Medicaid eligibility requirements for the PPR analysis.

*Data for the PPR analysis:* Table A.1.5 shows the number of inpatient stays included in the PPR analysis. The PPR algorithm excluded 19,633 admissions in the reference year and 25,124 admissions in the analytic year from the analysis because they were for conditions or circumstances that were expected to have a high rate of unavoidable readmissions. In addition, we excluded approximately 3,500 non-readmission stays from the last 15 days of each year as the data timeframe would not include readmissions for those stays.

Table A.1.5
Overview of Data: Readmissions

| | 2014-2015 | 2015-2016 |
|---|---|---|
| Number of inpatient admissions during year of analysis | 110,926 | 109,371 |
| Number of admissions excluded by the PPR algorithm | 23,393 | 28,654 |
| Number of admissions excluded because of lack of follow-up time | 3,760 | 3,530 |
| Number of inpatient admissions at risk for a readmission | 87,533 | 80,717 |

# Appendix A.2 Detailed Data Tables

The tables in this section provide the detailed data behind the analyses described in this report. For each of the analyses, we provide tables comparing FFS and CC across all CC programs, for each CRG, and for each CC program.

### A.2.1 Potentially Preventable Admissions

PPA rates across FFS and CC programs.

Table A.2.1.1
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1 - November 30

| | People with Fee For Service | | | | | | | | | People with Coordinated Care | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA |
| 2013-2014 | 14,675 | 0.73 | 4,280 | 1.18 | 29% | 0.81 | 0.53 | $3,788 | $7,128 | 37,359 | 0.75 | 5,949 | 5.07 | 16% | 1.15 | 0.69 | $4,461 | $6,502 |
| 2014-2015 | 10,564 | 0.79 | 2,872 | 1.52 | 27% | 0.95 | 0.56 | $4,037 | $7,254 | 42,668 | 0.75 | 7,654 | 2.80 | 18% | 1.06 | 0.64 | $4,201 | $6,578 |
| 2015-2016 | 5,405 | 1.01 | 1,265 | 1.59 | 23% | 0.97 | 0.71 | $4,974 | $7,217 | 46,677 | 0.79 | 7,750 | 1.81 | 17% | 0.83 | 0.65 | $4,042 | $6,224 |

PPA rates by CRG.

Table A.2.1.2
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1, 2013 - November 30, 2014

| | People with Fee For Service | | | | | | | | | People with Coordinated Care | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG Category | Inpatient Admissions | CMI | Number of PPAs | PPAs / 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA |
| **No CRG Category** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 6,106 | 0.77 | 1,083 | 1.39 | 18% | | 0.59 | $4,119 | $7,169 | 11,974 | 0.59 | 776 | 2.44 | 6% | | 0.59 | $3,874 | $6,582 |
| 2014-2015 | 4,494 | 0.88 | 747 | 2.25 | 17% | | 0.63 | $4,308 | $6,992 | 13,583 | 0.60 | 1,045 | 1.46 | 8% | | 0.55 | $3,824 | $7,010 |
| 2015-2016 | 2,841 | 0.93 | 426 | 3.93 | 15% | | 0.69 | $4,530 | $6,694 | 13,834 | 0.66 | 1,050 | 1.03 | 8% | | 0.57 | $3,716 | $6,567 |
| **Healthy** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 6,902 | 0.61 | 1,995 | 0.62 | 29% | 0.74 | 0.46 | $3,343 | $7,087 | 16,406 | 0.61 | 1,433 | 2.03 | 9% | 1.65 | 0.58 | $3,793 | $6,578 |
| 2014-2015 | 4,342 | 0.66 | 1,191 | 0.71 | 27% | 0.99 | 0.47 | $3,348 | $7,111 | 18,750 | 0.61 | 2,375 | 1.14 | 13% | 1.25 | 0.52 | $3,513 | $6,781 |
| 2015-2016 | 1,403 | 0.81 | 278 | 0.40 | 20% | 0.95 | 0.54 | $3,600 | $6,675 | 21,112 | 0.64 | 2,521 | 0.73 | 12% | 0.79 | 0.52 | $3,324 | $6,323 |
| **Hx of Sig Acute Disease** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 1,136 | 0.63 | 479 | 2.91 | 42% | 0.84 | 0.47 | $3,089 | $6,488 | 3,089 | 0.67 | 405 | 3.62 | 13% | 1.20 | 0.63 | $3,950 | $6,273 |
| 2014-2015 | 739 | 0.65 | 301 | 4.13 | 41% | 1.11 | 0.45 | $3,039 | $6,682 | 3,848 | 0.67 | 661 | 3.39 | 17% | 1.03 | 0.55 | $3,521 | $6,475 |
| 2015-2016 | 272 | 0.94 | 58 | 4.25 | 21% | 1.32 | 0.60 | $3,908 | $6,526 | 4,004 | 0.69 | 714 | 2.47 | 18% | 0.82 | 0.57 | $3,566 | $6,224 |
| **Single Minor Chronic Disease** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 447 | 0.79 | 110 | 2.88 | 25% | 0.78 | 0.51 | $3,718 | $7,188 | 1,358 | 0.87 | 199 | 3.64 | 15% | 1.14 | 0.68 | $4,341 | $6,353 |
| 2014-2015 | 275 | 0.87 | 48 | 2.30 | 17% | 0.71 | 0.60 | $4,509 | $7,710 | 1,538 | 0.85 | 242 | 3.09 | 16% | 0.94 | 0.64 | $4,193 | $6,587 |
| 2015-2016 | 129 | 0.87 | 25 | 3.21 | 19% | 0.89 | 0.56 | $4,034 | $7,401 | 1,721 | 0.85 | 230 | 2.30 | 13% | 0.72 | 0.65 | $4,075 | $6,181 |
| **Minor Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 64 | 0.59 | 15 | 5.12 | 23% | 1.03 | 0.67 | $4,220 | $6,267 | 289 | 0.82 | 50 | 5.26 | 17% | 0.99 | 0.66 | $5,368 | $8,480 |
| 2014-2015 | 32 | 1.29 | 3 | 1.74 | 9% | 0.30 | 0.56 | $4,715 | $8,553 | 308 | 0.84 | 54 | 4.36 | 18% | 0.93 | 0.74 | $4,863 | $6,635 |
| 2015-2016 | 16 | 0.74 | 4 | 3.88 | 25% | 0.65 | 0.56 | $3,431 | $5,990 | 315 | 1.01 | 60 | 4.24 | 19% | 1.09 | 0.88 | $5,325 | $6,000 |
| **Single Dominant or Moderate Chronic Disease** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 2,472 | 0.76 | 750 | 6.07 | 30% | 0.79 | 0.49 | $3,555 | $7,186 | 5,109 | 0.86 | 1,009 | 6.68 | 20% | 1.16 | 0.69 | $4,429 | $6,436 |
| 2014-2015 | 1,880 | 0.80 | 509 | 6.84 | 27% | 0.92 | 0.53 | $3,955 | $7,523 | 6,006 | 0.84 | 1,273 | 6.29 | 21% | 1.02 | 0.63 | $4,090 | $6,535 |
| 2015-2016 | 1,019 | 0.89 | 243 | 6.86 | 24% | 0.98 | 0.61 | $4,383 | $7,345 | 6,811 | 0.86 | 1,343 | 5.05 | 20% | 0.84 | 0.64 | $3,938 | $6,152 |

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Table A.2.1.2
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1, 2013 - November 30, 2014

| | People with Fee For Service | | | | | | | | | People with Coordinated Care | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG Category | Inpatient Admissions | CMI | Number of PPAs | PPAs / 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA |
| **Significant Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 2,219 | 0.77 | 493 | 12.97 | 22% | 0.78 | 0.64 | $5,171 | $8,399 | 6,873 | 0.87 | 1,601 | 15.46 | 23% | 1.08 | 0.72 | $4,691 | $6,545 |
| 2014-2015 | 2,018 | 0.82 | 417 | 13.45 | 21% | 0.81 | 0.67 | $5,418 | $8,502 | 7,837 | 0.87 | 1,783 | 15.22 | 23% | 1.06 | 0.72 | $4,697 | $6,522 |
| 2015-2016 | 1,377 | 0.98 | 313 | 14.92 | 23% | 1.04 | 0.76 | $5,348 | $7,111 | 7,830 | 0.92 | 1,511 | 11.05 | 19% | 0.79 | 0.74 | $4,612 | $6,415 |
| **Dominant Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 626 | 1.01 | 225 | 55.96 | 36% | 1.15 | 0.85 | $5,408 | $6,619 | 3,019 | 0.93 | 947 | 44.05 | 31% | 0.97 | 0.79 | $5,108 | $6,471 |
| 2014-2015 | 589 | 0.95 | 213 | 55.11 | 36% | 1.08 | 0.82 | $5,342 | $6,531 | 3,123 | 0.96 | 982 | 42.55 | 31% | 0.94 | 0.82 | $5,254 | $6,375 |
| 2015-2016 | 495 | 1.07 | 164 | 42.47 | 33% | 0.83 | 0.86 | $5,611 | $6,569 | 3,477 | 1.03 | 1,061 | 41.81 | 31% | 0.92 | 0.82 | $4,940 | $5,897 |
| **Malignancy, Under Active Treatment** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 187 | 1.38 | 15 | 12.91 | 8% | 0.71 | 0.79 | $4,990 | $6,316 | 392 | 1.20 | 74 | 18.24 | 19% | 1.09 | 0.77 | $4,895 | $6,323 |
| 2014-2015 | 117 | 1.37 | 15 | 14.48 | 13% | 0.82 | 0.80 | $5,151 | $6,415 | 384 | 1.34 | 78 | 18.60 | 20% | 1.13 | 0.79 | $4,913 | $6,278 |
| 2015-2016 | 72 | 1.19 | 8 | 10.03 | 11% | 0.40 | 0.53 | $3,398 | $6,407 | 521 | 1.31 | 100 | 22.15 | 19% | 1.46 | 0.88 | $5,304 | $6,085 |
| **Catastrophic Conditions** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 622 | 1.43 | 198 | 19.26 | 32% | 1.01 | 0.86 | $5,470 | $6,368 | 824 | 1.24 | 231 | 26.27 | 28% | 0.99 | 0.82 | $5,177 | $6,311 |
| 2014-2015 | 572 | 1.49 | 175 | 18.50 | 31% | 0.98 | 0.89 | $5,562 | $6,263 | 874 | 1.29 | 206 | 20.82 | 24% | 0.84 | 0.82 | $5,264 | $6,374 |
| 2015-2016 | 622 | 1.70 | 172 | 18.64 | 28% | 1.02 | 0.97 | $7,346 | $8,995 | 886 | 1.45 | 210 | 19.64 | 24% | 0.89 | 0.88 | $5,313 | $5,950 |

PPA rates by COE.

Table A.2.1.3
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1 - November 30

| | People with Fee For Service | | | | | | | | | People with Coordinated Care | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA |
| **MA Adult** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 298 | 0.70 | 44 | 4.97 | 15% | 2.32 | 0.73 | $4,838 | $6,426 | 7,018 | 0.63 | 799 | 2.14 | 11% | 0.77 | 0.64 | $4,207 | $6,579 |
| 2014-2015 | 222 | 0.67 | 25 | 3.68 | 11% | 1.34 | 0.60 | $3,695 | $6,158 | 8,331 | 0.64 | 877 | 1.83 | 11% | 0.67 | 0.64 | $4,102 | $6,401 |
| 2015-2016 | 238 | 0.72 | 30 | 3.74 | 13% | 1.10 | 0.59 | $3,724 | $6,182 | 7,983 | 0.68 | 788 | 1.80 | 10% | 0.64 | 0.69 | $4,055 | $5,798 |
| **MA Children** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 7,582 | 0.58 | 2,329 | 1.06 | 31% | 0.60 | 0.45 | $3,297 | $7,198 | 30 | 0.43 | - | - | - | - | . | . | . |
| 2014-2015 | 4,399 | 0.60 | 1,289 | 1.24 | 29% | 0.79 | 0.46 | $3,403 | $7,316 | 3,636 | 0.59 | 1,165 | 1.26 | 32% | 0.80 | 0.45 | $3,242 | $7,066 |
| 2015-2016 | 670 | 0.64 | 219 | 2.06 | 33% | 1.25 | 0.47 | $4,149 | $8,878 | 7,669 | 0.63 | 2,250 | 0.92 | 29% | 0.56 | 0.47 | $3,158 | $6,694 |
| **SSI/Disabled Newborns** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 514 | 1.47 | 161 | 8.79 | 31% | 1.03 | 0.68 | $4,332 | $6,330 | 792 | 1.89 | 209 | 8.27 | 26% | 1.04 | 0.59 | $3,728 | $6,228 |
| 2014-2015 | 442 | 1.73 | 147 | 9.14 | 33% | 1.14 | 0.75 | $5,156 | $7,014 | 948 | 1.82 | 239 | 8.61 | 25% | 1.01 | 0.64 | $4,111 | $6,427 |
| 2015-2016 | 404 | 1.74 | 118 | 8.02 | 29% | 1.08 | 0.85 | $5,569 | $6,750 | 978 | 2.07 | 245 | 8.32 | 25% | 1.12 | 0.72 | $4,322 | $6,040 |
| **Non-SSI Newborns** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 993 | 0.56 | 554 | 3.58 | 56% | 1.48 | 0.44 | $2,761 | $6,279 | 1,577 | 0.78 | 621 | 4.91 | 39% | 2.11 | 0.45 | $2,770 | $6,178 |
| 2014-2015 | 690 | 0.60 | 391 | 5.34 | 57% | 2.34 | 0.43 | $2,728 | $6,396 | 2,285 | 0.65 | 1,108 | 5.03 | 48% | 2.12 | 0.44 | $2,873 | $6,405 |
| 2015-2016 | 93 | 0.95 | 37 | 9.75 | 40% | 5.52 | 0.48 | $2,927 | $6,068 | 1,609 | 0.89 | 616 | 4.82 | 38% | 2.12 | 0.48 | $2,986 | $6,226 |
| **Quasi-CHIP** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 24 | 0.48 | 4 | 0.01 | 17% | 0.21 | 0.43 | $3,522 | $7,921 | 2 | 0.33 | - | - | - | - | . | . | . |
| 2014-2015 | 55 | 0.67 | 14 | 0.12 | 25% | 2.11 | 0.41 | $3,104 | $7,331 | 209 | 0.59 | 40 | 0.09 | 19% | 0.53 | 0.43 | $3,135 | $7,079 |
| 2015-2016 | 43 | 0.58 | 7 | 0.89 | 16% | 0.51 | 0.37 | $2,344 | $6,415 | 600 | 0.73 | 102 | 0.18 | 17% | 0.36 | 0.47 | $3,276 | $7,032 |
| **Pregnant Women** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 482 | 0.45 | 1 | 0.10 | 0% | 0.06 | 0.56 | $3,508 | $6,234 | 10,356 | 0.47 | 24 | 0.39 | 0% | 0.26 | 0.50 | $3,133 | $6,252 |
| 2014-2015 | 453 | 0.45 | 1 | 0.12 | 0% | 0.09 | 0.59 | $3,788 | $6,415 | 9,376 | 0.47 | 18 | 0.32 | 0% | 0.23 | 0.54 | $3,480 | $6,415 |
| 2015-2016 | 403 | 0.47 | 1 | 0.11 | 0% | 0.05 | 0.41 | $2,643 | $6,415 | 10,320 | 0.47 | 28 | 0.46 | 0% | 0.36 | 0.62 | $3,593 | $5,711 |

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Table A.2.1.3

Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1 - November 30

| Year | People with Fee For Service | | | | | | | | | People with Coordinated Care | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA | Inpatient Admissions | CMI | Number of PPAs | PPAs/ 1000 Mbr Mos | PPA Rate | A/E Ratio | DRG Avg Casemix for PPAs | Avg Paymt/ PPA | Casemix Adj Avg Payment/ PPA |
| **Non-Newborn SSI/Disabled** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 4,406 | 0.98 | 1,126 | 1.90 | 26% | 1.10 | 0.72 | $5,059 | $7,242 | 17,223 | 0.92 | 4,246 | 7.61 | 25% | 1.23 | 0.74 | $4,787 | $6,506 |
| 2014-2015 | 3,914 | 1.01 | 940 | 1.54 | 24% | 0.96 | 0.73 | $5,124 | $7,224 | 17,515 | 0.95 | 4,142 | 7.27 | 24% | 1.18 | 0.75 | $4,849 | $6,470 |
| 2015-2016 | 3,352 | 1.10 | 820 | 1.31 | 24% | 0.93 | 0.78 | $5,234 | $6,822 | 17,094 | 1.02 | 3,660 | 6.33 | 21% | 1.03 | 0.79 | $4,744 | $5,968 |
| **Foster Care** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | 376 | 0.59 | 61 | 3.38 | 16% | 0.71 | 0.50 | $6,222 | $12,611 | 335 | 0.54 | 44 | 1.72 | 13% | 0.64 | 0.51 | $5,691 | $10,798 |
| 2014-2015 | 387 | 0.56 | 63 | 3.30 | 16% | 0.66 | 0.50 | $6,418 | $12,778 | 340 | 0.55 | 61 | 2.03 | 18% | 0.74 | 0.51 | $5,398 | $10,584 |
| 2015-2016 | 202 | 0.79 | 33 | 1.86 | 16% | 0.64 | 0.61 | $5,907 | $10,094 | 397 | 0.59 | 56 | 1.58 | 14% | 0.58 | 0.58 | $5,379 | $9,608 |
| **Breast and Cervical Cancer** | | | | | | | | | | | | | | | | | | |
| 2013-2014 | | | | | | | | | | 26 | 1.00 | 6 | 5.90 | 23% | 0.58 | 0.77 | $4,935 | $6,352 |
| 2014-2015 | 2 | 1.77 | 2 | 111.11 | 100% | 92.22 | 1.77 | $11,377 | $6,415 | 28 | 1.25 | 4 | 4.43 | 14% | 0.39 | 0.65 | $4,141 | $6,415 |
| 2015-2016 | | | | | | | | | | 27 | 1.06 | 5 | 6.06 | 19% | 0.73 | 0.99 | $6,171 | $6,158 |

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### A.2.2 Potentially Preventable Emergency Department Visits

PPV rates across FFS and CC programs.

Table A.2.2.1
Summary of Mississippi Medicaid Potentially Preventable ED Visits December 1 - November 30

| | People with Fee For Service | | | | | | | | People with Coordinated Care | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV |
| 2013-2014 | 245,770 | 0.26 | 183,775 | 50.68 | 75% | 0.80 | 0.23 | $167 | 257,846 | 0.27 | 198,896 | 169.61 | 77% | 1.27 | 0.24 | $214 |
| 2014-2015 | 157,472 | 0.27 | 122,981 | 65.15 | 78% | 1.16 | 0.24 | $186 | 431,063 | 0.28 | 331,975 | 121.46 | 77% | 1.40 | 0.25 | $218 |
| 2015-2016 | 36,826 | 0.33 | 26,195 | 32.93 | 71% | 0.83 | 0.29 | $256 | 555,729 | 0.32 | 420,344 | 98.06 | 76% | 1.38 | 0.29 | $219 |

PPV Rates by CRG.

Table A.2.2.2
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1, 2013 - November 30, 2014

| | People with Fee For Service | | | | | | | | People with Coordinated Care | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG Category | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV |
| **No CRG Category** | | | | | | | | | | | | | | | | |
| 2013-2014 | 77,943 | 0.28 | 52,124 | 67.14 | 67% | | 0.23 | $184 | 52,069 | 0.26 | 38,312 | 120.45 | 74% | | 0.23 | $176 |
| 2014-2015 | 52,297 | 0.29 | 36,489 | 109.70 | 70% | | 0.24 | $200 | 98,291 | 0.29 | 69,909 | 97.75 | 71% | | 0.25 | $199 |
| 2015-2016 | 19,254 | 0.36 | 11,549 | 106.51 | 60% | | 0.29 | $280 | 118,220 | 0.33 | 83,167 | 81.49 | 70% | | 0.28 | $196 |
| **Healthy** | | | | | | | | | | | | | | | | |
| 2013-2014 | 179,282 | 0.26 | 134,457 | 41.45 | 75% | 0.86 | 0.23 | $159 | 106,607 | 0.26 | 81,221 | 114.78 | 76% | 1.36 | 0.23 | $185 |
| 2014-2015 | 111,995 | 0.27 | 88,436 | 52.88 | 79% | 1.34 | 0.24 | $173 | 231,983 | 0.28 | 177,082 | 84.68 | 76% | 1.58 | 0.24 | $190 |
| 2015-2016 | 18,818 | 0.33 | 13,155 | 18.72 | 70% | 0.86 | 0.28 | $214 | 320,058 | 0.32 | 240,714 | 69.96 | 75% | 1.44 | 0.28 | $190 |
| **Hx of Sig Acute Disease** | | | | | | | | | | | | | | | | |
| 2013-2014 | 28,527 | 0.25 | 21,731 | 132.02 | 76% | 0.81 | 0.22 | $162 | 30,214 | 0.27 | 23,196 | 207.15 | 77% | 1.26 | 0.24 | $201 |
| 2014-2015 | 17,211 | 0.27 | 13,658 | 187.54 | 79% | 1.22 | 0.24 | $181 | 53,204 | 0.28 | 40,903 | 209.98 | 77% | 1.36 | 0.25 | $211 |

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Table A.2.2.2
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1, 2013 - November 30, 2014

| | People with Fee For Service | | | | | | | | People with Coordinated Care | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG Category | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV |
| 2015-2016 | 3,335 | 0.32 | 2,453 | 179.68 | 74% | 1.31 | 0.28 | $230 | 68,270 | 0.31 | 52,041 | 180.18 | 76% | 1.36 | 0.28 | $209 |
| **Single Minor Chronic Disease** | | | | | | | | | | | | | | | | |
| 2013-2014 | 5,620 | 0.26 | 4,213 | 110.15 | 75% | 0.64 | 0.23 | $185 | 15,959 | 0.27 | 12,656 | 231.47 | 79% | 1.22 | 0.24 | $209 |
| 2014-2015 | 3,560 | 0.28 | 2,695 | 128.90 | 76% | 0.78 | 0.25 | $206 | 21,691 | 0.28 | 17,219 | 220.00 | 79% | 1.25 | 0.25 | $223 |
| 2015-2016 | 1,304 | 0.32 | 908 | 116.54 | 70% | 0.79 | 0.29 | $250 | 24,095 | 0.32 | 18,513 | 185.46 | 77% | 1.24 | 0.29 | $230 |
| **Minor Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | |
| 2013-2014 | 531 | 0.28 | 386 | 131.70 | 73% | 0.41 | 0.24 | $198 | 4,449 | 0.27 | 3,769 | 396.61 | 85% | 1.17 | 0.25 | $216 |
| 2014-2015 | 356 | 0.28 | 268 | 155.45 | 75% | 0.51 | 0.25 | $231 | 5,224 | 0.29 | 4,317 | 348.37 | 83% | 1.10 | 0.27 | $241 |
| 2015-2016 | 152 | 0.33 | 110 | 106.80 | 72% | 0.37 | 0.28 | $251 | 4,694 | 0.33 | 3,601 | 254.27 | 77% | 0.92 | 0.30 | $271 |
| **Single Dominant or Moderate Chronic Disease** | | | | | | | | | | | | | | | | |
| 2013-2014 | 21,207 | 0.26 | 15,194 | 122.88 | 72% | 0.67 | 0.23 | $189 | 43,965 | 0.28 | 33,779 | 223.69 | 77% | 1.27 | 0.25 | $230 |
| 2014-2015 | 15,185 | 0.28 | 11,168 | 150.05 | 74% | 0.87 | 0.25 | $215 | 57,036 | 0.29 | 43,980 | 217.45 | 77% | 1.29 | 0.26 | $247 |
| 2015-2016 | 5,541 | 0.33 | 3,887 | 109.80 | 70% | 0.73 | 0.29 | $277 | 67,658 | 0.33 | 51,241 | 192.58 | 76% | 1.32 | 0.29 | $253 |
| **Significant Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | |
| 2013-2014 | 7,484 | 0.28 | 5,368 | 141.21 | 72% | 0.51 | 0.25 | $264 | 40,794 | 0.28 | 31,998 | 309.06 | 78% | 1.18 | 0.25 | $255 |
| 2014-2015 | 6,278 | 0.29 | 4,479 | 144.48 | 71% | 0.55 | 0.26 | $303 | 45,431 | 0.30 | 35,434 | 302.41 | 78% | 1.20 | 0.26 | $286 |
| 2015-2016 | 4,585 | 0.36 | 3,299 | 157.24 | 72% | 0.70 | 0.31 | $340 | 50,996 | 0.35 | 38,822 | 283.94 | 76% | 1.31 | 0.31 | $308 |
| **Dominant Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | |
| 2013-2014 | 1,386 | 0.29 | 1,126 | 280.03 | 81% | 0.66 | 0.26 | $357 | 12,180 | 0.30 | 9,279 | 431.58 | 76% | 1.07 | 0.26 | $288 |
| 2014-2015 | 1,284 | 0.30 | 1,036 | 268.05 | 81% | 0.63 | 0.26 | $393 | 12,546 | 0.30 | 9,892 | 428.61 | 79% | 1.07 | 0.27 | $321 |
| 2015-2016 | 1,419 | 0.35 | 1,124 | 291.04 | 79% | 0.82 | 0.32 | $419 | 15,461 | 0.36 | 12,067 | 475.55 | 78% | 1.42 | 0.32 | $353 |
| **Malignancy, Under Active Treatment** | | | | | | | | | | | | | | | | |
| 2013-2014 | 183 | 0.39 | 141 | 121.34 | 77% | 0.57 | 0.25 | $284 | 1,021 | 0.28 | 881 | 217.21 | 86% | 1.13 | 0.26 | $300 |
| 2014-2015 | 139 | 0.33 | 118 | 113.90 | 85% | 0.53 | 0.26 | $338 | 1,030 | 0.30 | 860 | 205.05 | 83% | 1.06 | 0.27 | $337 |
| 2015-2016 | 79 | 0.31 | 67 | 83.96 | 85% | 0.48 | 0.30 | $346 | 1,144 | 0.36 | 910 | 201.60 | 80% | 1.20 | 0.31 | $377 |
| **Catastrophic Conditions** | | | | | | | | | | | | | | | | |

Table A.2.2.2
Summary of Mississippi Medicaid Potentially Preventable Admissions, December 1, 2013 - November 30, 2014

| | People with Fee For Service | | | | | | | | People with Coordinated Care | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG Category | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV |
| 2013-2014 | 1,550 | 0.29 | 1,159 | 112.73 | 75% | 0.74 | 0.24 | $292 | 2,657 | 0.32 | 2,117 | 240.79 | 80% | 1.22 | 0.25 | $260 |
| 2014-2015 | 1,464 | 0.30 | 1,123 | 118.69 | 77% | 0.81 | 0.26 | $298 | 2,918 | 0.34 | 2,288 | 231.23 | 78% | 1.27 | 0.26 | $281 |
| 2015-2016 | 1,593 | 0.36 | 1,192 | 129.20 | 75% | 0.97 | 0.30 | $312 | 3,353 | 0.41 | 2,435 | 227.72 | 73% | 1.50 | 0.30 | $294 |

PPV rates by COE.

Table A.2.2.3
Summary of Mississippi Medicaid Potentially Preventable Visits, December 1 - November 30

| | People with Fee For Service | | | | | | | | People with Coordinated Care | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV |
| **MA Adult** | | | | | | | | | | | | | | | | |
| 2013-2014 | 2,630 | 0.28 | 1,985 | 224.32 | 75% | 1.93 | 0.24 | $256 | 93,865 | 0.27 | 73,245 | 196.23 | 78% | 1.58 | 0.24 | $211 |
| 2014-2015 | 1,829 | 0.31 | 1,299 | 191.23 | 71% | 1.82 | 0.26 | $260 | 112,080 | 0.29 | 87,093 | 182.07 | 78% | 1.60 | 0.26 | $244 |
| 2015-2016 | 2,105 | 0.35 | 1,518 | 189.49 | 72% | 1.98 | 0.30 | $305 | 103,582 | 0.33 | 79,017 | 180.12 | 76% | 1.79 | 0.30 | $266 |
| **MA Children** | | | | | | | | | | | | | | | | |
| 2013-2014 | 189,256 | 0.26 | 141,610 | 64.35 | 75% | 0.80 | 0.23 | $160 | 356 | 0.27 | 251 | 190.01 | 71% | 1.58 | 0.24 | $187 |
| 2014-2015 | 113,112 | 0.27 | 89,415 | 86.05 | 79% | 1.32 | 0.24 | $173 | 115,649 | 0.28 | 86,392 | 93.17 | 75% | 1.42 | 0.24 | $174 |
| 2015-2016 | 12,513 | 0.30 | 9,657 | 90.65 | 77% | 1.62 | 0.27 | $188 | 253,470 | 0.31 | 191,302 | 78.56 | 75% | 1.23 | 0.28 | $175 |
| **SSI/Disabled Newborns** | | | | | | | | | | | | | | | | |
| 2013-2014 | 2,597 | 0.26 | 1,953 | 106.59 | 75% | 0.65 | 0.23 | $208 | 4,847 | 0.26 | 3,610 | 142.78 | 74% | 0.85 | 0.23 | $175 |
| 2014-2015 | 2,145 | 0.28 | 1,582 | 98.35 | 74% | 0.66 | 0.25 | $233 | 5,509 | 0.28 | 4,205 | 151.50 | 76% | 0.88 | 0.24 | $212 |
| 2015-2016 | 1,782 | 0.33 | 1,234 | 83.89 | 69% | 0.65 | 0.29 | $252 | 5,649 | 0.33 | 4,198 | 142.60 | 74% | 0.96 | 0.28 | $214 |
| **Non-SSI Newborns** | | | | | | | | | | | | | | | | |
| 2013-2014 | 28,312 | 0.24 | 22,901 | 148.17 | 81% | 1.31 | 0.22 | $148 | 29,958 | 0.23 | 25,935 | 205.20 | 87% | 1.81 | 0.22 | $140 |
| 2014-2015 | 20,033 | 0.25 | 16,803 | 229.56 | 84% | 2.40 | 0.23 | $167 | 63,904 | 0.24 | 54,376 | 246.95 | 85% | 2.32 | 0.23 | $162 |
| 2015-2016 | 1,119 | 0.28 | 920 | 242.49 | 82% | 3.12 | 0.26 | $190 | 42,254 | 0.28 | 36,639 | 286.66 | 87% | 3.01 | 0.26 | $173 |
| **Quasi-CHIP** | | | | | | | | | | | | | | | | |
| 2013-2014 | 651 | 0.27 | 473 | 0.76 | 73% | 0.64 | 0.24 | $174 | 3 | 0.21 | 3 | 1000.00 | 100% | 7.36 | 0.21 | $198 |
| 2014-2015 | 494 | 0.29 | 317 | 2.76 | 64% | 1.66 | 0.26 | $206 | 4,247 | 0.29 | 3,052 | 7.22 | 72% | 1.04 | 0.25 | $191 |
| 2015-2016 | 449 | 0.35 | 306 | 38.95 | 68% | 1.08 | 0.30 | $237 | 15,047 | 0.33 | 10,588 | 18.24 | 70% | 1.04 | 0.29 | $196 |
| **Pregnant Women** | | | | | | | | | | | | | | | | |
| 2013-2014 | 3,238 | 0.34 | 946 | 92.51 | 29% | 0.90 | 0.25 | $203 | 11,596 | 0.30 | 5,350 | 86.28 | 46% | 0.72 | 0.24 | $187 |
| 2014-2015 | 2,456 | 0.37 | 684 | 81.57 | 28% | 0.88 | 0.27 | $240 | 10,985 | 0.32 | 4,909 | 86.85 | 45% | 0.78 | 0.26 | $206 |
| 2015-2016 | 3,134 | 0.41 | 838 | 90.09 | 27% | 1.08 | 0.30 | $274 | 13,644 | 0.36 | 5,731 | 93.85 | 42% | 0.96 | 0.29 | $232 |

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Table A.2.2.3
Summary of Mississippi Medicaid Potentially Preventable Visits, December 1 - November 30

| | People with Fee For Service | | | | | | | | People with Coordinated Care | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV | ED Visits | Avg EAPG Weight | Number of PPVs | PPVs/ 1000 Mbr Mos | PPV Rate | A/E Ratio | EAPG Avg Casemix for PPVs | Avg Paymt/ PPV |
| **Non-Newborn SSI/Disabled** | | | | | | | | | | | | | | | | |
| 2013-2014 | 17,901 | 0.28 | 13,120 | 22.18 | 73% | 0.50 | 0.24 | $259 | 115,193 | 0.28 | 89,116 | 159.75 | 77% | 1.10 | 0.25 | $241 |
| 2014-2015 | 16,237 | 0.29 | 12,082 | 19.80 | 74% | 0.50 | 0.26 | $292 | 116,398 | 0.29 | 90,356 | 158.63 | 78% | 1.13 | 0.26 | $269 |
| 2015-2016 | 14,846 | 0.34 | 11,128 | 17.74 | 75% | 0.57 | 0.30 | $314 | 119,428 | 0.35 | 91,010 | 157.52 | 76% | 1.31 | 0.31 | $293 |
| **Foster Care** | | | | | | | | | | | | | | | | |
| 2013-2014 | 1,185 | 0.28 | 787 | 43.66 | 66% | 0.43 | 0.24 | $194 | 1,947 | 0.27 | 1,321 | 51.76 | 68% | 0.58 | 0.23 | $167 |
| 2014-2015 | 1,166 | 0.30 | 799 | 41.89 | 69% | 0.45 | 0.26 | $240 | 2,208 | 0.29 | 1,533 | 51.08 | 69% | 0.62 | 0.25 | $185 |
| 2015-2016 | 878 | 0.36 | 594 | 33.47 | 68% | 0.49 | 0.30 | $234 | 2,565 | 0.33 | 1,786 | 50.30 | 70% | 0.68 | 0.28 | $183 |
| **Breast and Cervical Cancer** | | | | | | | | | | | | | | | | |
| 2013-2014 | | | | | | | | | 81 | 0.27 | 65 | 63.91 | 80% | 0.37 | 0.26 | $305 |
| 2014-2015 | | | | | | | | | 83 | 0.31 | 59 | 65.34 | 71% | 0.38 | 0.25 | $307 |
| 2015-2016 | | | | | | | | | 90 | 0.40 | 73 | 88.48 | 81% | 0.55 | 0.29 | $287 |

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### A.2.3 Potentially Preventable Readmissions

PPR rates across FFS and CC programs.

Table A.2.3.1

Summary of Mississippi Medicaid Potentially Preventable Hospital Readmissions December 1 - November 30

| | Fee For Service Inpatient Stays | | | | | | | | | Coordinated Care Inpatient Stays | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Payment/ PPR | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Payment/ PPR |
| 2014-2015 | 87,533 | 0.57 | 3736 | 3,008 | 3.44% | 3.44% | 1.00 | $6,046 | $8,740 | | | | | | | | | |
| 2015-2016 | 11,705 | 0.93 | 983 | 718 | 6.13% | 3.65% | 1.00 | $7,045 | $8,542 | 69,012 | 0.55 | 2547 | 1,916 | 2.78% | 2.97% | 0.85 | $5,342 | $7,723 |

PPR Rates by CRG.

Table A.2.3.2

Summary of Mississippi Medicaid Potentially Preventable Hospital Readmissions December 1 - November 30

| | Fee For Service Inpatient Stays | | | | | | | | | Coordinated Care Inpatient Stays | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CRG Category | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR Rate | A/E Ratio | Avg Paymt/ PPR | Casemix Adj. Avg Paymt/ PPR | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR Rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Payment/ PPR |
| **No CRG Category** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 40,137 | 0.38 | 723 | 626 | 1.56% | 2.91% | 0.92 | $5,476 | $8,768 | | | | | | | | | |
| 2015-2016 | 4,846 | 0.92 | 298 | 244 | 5.04% | 3.18% | 0.89 | $6,562 | $7,137 | 32,106 | 0.31 | 367 | 319 | 0.99% | 2.23% | 0.80 | $4,313 | $8,988 |
| **Healthy** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 21,525 | 0.58 | 449 | 415 | 1.93% | 1.98% | 0.72 | $5,398 | $9,241 | | | | | | | | | |
| 2015-2016 | 2,199 | 0.70 | 65 | 63 | 2.86% | 2.10% | 0.76 | $7,364 | $10,358 | 17,503 | 0.59 | 370 | 315 | 1.80% | 2.39% | 0.70 | $5,188 | $8,135 |
| **Hx of Sig Acute Disease** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 4,217 | 0.63 | 125 | 114 | 2.70% | 3.24% | 0.85 | $5,897 | $8,266 | | | | | | | | | |
| 2015-2016 | 450 | 0.74 | 11 | 11 | 2.44% | 1.51% | 0.56 | $5,118 | $7,510 | 3,205 | 0.66 | 93 | 81 | 2.53% | 2.83% | 0.77 | $5,220 | $7,883 |
| **Single Minor Chronic Disease** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 1,639 | 0.73 | 58 | 56 | 3.42% | 3.00% | 0.88 | $5,077 | $9,002 | | | | | | | | | |
| 2015-2016 | 211 | 0.86 | 12 | 8 | 3.79% | 1.80% | 0.89 | $5,249 | $7,127 | 1,396 | 0.74 | 55 | 43 | 3.08% | 2.49% | 0.81 | $5,586 | $6,886 |
| **Minor Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 296 | 0.88 | 20 | 19 | 6.42% | 4.63% | 1.19 | $4,856 | $5,552 | | | | | | | | | |
| 2015-2016 | 32 | 0.78 | 1 | 1 | 3.13% | 1.07% | 0.77 | $8,484 | $15,814 | 258 | 0.87 | 6 | 4 | 1.55% | 1.10% | 0.29 | $5,176 | $6,388 |
| **Single Dominant or Moderate Chronic Disease** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 7,015 | 0.82 | 445 | 389 | 5.55% | 4.43% | 0.93 | $6,411 | $8,584 | | | | | | | | | |
| 2015-2016 | 1,256 | 0.90 | 103 | 70 | 5.57% | 3.23% | 0.86 | $7,298 | $10,661 | 5,394 | 0.81 | 304 | 235 | 4.36% | 3.11% | 0.71 | $5,555 | $7,709 |
| **Significant Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 8,366 | 0.86 | 1091 | 825 | 9.86% | 6.45% | 1.21 | $6,056 | $9,219 | | | | | | | | | |
| 2015-2016 | 1,577 | 0.99 | 247 | 164 | 10.40% | 5.53% | 1.24 | $7,513 | $10,502 | 5,898 | 0.91 | 715 | 514 | 8.71% | 5.76% | 0.98 | $5,318 | $7,599 |
| **Dominant Chronic Disease in Multiple Organ Systems** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 3,006 | 0.99 | 615 | 416 | 13.84% | 9.49% | 1.32 | $6,315 | $7,789 | | | | | | | | | |
| 2015-2016 | 562 | 1.17 | 152 | 85 | 15.12% | 12.68% | 1.18 | $6,394 | $7,255 | 2,509 | 1.04 | 457 | 304 | 12.12% | 14.31% | 0.99 | $5,705 | $7,218 |

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Table A.2.3.2
Summary of Mississippi Medicaid Potentially Preventable Hospital Readmissions December 1 - November 30

| CRG Category | Fee For Service Inpatient Stays | | | | | | | | | Coordinated Care Inpatient Stays | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR Rate | A/E Ratio | Avg Paymt/ PPR | Casemix Adj. Avg Paymt/ PPR | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR Rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Payment/ PPR |
| **Malignancy, Under Active Treatment** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 171 | 0.95 | 13 | 9 | 5.26% | 2.83% | 0.79 | $5,200 | $8,528 | | | | | | | | | |
| 2015-2016 | 29 | 1.11 | 3 | 3 | 10.34% | 13.85% | 1.11 | $8,287 | $7,345 | 133 | 1.00 | 15 | 11 | 8.27% | 35.47% | 0.99 | $4,740 | $6,856 |
| **Catastrophic Conditions** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 1,161 | 1.35 | 197 | 139 | 11.97% | 5.74% | 1.35 | $8,461 | $8,725 | | | | | | | | | |
| 2015-2016 | 543 | 1.71 | 91 | 69 | 12.71% | 5.91% | 1.47 | $8,337 | $6,554 | 610 | 1.52 | 165 | 90 | 14.75% | 7.82% | 1.37 | $6,730 | $6,254 |

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PPR Rates by CO.

Table A.2.3.3

Summary of Mississippi Medicaid Potentially Preventable Hospital Readmissions December 1 - November 30

| | Fee For Service Inpatient Stays | | | | | | | | | Coordinated Care Inpatient Stays | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Paymt/ PPR | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Payment/ PPR |
| **COE Group: MA Adult** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 10,787 | 0.66 | 437 | 382 | 3.54% | 3.58% | 0.88 | $5,075 | $7,819 | | | | | | | | | |
| 2015-2016 | 1,797 | 0.88 | 100 | 80 | 4.45% | 2.74% | 0.81 | $6,391 | $7,554 | 7,983 | 0.67 | 317 | 245 | 3.07% | 2.82% | 0.73 | $4,941 | $7,148 |
| **COE Group: MA Children** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 9,471 | 0.60 | 262 | 247 | 2.61% | 1.40% | 0.82 | $6,250 | $12,104 | | | | | | | | | |
| 2015-2016 | 1,237 | 0.64 | 66 | 50 | 4.04% | 3.18% | 1.25 | $7,568 | $13,067 | 7,731 | 0.61 | 183 | 161 | 2.08% | 1.93% | 0.70 | $5,283 | $9,960 |
| **COE Group: SSI/Disabled Newborns** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 1,262 | 1.42 | 84 | 71 | 5.63% | 2.66% | 1.10 | $6,871 | $9,193 | | | | | | | | | |
| 2015-2016 | 362 | 1.69 | 44 | 41 | 11.33% | 3.69% | 2.15 | $7,667 | $6,551 | 813 | 1.54 | 61 | 44 | 5.41% | 1.98% | 1.11 | $8,221 | $7,182 |
| **COE Group: Non-SSI Newborns** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 25,868 | 0.19 | 197 | 190 | 0.73% | 0.92% | 1.02 | $2,184 | $8,431 | | | | | | | | | |
| 2015-2016 | 826 | 0.30 | 10 | 7 | 0.85% | 0.70% | 0.99 | $1,432 | $8,004 | 22,534 | 0.18 | 154 | 143 | 0.63% | 0.80% | 0.96 | $1,842 | $9,037 |
| **COE Group: Quasi-CHIP** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 764 | 0.62 | 25 | 21 | 2.75% | 1.78% | 0.83 | $4,944 | $9,365 | | | | | | | | | |
| 2015-2016 | 88 | 0.65 | 3 | 3 | 3.41% | 2.29% | 0.89 | $7,103 | $15,592 | 564 | 0.68 | 20 | 18 | 3.19% | 2.28% | 1.03 | $4,915 | $9,663 |
| **COE Group: Pregnant Women** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 17,561 | 0.47 | 196 | 188 | 1.07% | 6.61% | 0.95 | $4,689 | $8,117 | | | | | | | | | |
| 2015-2016 | 1,656 | 0.47 | 13 | 15 | 0.91% | 1.63% | 0.79 | $4,504 | $8,537 | 15,383 | 0.47 | 180 | 155 | 1.01% | 2.83% | 0.84 | $4,584 | $8,620 |
| **COE Group: Non-Newborn SSI/Disabled** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 20,916 | 0.98 | 2471 | 1,847 | 8.83% | 5.11% | 1.05 | $6,551 | $8,409 | | | | | | | | | |
| 2015-2016 | 5,399 | 1.20 | 717 | 498 | 9.22% | 4.65% | 0.96 | $7,136 | $8,128 | 13,558 | 1.00 | 1601 | 1,124 | 8.29% | 4.71% | 0.87 | $5,734 | $7,276 |
| **COE Group: Foster Care** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | 867 | 0.54 | 64 | 62 | 7.15% | 4.84% | 1.43 | $7,761 | $16,056 | | | | | | | | | |
| 2015-2016 | 327 | 0.61 | 29 | 23 | 7.03% | 3.38% | 1.45 | $8,025 | $14,460 | 424 | 0.58 | 30 | 25 | 5.90% | 3.20% | 1.31 | $5,936 | $11,826 |

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Table A.2.3.3
Summary of Mississippi Medicaid Potentially Preventable Hospital Readmissions December 1 - November 30

| Year | Fee For Service Inpatient Stays | | | | | | | | | Coordinated Care Inpatient Stays | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Paymt/ PPR | Admits | Casemix Index | PPRs | PPR Chains | PPR Rate | Casemix Adjusted PPR rate | A/E Ratio | Avg Payment/ PPR | Casemix Adj. Avg Payment/ PPR |
| **COE Group: Breast and Cervical Cancer** | | | | | | | | | | | | | | | | | | |
| 2014-2015 | * | * | * | * | * | * | * | . | . | | | | | | | | | |
| 2015-2016 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

**Note**

1. * Group size too small to be meaningful.

## Notes

[1] This study could not have been performed without the assistance of 3M Health Information Systems. The PPE algorithms themselves products of 3M, as are All Patient Refined Diagnosis Related Groups (APR-DRGs). We emphasize that 3M bears no responsibility for our analysis and findings.

[2] Millwee B, Goldfield N, Turnipseed J. "Achieving Improved Outcomes Through Value-Based Purchasing in One State." American Journal of Medical Quality. 2017. http://journals.sagepub.com/doi/pdf/10.1177/1062860617714322
Also, please see:Florida Agency for Health Care Administration (Business Intelligence Unit, Medicaid Data Analytics). "Analyzing Potentially Preventable Healthcare Events of Florida Medicaid Enrollees, Quarterly Statewide Medicaid Coordinated care Report." Spring, 2017. https://ahca.myflorida.com/medicaid/Finance/data_analytics/BI/docs/Quarterly_SMMC_Report_Spring_2017.pdf

[3] With further time and data assistance from DOM, PMD could develop analyses for older periods, if desired.

[4] Though roughly similar to the DRG base rate, the average payment (even when adjusted for casemix), does not precisely match the DRG base rate because it does not isolate other payment adjustments such as policy adjustors, outlier payments, transfer adjustments and the like.

[5] To test the effects of this recalibration, we applied the Year 3 weights to all Year 2 ED claims, and compared the average casemix with Year 2. The average actual EAPG weight for Year 2, across all groups, FFS and CC, was 0.28. With Year 3 weights applied, the resulting average was 0.32.

[6] Note that in PPR analyses, we do not report on groups where the number of initial stays is less than 40, nor those where the number of PPRs is less than five, since in these instances, the properties of small numbers make rate and percentage calculations too unstable to be useful.

# Appendix E: PCG Peer State Comparisons

PUBLIC CONSULTING GROUP

**TO:** Margaret King, Deputy Administrator for Finance, Mississippi Division of Medicaid
**FROM:** Public Consulting Group, Inc.
**DATE:** November 15, 2017
**RE:** MississippiCAN Cost Effectiveness Study: Component #6

## *Introduction*

PCG has performed the following analysis to support the Mississippi Division of Medicaid (DOM) in their efforts to assess the cost-effectiveness of the State's managed care program, MississippiCAN (MSCAN). The project component that PCG was responsible for was to conduct comparisons of MSCAN's per beneficiaries per month and non-claim costs to peer states, as well as assess DOM's fee-for-service beneficiaries of the same services, and national benchmarks. Understanding that a corresponding project component was to compare health status and outcome measures to peer states with similar demographics as Mississippi, PCG engaged with leadership from DOM and representatives from Myers and Stauffer to collaboratively define "peer" states. After an initial assessment of similar states with readily available data, all parties agreed on the following states to comprise the comparison group: Georgia, Michigan and Tennessee.

DOM provided PCG with a cost analysis for Mississippi's Medicaid spending from fiscal years 2013-2017[1]. Our approach was to replicate this analysis and corresponding data elements for the identified peer states. PCG reviewed publicly-available data from numerous sources to determine the availability of information on the peer states. Ultimately, PCG chose to rely primarily on national data from the Medicaid and CHIP Payment and Access Commission's (MACPAC) annual report; MACStats: Medicaid and CHIP Data Books. These reports proved to be the most comprehensive and provided the bulk of the information needed to complete our analysis. In cases where certain data was unavailable or insufficient, PCG supplemented using reports from the CMS website. Unfortunately, a complete data set for fiscal years 2013-2017 was not available. Therefore, our analysis centers around FY16, the latest year available. FY15 data was also insufficient, so PCG included FY14 to provide some historical context. In the attached workbook, comparisons of Mississippi's spending for FFS, MSCAN, supplemental payments, total benefit, and administrative spending are provided in the Peer State Comparison tabs for the two years. However, information for all fifty states and the District of Columbia are also included, but not summarized. Our hope is that DOM will find this a useful tool for comparison.

In certain cases, PCG relied on assumptions in the absence of clear data. For example, a complete accounting of member months was unavailable for the peer states, so PCG used average monthly enrollment for the analyzed years to estimate total member months. Likewise, data on UPL payments for peer states was unavailable, so PCG used non-DSH and 1115 waiver supplemental payments as a proxy. Lastly, detailed cost information related to tax expenses was unavailable in the national data-set. Therefore, PCG omitted the tax cost information provided from DOM in our comparative analysis. The final step in our analysis was to provide a comparison to national benchmarks for Medicaid spending. For each year, the national aggregate costs per member month, average cost per member month, median cost per member month, minimum cost per member month and maximum cost per member month are provided. For this comparison, PCG only analyzed data from the fifty states and District of Columbia. U.S. territories such as Puerto Rico, Guam and the Virgin Islands are excluded.

**Note: A complete dataset was unavailable for FY15. PCG has included FY14 to provide some historical reference to FY16**

| | FY2014 | | | | Data Sources |
|---|---|---|---|---|---|
| | **Mississippi** | **Georgia** | **Michigan** | **Tennessee** | |
| Total Medicaid Beneficiary Member Months | 7,897,842 | 19,896,708 | 24,604,350 | 15,473,514 | *FY16 CMS Enrollment Reports |
| **Fee-For-Service (FFS) / Waivers/Other** | | | | | |
| Total Medicaid FFS Member Months | 6,120,828 | 7,302,092 | 7,110,657 | 0 | * MACPAC: Calculated using FFS/ MCO penetration statistics: MACStats Report 2016 |
| Total Non-Mgd Care Medical Costs (A) | $ 3,614,900,000 | $ 6,134,900,000 | $ 5,617,700,000 | $ 2,210,200,000 | * MACSPAC: Total Medicaid Benefit Spending by Source: MACStats Report 2016 |
| Total per FFS Member Months | $ 590.59 | $ 840.16 | $ 790.04 | N/A | |
| *50 State + D.C. Rank (High to Low)* | *31* | *19* | *20* | *51* | |
| **Managed Care** | | | | | |
| Total Managed Care Member Months | 1,777,014 | 12,594,616 | 17,493,693 | 15,473,514 | * MACPAC: Calculated using FFS/ MCO penetration statistics: MACStats Report 2016 |
| Total Managed Care Costs | $ 763,000,000 | $ 3,194,000,000 | $ 7,315,000,000 | $ 6,163,000,000 | * MACSPAC: Total Medicaid Benefit Spending by Source: MACStats Report 2016 |
| Total per Managed Care Member Months | $ 429.37 | $ 253.60 | $ 418.15 | $ 398.29 | |
| *50 State + D.C. Rank (High to Low)* | *21* | *32* | *23* | *25* | |
| **Non-DSH Supplemental Payments (UPL/MHAP)** | | | | | |
| Total Supplemental Payments | $ 487,100,000 | $ 69,100,000 | $ 570,300,000 | $ 832,800,000 | * MACPAC: Supplemental Payments by State: MACStats Report 2016 |
| Total per Medicaid Member Months | $ 61.68 | $ 3.47 | $ 23.18 | $ 53.82 | *Excludes DSH Payments to provide a comparison of only UPL payments, similar to the data received from MS.* |
| *50 State + D.C. Rank (High to Low)* | *7* | *36* | *19* | *8* | |
| **Total Medical Costs** | | | | | |
| **Total Medical Costs** | **$ 4,865,000,000** | **$ 9,398,000,000** | **$ 13,503,000,000** | **$ 9,206,000,000** | * MACPAC: Total Medicaid Benefit Spending by Source: MACStats Report 2016 |
| **Total Medical Costs Per Member Months** | **$ 615.99** | **$ 472.34** | **$ 548.81** | **$ 594.95** | |
| *50 State + D.C. Rank (High to Low)* | *24* | *50* | *38* | *28* | |
| **Administrative Expenses and Taxes** | | | | | |
| **Total Administrative Expenses** | **$151,000,000.00** | **$461,000,000.00** | **$645,000,000.00** | **$449,000,000.00** | * MACPAC: Total Medicaid Administrative Spending by Source: MACStats Report 2016 |
| **Total Admin Costs Per Member Months** | **$19.12** | **$23.17** | **$26.21** | **$29.02** | |
| *50 State + D.C. Rank (High to Low)* | *50* | *45* | *41* | *33* | |
| **Total Medical and Administrative Costs** | | | | | |
| **Total Medical and Administrative Costs** | **$ 5,016,000,000** | **$ 9,859,000,000** | **$ 14,148,000,000** | **$ 9,655,000,000** | |
| **Total Costs Per Member Months** | **$ 635.11** | **$ 495.51** | **$ 575.02** | **$ 623.97** | |
| *50 State + D.C. Rank (High to Low)* | *26* | *50* | *37* | *29* | |

| National Benchmarks (50 States + District of Columbia) | | | | | |
|---|---|---|---|---|---|
| | Aggregate* | Average | Median | Minimum | Maximum |
| **Total Medical Costs Per Member Month** | $618.22 | $641.33 | $608.48 | $452.51 | $954.68 |
| **Non-DSH Supplemental Payments Per Member Month** | $32.01 | $22.43 | $13.87 | $0.00 | $86.90 |
| **Total Administrative Costs Per Member Month** | $32.31 | $36.58 | $33.54 | $16.99 | $90.60 |
| **Total Medical and Administrative Costs per Member Month** | **$650.53** | **$677.90** | **$640.09** | **$482.46** | **$1,045.28** |

**Note: FY16 is the latest year for which a complete data set was readily available**

| | FY2016 | | | | Data Sources |
|---|---|---|---|---|---|
| | Mississippi | Georgia | Michigan | Tennessee | |
| Total Medicaid Beneficiary Member Months | 8,367,108 | 20,936,868 | 27,431,088 | 18,768,696 | *FY16 CMS Enrollment Reports |
| **Fee-For-Service (FFS) / Waivers/Other** | | | | | |
| Total Medicaid FFS Member Months | 2,663,914 | 6,656,162 | 12,379,615 | 1,520,500 | * MACPAC: Calculated using FFS/ MCO penetration statistics: MACStats Report 2016 |
| Total Non-Mgd Care Medical Costs (A) | $ 2,878,044,152 | $ 5,991,727,889 | $ 5,442,608,398 | $ 2,311,912,247 | * MACSPAC: Total Medicaid Benefit Spending by Source: MACStats Report 2016 |
| Total per FFS Member Months | $ 1080.38 | $ 900.18 | $ 439.64 | $ 1,520.49 | $ 126.94 |
| *50 State + D.C. Rank (High to Low)* | *23* | *29* | *44* | *14* | |
| **Managed Care** | | | | | |
| Total Managed Care Member Months | 5,703,194 | 14,280,706 | 15,051,473 | 17,248,196 | * MACPAC: Calculated using FFS/ MCO penetration statistics: MACStats Report 2016 |
| Total Managed Care Costs | $ 2,519,670,607 | $ 3,604,169,311 | $ 10,591,756,547 | $ 6,136,898,067 | * MACSPAC: Total Medicaid Benefit Spending by Source: MACStats Report 2016 |
| Total per Managed Care Member Months | $ 441.80 | $ 252.38 | $ 703.70 | $ 355.80 | $ 4.51 |
| *50 State + D.C. Rank (High to Low)* | *28* | *44* | *10* | *39* | |
| **Non-DSH Supplemental Payments (UPL/MHAP)** | | | | | |
| Total Supplemental Payments | $ 0 | $ 127,916,807 | $ 680,389,929 | $ 1,014,931,973 | * MACPAC: Supplemental Payments by State: MACStats Report 2016 |
| Total per Medicaid Member Months | $ 0.00 | $ 6.11 | $ 24.80 | $ 54.08 | *Excludes DSH Payments to provide a comparison of only UPL payments, similar to the data received from MS.* |
| *50 State + D.C. Rank (High to Low)* | *46* | *35* | *14* | *5* | |
| **Total Medical Costs** | | | | | |
| **Total Medical Costs** | **$ 5,397,714,759** | **$ 9,723,814,007** | **$ 16,714,754,874** | **$ 9,463,742,287** | * MACPAC: Total Medicaid Benefit Spending by Source: MACStats Report 2016 |
| **Total Medical Costs Per Member Months** | **$ 645.11** | **$ 464.43** | **$ 609.34** | **$ 504.23** | |
| *50 State + D.C. Rank (High to Low)* | *26* | *50* | *28* | *45* | |
| **Administrative Expenses and Taxes** | | | | | |
| **Total Administrative Expenses** | **$165,698,679** | **$560,090,198.00** | **$723,926,464.00** | **$464,727,139.00** | |
| **Total Admin Costs Per Member Months** | **$19.80** | **$26.75** | **$26.39** | **$24.76** | |
| *50 State + D.C. Rank (High to Low)* | *49* | *33* | *36* | *42* | |

| | FY2016 | | | |
|---|---|---|---|---|
| | Mississippi | Georgia | Michigan | Tennessee |
| Total Medical and Administrative Costs | | | | |
| Total Medical and Administrative Costs | $ 5,563,413,438 | $ 10,283,904,205 | $ 17,438,681,338 | $ 9,928,469,426 |
| Total Costs Per Member Months | $ 664.91 | $ 491.19 | $ 635.73 | $ 528.99 |
| *50 State + D.C. Rank (High to Low)* | *26* | *50* | *29* | *44* |

* MACPAC: Total Medicaid Administrative Spending by Source: MACStats Report 2016

| National Benchmarks *Excluding US Territories | | | | |
|---|---|---|---|---|
| | Aggregate* | Average | Median | Minimum |
| Total Medical Costs Per Member Month | $631.43 | $659.39 | $638.27 | $463.85 |
| Non-DSH Supplemental Payments Per Member Month | $35.29 | $21.58 | $15.27 | $0.00 |
| Total Administrative Costs Per Member Month | $30.20 | $36.56 | $30.64 | $11.42 |
| Total Medical and Administrative Costs per Member Month | $661.64 | $695.95 | $663.28 | $488.64 |

*Medicaid Tax information was not readily available for comparison. PCG excluded Mississippi's reported spending in our analysis*

**Aggregates Spending and Member Months for all 50 states*

| Maximum |
|---|
| $1,085.00 |
| $144.87 |
| $131.14 |
| $1,216.15 |

# Appendix F: PCG Cost Effectiveness #7

**TO:** Margaret King, Deputy Administrator for Finance, Mississippi Division of Medicaid
**FROM:** Public Consulting Group, Inc.
**DATE:** 15 November 2017
**RE:** **MississippiCAN Cost Effectiveness Study: Component #7**

***Introduction***

This memorandum contains information regarding the necessity and/or benefit of the Division of Medicaid (DOM) increasing State Fiscal Year (SFY) 2017 payments to Coordinated Care Organizations (CCOs) following a Legislative session that funded DOM at approximately $75 million below spending projections for SFY 2017.

At a high level, the annual process for determining payments to CCOs is as follows: DOM's actuarial vendor calculates and documents proposed rates which are then provided to DOM. Upon receipt of the suggested payments from its actuarial vendor DOM reviews the recommendation and either approves it or asks for changes as applicable. Once the rates are finalized they are submitted to CMS for review and eventual approval. This process is explored in more detail in the following narrative.

Of note, SFY 2017 capitation payment amounts to CCOs have already received final certification as per the established processes. In comparison to SFY 2016 (rates effective December 2015) the SFY 2017 MississippiCAN capitation rates are 4.25% higher. Details on this can be found below also.

***Standard Year to Year State Rate Development Process***

On an annual basis DOM's actuarial vendor produces the Capitation Rate Development Report[1]. This report includes detailed information on the data used to develop the upcoming SFY capitation rates for each rate table. The report also includes a comparison of rate changes for each rating table from the previous SFY. As required by CMS, this report includes the CMS rate setting checklist and CMS managed care rate setting guide. Additionally, an actuarial certification is included for all MississippiCAN rate cells.

Upon completion of this report, DOM reviews the proposed rates and submits to CMS upon approval. CMS then reviews the states proposed rates and ensures the required components, described in further detail below, are included with the state's submission.

Once the rates are approved and implemented, DOM pays the capitation payments to the CCOs based on the number of eligible and enrolled members. Monthly capitation payments are calculated by multiplying the number of member months times the applicable monthly capitation rate by member rate cell. Capitation rates for each member may vary based on the rate cell as well as the members' county of residence.

***CMS Rate Setting Requirements***

The 2016 Medicaid Managed Care Rate Development Guide was released by CMS for use in setting rates for rating periods starting in calendar year 2016. This guide is applicable to the DOM SFY 2017 capitation rates. The goal of this guide is to describe information that CMS expects states and their actuaries to provide when developing actuarial rate certifications[2]. Federal regulation requires that the capitation rates are certified by an actuary which meets the standards set forth in 42 CFR §438.6. The rates must also be sufficient for the covered population and services for the period that the rates are effective, and have been developed in accordance with generally accepted actuarial practices and principles.

[1] https://medicaid.ms.gov/wp-content/uploads/2017/02/RFP-20170203_Appendix-C_MississippiCAN-Capitation-Rate-Development-Report.pdf
[2] https://www.medicaid.gov/medicaid/managed-care/downloads/2016-medicaid-rate-guide.pdf

During CMS review of submitted capitation rates, CMS applies the following three principles to their review:

- The capitation rates are reasonable and comply with all applicable laws for Medicaid managed care;
- The rate development process complies with all applicable laws for the Medicaid program, including but not limited to eligibility, benefits, financing, and any applicable waiver or demonstration requirements, and program integrity; and,
- The documentation is sufficient to demonstrate that the rate development process meets generally accepted actuarial practices and principles.

Within this guide CMS defines the specific Actuarial Standards of Practice which states must apply when developing the capitation rates. The requirement for rates to be actuarially sound is further defined in 42 CFR §438.6. Additionally, CMS requires that rate certifications be completed on an annual basis with certain exceptions such as a contract amendment which requires the adjustment of rates or when a state has negotiated the need for an alternative rating period length with CMS prior to initial submission and certification of rates.

CMS also requires states to submit actuarial documentation which describes data used in the development of the rates to ensure CMS is able to determine compliance with regulations. This information is further evaluated for reasonableness of the information used for rate development. CMS requires that the following information is documented in the submission of capitation rates:

- Data used, including citations to studies, research papers, other states' analyses, or similar secondary data resources;
- Assumptions made, including any basis or justification for the assumption; and,
- Methods for analyzing data and developing assumptions and adjustments.

CMS requires information is provided that ensures the certifying actuary understands the program for which the rates are being set. This information includes a summary of the managed care program, any eligibility or enrollment criteria that would have significant influence on the specific population to be covered, and a general description of the benefits covered by the managed care program including those that may be carved out or that are new to the program.

Additionally, CMS requires states to submit a comparison of the final certified rates to the previous rate certification and a description of any other material changes to the capitation rates or the process to develop the rates that is not otherwise covered in the report.

At times CMS may have not provided final certification prior to the implementation of the rates. In such situation, DOM may implement the rates and reserves the right to adjust the rates and the CCO must refund any overpayments within thirty (30) days of notice. Additionally, DOM shall pay the CCO any underpayment of capitation rates pursuant to the MississippiCAN Contract. Possible reasons for adjustment include legislatively or congressionally mandated changes in Medicaid services, program changes in the scope of mandatory services, and/or when capitation rates calculations are determined to have been in error.

***Changes Impacting Payments to CCOs for SFY 2017***

DOM's contracted actuary submitted a report to DOM on November 29, 2016, regarding the SFY 2017 MississippiCAN CCO Rate Calculation and Certification. The report documents capitation rates for all populations enrolled in MississippiCAN for July 1, 2016 – June 30, 2017. As previously mentioned, the Members capitation rate may vary based on their county of residence. Each county was assigned a geographic region (North, Central, or South) to distinguish the regional capitation rates.

The SFY 2017 rates were developed by the actuary vendor using CCO encounter data and CCO financial reporting for January 2011 to June 2015, Fee for Service (FFS) cost and eligibility data for January 2012

to October 2015, historical and projected reimbursement information, third party liability (TPL) recoveries, fee schedules and other information from DOM, CCOs, and CMS. The actuary appears to have used all applicable data and professional best practices to provide the most accurate rate development report to their professional knowledge and belief.

In comparison to SFY 2016 (rates effective December 2015) the SFY 2017 MississippiCAN capitation rates are 4.25% higher. This rate change is largely due to the projected costs of specific populations compared to the actual cost during calendar year 2014. The following changes also include revisions to trends and inpatient savings assumption to SFY 2016.

- Non-Newborn SSI/Disabled – increase of 7.1%
- MA Adults – Increase of 1.8%
- MA Children – decrease of 4.4%

The following factors also impacted the rate change from SFY 2016 to SFY 2017:

- Composite utilization and unit cost trends from SFY 2016 to SFY 2017 increase costs 6.5%;
- Third party liability (TPL) recover percentage was updated from 1.00% in SFY 2016 to 0.90% for SFY 2017, resulting in an increase in costs of 0.05%;
- Establishment of Federal Upper Limits for certain prescription drugs is expected to reduce pharmacy costs by 16%, which has a -4.3% impact on total rates; and,
- Non-benefit expense assumption updates result in a 0.6% increase to capitation rates.

Notable rate cell changes from SFY 2016 to SFY 2017 include Non-Newborn SSI/Disabled, Foster Care, Breast and Cervical Cancer, SSI/Disabled Newborns and Non-SSI Newborns 0-2 Months rate cells. Although some of these populations are very small, there was a significant rate changes.

The Non-Newborn SSI/Disabled population capitation rates increased 10.35%. This increase is largely due to an increase in inpatient and pharmacy costs. The pharmacy unit cost trend was updated to 10.50% annually. The actuary contractor supported this increase using historical data and projected industry knowledge of future cost changes.

The Foster Care population capitation rate increased 17.27%. The actuary found that the data from calendar year 2014 experience is 4.67% higher than what the calendar year 2014 would have projected using the SFY 2016 capitation rate assumptions.

Capitation rates for the Breast and Cervical Cancer population increased by 22.24%. Again, it was found that the data from calendar year 2014 experience is 11.89% higher than where calendar year 2014 would have been projected using the SFY 2016 capitation rate assumptions.

For the SSI/Disabled Newborn population, the capitation rates increased 23.18%. The actuary found that the data from calendar year 2014 experience was 10.37% higher than what the calendar year 2014 would have projected to be using the SFY 2016 capitation rate assumptions. This is largely driven by the inclusion of inpatient services into managed care and the cost were higher than expected for inpatient costs for the first few months of life.

Finally, the Non-SSI Newborns 0-2 Months Population had a rate decrease of 6.13%. This decrease for this population was largely due to lower than expected inpatient costs for the first few months of life. Newborns were previously enrolled in Fee for Service. The data from calendar year 2014 experience was 16.48% lower than what the calendar year 2014 would have projected to be using the SFY 2016 capitation rate assumptions.


***Conclusion***

PCG has undertaken a review of the MississippiCAN Capitation Rate Development Report and the requirements set forth by CMS. This review indicates that DOM and their partners created rates which were developed through the appropriate process. The professionals who completed the report meet the qualification standards of the American Academy of Actuaries. All generally recognized and accepted actuarial principles and practices appear to have been complied with. Further, it appears that defendable assumptions for cost of care for the MississippiCAN population were the basis of the recommended capitation payments. Finally, CMS has certified these capitation payments providing additional credence to them.

Given that SFY17 rates have been determined actuarially sound and received final certification by CMS DOM has the responsibility to accept the certified rates and implement them as the basis of the fiscal year payments to the CCOs. While the funding deficit undoubtedly provides difficulties to DOM's operations, adjusting capitation payments based on this deficit does not appear to be a viable option. Therefore, it appears DOM has taken the correct action to increase capitation payments despite the funding deficit.

## Appendix G: Cornerstone Cost Effectiveness #8 and #9

Cornerstone
Healthcare Financial Consulting LLC

# Cost Effectiveness Study – Components 8 and 9

Prepared for:
Mississippi Division of Medicaid

The attached components for the Cost Effectiveness Study for the Mississippi Division of Medicaid, were prepared as a joint effort by Cornerstone Healthcare Financial Consulting, LLC and Gary L. Owens, LLC.

December 4, 2017

Phone: 662-417-9211 | 8273 Eagle Pointe Drive Meridian, MS 39305 | Email: akheart@comcast.net

**Extent to which Provider Payments Increased after CCO Rate Increases**

We analyzed how the provider payments increased after CCO rate increases took effect. We used information from the CCO Medical Loss Ratio Reports, which compares the CCO capitation payment revenue to related medical expenditures. These reports are used to determine that the CCO's expenses compared to the capitation payment revenue are within the guidelines of their contract with the Division of Medicaid (DOM). These reports are audited by a DOM subcontractor (Myers & Stauffer, LC). Our analysis included comparing, the change in net annual capitation payments made to the CCOs for SFY's 2015, 2016 and 2017, to the changes in medical spending and we noted the following:

For SFY 2016 compared to SFY 2015, the CCOs increase in medical spending was 106.9% greater than their increase in capitation payments. For the SFY 2017 compared to SFY 2016, the CCOs increase in medical spending was greater than their increase in capitation payments by 93.6%. For the cumulative period of SFY's 2016 and 2017 the changes in medical expenditures of the CCOs was expended at a rate of 103.9 of the changes in the capitation payments.

**Cornerstone Healthcare Financial Consulting, LLC / Gary L. Owens, LLC** **12/4/2017**
**Extent to which Provider Payments Increased after CCO Rate Increases**
**For the State Fiscal Years Ended June 30, 2015 through 2017**

**Comparison of Annual CCO Rate Increases**

For this study, we will compare the change in total capitation payments made to the CCOs each state fiscal year compared to the changes in medical spending as derived from changes in Medical Loss Ratio(s) as reported on the Medical Loss Ratio Reports provided by the CCOs. (Note: this will require the use of both audited and unaudited MLR reports.) Since the MLR Reports are not available until SFY 2015, this will be provided for SFY's 2015 through 2017.

| | State Fiscal Year Ending June 30, 2015 (A) | State Fiscal Year Ending June 30, 2016 (B), (C) | State Fiscal Year Ending June 30, 2017 (C) | Cumulative for SFY's 2016 and 2017 |
|---|---|---|---|---|
| **Total Capitation Payments to CCOs** | $ 1,060,212,656 | $ 2,024,161,135 | $ 2,253,913,486 | |
| Less Allocations for: | | | | |
| - Premium Tax / Health Insurer Tax | 47,154,779 | 92,735,568 | 87,557,414 | |
| - Administrative Expense | 96,244,792 | 154,131,493 | 142,323,664 | |
| **Total Annual Net Medical Payments to CCOs** | $ 916,813,085 | $ 1,777,294,074 | $ 2,024,032,408 | |
| **Annual Change in Medical Payments to CCOs** | | $ 860,480,989 | $ 246,738,334 | $ 1,107,219,323 |
| **CCO Medical Expenditures per MLR Reports** | $ 919,266,350 | $ 1,838,718,216 | $ 2,069,549,096 | |
| **Annual Change in CCO Medical Expenditures to Providers** | | $ 919,451,866 | $ 230,830,880 | $ 1,150,282,746 |
| **Percentage Ratio of CCO Medical Expenditures to Medical Payments** | 100.3% | 106.9% | 93.6% | **103.9%** |
| CCO Payment Overage/(Shortfall) | $ (2,453,265) | $ (61,424,142) | $ (45,516,688) | |

(A) Amounts from CCO MLR Reports (SFY June 2015 - Audited)
(B) Amounts for FYE June 2016 include six-month Audited MLR Report ended Dec. 2015 and Unaudited for Jan.-Jun., 2016.
(C) Unaudited MLR Reports do not include a six-month "Run-out" period, but do include IBNR estimates.

**Comparison of Annual Growth in Medicaid and MississippiCAN Spending to Cost Inflation Indexes**

We compared the actual annual growth In Medicaid and MSCAN spending percentage to the CMS inflation rate that spending would have been based on the given rate for the SFY's of 2011 through 2017. The CMS inflation rate is the Medical Consumer Price Index, as reported in the *2016 CMS Actuarial Report*. The inflation rates in the CMS Report were based upon historical rates for the Fiscal Years 2011 through 2015, and projected rates for Fiscal Year 2016 and 2017 (See attached pages from the report). Our comparison showed the following:

The cumulative difference in Medicaid and MSCAN spending for the six year period was estimated to be $147,692,023 less than what would have been spent at the CMS Medical Consumer Price Index.

**Impact of Enrollment changes on Medicaid and MississippiCAN Spending:**

We calculated the impact of enrollment changes on Medicaid and MississippiCAN spending to determine how it affected overall expenses for SFY's 2011 to 2017. We did this by multiplying the six-year enrollment growth of 1,004,401 Member Months times the SFY 2011 Medicaid cost per member per month of $612.96. This resulted in an estimated $615,656,549 increase in expenses based upon enrollment growth alone over this six year period.

# 2016 ACTUARIAL REPORT ON THE FINANCIAL OUTLOOK FOR MEDICAID

Prepared by:

Christopher J. Truffer, FSA, MAAA
Christian J. Wolfe, FSA, MAAA
Kathryn E. Rennie, ASA

Office of the Actuary
Centers for Medicare & Medicaid Services
United States Department of Health & Human Services

**Table 16—Historical and Projected Price Factors and Unemployment Rates, Fiscal Years 2010–2025**

| Fiscal Year | Medical consumer price index | Consumer price index | Home health input price index | Inpatient price index | Wages | Unemployment rate (CY) |
|---|---|---|---|---|---|---|
| Historical data: | | | | | | |
| 2010 | 3.4% | 1.7% | 2.2% | 2.1% | 1.6% | 9.6% |
| 2011 | 3.1 | 2.7 | 2.1 | 2.6 | 2.9 | 8.9 |
| 2012 | 3.5 | 2.0 | 2.3 | 3.0 | 3.1 | 8.1 |
| 2013 | 2.8 | 1.5 | 2.3 | 2.6 | 1.6 | 7.4 |
| 2014 | 2.4 | 1.2 | 2.3 | 2.5 | 2.6 | 6.2 |
| 2015 | 2.3 | 0.3 | 2.5 | 2.9 | 2.8 | 5.3 |
| Projections: | | | | | | |
| 2016 | 2.1 | 1.4 | 2.4 | 2.4 | 2.9 | 5.1 |
| 2017 | 3.8 | 2.8 | 3.4 | 3.6 | 4.3 | 5.2 |
| 2018 | 4.3 | 2.7 | 3.7 | 3.9 | 4.8 | 5.3 |
| 2019 | 4.2 | 2.6 | 3.6 | 3.8 | 4.6 | 5.4 |
| 2020 | 4.2 | 2.6 | 3.5 | 3.7 | 4.4 | 5.5 |
| 2021 | 4.2 | 2.6 | 3.4 | 3.7 | 4.2 | 5.5 |
| 2022 | 4.2 | 2.6 | 3.3 | 3.6 | 4.1 | 5.5 |
| 2023 | 4.2 | 2.6 | 3.2 | 3.5 | 4.0 | 5.5 |
| 2024 | 4.2 | 2.6 | 3.2 | 3.5 | 4.0 | 5.6 |
| 2025 | 4.2 | 2.6 | 3.2 | 3.5 | 3.9 | 5.6 |

**Cornerstone Healthcare Financial Consulting, LLC / Gary L. Owens, LLC** **12/4/2017**
**Annual Growth in Medicaid Spending Compared to CMS Medical Inflation Rate**
**For the State Fiscal Years Ended June 30, 2011 through 2017**

For this study, we will compare annual growth in Medicaid and MSCAN spending to the CMS inflation rate that spending would have been based on that given rate for the SFY's of 2011 through 2017.

| | State Fiscal Year Ending: June 30, 2011 | June 30, 2012 | June 30, 2013 | June 30, 2014 | June 30, 2015 | June 30, 2016 | June 30, 2017 |
|---|---|---|---|---|---|---|---|
| Medicaid Member Months | 7,572,997 | 7,686,006 | 7,711,029 | 7,879,431 | 8,726,684 | 8,744,441 | 8,577,398 |
| Total Medicaid and MSCAN Spending (Less Spending for CHIP) | $ 4,641,936,036 | $ 4,856,651,422 | $ 5,079,073,048 | $ 5,239,376,263 | $ 5,614,755,316 | $ 5,960,098,612 | $ 6,050,845,185 |
| Total Medicaid Cost/PMPM | $ 612.96 | $ 631.88 | $ 658.68 | $ 664.94 | $ 643.40 | $ 681.59 | $ 705.44 |
| Annual Change in Cost/PMPM | | $ 18.92 | $ 26.79 | $ 6.27 | $ (21.54) | $ 38.19 | $ 23.85 |
| % Annual Increase/PMPM | | 3.1% | 4.2% | 1.0% | -3.2% | 5.9% | 3.5% |
| | Historical | | | | Projected | | |
| Annual Medical Inflation Rate (A) | 3.1% | 3.5% | 2.8% | 2.4% | 2.3% | 2.1% | 3.8% |
| Annual Difference between Medicaid and MSCAN Spending Rate and CMS Rate | | -0.4% | 1.4% | -1.4% | -5.5% | 3.8% | -0.3% |
| Medicaid and MSCAN Spending based on CMS Annual Inflation Rate | | $ 4,876,098,117 | $ 5,008,891,978 | $ 5,314,555,367 | $ 5,936,214,908 | $ 5,744,329,968 | $ 6,068,401,531 |
| Annual Difference in Medicaid and MSCAN Spending | | $ (19,446,695) | $ 70,181,070 | $ (75,179,104) | $ (321,459,592) | $ 215,768,644 | $ (17,556,346) |
| Cumulative Difference in Medicaid and MSCAN Spending | | $ (19,446,695) | $ 50,734,375 | $ (24,444,730) | $ (345,904,321) | $ (130,135,677) | $ (147,692,023) |

(A) Medical CPI Rates from the 2016 CMS Actuarial Report

**Cornerstone Healthcare Financial Consulting, LLC / Gary Owens, LLC** **12/4/2017**
**Annual Growth in Medicaid Spending Based on Normalized Beneficiary Growth**
**For the State Fiscal Years Ended June 30, 2011 through 2017**

Using the average cost per beneficiary, we will normalize the growth in medical cost by accounting for the annual change in beneficiaries for the same years.

| | State Fiscal Year Ending: June 30, 2011 | June 30, 2012 | June 30, 2013 | June 30, 2014 | June 30, 2015 | June 30, 2016 | June 30, 2017 |
|---|---|---|---|---|---|---|---|
| Medicaid Member Months | 7,572,997 | 7,686,006 | 7,711,029 | 7,879,431 | 8,726,684 | 8,744,441 | 8,577,398 |
| Change in Member Months per Year | | 113,009 | 25,023 | 168,402 | 847,253 | 17,757 | (167,043) |
| Total Medicaid and MSCAN Spending (Less Spending for CHIP) | $ 4,641,936,036 | $ 4,856,651,422 | $ 5,079,073,048 | $ 5,239,376,263 | $ 5,614,755,316 | $ 5,960,098,612 | $ 6,050,845,185 |
| Total Annual Medicaid Cost/PMPM | $ 612.96 | $ 631.88 | $ 658.68 | $ 664.94 | $ 643.40 | $ 681.59 | $ 705.44 |
| Total Normalized Base Period Medicaid Cost/PMPM (A) | | $ 612.96 | $ 612.96 | $ 612.96 | $ 612.96 | $ 612.96 | $ 612.96 |
| Annual Effect in Total Spending based on Change in Enrollment (Based on Base Year2011 PMPM x Member Months) | | $ 69,269,874 | $ 15,338,071 | $ 103,223,507 | $ 519,331,281 | $ 10,884,311 | $ (102,390,496) |
| **Cumulative Effect in Total Spending Based on Change in Enrollment** | | **$ 69,269,874** | **$ 84,607,945** | **$ 187,831,453** | **$ 707,162,734** | **$ 718,047,045** | **$ 615,656,549** |

| | |
|---|---|
| Total Member Months Change between June 30, 2011 and June 30, 2017 | 1,004,401 |
| Average Member Months Growth per Year | 167,400 |
| Base Year 2011 Medicaid PMPM Cost | $ 612.96 |
| Average Annual Growth in Medical Costs due to Beneficiary Growth | $ 102,609,425 |

(A) This rate is held constant at the Base period of June 2011 to measure only the effect of changes in beneficiary growth.

# Appendix H: HEDIS® Measures and Corresponding Charts by Measure for Mississippi and Peer States

Myers and Stauffer reviewed the results for 15 reported categories of HEDIS® measures across Georgia, Michigan, Mississippi, and Tennessee. There are 22 measures presented below due to some HEDIS® categories being broken out by age group.

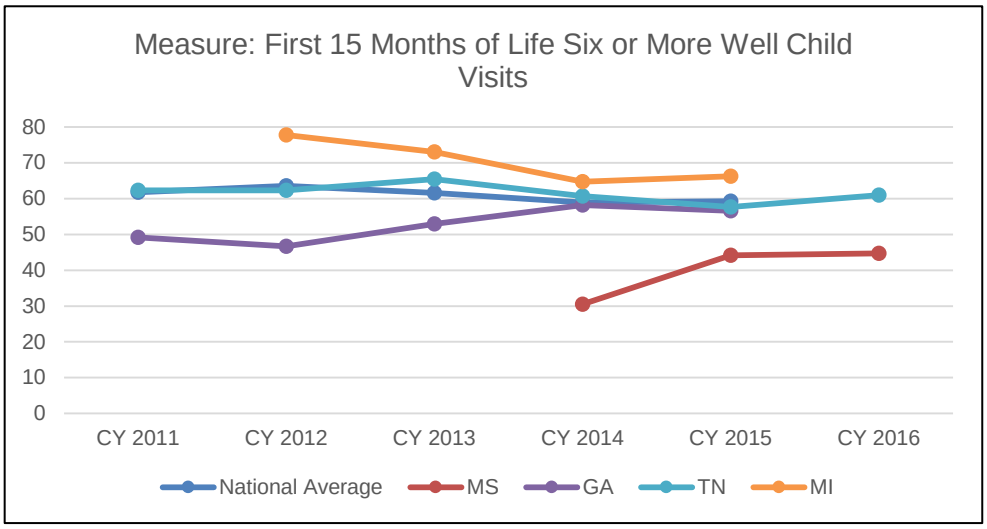
| Measure: First 15 Months of Life and Six or More Well Child Visits | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 61.8 | 63.6 | 61.6 | 58.9 | 59.3 | - |
| MS | - | - | - | 30.52 | 44.16 | 44.68 |
| GA | 49.2 | 46.71 | 52.92 | 58.25 | 56.62 | - |
| TN | 62.36 | 62.32 | 65.41 | 60.69 | 57.63 | 60.94 |
| MI | - | 77.83 | 73.09 | 64.76 | 66.22 | - |

**MS compared to the national average:**

- The national average for *First 15 Months of Life Six of More Well Child Visits* remained relatively constant at or above 59 percent between the first year for which data was assessed (CY2011: 61.8) and the most recent (CY 2015: 59.3). Data for CY 2016 was not available, therefore, not assessed.
- MS rates trended upwards approximately 46 percent over the years for which data was assessed (CY 2014 – CY 2016).

**MS comparison to peer states (GA, TN, and MI):**

- MS rates performed below all peer states for all data points assessed.
- TN mirrored national average, while MI substantially outperformed national average. GA showed a 15 percent increase over data points assessed, approaching national average by CY 2014.



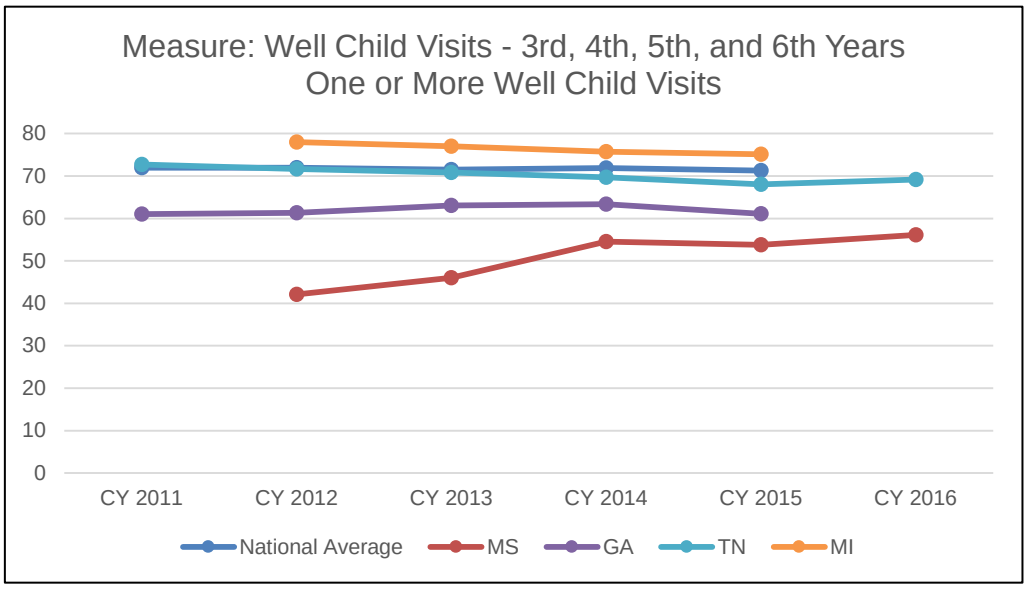
| Measure: Well Child Visits – 3rd, 4th, 5th, and 6th Years and One or More Well Child Visits | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 72 | 72 | 71.5 | 71.9 | 71.3 | - |
| MS | - | 42.08 | 46.04 | 54.57 | 53.82 | 56.09 |
| GA | 61 | 61.31 | 63.09 | 63.33 | 61.12 | - |
| TN | 72.69 | 71.68 | 70.8 | 69.7 | 68.01 | 69.18 |
| MI | - | 78.03 | 77.05 | 75.76 | 75.11 | - |

**MS compared to the national average:**

- The national average for *3rd, 4th, 5th and 6th Years – One or More Well Child Visits* remained relatively constant at or above 71 percent between the first year for which data was assessed (CY 2011: 72) and the most recent (CY 2015: 71.3). Data for CY 2016 was not available, therefore, not assessed.
- MS rates in general trended upward for all data points assessed, approximately 33 percent from CY 2012 to CY 2016.
- MS performed substantially lower (by approximately 17 to 32 percentage points) than the national average for all years for which data was assessed (CY 2012 – CY 2015).

**MS comparison to peer states (GA, TN, and MI):**

- MS rates performed below all peer states for all data points assessed.
- TN mirrored the national average, while MI outperformed the national average over the years for which data points were assessed. GA was below the national average by approximately eight to nine percentage points, yet still outperformed MS rates.



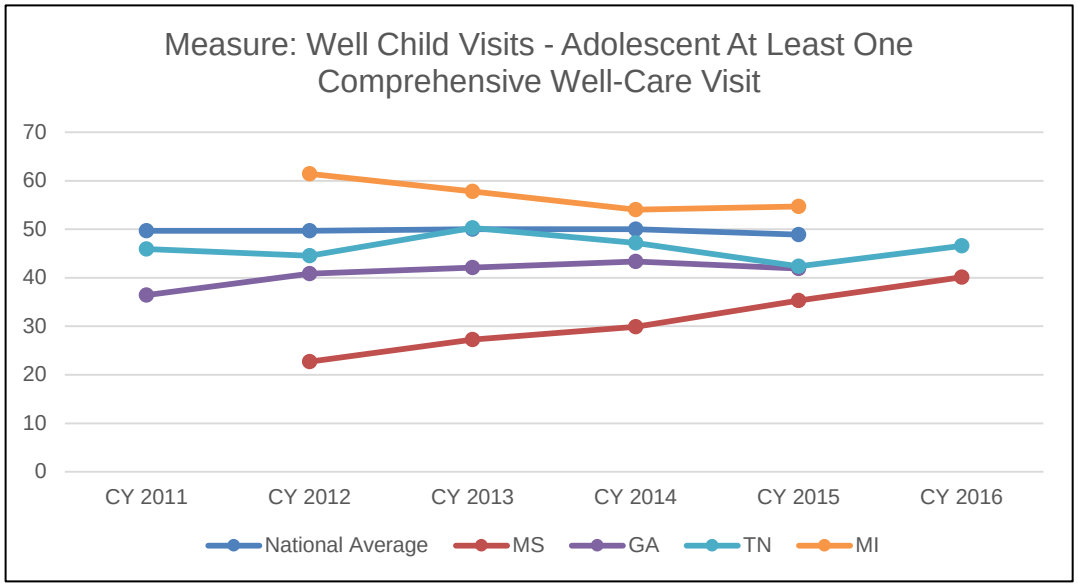
| Measure: Well Child Visits – Adolescent At Least One Comprehensive Well-Care Visit | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 49.7 | 49.7 | 50 | 50 | 48.9 | - |
| MS | - | 22.68 | 27.25 | 29.93 | 35.29 | 40.16 |
| GA | 36.4 | 40.83 | 42.13 | 43.36 | 41.9 | - |
| TN | 45.95 | 44.53 | 50.27 | 47.18 | 42.34 | 46.61 |
| MI | - | 61.46 | 57.8 | 54.02 | 54.74 | - |

**MS compared to the national average:**

- The national average for *Adolescent – At Least One Comprehensive Well-Care Visit* remained relatively constant around or above 49 percent between the first year for which data was assessed (CY 2011: 49.7) and the most recent (CY 2015: 48.9). Data for CY 2016 was not available, therefore, not assessed.
- MS rates trended strongly upward, increasing approximately 77 percent over the years for which data was assessed (CY 2012 to CY 2016).
- MS performed below the national average for all years for which data was assessed (CY 2012 – CY 2015).

**MS comparison to peer states (GA, TN, and MI):**

- MS rates performed below all peer states for all data points assessed.
- TN mirrored national average with a slight decline starting in CY 2014. MI substantially outperformed the national average. GA performed consistently below the national average, but still outperformed the MS rates.



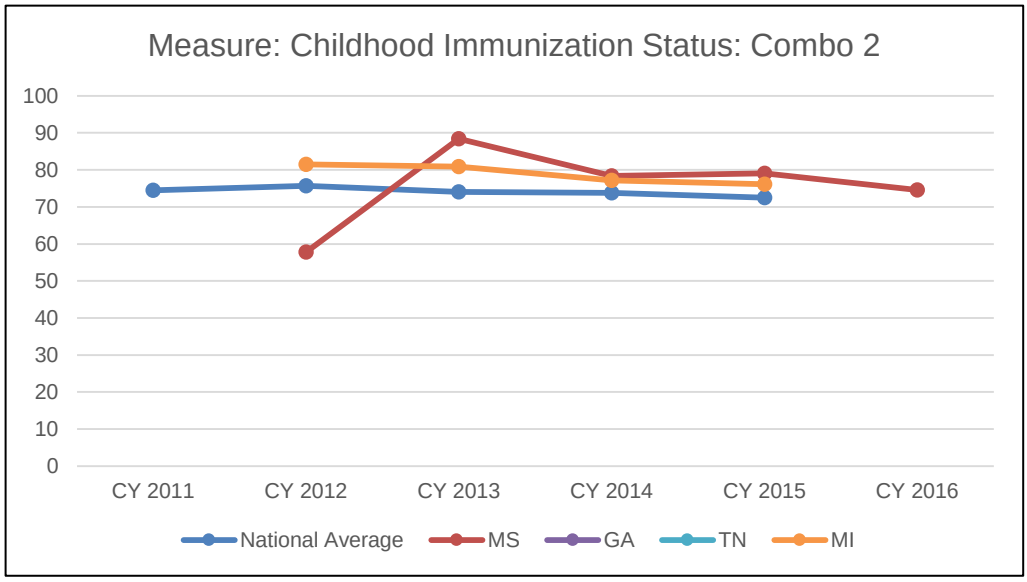
| Measure: Childhood Immunization Status; Combo 2 | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 74.5 | 75.7 | 74 | 73.8 | 72.5 | - |
| MS | - | 57.84 | 88.36 | 78.36 | 79.04 | 74.57 |
| GA | - | - | - | - | - | - |
| TN | - | - | - | - | - | - |
| MI | - | 81.48 | 80.9 | 77.16 | 76.15 | - |

**MS compared to the national average:**

- The national average for *Childhood Immunization Status: Combo 2* remained relatively constant around or above 73 percent between the first year for which data was assessed (CY 2011: 74.5) and the most recent (CY 2015: 72.5). Data for CY 2016 was not available, therefore, not assessed.
- MS rates trended upward approximately 29 percent over the years for which data was assessed (CY 2012 to CY 2016). The sharp change between CY 2012 and CY 2013 warrants further analysis.
- MS outperformed national average for all years for which data was assessed (CY 2012 – CY 2015) with the exception of the low CY2012 data point.

**MS comparison to peer states (GA, TN, and MI):**

- MS outperformed the national average and MI in three of the four years for which data was assessed (CY 2012 through CY 2015). MS was substantially lower than both the national average and MI rates in CY 2011.
- There were no data points to assess for GA or TN for this measure. It was noted by Myers and Stauffer that GA reports for Combo 3.



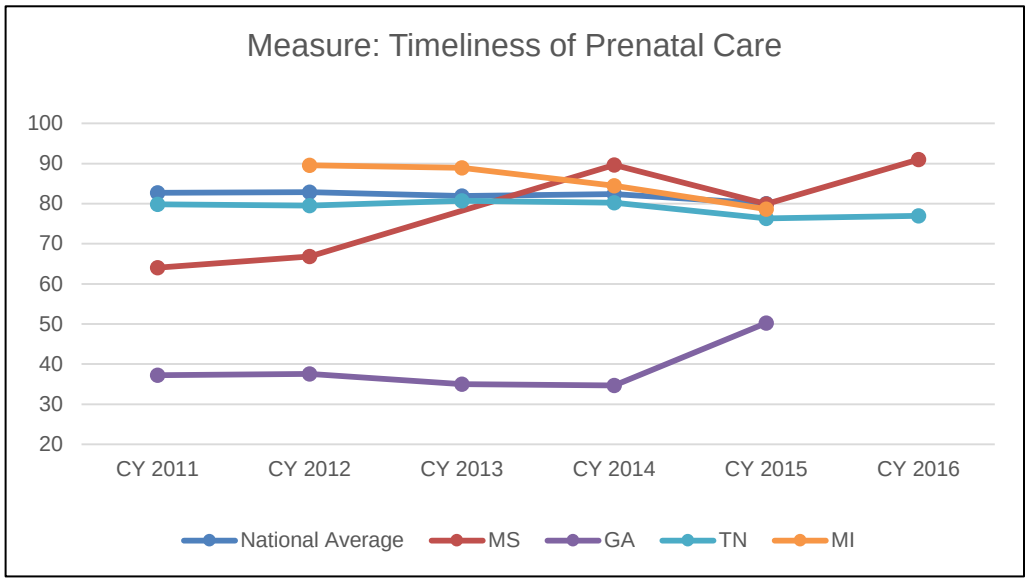
| Measure: Timeliness of Prenatal Care | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 82.7 | 82.9 | 81.9 | 82.4 | 80 | - |
| MS | 64.05 | 66.86 | - | 89.66 | 79.91 | 91.04 |
| GA | 37.2 | 37.54 | 35.03 | 34.68 | 50.2 | - |
| TN | 79.83 | 79.51 | 80.7 | 80.23 | 76.34 | 76.94 |
| MI | - | 89.61 | 88.92 | 84.45 | 78.63 | - |

**MS compared to the national average:**

- The national average for *Timeliness of Prenatal Care* remained relatively constant at or above 80 percent between the first year for which data was assessed (CY 2011: 82.7) and the most recent (CY 2015: 80). Data for CY 2016 was not available, therefore, not assessed.
- MS rates trended upwards approximately 42 percent over the years for which data was assessed (CY 2011 to CY 2016). However, it should be noted that MS did not have a data point of measurement for CY 2013 and experienced a sharp decline in CY 2015. These data anomalies warrant further analysis.
- MS performed substantially below the national average for CY 2011 and CY 2012. CY 2014 and CY 2015. However, MS trends are difficult to assess due to the lack of data point for CY 2013 and sharp change between CY 2012 and CY 2014 as described in bullet point above.

**MS comparison to peer states (GA, TN, and MI):**

- MS Magnolia outperformed TN for CY 2013 through CY 2016 and performed near or above MI for CY 2013 to CY 2015. MS rates outperformed GA for all data points assessed.
- TN mirrored but was slightly below the national average rates over all years for which data was assessed, while MI in general outperformed the national average. GA performed consistently and substantially below the national average.



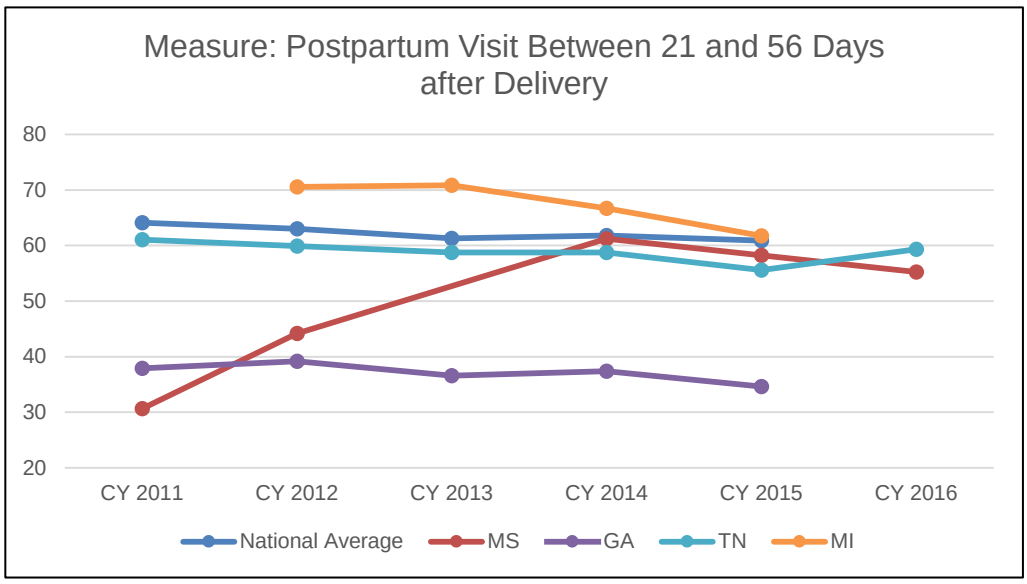
| Measure: Postpartum Visit Between 21 and 56 Days After Delivery | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 64.1 | 63 | 61.3 | 61.8 | 60.9 | - |
| MS | 30.67 | 44.19 | - | 61.25 | 58.23 | 55.24 |
| GA | 37.9 | 39.16 | 36.58 | 37.37 | 34.64 | - |
| TN | 61.06 | 59.9 | 58.77 | 58.74 | 55.57 | 59.35 |
| MI | - | 70.56 | 70.84 | 66.69 | 61.73 | - |

**MS compared to the national average:**

- The national average for *Postpartum Visit Between 21 and 56 Days After Delivery* remained relatively constant around or above 61 percent between the first year for which data was assessed (CY 2011: 64.1) and the most recent (CY 2015: 60.9). Data for CY 2016 was not available, therefore, not assessed.
- MS rates trended upward approximately 80 percent over the years for which data was assessed (CY 2011 to CY 2016). However, this data is difficult to interpret due to a lack of data point in CY 2013 and declines in CY 2015 and CY 2016.
- MS rates experienced a sharp increase from CY 2011 to CY 2012. MS rates peaked in CY 2014 at 61.25 percent and then fell below the national average for CY 2015 and CY 2016.

**MS comparison to peer states (GA, TN, and MI):**

- MS outperformed TN for CY 2013 through CY 2015. MS rates outperformed GA for CY 2012, CY 2014, and CY 2015. MS performed lower than MI for all data points assessed CY 2012 to CY 2014.
- TN was consistently slightly below the national average.
- MI outperformed all data points for all peer states and the national average.
- GA performed consistently and substantially below the national average.



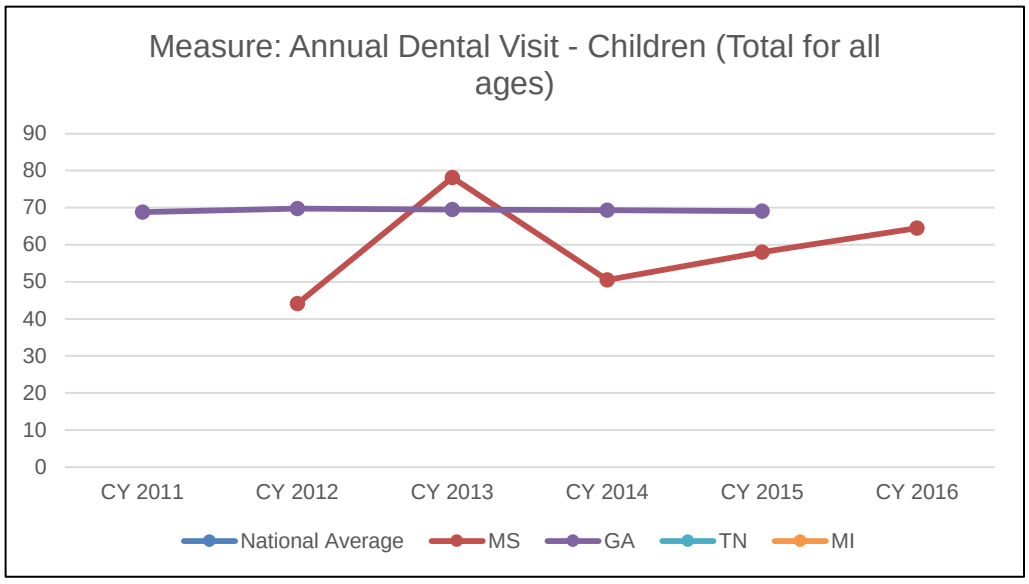
| Measure: Annual Dental visit – Children (Total for All Ages) | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | - | - | - | - | - | - |
| MS | - | 44.14 | 78.15 | 50.53 | 58.03 | 64.52 |
| GA | 68.8 | 69.77 | 69.47 | 69.34 | 69.06 | - |
| TN | - | - | - | - | - | - |
| MI | - | - | - | - | - | - |

**MS compared to the national average:**

- There were no national average data points available to assess for the *Annual Dental Visit – Children (Total for all ages)* measure.

**MS comparison to peer states (GA, TN, and MI):**

- MS saw an upward trend of approximately 46 percent over the years with data points assessed (CY 2012 to CY 2016).
- There were no data points to assess for TN or MI for this measure.



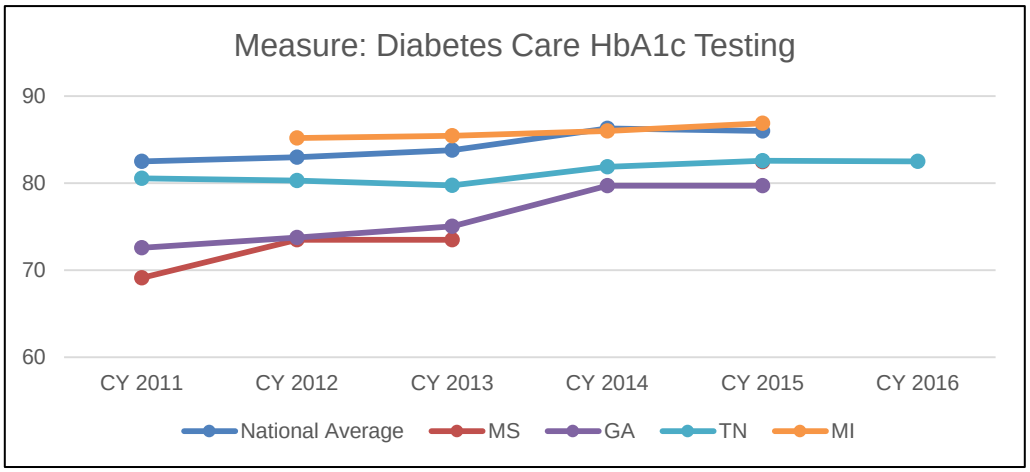
| Measure: Diabetes Care HbA1c Testing | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 82.5 | 83 | 83.8 | 86.3 | 86 | - |
| MS | 69.15 | 73.51 | - | - | 82.46 | - |
| GA | 72.6 | 73.77 | 75.07 | 79.73 | 79.71 | - |
| TN | 80.55 | 80.32 | 79.76 | 81.88 | 82.59 | 82.51 |
| MI | - | 85.21 | 85.45 | 85.99 | 86.89 | - |

**MS compared to the national average:**

- The national average for *Diabetes Care HbA1c Testing* remained relatively constant around or above 83 percent between the first year for which data was assessed (CY 2011: 82.5) and the most recent (CY 2015: 86). Data for CY 2016 was not available, therefore, not assessed.
- MS rates trended upwards approximately 13 percent over the years for which data was assessed CY 2011 to CY 2015. However, there were no data points for CY 2014 and CY 2016.
- MS performed below the national average for all years for which data was assessed. In CY 2015, MS had nearly approached the national average for CY 2015.

**MS comparison to peer states (GA, TN, and MI):**

- The missing data points for MS make it difficult to compare trends to peer states. MS rates in general are above GA rates and have a similar trend as TN rates.
- TN rate trending is similar to, although lower than, the national average over the years for which data points were assessed. MI in general is tracking above the national average, while GA is consistently below the national average.



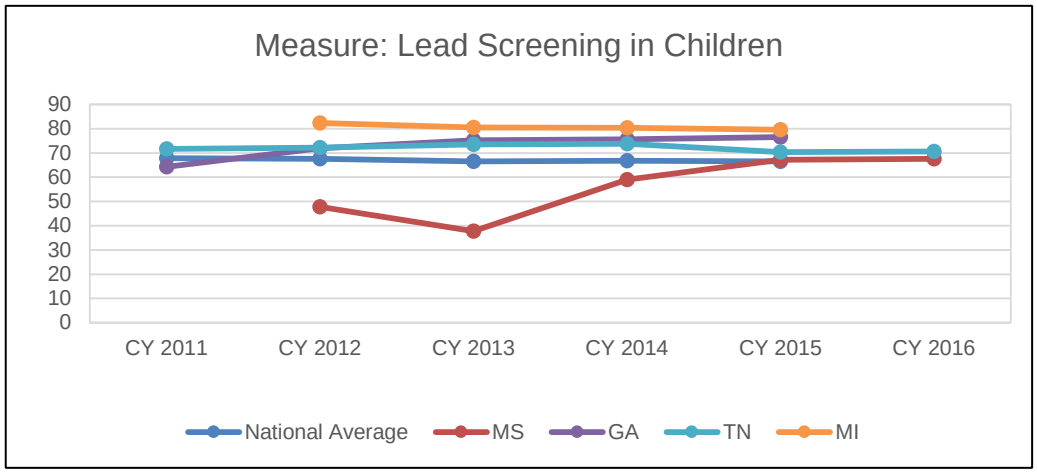
| Measure: Lead Screening Rate in Children | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 67.8 | 67.5 | 66.5 | 66.8 | 66.5 | - |
| MS | - | 47.82 | 37.78 | 59.05 | 67.10 | 67.52 |
| GA | 64.3 | 71.97 | 75.27 | 75.6 | 76.57 | - |
| TN | 71.65 | 72.18 | 73.44 | 73.7 | 70.29 | 70.64 |
| MI | - | 82.4 | 80.43 | 80.37 | 79.55 | - |

**MS compared to the national average:**

- The national average for *Lead Screening in Children* remained relatively constant around or above 67 percent between the first year for which data was assessed (CY 2011: 67.8) and the most recent (CY 2015: 66.5). Data for CY 2016 was not available, therefore, not assessed.
- MS rates trended upwards approximately 41 percent over the years for which data was assessed (CY 2012 to CY 2016). While there was an upward trend, there was a sharp decline in CY 2013 before leveling off at the national average. The sharp decline in 2013 warrants further analysis.
- MS performed below the national average from CY 2012 to CY 2014, but showed continued growth during those years. In CY 2015, MS surpassed the national average by 0.6 percentage points.

**MS comparison to peer states (GA, TN, and MI):**

- MS rates overall were lower than all three peer states.
- All three peer states tracked consistently well above the national average for all years for which data was assessed, with MI exceeding the national average by approximately 13 percentage points.



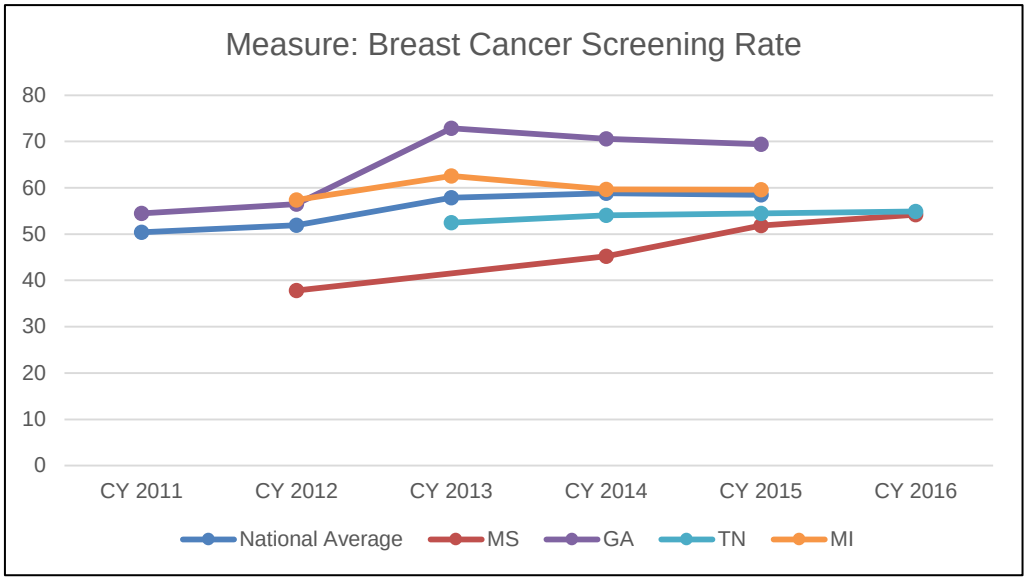
| Measure: Breast Cancer Screening Rate | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 50.4 | 51.9 | 57.9 | 58.8 | 58.5 | - |
| MS | - | 37.85 | - | 45.24 | 51.83 | 54.22 |
| GA | 54.5 | 56.49 | 72.9 | 70.58 | 69.43 | - |
| TN | - | - | 52.47 | 54.08 | 54.47 | 54.9 |
| MI | - | - | 57.41 | 62.56 | 59.65 | 59.58 |

**MS compared to the national average:**

- The national average for *Breast Cancer Screening* increased approximately 16 percent between the first year for which data was assessed (CY 2011: 50.4) and the most recent (CY 2015: 58.5). Data for CY 2016 was not available, therefore, not assessed.
- The MS rates increased approximately 43 percent over the years for which data was assessed (CY 2012 to CY 2016. However, there was a missing data point for CY 2013.
- MS performed below the national average during all years assessed.

**MS compared to peer states (GA, MI, and TN):**

- MS was outperformed by all the peer states over the years for which data was assessed.
- MS and TN trended upwards over the years for which data was assessed.
- GA and MI experienced an overall increase from the first year for which data was assessed but had most recently been experiencing a downward trend.



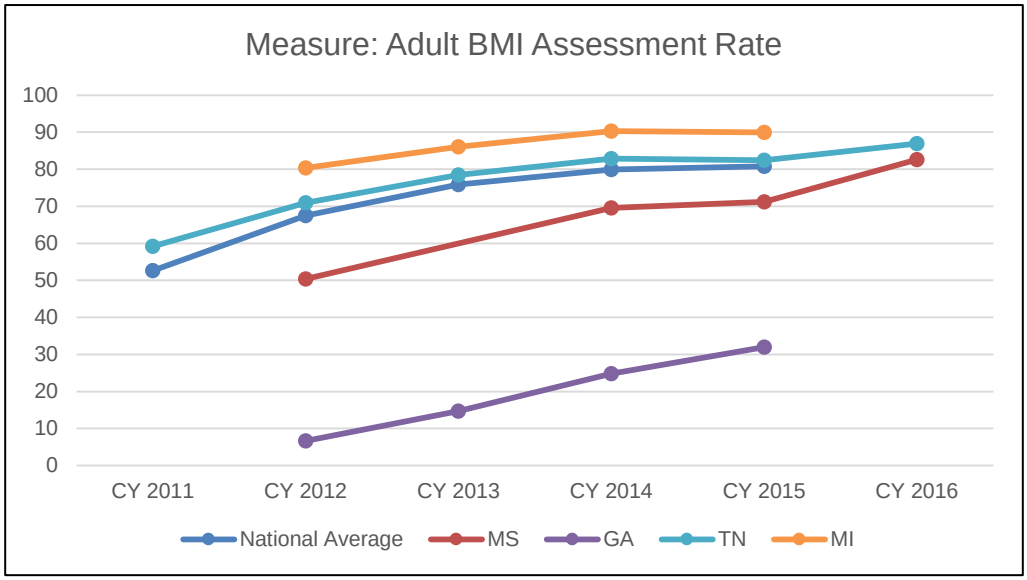
| Measure: Adult BMI Assessment Rate | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 52.6 | 67.5 | 75.9 | 79.9 | 80.8 | - |
| MS | - | 50.37 | - | 69.54 | 71.17 | 82.58 |
| GA | - | 6.69 | 14.71 | 24.78 | 32 | - |
| TN | 59.17 | 70.95 | 78.5 | 82.84 | 82.46 | 86.96 |
| MI | - | 80.39 | 86.05 | 90.31 | 89.92 | - |

**MS compared to the national average:**

- The national average for *Adult BMI Assessment* increased approximately 54 percent between the first year for which data was assessed (CY 2011: 52.6) and the most recent (CY 2015: 80.8). Data for CY 2016 was not available, therefore, not assessed.
- The MS rates increased over the years for which data was assessed: the CY 2012 rate of 50.37 increased to 82.58 in CY 2016.
- MS performed below the national average during all years assessed.

**MS compared to peer states (GA, MI, and TN):**

- MS outperformed GA during all years for which data was assessed (CY 2012 – CY 2015).
- TN outperformed MS during all years for which data was assessed (CY 2012 – CY 2016).
- MI outperformed MS during all years for which data was assessed (CY 2012 – CY 2015).



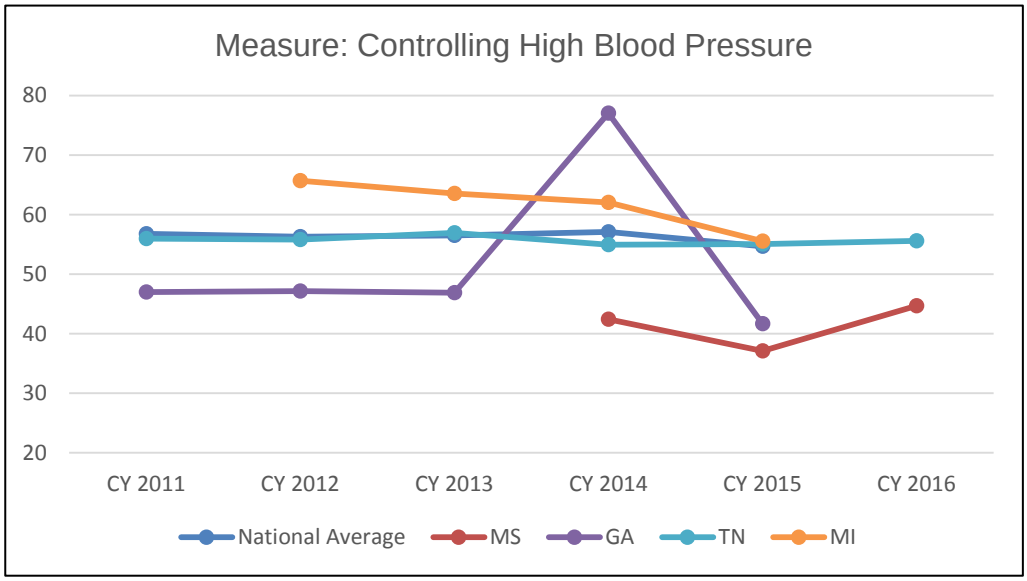
| Measure: Controlling High Blood Pressure | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 56.8 | 56.3 | 56.5 | 57.1 | 54.7 | - |
| MS | - | - | - | 42.44 | 37.13 | 44.72 |
| GA | 47 | 47.19 | 46.92 | 77.08 | 41.68 | - |
| TN | 55.99 | 55.82 | 56.98 | 54.99 | 55.10 | 55.63 |
| MI | - | 65.71 | 63.58 | 62.06 | 55.54 | - |

**MS compared to the national average:**

- The national average for *Controlling High Blood Pressure* fluctuated over the five years for which data was assessed. The highest level of this measure occurred in CY 2014 when the rate was 57.1 and CY 2015 when the lowest was 54.7.
- The MS rates trended upward approximately 5.4 percent for the years for which data was assessed (CY 2014 to CY 2016). There is a decline in CY 2015 which does warrant further analysis.
- MS performed below the national average during all years assessed.

**MS compared to peer states (GA, MI, and TN):**

- GA outperformed MS in all years for which data was assessed (CY 2014 – CY 2015).
- TN outperformed MS in all years for which data was assessed (CY 2014 – CY 2016).
- MI outperformed MS in all years for which data was assessed (CY 2014 – CY 2015).



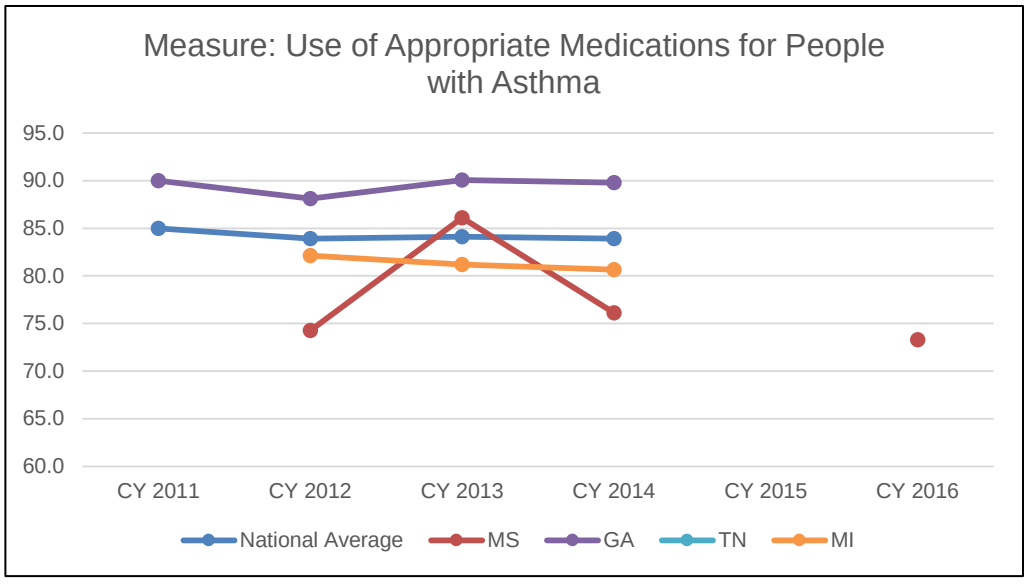
| Measure: Use of Appropriate Medications for People with Asthma | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 85.0 | 83.9 | 84.1 | 83.9 | - | - |
| MS | - | 74.29 | 86.1 | 76.12 | - | 73.31 |
| GA | 90 | 88.11 | 90.06 | 89.77 | - | - |
| TN | - | - | - | - | - | - |
| MI | - | 82.13 | 81.19 | 80.64 | - | - |

**MS compared to the national average:**

- The national average for *Use of Appropriate Medications for People with Asthma* appeared stable over the years for which data was assessed (CY 2011 – CY 2014). The rates ranged from 83.9 to 85.0.
- MS performed below the national average for CY 2012 and CY 2014
- MS performed above the national average from CY 2013.

**MS compared to peer states (GA, MI, and TN):**

- GA outperformed MS in all years for which data was assessed (CY 2012 – CY 2014).
- MS outperformed MI in CY 2013, 86.1 compared to 81.19.
- MI outperformed MS in CY 2012 and CY 2014.
- Data was not available, and, therefore, not assessed, as follows:
  - MS CY 2011.
  - MS, GA, TN, or MI CY 2015.
  - GA CY 2016.
  - TN CY 2011 – CY 2016.
  - MI CY 2016.



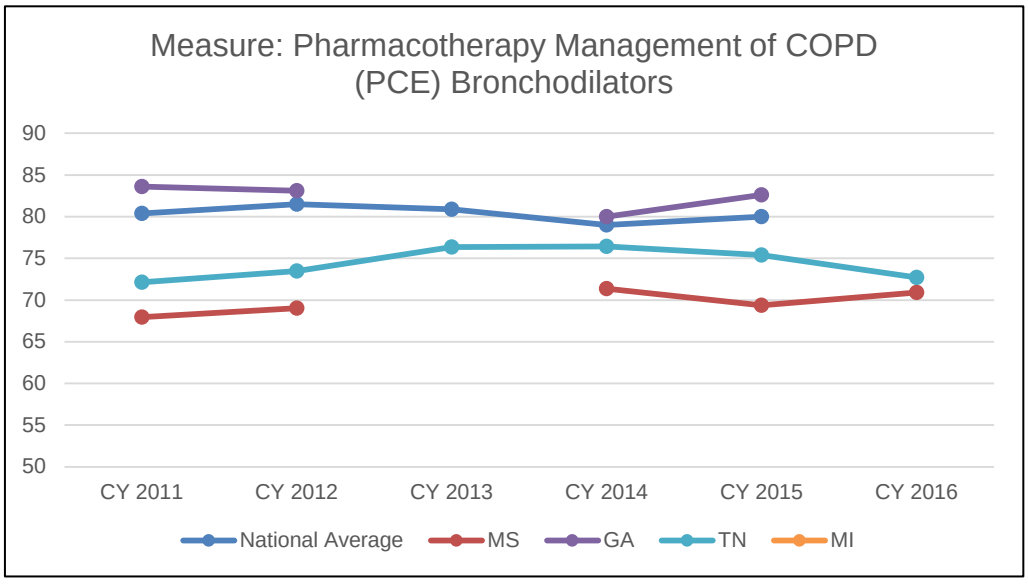
| Measure: Pharmacotherapy Management of COPD (PCE) Bronchodilators | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 80.4 | 81.5 | 80.9 | 79 | 80 | - |
| MS | 67.96 | 69.04 | - | 71.36 | 69.37 | 70.90 |
| GA | 83.6 | 83.12 | - | 80 | 82.61 | - |
| TN | 72.13 | 73.48 | 76.34 | 76.43 | 75.41 | 72.71 |
| MI | - | - | - | - | - | - |

**MS compared to the national average:**

- The national average for *Pharmacotherapy Management of COPD (PCE) Bronchodilators* appeared stable over the years for which data was assessed (CY 2011 – CY 2015). The rates ranged from 79 to 81.5.
- MS fell below the national average, but has shown improvement since CY 2011.

**MS compared to peer states (GA, MI, and TN):**

- GA outperformed MS in all years for which data was assessed (CY 2011, CY 2012, CY 2014 and CY 2015).
- TN outperformed MS for all years for which data was assessed (CY 2011, CY 2012, CY 2014, CY 2015, and CY 2016).
- Comparison between MI and MS was not possible due to lack of data for MI CY 2011 – CY 2016.



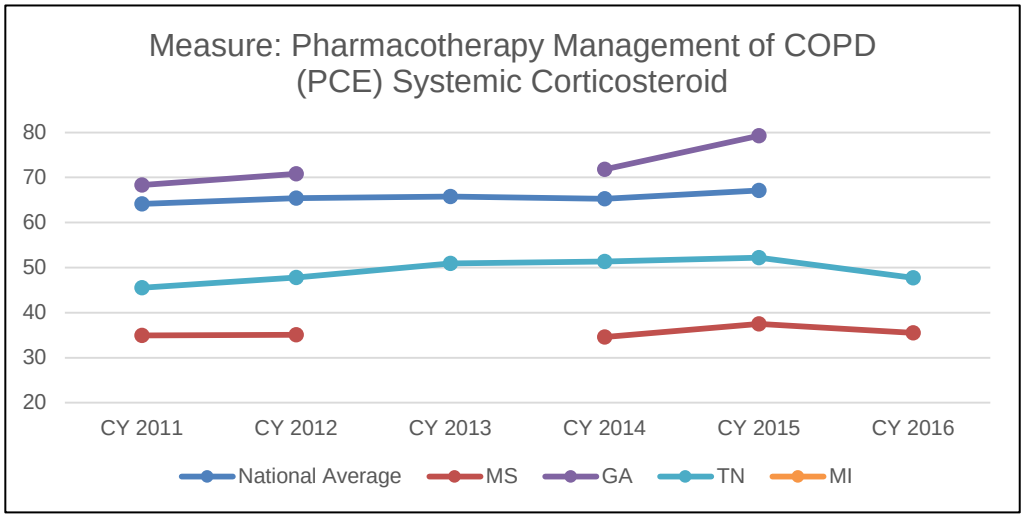
| Measure: Pharmacotherapy Management of COPD (PCE) Systemic Corticosteroid | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 64.1 | 65.4 | 65.8 | 65.3 | 67.1 | - |
| MS | 34.97 | 35.07 | - | 34.58 | 37.51 | 35.54 |
| GA | 68.3 | 70.78 | - | 71.79 | 79.26 | - |
| TN | 45.55 | 47.81 | 50.91 | 51.32 | 52.23 | 47.75 |
| MI | - | - | - | - | - | - |

**MS compared to the national average:**

- The national average for *Pharmacotherapy Management of COPD (PCE) Systemic Corticosteroid* appeared stable over the years for which data was assessed (CY 2011 – CY 2015). The rates ranged from 64.1 to 67.1.
- The MS rates appeared stable during the years for which data was assessed; the highest rate was 37.51 in CY 2015 and the lowest was 34.58 in CY 2014.
- MS performed below the national average during all years for which data assessed (CY 2011 – CY 2015).

**MS compared to peer states (GA, MI, and TN):**

- GA outperformed MS in all years for which data was assessed (CY 2011, CY 2012, CY 2014, and CY 2015).
- TN outperformed MS in all years for which data was assessed (CY 2011 – CY 2016).
- Comparison between MI and MS was not possible due to lack of data for MI CY 2011 – CY 2016.



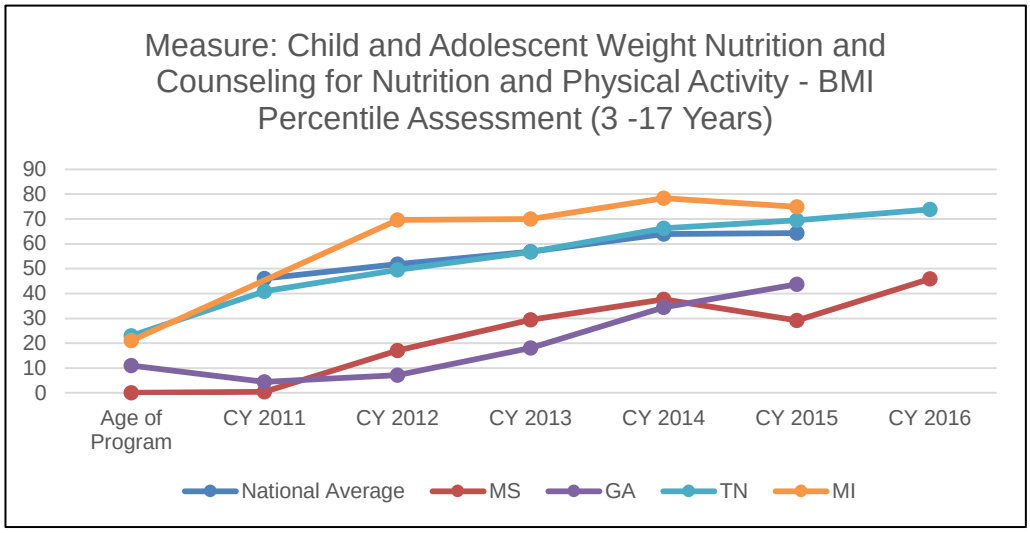
| Measure: Child and Adolescent Weight Nutrition and Counseling for Nutrition and Physical Activity – BMI Percentile Assessment (3 – 17 Years) | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 46 | 51.8 | 56.9 | 64 | 64.4 | - |
| MS | 0.43 | 17.01 | 29.42 | 37.70 | 29.21 | 45.95 |
| GA | 4.5 | 7.15 | 18.04 | 34.42 | 43.77 | - |
| TN | 40.91 | 49.52 | 56.8 | 66.3 | 69.55 | 73.88 |
| MI | - | 69.62 | 70.07 | 78.34 | 74.93 | - |

**MS compared to the national average:**

- The national average for *Child and Adolescent Weight Nutrition and Counseling for Nutrition and Physical Activity – BMI Percentile Assessment (3 – 17 Years)* trended upward between the first year for which data was assessed (CY 2011: 46) and the most recent (CY 2015: 64.4). Data for CY 2016 was not available, therefore, not assessed.
- The MS rates fluctuated during the years for which data was assessed (CY 2011 – CY 2016) beginning with a low of 0.43 in CY 2011 and ending with a high of 45.95 in CY 2016.
- MS performed below the national average during all years assessed.

**MS compared to peer states (GA, MI, and TN):**

- GA outperformed MS during CY 2011 and CY 2015 but performed below for CY 2012, CY 2013, and CY 2014.
- MI outperformed MS during all years for which data was assessed (CY 2012 – CY 2015).
- TN outperformed MS during all years for which data was assessed (CY 2011 – CY 2016).
- MS performance appears anomalous in CY 2011 and CY 2012 when the lowest rates were 0.37 and 8.76 in CY 2011 and CY 2012, respectively.



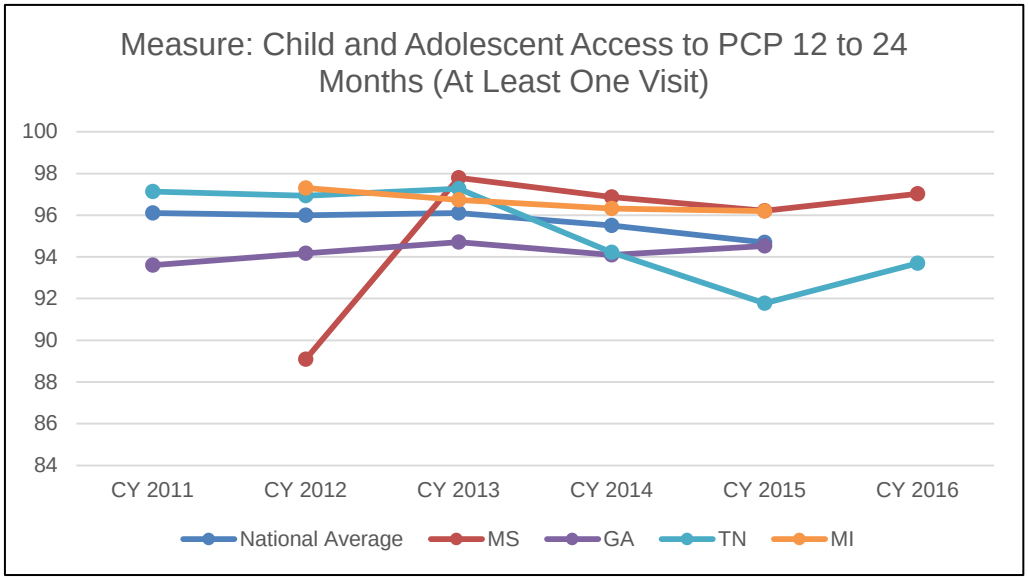
| Measure: Child and Adolescent Access to PCP up to 24 Months | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 96.1 | 96 | 96.1 | 95.5 | 94.7 | - |
| MS | - | 89.09 | 97.79 | 96.87 | 96.21 | 97.03 |
| GA | 93.6 | 94.17 | 94.71 | 94.09 | 94.53 | - |
| TN | 97.14 | 96.94 | 97.27 | 94.22 | 91.77 | 93.7 |
| MI | - | 97.3 | 96.73 | 96.32 | 96.2 | - |

**MS compared to the national average:**

- The national average for *Child and Adolescent Access to PCP up to 24 Months* appeared stable over the years for which data was assessed (CY 2011 – CY 2015). The rates ranged from 94.7 to 96.1.
- MS rates appeared stable between CY 2013 – CY 2016.
- MS outperformed the national average in CY 2013 (97.79), CY 2014 (96.87), and CY 2015 (96.21).

**MS compared to peer states (GA, MI, and TN):**

- MS outperformed GA in CY 2013, CY 2014, and CY 2015 (three of four years for which data was assessed, CY 2012 – CY 2015).
- MS outperformed TN in CY 2013, CY 2014, CY 2015, and CY 2016 (four of the five years for which data was assessed, CY 2012 – CY 2016.
- MS outperformed, or performed comparably with, MI during three of the four years for which data was assessed (CY 2012 – CY 2015).



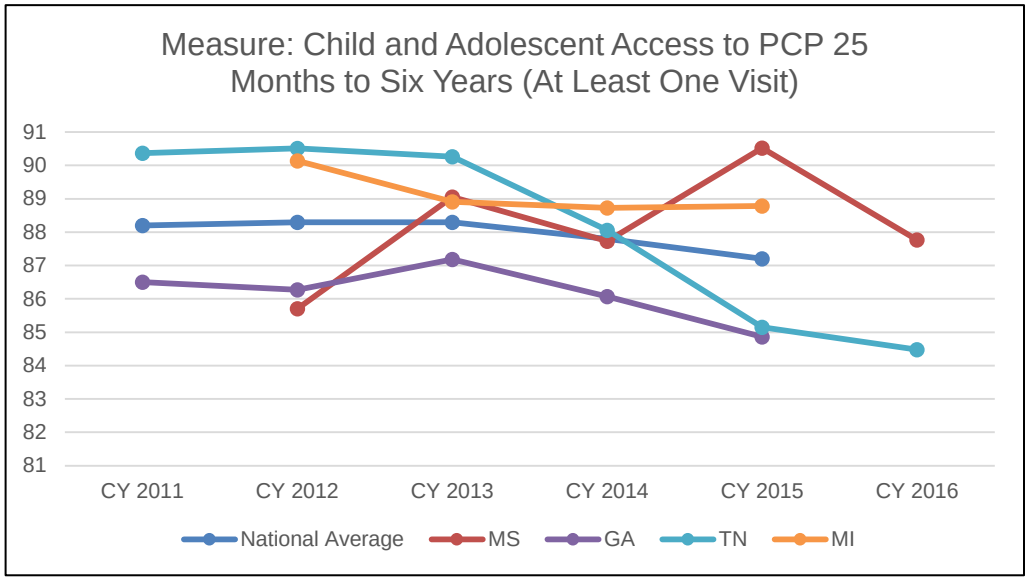
| Measure: Child and Adolescent Access to PCP 25 Months to Six Years | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 88.2 | 88.3 | 88.3 | 87.8 | 87.2 | - |
| MS | - | 85.71 | 89.05 | 87.73 | 90.53 | 87.77 |
| GA | 86.5 | 86.27 | 87.18 | 86.07 | 84.86 | - |
| TN | 90.37 | 90.51 | 90.26 | 88.06 | 85.15 | 84.48 |
| MI | - | 90.14 | 88.91 | 88.73 | 88.79 | - |

**MS compared to the national average:**

- The national average for *Child and Adolescent Access to PCP 25 Months to Six Years* (at least one visit) appeared stable over the years for which data was assessed (CY 2011 – CY 2015). The rates ranged from 87.2 to 88.3.
- The MS rates increased for three consecutive years (CY 2011 – CY 2013) to 92.03, then, fluctuated with downward movement in CY 2014 (89.9), upward again in CY 2015 (92.06), then, downward again in CY 2016 (88.23).
- MS exceeded the national average in three consecutive years (CY 2013 – CY 2015).
- MS performed below the national average in CY 2011 and CY 2012.

**MS compared to peer states (GA, MI, and TN):**

- MS outperformed GA during three of five years for which data was assessed.
- MS outperformed TN for during four of six years for which data was assessed.
- MS outperformed MI during three of four years for which data was assessed.



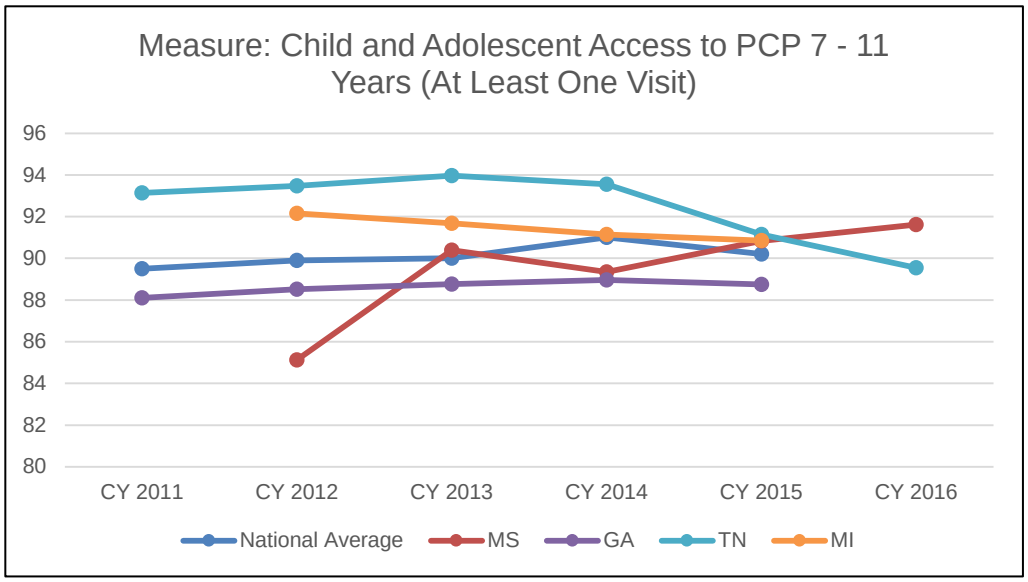
| Measure: Child and Adolescent Access to PCP 7 – 11 Years | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 89.5 | 89.9 | 90 | 91 | 90.2 | - |
| MS | - | 85.12 | 90.40 | 89.35 | 90.84 | 91.62 |
| GA | 88.1 | 88.52 | 88.76 | 88.97 | 88.75 | - |
| TN | 93.14 | 93.47 | 93.96 | 93.55 | 91.15 | 89.55 |
| MI | -- | 92.15 | 91.68 | 91.14 | 90.85 | - |

**MS compared to the national average:**

- The national average for *Child and Adolescent Access to PCP 7 – 11 Years* (at least one visit) appeared stable over the years for which data was assessed (CY 2011 – CY 2015). The rates ranged from 89.5 to 91.
- The MS rates increased in CY 2013 to 90.40, then remained consistent for all remaining years for which data was assessed (CY 2013 – CY 2016).
- MS exceeded, or was consistent with, the national average during three of the four years for which data was assessed.

**MS compared to peer states (GA, MI, and TN):**

- MS outperformed GA during three of four years for which data was assessed (CY 2012 – CY 2015).
- TN outperformed, or performed comparably, with MS for four of five years for which data was assessed (CY 2012 – CY 2015). MS outperformed TN in CY 2016 by 2.07 percentage points.
- MI performed comparably with MS for CY 2013 – CY 2015.



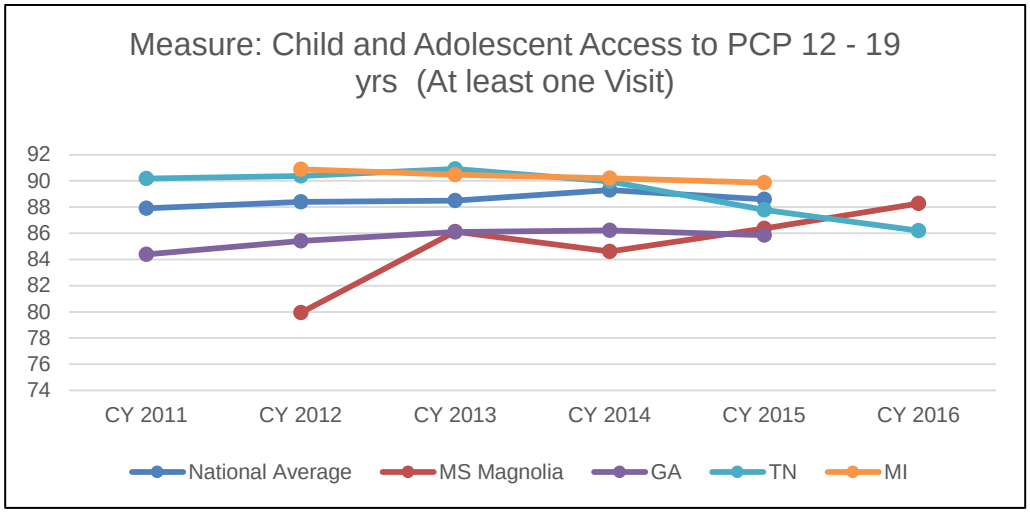
| Measure: Child and Adolescent Access to PCP 12 – 19 Years | | | | | | |
|---|---|---|---|---|---|---|
| **State** | **CY 2011** | **CY 2012** | **CY 2013** | **CY 2014** | **CY 2015** | **CY 2016** |
| National Average | 87.9 | 88.4 | 88.5 | 89.3 | 88.6 | - |
| MS | - | 79.94 | 86.12 | 84.61 | 86.37 | 88.27 |
| GA | 84.4 | 85.42 | 86.1 | 86.21 | 85.86 | - |
| TN | 90.18 | 90.38 | 90.91 | 89.96 | 87.78 | 86.19 |
| MI | -- | 90.89 | 90.48 | 90.21 | 89.86 | - |

**MS compared to the national average:**

- The national average for *Child and Adolescent Access to PCP 12 – 19 Years* (at least one visit) appeared stable, with a slight increase, over the years for which data was assessed (CY 2011 – CY 2015). The rates ranged from 87.9 to 88.6.
- The national average was higher than MS rates for all years for which data was assessed.

**MS compared to peer states (GA, MI, and TN):**

- MS outperformed GA during two of four years for which data was assessed (CY 2012 – CY 2015).
- MS was outperformed or performed consistently with TN during four of the five years for which data was assessed (CY 2012 – CY 2016).
- MI outperformed MS for all years for which data was assessed (CY 2012 – CY 2015).




**Sources for data included in this Appendix:**

National Source: 2016 NCQA State of Health Care Quality.

Mississippi Source: Mississippi Division of Medicaid.

Georgia Source: Georgia Medicaid Performance Measure Reports for CY 2011 – CY 2014 and CY 2012 – 2015.

Tennessee Source: 2017 Annual HEDIS/CAHPS Report: Comparative Analysis of Audited Results from TennCare MCOs.

Michigan Source: Michigan Medicaid HEDIS 2015 Results Statewide Aggregate Report and 2016 HEDIS Aggregate Report for Michigan Medicaid.

# Appendix I: Medi-Cal Dashboard

## Medi-Cal Managed Care Performance Dashboard Glossary

**Released September 14, 2017**

### Quarterly Release Notes

- Aid Codes M3 and M4 have been reassigned from the ACA population group to the OTHER population group. This reassignment represents a significant difference between this dashboard and previous versions.
- The label "MO-," which stands for Medi-Cal Only, has been added by each population type when the metric compares DUAL membership against different aid code populations.
- Percentage metrics are displayed as whole numbers. Charts may add up to 99%, 100%, or 101%.

### Population Aid Code Groups

**Affordable Care Act (*ACA*):** This population consists of the following Adult Expansion aid codes: M1, M2, L1, and 7U.

**Optional Targeted Low Income Children (*OTLIC*):** This population consists of the following OTLIC aid codes: 2P, 2R, 2S, 2T, 2U, 5C, 5D, E2, E5, E6, E7, H1, H2, H3, H4, H5, M5, T0, T1, T2, T3, T4, T5, T6, T7, T8, and T9.

**Seniors and Persons with Disabilities (*SPD*):** This population consists of the following SPD aid codes: 10, 13, 14, 16, 17, 1E, 1H, 20, 23, 24, 26, 27, 2E, 2H, 36, 60, 63, 64, 66, 67, 6A, 6C, 6E, 6G, 6H, 6J, 6N, 6P, 6R, 6V, 6W, 6X, 6Y, C1, C2, C3, C4, C7, C8, D2, D3, D4, D5, D6, and D7.

**Other Populations (*OTHER*):** This population consists of all other aid codes not mentioned above.

### Medicare Status

**DUAL:** This population consists of any Medi-Cal eligible member who has active Medicare coverage. Active Medicare coverage means one or more of the following Medicare portions are active: Part A, B, or D. Dual members are not identified by an aid code.

Glossary Page **1** of **3**

# Medi-Cal Managed Care Performance Dashboard Glossary

**Released September 14, 2017**

**Non-Dual:** This population consists of any Medi-Cal eligible member who is **Medi-Cal Only (MO)** and has no active Medicare coverage. Aid code groups are displayed as Medi-Cal only for the following measures: Utilization, Grievance and Appeals, and State Fair Hearings.

## Utilization Measures for Certified Eligible Managed Care Members

Utilization is tracked by aid code population and Medicare status. Utilization metrics displayed by aid code group is **Medi-Cal Only (MO)** and does not include Medicare coverage.

**Emergency Room (ER) Visits:** This measure captures the number of ER visits per month. The results from this measure are used to calculate ER visits with an inpatient admission. A visit consists of a unique combination between provider, member. and date of service. This measure is displayed per 1,000 member months.

**Emergency Room (ER) Visits with an Inpatient (IP) Admission:** This measure captures the number of ER visits that resulted in an inpatient admission per month. The results of this measure are a subset of ER visits and IP admissions. The service date and member identification are linked to create this measure. An admission consists of a unique combination between member and date of admission to a facility. This measure is displayed per 1,000 member months.

**Inpatient (IP) Admissions:** This measure captures the number of Inpatient Admissions per month. The results from this measure are used to calculate ER visits with an inpatient admission. An admission consists of a unique combination between member and date of admission to a facility. This measure is displayed per 1,000 member months.

**Outpatient (OP) Visits:** This measure captures the number of OP visits per month. A visit consists of a unique combination between provider, member, and date of service. This measure is displayed per 1,000 member months.

**Prescriptions:** This measure captures the number of prescriptions per month. A prescription consists of a unique combination between National Drug Code, member, and date of service. This measure is displayed per 1,000 member months.

Glossary Page **2** of **3**

# Medi-Cal Managed Care Performance Dashboard Glossary

**Released September 14, 2017**

**Mild to Moderate Mental Health Visits:** This measure captures the number of visits per month related to selected Psychotherapy Services and Diagnostic Evaluations. The selected procedure codes aim to capture mild to moderate mental health visits. A visit consists of a unique combination between provider, member, and date of service. This measure is displayed per 1,000 member months.

## Grievance, Appeals and State Fair Hearings

**Grievance and Appeals:** Grievance and Appeals data is plan reported. Metrics displayed by aid code group is **Medi-Cal Only (MO)** and does not include Medicare coverage.

**State Fair Hearings:** Hearing data is submitted through the Department of Social Services. Metrics displayed by aid code group is **Medi-Cal Only (MO)** and does not include Medicare coverage.

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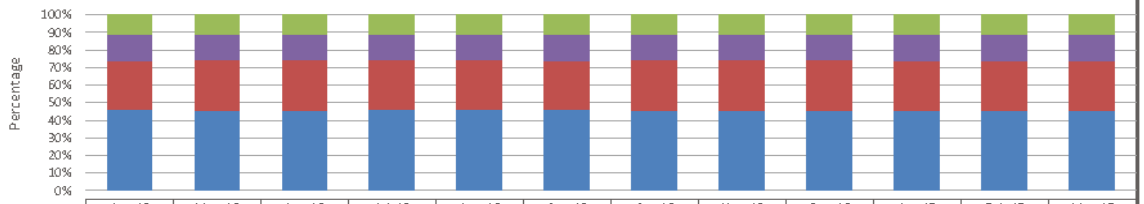
## Medi-Cal Managed Care Performance Dashboard
## Released September 14, 2017

**CERTIFIED ELIGIBLE ENROLLMENT: As of March 2017 (Data Warehouse pull August 2017)**

1-1: Managed Care Enrollment by Aid Population

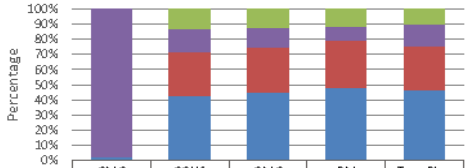



| | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Jan-17 | Feb-17 | Mar-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OTLIC | 1,163,349 | 1,171,672 | 1,190,049 | 1,188,318 | 1,190,158 | 1,193,625 | 1,208,067 | 1,214,386 | 1,211,452 | 1,194,476 | 1,194,996 | 1,198,913 |
| SPD | 1,551,771 | 1,548,733 | 1,551,699 | 1,551,594 | 1,566,921 | 1,565,233 | 1,567,162 | 1,563,774 | 1,570,003 | 1,595,648 | 1,613,945 | 1,617,877 |
| ACA | 2,963,445 | 3,002,382 | 3,037,042 | 3,013,263 | 3,012,359 | 3,015,635 | 3,054,097 | 3,077,406 | 3,094,880 | 3,064,869 | 3,077,708 | 3,097,027 |
| OTHER | 4,861,475 | 4,855,196 | 4,887,495 | 4,915,719 | 4,954,082 | 4,940,270 | 4,964,883 | 4,949,224 | 4,943,594 | 4,920,819 | 4,934,498 | 4,935,914 |
| **Managed Care Total** | **10,540,040** | **10,577,983** | **10,666,285** | **10,668,894** | **10,723,520** | **10,714,763** | **10,794,209** | **10,804,790** | **10,819,929** | **10,775,812** | **10,821,147** | **10,849,731** |

**Other Medi-Cal Programs**

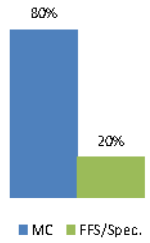
| *Medi-Cal Type* | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Jan-17 | Feb-17 | Mar-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fee-for-Service | 3,059,610 | 3,048,263 | 2,958,105 | 2,860,607 | 2,806,742 | 2,756,571 | 2,680,452 | 2,694,482 | 2,707,179 | 2,730,853 | 2,659,646 | 2,607,959 |
| Speciality Plans | 20,879 | 21,022 | 21,080 | 21,008 | 21,025 | 20,991 | 21,078 | 21,166 | 21,199 | 21,544 | 21,662 | 21,803 |
| **Medi-Cal Program Total** | **13,620,529** | **13,647,268** | **13,645,470** | **13,550,509** | **13,551,287** | **13,492,325** | **13,495,739** | **13,520,438** | **13,548,307** | **13,528,209** | **13,502,455** | **13,479,493** |

1-2: Aid Population by Plan Model

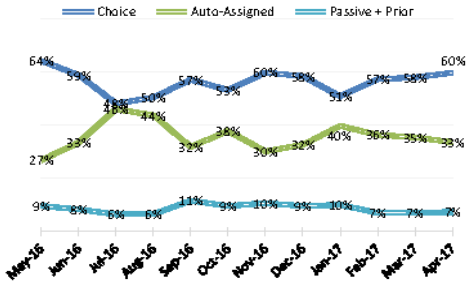



| | CMC | COHS | GMC | RM | Two-Plan |
|---|---|---|---|---|---|
| OTLIC | 0 | 295,181 | 141,057 | 45,597 | 717,078 |
| SPD | 112,156 | 329,869 | 158,181 | 34,559 | 983,112 |
| ACA | 1 | 627,198 | 345,182 | 120,925 | 2,003,721 |
| OTHER | 2,460 | 948,988 | 528,343 | 187,941 | 3,268,182 |

1-3: Medi-Cal Managed Care vs. FFS/Specialty




1-4: Choice and Auto-Assignment Rates




**Note: Data in this dashboard is preliminary and subject to change**

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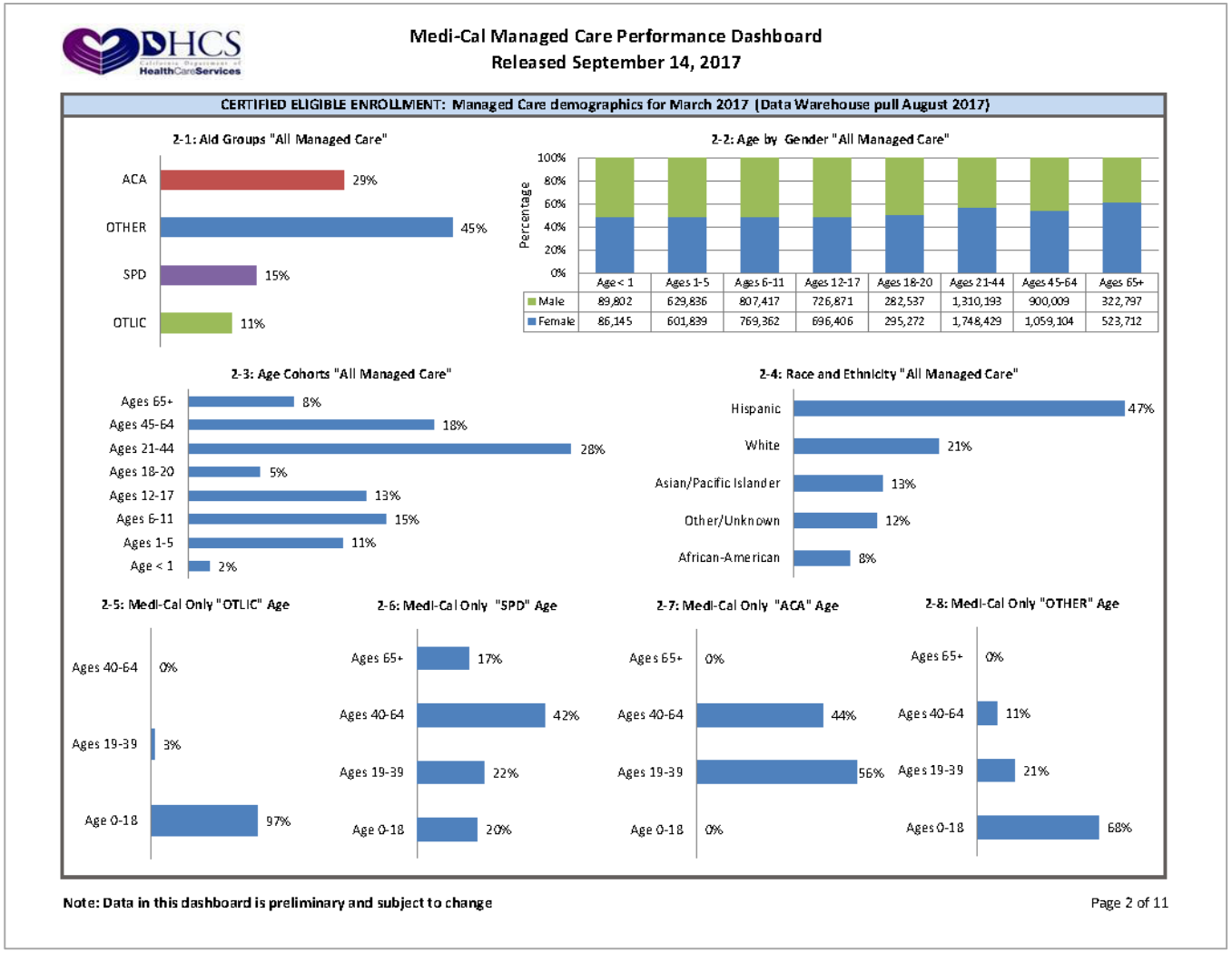
DHCS
Medi-Cal Managed Care Performance Dashboard
Released September 14, 2017
CERTIFIED ELIGIBLE ENROLLMENT: Managed Care demographics for March 2017 (Data Warehouse pull August 2017)
2-1: Aid Groups "All Managed Care"
ACA 29%
OTHER 45%
SPD 15%
OTLIC 11%
2-2: Age by Gender "All Managed Care"
Percentage
100%
80%
60%
40%
20%
0%
Age < 1 | Ages 1-5 | Ages 6-11 | Ages 12-17 | Ages 18-20 | Ages 21-44 | Ages 45-64 | Ages 65+
Male | 89,802 | 629,836 | 807,417 | 726,871 | 282,537 | 1,310,193 | 900,009 | 322,797
Female | 86,145 | 601,839 | 769,362 | 696,406 | 295,272 | 1,748,429 | 1,059,104 | 523,712
2-3: Age Cohorts "All Managed Care"
Ages 65+ 8%
Ages 45-64 18%
Ages 21-44 28%
Ages 18-20 5%
Ages 12-17 13%
Ages 6-11 15%
Ages 1-5 11%
Age < 1 2%
2-4: Race and Ethnicity "All Managed Care"
Hispanic 47%
White 21%
Asian/Pacific Islander 13%
Other/Unknown 12%
African-American 8%
2-5: Medi-Cal Only "OTLIC" Age
Ages 40-64 0%
Ages 19-39 3%
Age 0-18 97%
2-6: Medi-Cal Only "SPD" Age
Ages 65+ 17%
Ages 40-64 42%
Ages 19-39 22%
Age 0-18 20%
2-7: Medi-Cal Only "ACA" Age
Ages 65+ 0%
Ages 40-64 44%
Ages 19-39 56%
Age 0-18 0%
2-8: Medi-Cal Only "OTHER" Age
Ages 65+ 0%
Ages 40-64 11%
Ages 19-39 21%
Ages 0-18 68%
Note: Data in this dashboard is preliminary and subject to change
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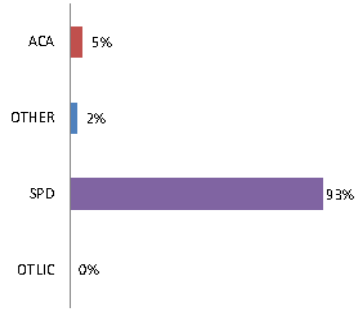
## Medi-Cal Managed Care Performance Dashboard
Released September 14, 2017

**CERTIFIED ELIGIBLE DEMOGRAPHICS: Dual Eligible Managed Care demographics for March 2017 (Data Warehouse pull August 2017)**

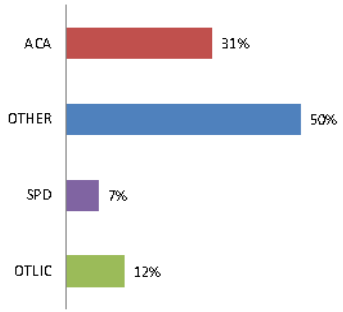
| *Dual Status* | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Jan-17 | Feb-17 | Mar-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dual | 966,351 | 965,864 | 968,518 | 964,686 | 965,296 | 962,590 | 963,711 | 962,345 | 971,414 | 997,225 | 1,015,186 | 1,020,021 |
| Non-Dual* | 9,573,689 | 9,612,119 | 9,697,767 | 9,704,208 | 9,758,224 | 9,752,173 | 9,830,498 | 9,842,445 | 9,848,515 | 9,778,587 | 9,805,961 | 9,829,710 |

*Note: Medi-Cal Only. See glossary.*

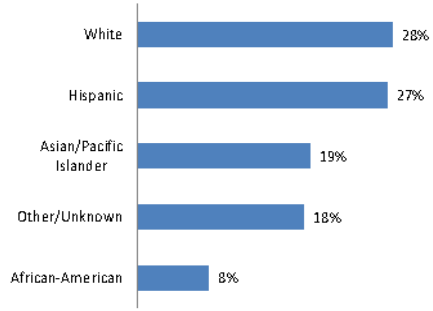
3-1: Aid Groups "Dual"



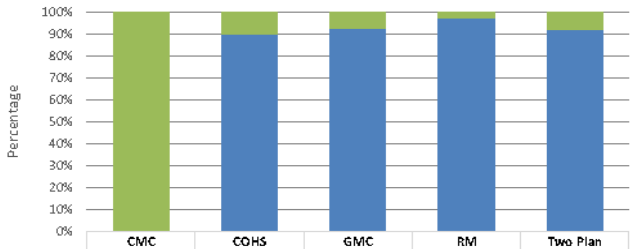

3-2: Aid Groups "Non-Dual"




3-3: Dual Eligible by Race and Ethnicity

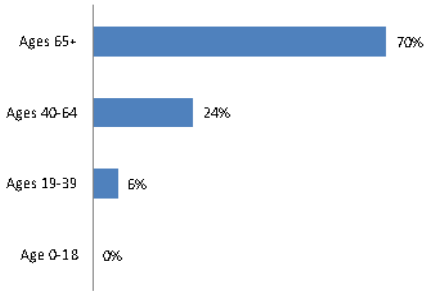



3-4: Plan Model Totals




| | CMC | COHS | GMC | RM | Two Plan |
|---|---|---|---|---|---|
| Dual | 114,601 | 228,231 | 89,123 | 10,867 | 577,199 |
| Non-Dual | 16 | 1,973,005 | 1,083,640 | 378,155 | 6,394,894 |

3-5: Dual Age Cohorts




**Note: Data in this dashboard is preliminary and subject to change**

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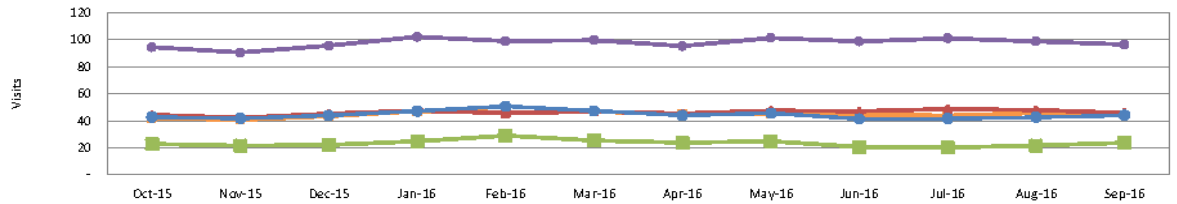
## Medi-Cal Managed Care Performance Dashboard
## Released September 14, 2017

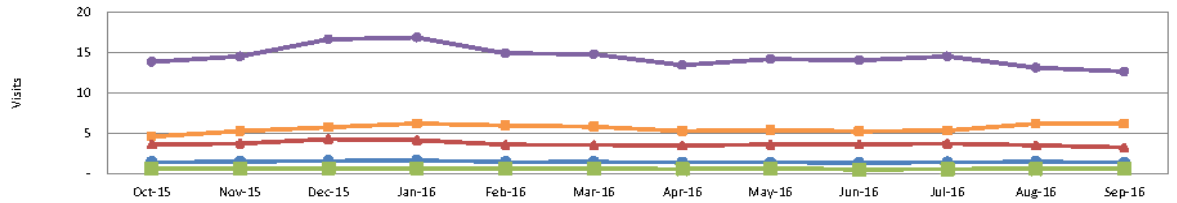
**UTILIZATION: Statewide October 2015 to September 2016 (Data Warehouse pull August 2017)**

### 4-1: Emergency Room Visits per 1,000 Member Months




| | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO-SPD | 94 | 91 | 96 | 102 | 99 | 100 | 95 | 101 | 99 | 101 | 99 | 96 |
| Dual | 42 | 41 | 43 | 47 | 46 | 47 | 45 | 45 | 45 | 44 | 46 | 44 |
| MO-ACA | 44 | 42 | 45 | 47 | 46 | 47 | 45 | 47 | 47 | 49 | 48 | 46 |
| MO-Other | 43 | 42 | 44 | 47 | 51 | 47 | 44 | 46 | 41 | 42 | 43 | 44 |
| MO-OTLIC | 23 | 22 | 22 | 25 | 29 | 25 | 24 | 25 | 21 | 20 | 22 | 24 |

### 4-2: Emergency Room Visits With an Inpatient Admission per 1,000 Member Months




| | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO-SPD | 14 | 14 | 17 | 17 | 15 | 15 | 13 | 14 | 14 | 14 | 13 | 13 |
| Dual | 5 | 5 | 6 | 6 | 6 | 6 | 5 | 5 | 5 | 5 | 6 | 6 |
| MO-ACA | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 3 |
| MO-Other | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| MO-OTLIC | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |

**Note: Data in this dashboard is preliminary and subject to change**

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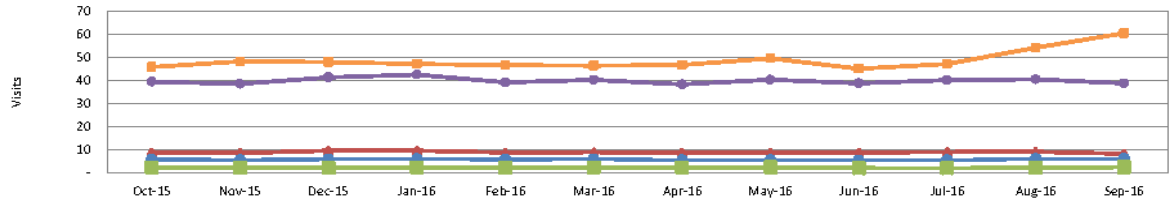
DHCS California Department of Health Care Services

## Medi-Cal Managed Care Performance Dashboard
## Released September 14, 2017

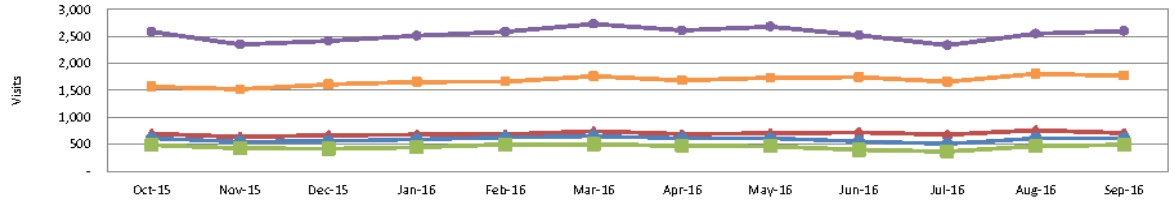
**UTILIZATION: Statewide October 2015 to September 2016 (Data Warehouse pull August 2017)**

### 5-1: Inpatient Admissions per 1,000 Member Months




| | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO-SPD | 40 | 39 | 41 | 43 | 39 | 40 | 38 | 40 | 39 | 40 | 41 | 39 |
| Dual | 46 | 48 | 48 | 47 | 47 | 46 | 47 | 50 | 45 | 47 | 54 | 60 |
| MO-ACA | 9 | 9 | 10 | 10 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 8 |
| MO-Other | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 |
| MO-OTLIC | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 |

### 5-2: Outpatient Visits per 1,000 Member Months




| | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO-SPD | 2,587 | 2,348 | 2,418 | 2,513 | 2,588 | 2,731 | 2,612 | 2,681 | 2,522 | 2,336 | 2,552 | 2,600 |
| Dual | 1,569 | 1,520 | 1,608 | 1,657 | 1,660 | 1,762 | 1,684 | 1,733 | 1,744 | 1,658 | 1,807 | 1,770 |
| MO-ACA | 694 | 635 | 669 | 679 | 682 | 741 | 688 | 702 | 722 | 679 | 760 | 706 |
| MO-Other | 609 | 547 | 559 | 589 | 629 | 650 | 610 | 610 | 555 | 507 | 611 | 613 |
| MO-OTLIC | 487 | 427 | 416 | 445 | 498 | 500 | 469 | 461 | 397 | 364 | 463 | 490 |

**Note: Data in this dashboard is preliminary and subject to change**

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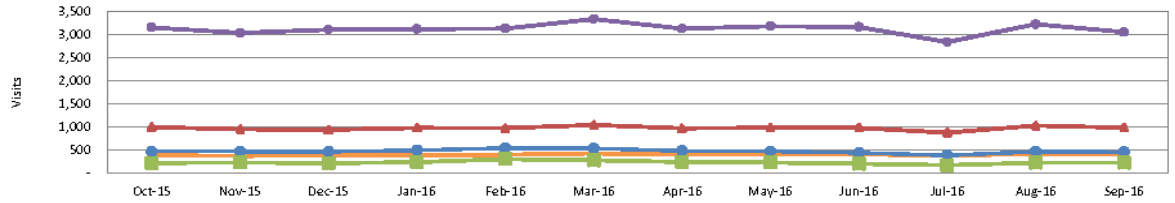
## Medi-Cal Managed Care Performance Dashboard
## Released September 14, 2017

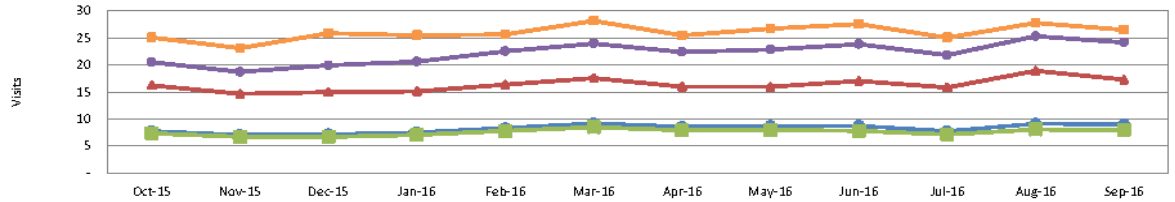
**UTILIZATION: Statewide October 2015 to September 2016 (Data Warehouse pull August 2017)**

6-1: Prescriptions per 1,000 Member Months




| | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO-SPD | 3,148 | 3,035 | 3,103 | 3,116 | 3,127 | 3,331 | 3,126 | 3,175 | 3,160 | 2,836 | 3,221 | 3,050 |
| Dual | 389 | 374 | 380 | 394 | 399 | 428 | 399 | 404 | 411 | 376 | 426 | 406 |
| MO-ACA | 998 | 951 | 940 | 981 | 976 | 1,043 | 971 | 983 | 980 | 876 | 1,029 | 985 |
| MO-Other | 470 | 469 | 465 | 494 | 545 | 536 | 484 | 473 | 440 | 386 | 465 | 459 |
| MO-OTLIC | 224 | 231 | 218 | 239 | 305 | 278 | 244 | 232 | 204 | 174 | 226 | 227 |

6-2: Mild to Moderate Mental Health Visits per 1,000 Member Months




| | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO-SPD | 21 | 19 | 20 | 21 | 23 | 24 | 22 | 23 | 24 | 22 | 25 | 24 |
| Dual | 25 | 23 | 26 | 25 | 26 | 28 | 25 | 27 | 28 | 25 | 28 | 27 |
| MO-ACA | 16 | 15 | 15 | 15 | 16 | 18 | 16 | 16 | 17 | 16 | 19 | 17 |
| MO-Other | 8 | 7 | 7 | 7 | 8 | 9 | 9 | 9 | 9 | 8 | 9 | 9 |
| MO-OTLIC | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 7 | 8 | 8 |

**Note: Data in this dashboard is preliminary and subject to change**

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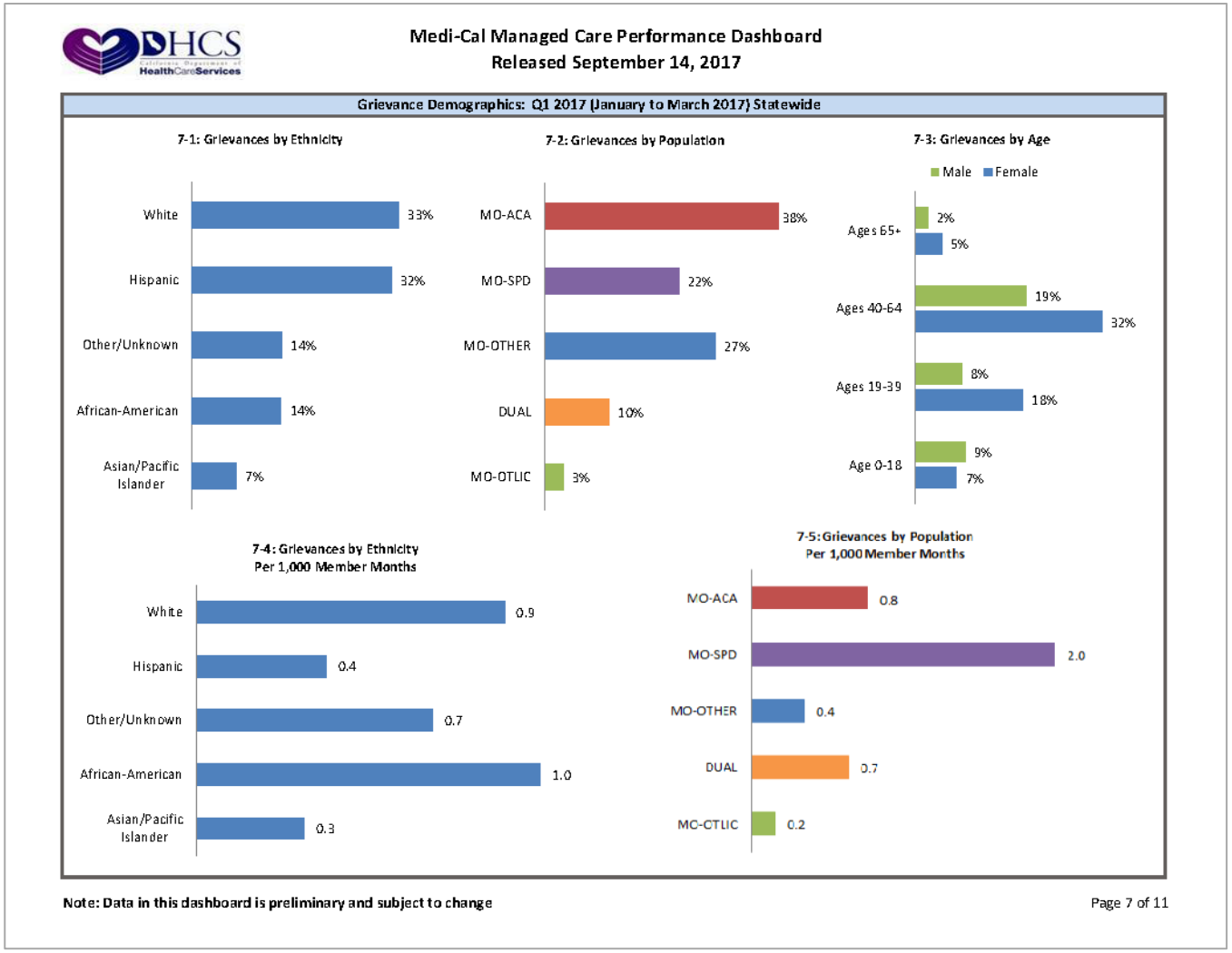
DHCS
Medi-Cal Managed Care Performance Dashboard
Released September 14, 2017
Grievance Demographics: Q1 2017 (January to March 2017) Statewide
7-1: Grievances by Ethnicity
White 33%
Hispanic 32%
Other/Unknown 14%
African-American 14%
Asian/Pacific Islander 7%
7-2: Grievances by Population
MO-ACA 38%
MO-SPD 22%
MO-OTHER 27%
DUAL 10%
MO-OTLIC 3%
7-3: Grievances by Age
Male Female
Ages 65+ 2% 5%
Ages 40-64 19% 32%
Ages 19-39 8% 18%
Age 0-18 9% 7%
7-4: Grievances by Ethnicity
Per 1,000 Member Months
White 0.9
Hispanic 0.4
Other/Unknown 0.7
African-American 1.0
Asian/Pacific Islander 0.3
7-5: Grievances by Population
Per 1,000 Member Months
MO-ACA 0.8
MO-SPD 2.0
MO-OTHER 0.4
DUAL 0.7
MO-OTLIC 0.2
Note: Data in this dashboard is preliminary and subject to change
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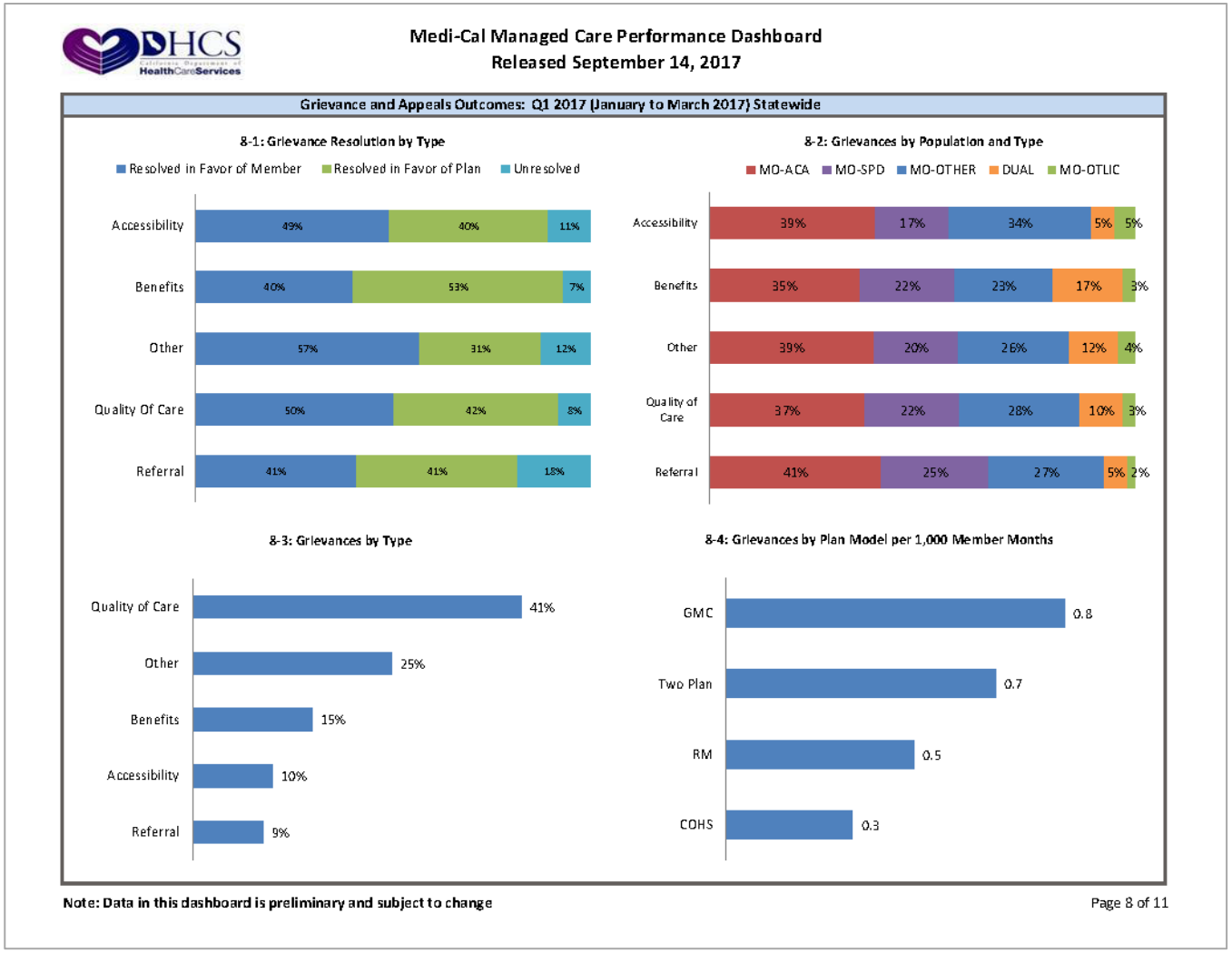
DHCS
Medi-Cal Managed Care Performance Dashboard
Released September 14, 2017
Grievance and Appeals Outcomes: Q1 2017 (January to March 2017) Statewide
8-1: Grievance Resolution by Type
Resolved in Favor of Member
Resolved in Favor of Plan
Unresolved
Accessibility 49% 40% 11%
Benefits 40% 53% 7%
Other 57% 31% 12%
Quality Of Care 50% 42% 8%
Referral 41% 41% 18%
8-2: Grievances by Population and Type
MO-ACA
MO-SPD
MO-OTHER
DUAL
MO-OTLIC
Accessibility 39% 17% 34% 5% 5%
Benefits 35% 22% 23% 17% 3%
Other 39% 20% 26% 12% 4%
Quality of Care 37% 22% 28% 10% 3%
Referral 41% 25% 27% 5% 2%
8-3: Grievances by Type
Quality of Care 41%
Other 25%
Benefits 15%
Accessibility 10%
Referral 9%
8-4: Grievances by Plan Model per 1,000 Member Months
GMC 0.8
Two Plan 0.7
RM 0.5
COHS 0.3
Note: Data in this dashboard is preliminary and subject to change
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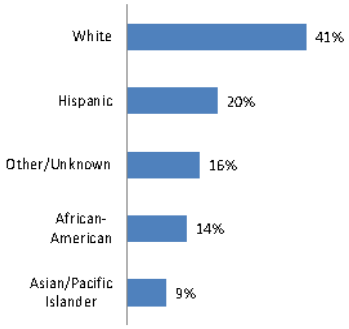
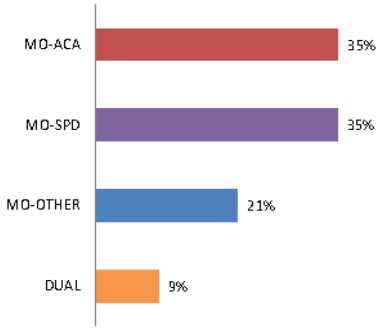
## Medi-Cal Managed Care Performance Dashboard
## Released September 14, 2017

### State Fair Hearing Demographics: Q1 2017 (January to March 2017) Statewide

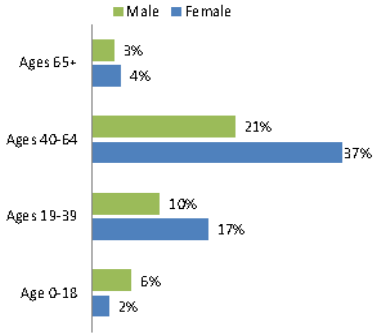
**9-1: Hearings by Ethnicity**



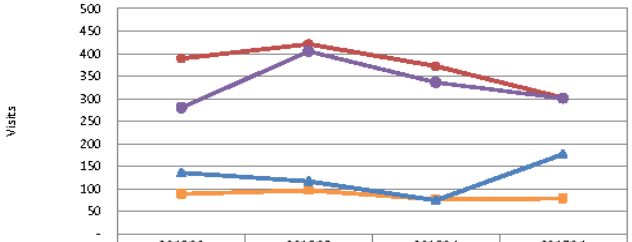

**9-2: Hearings by Population**




**9-3: Hearings by Age**

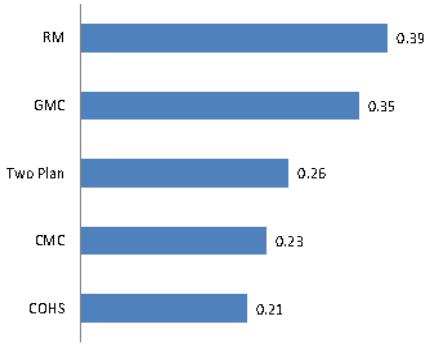



**9-4: Hearings by Population**




| | 2016Q2 | 2016Q3 | 2016Q4 | 2017Q1 |
|---|---|---|---|---|
| MO-ACA | 389 | 421 | 372 | 302 |
| DUAL | 89 | 97 | 77 | 79 |
| MO-OTHER | 136 | 117 | 75 | 177 |
| MO-SPD | 280 | 405 | 336 | 301 |
| Total | 894 | 1040 | 860 | 859 |

**9-5: Hearings by Plan Model per 10,000 Member Months**




**Note: Data in this dashboard is preliminary and subject to change**

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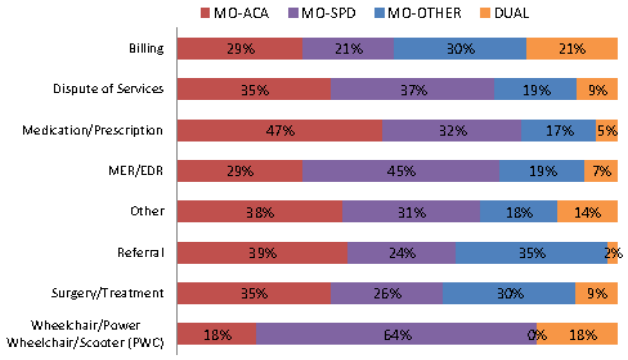
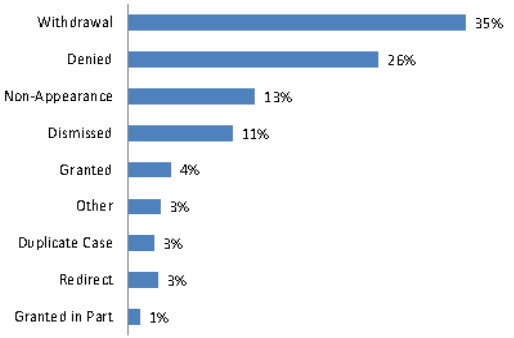
**Medi-Cal Managed Care Performance Dashboard**
**Released September 14, 2017**

**State Fair Hearing Reasons/Outcomes: Q1 2017 (January to March 2017) Statewide**

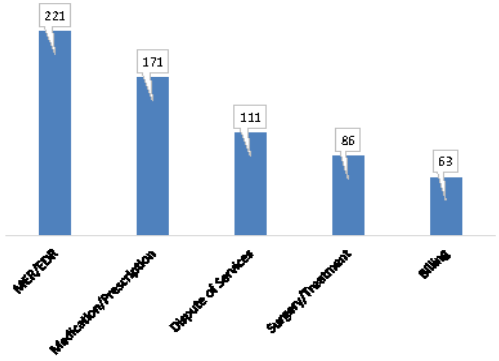
**10-1: Hearing Reasons by Population**



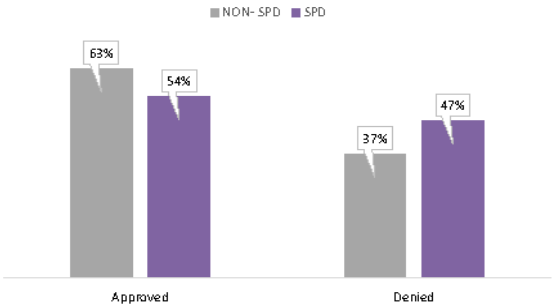

**10-2: Hearing Outcomes**




**10-3: Top 5 Hearing Reasons**




**10-4: Medical Exemption Requests**




**Note: Data in this dashboard is preliminary and subject to change**

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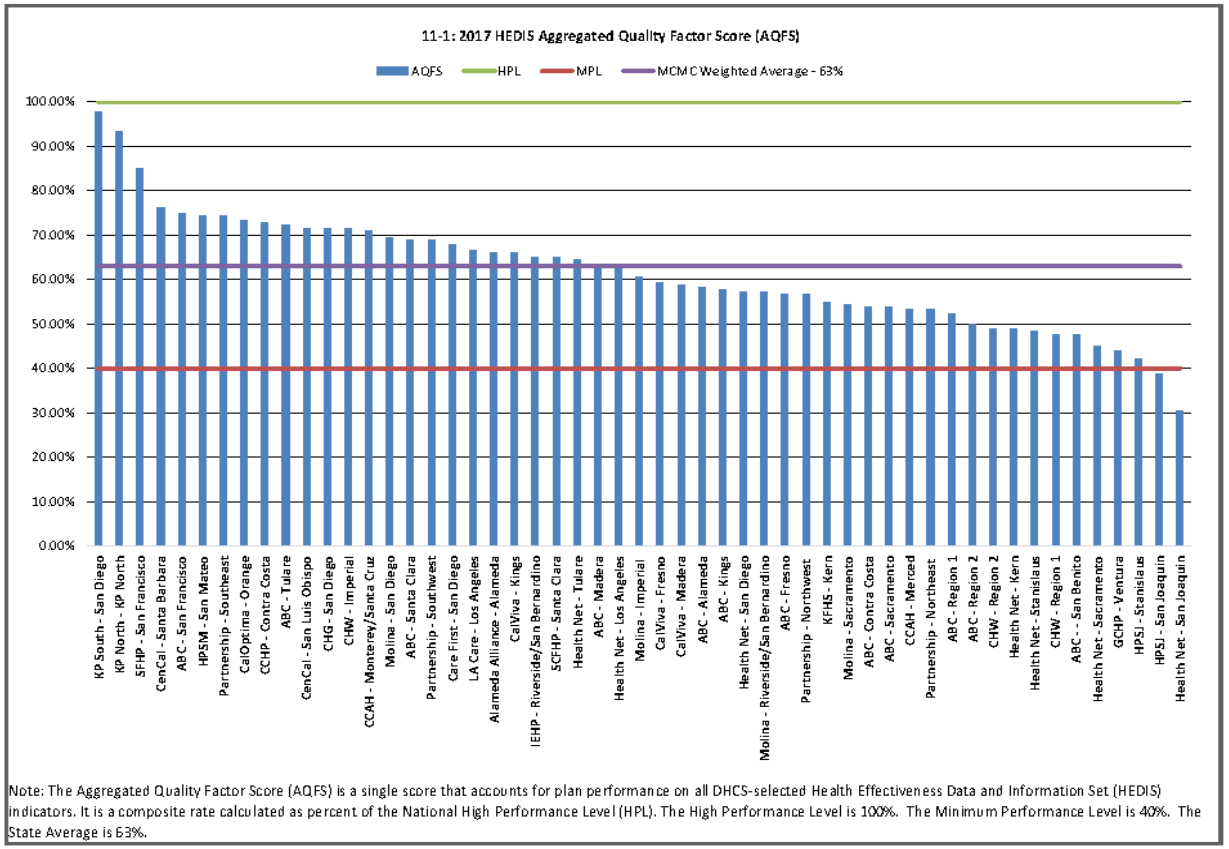
**Medi-Cal Managed Care Performance Dashboard**
**Released September 14, 2017**




Note: The Aggregated Quality Factor Score (AQFS) is a single score that accounts for plan performance on all DHCS-selected Health Effectiveness Data and Information Set (HEDIS) indicators. It is a composite rate calculated as percent of the National High Performance Level (HPL). The High Performance Level is 100%. The Minimum Performance Level is 40%. The State Average is 63%.

**Note: Data in this dashboard is preliminary and subject to change**

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# Appendix J: Georgia Families VBP

**Attachment U**
**Georgia Families**
**Value Based Purchasing Measures**

**Figure Z: Value Based Purchasing Performance Measures and Targets - Georgia Families Core Measures**

| | Performance Measures | Baseline Measurement Period<br>Calendar Year: 2013<br>Validation Period: SFY 2014<br>Published: September 2014 | | Proposed Targets for Measurement Period: Year 1<br>Calendar Year: 2017<br>Validation Period: CY 2018<br>Published: 10/2018 | | Proposed Targets for Measurement Period: Year 2<br>Calendar Year: 2018<br>Validation Period: CY 2019<br>Published: 10/2019 | | Proposed Targets for Measurement Period: Year 3<br>Calendar Year: 2019<br>Validation Period: CY 2020<br>Published: 10/2020 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid |
| 1 | **Preventive Care for Children: Well-child visits in the First 15 Months of Life – 6 or more visits** – The percentage of members who turned 15 months old during the measurement year and who had six or more well-child visits with a PCP during their first 15 months of life. | | 68.46 | | HEDIS 2016 National 50th percentile | | HEDIS 2017 National 75th percentile | | HEDIS 2018 National 75th percentile |
| 2 | **Preventive Care for Children: Childhood Immunization Status – Combo 10** – The percentage of children two years of age who had 4 DTaP; 3 IPV; 1 MMR; 3 HiB; 3 HepB; 1 VZV; 4 PCV; 1 HepA; 2 – 3 RV; and 2 Influenza vaccines by their second birthday. | | 40.28 | | HEDIS 2016 National 75th percentile | | HEDIS 2017 National 75th percentile | | HEDIS 2018 National 90th percentile |
| 3 | **Developmental Screening: Developmental Screening in the first three years of life** – The percentage of children screened for risk of developmental, behavioral, and social delays using a standardized screening tool in the 12 months preceding their first, second, or third birthday. | | 42.82 | | 70% | | Absolute 10% improvement over CY 2017 rate | | Absolute 10% improvement over CY 2018 rate |
| 4 | **Preventive Care for Adolescents: Adolescents Well-Care Visits** – The percentage of enrolled members 12-21 years of age who had at least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during the measurement year. | | 52.55 | | HEDIS 2016 National 50th percentile | | HEDIS 2017 National 75th percentile | | HEDIS 2018 National 75th percentile |
| 5 | **Preventive Dental Services: Total Eligibles Receiving Preventive Dental Services** – The percentage of individuals ages 1-20 who are enrolled for at least 90 continuous days, are eligible for Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) services, and who received at least one preventive dental | 52.65 | | 60% | | 10% relative improvement above CY 2017 rate | | 10% relative improvement above CY 2018 rate | |

**Attachment U**
**Georgia Families**
**Value Based Purchasing Measures**

| | Performance Measures | Baseline Measurement Period Calendar Year: 2013 Validation Period: SFY 2014 Published: September 2014 | | Proposed Targets for Measurement Period: Year 1 Calendar Year: 2017 Validation Period: CY 2018 Published: 10/2018 | | Proposed Targets for Measurement Period: Year 2 Calendar Year: 2018 Validation Period: CY 2019 Published: 10/2019 | | Proposed Targets for Measurement Period: Year 3 Calendar Year: 2019 Validation Period: CY 2020 Published: 10/2020 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid |
| | service during the reporting period. | | | | | | | | |
| 6 | **Obesity Prevention: Weight Assessment and Counseling for Nutrition and Physical Activity for Children/Adolescents – BMI Percentile – Total** – The percentage of members 3-17 years of age who had an outpatient visit with a PCP or an OB/GYN and who had evidence of the following during the measurement year: BMI percentile documentation, Counseling for nutrition, and Counseling for physical activity. | | BMI %tile - 51.16; Nutrition Counseling – 61.11 Physical Activity; Counseling – 54.63 | | HEDIS 2016 National 75th percentile | | HEDIS 2017 National 75th percentile | | HEDIS 2018 National 90th percentile |
| 7 | **Behavioral Health: Follow-up Care for Children Prescribed ADHD Medication – Initiation Phase** – The percentage of children newly prescribed attention-deficit/hyperactivity disorder (ADHD) medication who had at least three follow-up care visits within a 10-month period, one of which was within 30 days of when the first ADHD medication was dispensed. | Initiation Phase – 43.12; Continuation Phase – 59.22 | | HEDIS 2016 National 75th percentile | | HEDIS 2017 National 75th percentile | | HEDIS 2018 National 90th percentile | |
| 8 | **Pregnancy-related Care: Prenatal and Postpartum Care – Postpartum Care** – The percentage of deliveries of live births between November 6 of the year prior to the measurement year and November 5 of the measurement year. For these women, the measure assesses the following: *Postpartum Care* - The percentage of deliveries that had a postpartum visit on or between 21 and 56 days after delivery. | | 63.24 | | HEDIS 2016 National 75th percentile | | HEDIS 2017 National 90th percentile | | HEDIS 2018 National 90th percentile |
| 9 | **Birth Outcomes: Rate of Infants with Low Birth Weight** – The percentage of live births that weighed less than 2,500 grams during the reporting period. | 8.32 | | <= National Vital Statistics LBW rate published Dec of 2016 | | <= National Vital Statistics LBW rate published Dec of 2017 | | <= National Vital Statistics LBW rate published Dec or 2018 | |
| 10 | Diabetes: Comprehensive Diabetes Care | | HbA1c | | HEDIS 2016 | | HEDIS 2017 | | HEDIS 2018 |

**Attachment U**
**Georgia Families**
**Value Based Purchasing Measures**

| | Performance Measures | Baseline Measurement Period<br>Calendar Year: 2013<br>Validation Period: SFY 2014<br>Published: September 2014 | | Proposed Targets for Measurement Period: Year 1<br>Calendar Year: 2017<br>Validation Period: CY 2018<br>Published: 10/2018 | | Proposed Targets for Measurement Period: Year 2<br>Calendar Year: 2018<br>Validation Period: CY 2019<br>Published: 10/2019 | | Proposed Targets for Measurement Period: Year 3<br>Calendar Year: 2019<br>Validation Period: CY 2020<br>Published: 10/2020 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid |
| | **(18-75 years old)** – The percentage of members 18-75 years of age with diabetes (type 1 and type 2) who had each of the following: Hemoglobin A1c (HbA1c) testing; HbA1c poor control (>9.0%); HbA1c control (<8.0%); HbA1c control (<7.0%) for a selected population; Eye exam (retinal) performed; Medical attention for nephropathy; and BP control (<140/90 Hg). | | **testing – 80.5; HbA1c >9 – 52.47; HbA1c <8 – 39.64; HbA1c <7 – 30.08; Eye exam – 57.81; Nephropathy – 74.51; BP control – 56.91** | | **National 75th percentile for HbA1c testing; 50th percentile for all other rates** | | **National 90th percentile for HbA1c testing; 50th percentile for > 9.0 and 75th percentile for all other rates** | | **National 90th percentile for HbA1c testing; 25th percentile for >9.0 and 75th percentile for all other rates** |
| **11** | **Cardiovascular Conditions: Controlling High Blood Pressure (18-85)** – The percentage of members 18-85 years of age who had a diagnosis of hypertension (HTN) and whose BP was adequately controlled (<140/90) during the measurement year. Use the Hybrid Method for this measure. | | **48.36** | | **HEDIS 2016 National 50th percentile** | | **HEDIS 2017 National 75th percentile** | | **HEDIS 2018 National 75th percentile** |
| **12** | **Respiratory Conditions: Medication Management for People with Asthma** – The percentage of members 5-64 years of age during the measurement year who were identified as having persistent asthma and were dispensed appropriate medications that they remained on during the treatment period. Two rates are reported: 1) The percentage of members who remained on an asthma controller medication for at least 50% of their treatment period; 2) The percentage of members who remained on an asthma controller medication for at least 75% of their treatment period. | **50% compliant - 5 – 11yo – 49.08; 50% compliant- 12 – 18 yo – 46.26**<br><br>**75% compliant - 5 – 11yo – 22.88; 75% compliant - 12 – 18 yo – 22.18** | | **HEDIS 2016 National 75th percentile** | | **HEDIS 2017 National 75th percentile** | | **HEDIS 2018 National 90th percentile** | |
| **13** | **Experience with Care: CAHPS 5.0H Child Version – Shared Decision Making** – This measure provides information on parents' experience with their child's Medicaid organization. A composite score is | **Adult – 53.7% Child – 57.7%** | | **Absolute 10% above baseline** | | **Relative 10% above CY 2017 rate** | | **Relative 10% above CY 2018 rate** | |

**Attachment U**
**Georgia Families**
**Value Based Purchasing Measures**

| Performance Measures | | Baseline Measurement Period<br>Calendar Year: 2013<br>Validation Period: SFY 2014<br>Published: September 2014 | | Proposed Targets for Measurement Period: Year 1<br>Calendar Year: 2017<br>Validation Period: CY 2018<br>Published: 10/2018 | | Proposed Targets for Measurement Period: Year 2<br>Calendar Year: 2018<br>Validation Period: CY 2019<br>Published: 10/2019 | | Proposed Targets for Measurement Period: Year 3<br>Calendar Year: 2019<br>Validation Period: CY 2020<br>Published: 10/2020 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid | Admin | Hybrid |
| | calculated for the Shared Decision Making domain of member experience and responses of "Yes" and "A lot" are considered achievements for the Shared Decision Making composite. | | | | | | | | |
| 14. | **Increase in the number of Patient Centered Medical Homes in the Contractor's Network** – The percent increase of Providers enrolled in the Contractor's network that receive NCQA recognition. | **Establish Baseline** | | **Absolute 15% above baseline** | | **Relative 15% above CY 2017 total** | | **Relative 15% above CY 2018 total** | |