MED143 CONTRACT DRAFT DELIVERABLE #7

MEDS AD Waiver MTM Program Interim Report

Prepared for Florida Medicaid
in Partial Fulfillment of Contract
MED 143

College of Medicine
College of Social Work
Florida State University

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Executive Summary

This Interim Report describes the quantitative and qualitative evaluation and preliminary findings of the MEDS-AD Waiver Medication Therapy Management (MTM) Program as required by Medicaid contract MED143. Led by Principal Investigator Dr. Leslie M. Beitsch, MD, JD, an evaluation team from the Florida State University Colleges of Medicine and Social Work, the Claude Pepper Center, and the FAMU College of Pharmacy are conducting the evaluation of programs authorized through the MEDS-AD 1115 (a) Demonstration Waiver approved by the Centers for Medicare and Medicaid Services (CMS) for the period January 2011 through December 2013.

The purpose of this document is to summarize findings to date in support of the AHCA application to the Centers for Medicare and Medicaid Services MEDS-AD waiver renewal.

Evaluation of the MEDS-Ad Waiver MTM Program includes the following components:

1. Administrative Analysis and quantitative evaluation of the MEDS-AD Waiver MTM Program is being conducted by a Florida State University College of Medicine research team assessing the benefits of the MTM Program for certain aged and disabled recipients eligible for Medicaid through the Waiver Program during the period of June 1, 2011 through September 30, 2013. Key research questions are identifying differences in the utilization, expenditures, clinical outcomes, and recipient demographics between those eligible recipients who participated in the program (intervention group) and those eligible recipients who did not participate in the program (comparison group).

    - Preliminary results from the Quantitative Evaluation Team's audit of the University of Florida College of Pharmacy program reports and records as well as preliminary descriptive analysis of MTM data provided by the Florida Agency for Health Care Administration are included. These analyses are based on the claims and enrollment data available at the time of this report. Preliminary estimates of expenditures and number of services received by these populations are also provided. Appropriate

statistical tests for bivariate group comparisons are reported. Utilization, expenditure and disease prevalence are drawn from claims and enrollment data for January 1, 2010 to June 30, 2012. Inpatient hospitalization and skilled nursing facility stay records, as well as pharmacy and outpatient hospital clinic files, were provided by AHCA at the time of this report.

2. Qualitative Evaluation of the MEDS-AD Waiver MTM Program is being conducted by a Florida State University College of Social Work and Florida A & M University College of Pharmacy research team assessing the benefits and value of the MTM Program during the period of June 1, 2011 through September 30, 2013. The team employs qualitative research methods, including rigorous interview methods and empirical analytical tools, to articulate administrative, participant and physician perceptions of the MTM Program.

   - The qualitative component of this mixed methods project lends a much deeper understanding of the underlying processes that provide a more nuanced evaluation of the MEDS-AD Demonstration project based on Medication Therapy Management principles. The Research Investigative Team (RIT) associated with the qualitative evaluation effort consists of multidiscipline members who represent three academic institutions. The Lead Analyst, an Associate Professor at the FSU College of Social Work and a Co-PI of the project, is an expert in qualitative methodology and served as an essential participant in all five key informant interviews with University of Florida College of Pharmacy and AHCA Medicaid Administrative Personnel. She is also overseeing all interviews conducted by highly trained RIT Research Assistants. In addition, she, along with Florida A&M University (FAMU) Pharmacists, constructed the interview guides for key informant, primary care physicians, and MEDS-AD waiver program participants.

   - All key informants interviewed were the most knowledgeable persons available regarding the development and implementation of the current MEDS-AD Demonstration project. The Bureau Chief of Pharmacy Services for Florida Medicaid, provided insights into the etiology of the current program as well as lessons learned

from other models of care. The Clinical Administrator of Medicaid Pharmacy Services provided invaluable information regarding the implementation of the current program, including outcomes measured, characteristics of participants, and knowledge of the Medicaid population.

- Four key informants at the University of Florida's College of Pharmacy chosen by AHCA as being most knowledgeable about the MEDS-AD Demonstration project were also interviewed for this evaluation. The Center Director and three highly experienced pharmacists took great pains to describe the MTM program's implementation with a PowerPoint presentation that included detailed information regarding the MEDS-AD Demonstration project.

- Twenty-one participants have been interviewed regarding their perceptions of the services provided under the MEDS-AD Demonstration project using both open- and closed-ended questions. Preliminary findings from these interviews provide insight into their overall satisfaction with the MTM program and, additionally, feedback on specific issues such as information provided and characteristics of care provision.

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Contents

Table of Tables

Table of Figures

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List of Acronyms

Acronym	Explanation
AHCA	Agency for Health Care Administration
AHRQ	Agency for Healthcare Research and Quality
CG1	Comparison group 1 constructed from MTM eligible non-participants.
CG2	Comparison group 2 constructed from MEG1 population
CMR	Comprehensive medication review
FSU COM	Florida State University College of Medicine
MAP	Medication action plan
MED143	Contract between FSU COM and AHCA
MEDS-AD	Medicaid waiver program; section 1115 Demonstration (Project No. 11-W-00205/4)
MEG1	Medicaid eligible population number one. A category of Medicaid recipients eligible for MEDS-AD under the waiver.
MTM	Medication therapy management
PCP	Primary care physician
QFUR	Quarterly follow-up review
UF COP	University of Florida College of Pharmacy
ACE	Angiotensin-converting-enzyme inhibitor
ARB	Angiotensin receptor blockers
GERD	Gastroesophageal reflux disease
COPD	Chronic obstructive pulmonary disease
OTC	Over the counter

SECTION I:
Interim Report on the Preliminary *Quantitative* Data Analysis

Definitions of Population Groups

This Interim Report refers to various groups and populations defined by their Medicaid or MEDS-AD waiver status, Medication Therapy Management (MTM) program status, or membership in two comparison groups. The following definitions expand on the List of Acronyms and are offered to create a consistent nomenclature for discussing the groups discussed in this report.

All persons referred to in this report are part of the Florida MEDS-AD Waiver Demonstration Project No. 11-W-00205/4 and have to meet income and asset criteria to be eligible for Medicaid. The MEDS-AD waiver program includes three separate Demonstration Populations. The Medicaid Eligible Group 1 (MEG1) population is the group relevant to this evaluation of the University of Florida College of Pharmacy (UF COP) MTM project. The MEG1 population includes individuals eligible for Medicaid but not eligible for Medicare, and who are eligible but not currently receiving institutional care, hospice, or home and community based services. The MEG1 population is the source for all Medication Therapy Management (MTM) program participants and comparison groups to be constructed for this evaluation.

Group definitions for the purpose of this evaluation are determined by a series of steps taken by the AHCA Pharmacy Program, the UF COP staff, or the evaluation team and flow logically from the source population of approximately 14,000 MEG1 Medicaid recipients for the first year of the MTM program. See Figure 1.

Step 1. AHCA Pharmacy Program staff selected Medicaid recipients from the MEG1 population at random for the MTM program. Pharmacy Program staff contacted these recipients by telephone to determine their interest in the MTM program and obtained consent to provide their names and contact information to the UF COP staff. The selected group of MEG1

Medicaid recipients sent to UF COP is designated as MTM ELIGIBLE recipients. The Pharmacy Program sent the names of approximately 652 recipients to the UF COP in Year 1.

Step 2. The UF COP staff contacted persons in the pool of MTM ELIGIBLE recipients until they had completed Comprehensive Medication Reviews (CMR) with 147 persons. The completed CMR group is designated as MTM PARTICIPANTS to distinguish them from the larger group of MTM ELIGIBLE recipients. MTM ELIGIBLE recipients who did not become MTM PARTICIPANTS are designated as MTM ELIGIBLE NON-PARTICPANTS. They may be further categorized as recipients who declined to participate, could not be reached, or were not needed and therefore no contact attempt was made.

Step 3. The evaluation team identified two comparison groups to be used in this evaluation of the MTM program. The first MTM comparison group (CG1) is defined as MTM ELIGIBLE recipients who did not become MTM PARTICIPANTS. In Year 1 this group includes approximately 505 recipients (652-147).

The second MTM comparison group (CG2) is a subset of persons in the MEG1 population that were not referred by AHCA to the UF COP. In Year 1, the subset of the MEG1 population not referred to AHCA includes approximately 13,500 recipients (approximately 14,000 MEG1 members less 652 MTM ELIGIBLE recipients). The CG2 will be selected from the remaining MEG1 members who are well matched to the MTM PARTICIPANTS based on their demographic characteristics, utilization levels, and other factors deemed relevant by the evaluation team.

Introduction and Purpose of this Report

The purpose of this document is to summarize findings to date in support of the AHCA application to the Centers for Medicare and Medicaid Services MEDS-AD waiver renewal. Results from the Evaluation Team's audit of the UF COP program reports and records as well as preliminary descriptive analysis of the Year 1 MEG1, MTM ELIGIBLE PARTICIPANTS, and MTM PARTICIPANTS are provided based on the claims and enrollment data available at the time of this report. Preliminary estimates of expenditures and number of services received by these populations are also provided. Appropriate statistical tests for bivariate group comparisons are

reported. Utilization, expenditure and disease prevalence are drawn from claims and enrollment data for January 1, 2010 to June 30, 2012. Inpatient hospitalization and skilled nursing facility stay records, as well as pharmacy and outpatient hospital clinic files, were provided by AHCA at the time of this report.

Background on the MTM Program and Evaluation

The goals of the Medication Therapy Management (MTM) Program are to improve the quality of care and prescribing practices based on best-practice guidelines, improve patient adherence to medication plans, reduce clinical risk, and lower prescribed drug costs and the rate of inappropriate spending for certain Medicaid prescription drugs for a high risk population of Medicaid recipients eligible through the MEDS-AD Waiver Program. Trained staff from the UF COP conducts telephone interviews with willing Medicaid recipients and produce a Comprehensive Medication Review (CMR) document as the first step in the intervention. Based on findings from the CMR, UF COP staff may 1) send the patient a Medication Action Plan (MAP) that includes a medication list and may include recommendations for behavioral change relevant to their condition and medication; and/or 2) send a FAX to the recipient's Primary Care Physician (PCP) with recommendations for changes in medication. Any given recipient may receive a MAP only, PCP FAX only, a MAP and a PCP FAX, or none of the post-CMR actions. Actions initiated are based on the pharmacist's expert opinion regarding over or under utilization of medication, medication interactions, or other issues related to the patient's treatment. Recommendations to the PCP may or may not be accepted and implemented by the prescriber. Subsequent to the CMR and post-CMR actions, recipients are followed for an additional nine months. UF COP staff conducts reviews of patient medication claims records provided by the Pharmacy Benefit Management vendor for Florida Medicaid to determine if recommendations have been implemented or new problems have appeared. Occasionally, these three quarterly reviews lead to another patient or PCP contact.

Evaluation Questions Addressed in this Report

This Interim Report addresses four questions.

1. Are the data quality, completeness, and standardization of patient chart and other records maintained by the UF COP during the first year of the MTM project adequate for evaluative purposes?
    a. This question allowed the evaluation team to: 1) become familiar with the content of the UF COP files and their relationship to one another, and 2) identify areas where the UF COP files lacked sufficient detail, used inconsistent coding, or deviated from standard research/evaluation best practices.
2. Can the summary results from Year 1 provided to AHCA by the UF COP using patient chart files and other MTM project records be reproduced?
    a. This question allowed the evaluation team to examine the concordance between results reported in UF COP narrative reports and patient charts.
3. What are the demographic characteristics of the MEG1 population, the MTM ELIGIBLE NON-PARTICPANTS, and MTM PARTICIPANTS; and are there differences in those characteristics between those population groups?
    a. This question addresses concerns related to the selection of appropriate comparison groups and identifies potential gaps in the data.
4. Are there differences in the utilization and expenditure profiles of the MEG1 population, the MTM ELIGIBLE NON-PARTICPANTS, and MTM PARTICIPANTS for calendar year 2011 and project Year 1 (June 1, 2012 to May 31, 2013) based on the claims and enrollment data available at the time of this report?
    a. This question addresses concerns related to the selection of appropriate comparison groups and identifies potential gaps in the data.

Methods

Data Sources

Source data for this preliminary report include UF COP patient chart files, the post-CMR summary file, the UF COP final quarterly narrative report, and AHCA claims and recipient demographic files for Year 1 of the MTM Program (June 1, 2011 to May 31, 2012).

UF COP created an individual patient chart for each of the 147 MTM PARTICIPANTS with a completed CMR. These individual Microsoft Excel Workbooks included 16 spreadsheets. Data was extracted from all 147 patient chart files and combined into 16 separate files by spreadsheet type. Issues with data recording methodology were noted in a narrative log. Table 1 lists the 16 spreadsheet names, data storage type, content, and any issues identified by the evaluation team.

MTM PARTICIPANTS were assigned to mutually exclusive categories based on post-CMR actions by UF COP as documented in the Intervention spreadsheet for each MTM participant. Individual MTM Participant interventions were coded as completed according to the following definitions: Completion of a CMR and three quarterly follow-up reviews (QFUR).

Participants were categorized as potentially inactive by scanning the Notes column of the Intervention spreadsheet. Patients became inactive due to death, change in Medicaid eligibility status, or change in MTM eligibility status. Patient demographic information and program final status was extracted from the UF post-CMR summary file of 652 MTM ELIGIBLE RECIPIENTS.

AHCA administrative data and enrollment files were extracted from five separate files for: 1) inpatient hospital claims associated with short-term general and surgical hospitals, 2) outpatient hospital claims associated with individual provider services, 3) long-term-care (LTC) claims associated with long-term facilities, 4) pharmacy claims for each prescription filled by the Medicaid recipients, and 5) recipient demographic and enrollment information in the recipient demographic file. Patient categories created from the UF files were matched to patient records from the AHCA claims and enrollment files.

Design

A retrospective examination was conducted of all Medicaid covered services and UF COP program data files and narrative reports for the MTM PARTICIPANT and NON-PARTICIPANTS for the period June 1, 2011 through May 31, 2012 and for calendar year 2011.

Analytic Methods

The analysis includes simple univariate and bivariate comparison of selected measures from all data sources with tests for statistical differences among defined groups using Chi-squared and t-tests as appropriate to compare proportions and means. Population group membership models adjusting for recipient age, race, and gender were also conducted. Models for between population group differences in expenditures and service utilization were also conducted using log transformed expenditures in a linear model and counts of service utilization in a negative binomial model. Both were adjusted for age, race, gender, and the group membership indicator for the MEG1, MTM ELIGIBLE non-PARTICPANTS, and MTM PARTICIPANTS. Qualitative assessment of the approach and quality of UF COP data files were also incorporated by comparing findings reported by UF COP in the Year 1 final report to AHCA with data extracted by the evaluation team from 147 individual patient charts created by the UF COP.

Findings

Evaluation Question 1

Are the data quality, completeness, and standardization of patient chart and other records maintained by the UF COP during the first year of the MTM project adequate for evaluative purposes?

Data Quality of the UF COP Patient Charts

Data quality for the UF COP patient charts and post-CMR was generally good and easy to understand from a programmatic point of view. The spreadsheets in each patient chart made good use of standardized drop down categories for most data elements. Additionally, the use of auto-fill to complete data elements that don't change their value and were needed in more than one spreadsheet, e.g. patient date of birth, were useful. Patient chart data elements and content appear in Table 1.

However, some potential areas for improvement were identified by the evaluation team and are listed in the last column of Table 1. The most common issue was the use of a non-standard arrangement of data cells into rows and columns. Columns that include more than one data storage type or more than one content domain are problematic from an evaluation point of view. They require additional effort to extract into standard research format used by statistical programs such as SAS or IBM SPSS and increase the likelihood of errors during that process. The use of image files in spreadsheets (Nos. 5, 8, 9, 10, 12, 14, and 16) in Table 1 below cannot be manipulated by statistical programs so information in those image files had to be reentered manually by the evaluation team. Finally, some relevant information stored in the Notes column of the Intervention spreadsheet was difficult to identify because the Notes field was entered as free text rather than standard categories. For example, patients identified as potentially inactive were noted in this field along with dozens of other free text entries. Best practice suggests that all data elements are stored uniformly in rectangular tables with data elements (field or variable names) always listed horizontally across the top of a spreadsheet, that each column uses only one data storage type (e.g. text, numeric, or date), and that the content of each column refer to only one type of data domain (e.g. a column should not include information). For example, the third column in the Demographic spreadsheet included patient, provider, and pharmacy information in one column and uses text and date formats. While these issues with the patient chart design choices made by UF COP make sense from a programmatic point of view, they were a problem from an evaluation point of view. Microsoft Access or other database programs can include a "front end" that presents information to the user in the same manner as the UF COP spreadsheets but stores the data in the "back end" in standard rectangular format. These database programs also offer additional safeguards for data integrity and standardization.

Evaluation Question 2

Can the summary results from Year 1 provided to AHCA by the UF COP using patient chart files and other MTM project records be reproduced?

Concordance between UF COP Year 1 Annual Report and Patient Chart and Post-CMR Files

The evaluation team systematically extracted data for all patient charts and utilized that information to reproduce summary results presented in the UF COP Year 1 final report.

Section A of the report is labeled *Case Status*. This section reports that 147 patients completed a CMR and were all followed for three QFURs. This was confirmed by the evaluation review of the *Intervention* spreadsheet of each of the 147 patient charts.

Section B of the report is labeled *Calls made to program participating patients (including failed attempts).* Concordance between the UF COP and FSU COM values was generally poor. Repeated attempts to reach potential participants for an initial CMR interview appointment may have not been fully documented in the patient chart or were documented elsewhere. Rescheduled CMR appointments may not have been fully documented or the manner of documentation was not evident to the evaluation team. It is not clear how important documentation of every call attempt is to the AHCA Pharmacy Program Office or to the success of the MTM Program. These data are presented for the Pharmacy Program Office's consideration for quality improvement purposes.

Section C of the UF COP summary report is labeled *Summary of Interventions.* Table 2 reproduces the UF COP table and counts alongside of FSU COM findings extracted from the *Intervention* spreadsheet of all patient charts. Concordance between the UF COP and FSU COM values was generally very good. Only one CMR intervention (*Counseled on Medication Adherence/Compliance*) had a large discrepancy between the UF and FSU findings. CMR counseling related to medication adherence/compliance may not have been fully documented or the manner of documentation was not evident to the evaluation team. The *Interventions* column in the interventions spreadsheet included 127 unique intervention categories and 2,433 intervention records for the 147 MTM PARTICIPANTS. Mean number of intervention records per participant was 16.5.

A total of 227 CMR interventions and 103 MAP interventions were discussed with the 147 MTM PARTICIPANTS. Over 100 of the CMR interventions involved counseling on medication use, related to both general concerns and side effects (79 recommendations) or administration and technique (26 recommendations). Most remaining recommendations concerned condition-specific education. Counseling on medication use was also the most common type of MAP intervention recommended, accounting for 43 of the 103 recommendations made. Of these recommendations, a total of 139 were transmitted to providers, see Table 2.

Section D of the UF COP summary report is labeled *Tabulation of Interactions (by category).* Table 3 reproduces the UF COP table and counts alongside of FSU COM findings extracted from the *Intervention* spreadsheet of all patient charts. Concordance between the UF COP and FSU COM values was exact. UF COP identified 8 drug-disease interactions, 8 Level-1 clinically significant drug-drug interactions, and 15 Level-2 clinically significant drug-drug interactions.

Section E of the UF COP summary report is labeled *Patient Response/Rating of CMR.* Table 4 reproduces the UF COP table and counts alongside of FSU COM findings extracted from the *Questions CMR* spreadsheet of all patient charts. Concordance between the UF COP and FSU COM values was exact.

Most respondents responded yes to the first question, "Did you find this appointment helpful?" (76.9%). Questions 2 to 4 received even higher approval among a smaller number of respondents with a second telephone contact 30 to 60 days after the CMR interview (90-95%).

Section F of the UF COP summary report is labeled *Provider Interventions.* Table 5 reproduces the UF COP table and counts alongside of FSU COM findings extracted from the *Questions CMR* spreadsheet of all patient charts. FSU COM findings for the number and type of provider interventions matched the UF COP report exactly. However, the evaluation team was not able to identify resolutions reported by UF COP for three provider interventions: *Lack of Efficacy Identified, Lack of Therapy (Indication) Identified, and Recommended Preferred Drug List Alternative*. Recorded resolutions to provider interventions were determined by UF COP via subsequent patient report or observed changes in claims for filled prescriptions. Overall, UF

COP and FSU COM identified 139 provider interventions. Some PARTICPANTS received more than one provider intervention and others received none as determined by the UF COP staff. The most common types of recommendations were providing combination therapy (11 recommendations), resolving gaps in therapy (22 recommendations), mitigating insufficient dosage or duration (10 recommendations), addressing drug interactions (21 recommendations), and mitigating lack of therapy (19 recommendations). Only 4 (3 percent) provider interventions addressed issues potentially related to patient adherence to treatment instructions. These recommendations were relayed to providers after discussion with patients. UF COP used the Morisky 8-Item Medication Adherence Scale administered to MTM participants immediately after the CMR interview to measure adherence. The mean summary score on the Morisky Scale for the 147 patients as recorded on each patient chart was 6.31 out of a possible score of 8.0. Specific recommendations to providers and the frequency of each are shown in Table 5.

UF COP reported a 36% resolution rate while the evaluation team finds a resolution rate of 28%, largely due to missing information for three provider interventions. *Provider Interventions* may not have been fully documented or the manner of documentation was not evident to the evaluation team. Resolutions to Provider Interventions were identified by UF COP via review of the AHCA pharmacy claims records or by patient report. Resolution rates are consistent with provider response to MTM program recommendations reported in the literature.

Evaluation Question 3

What are the demographic characteristics of the MEG1 population, the MTM ELIGIBLE non-PARTICPANTS, MTM PARTICIPANTS; and are there differences in those characteristics between those population groups?

Demographic Characteristics of the MEG1 population, MTM ELIGIBLE NON-PARTICPANTS, MTM PARTICIPANTS

The focus of this section is to describe the principal groups in terms of *counts and proportions*, i.e., the numbers of participants and which intervention they received, and participant demographics; and then to examine differences within and between the groups, employing univariate and multivariable tests for significance. The research team selected study population

groups and selected comparisons identified in the *List of Acronyms* and *Definitions of Population Groups* sections at the beginning of this document and examined their demographic make-up.

Figure 4 depicts the processes and resolution of the 652 Medicaid recipient names provided to the UF COP by the AHCA Pharmacy Program. Selected resolution categories in Figure 4 are referred to in the following descriptions of the Year 1 MTM program.

General Description of the MTM ELIGIBLE and MTM PARTICIPANT Populations (Figure 4)

A total of 652 people were categorized as MTM ELIGIBLE recipients by virtue of their eligibility for MEDS-AD Waiver Medicaid eligible population and providing consent to the AHCA Pharmacy Office for contact by UF COP MTM program staff. Among the 652 MTM ELIGIBLE recipients in this population, mean age at the start of Year 1 was 54.3 years and ranged from eight to 66 years. The median (population distribution midpoint) was 56 years. Most (n=523) spoke English only or spoke English as a second language (n=8), 108 spoke Spanish only, three spoke other languages, and no language preference was listed for 10 recipients. The pool of MTM ELIGIBLE recipients included 327 (50.2%) white recipients, 147 (22.6%) black or African American recipients, 112 (17.2%) ethnically Hispanic persons, three Asian, three Native American, nine other race, and 51 (7.8%) persons with no determined ethnoracial category. Fifty-eight percent of MTM ELIGIBLE were women (n=381).

The UF COP attempted contact with 469 (71.9%) of these individuals; the remaining 183 (28.1%) were not contacted. Of the 469 people contacted by UF COP, 199 (42.4%) agreed to a follow-up appointment for a Comprehensive Medication Review (CMR) at a future date. Of the 199 people with a scheduled CMR, 94 (47.2%) were female and 105 (52.8%) were male. This group was mostly white (122-61.3%), black (49-24.6%), Hispanic (14-7.0%) or other racial designation (14-7%). They were mostly older than 50 (70.9%), with 46 recipients falling into the 51-55 years of age category, 48 falling into the 56-60 years of age category, and 47 falling into the 61-65 years of age category. Of the remaining persons with a scheduled CMR, 40 (29.1%) were between 41 and 50 years old and 18 were between 21 and 40 years old. Non-

participants among the 469 contacted (n=270-57.6%), either declined to participate (n=73-27.0%) or could not successfully be contacted (197-73.0%). Among the 199 people with a scheduled CMR, 52 (26.1%) later declined to participate or could not be reached.

The number of MTM eligible Medicaid recipients with a completed CMR for Year 1 of the program was 147 (MTM PARTICIPANTS); 22.5% of the eligible pool of 652. Among the MTM PARTICIPANTS with a completed CMR, 138 (93.9%) spoke English or English as a second language, and 8 (5.4%) spoke Spanish only, and one record was missing the language preference information.

MTM recipient residential street addresses were used to assign the point locations to maps of Florida, see Figure 2 and Figure 3. Thirty-six recipients did not have a valid street address and were geocoded to the geographic center of their residential zip code (identified with triangles in Figure 2). These 36 points are therefore less precise in their location. Six recipients with a completed CMR were not included in Figure 2 for similar reasons. Persons in the MTM ELIGIBLE population and MTM PARTICIPANTS in Year 1 appear to be distributed around Florida in a manner consistent with the overall geographic distribution of the state's population.

All 147 MTM PARTICIPANTS met the UF COP definition of a completed intervention. A completed intervention consists of a full CMR session and three quarterly follow-up reviews. QFURs generally consist of a review of pharmacy claims records which may initiate an additional telephone contact with the MTM participant. Additional telephone contact with the MTM participant occurred 52 times during Year 1.

Participants Scheduled for a CMR (n=199) versus Non-Participants (n=270)

The evaluation team examined the impact of different demographic characteristics on MTM ELIGIBLE Medicaid recipients with a scheduled CMR (n=199) versus persons who declined without scheduling a CMR or could not be successfully contacted (n=270) by ethnoracial category, sex, and age in Table 7, Table 8, and Table 9 respectively.

No difference was found among eligibles with a CMR appointment and eligibles that did not have a CMR appointment by race or age (Table 7 and Table 9). However, eligibles with an appointment were more likely to be women than men (Table 8). Logistic regression was used to model the likelihood of a scheduled CMR versus no appointment adjusting for race, gender, and age. Women were found to be 1.54 (p=.025) times more likely to be participants than non-participants compared to men. The lack of differences by age and race is a positive finding because it suggests a lack of systematic bias by age or race among recipients with a scheduled appointment and no scheduled appointment.

Scheduled and completed CMR (n=147) versus those who declined to complete a scheduled CMR (52)

The evaluation team examined the impact of different sociodemographic characteristics on participants' with an initial scheduled CMR (n=199) who then declined (52) by age, ethnoracial background, and sex in Table 10, Table 11, and Table 12 respectively. No difference was found among those with a completed CMR versus those who declined at the time of the appointment by age, race or gender (Table 10, Table 11, and Table 12 respectively). Logistic regression was used to model the likelihood of a scheduled completed CMR versus those who set an appointment and then declined, adjusting for race, gender, and age. Each increase of one age category increased the likelihood of completing the CMR by 5% (Odds Ratio 1.05, p=.009). The lack of differences by sex and race is a positive finding because it suggests a lack of systematic bias among these two categories of persons with a scheduled CMR appointment.

Post CMR Actions by Demographic Characteristics

The evaluation team examined the impact of different sociodemographic characteristics on participants' likelihood of receiving a complete intervention and a MAP versus no MAP. Ninety-five percent (139 of 147) of MTM participants with a completed intervention also received a MAP. The analysis examined the potential influence of age, ethnoracial background, and sex; see Table 13, Table 14 and Table 15. No differences were found between participants with a complete intervention with and without a MAP. Logistic regression was used to model the likelihood of a completed intervention with and without a MAP adjusting for race, gender, and age. No significant demographic factors were identified indicating that large sociodemographic

differences did not exist between the complete group with MAP and the complete group without MAP.

Post-CMR follow-up actions conducted with participating patients by MTM program staff were also examined. Specific follow-up actions taken by MTM staff included: giving the patient a MAP and making a recommendation to their physician, just making a recommendation to the patient's physician, just giving the patient a MAP, and neither giving the patient a MAP or making a recommendation to their physician. The 147 people who received complete CMRs were eligible for this follow-up. Table 16, Table 17, and Table 18 present these post-CMR actions by age, race, and sex. None of these demographic factors was associated with the likelihood of a particular action. Logistic regression models for the likelihood of each of the post-CMR actions adjusted for age, race, and gender did not significantly impact these individuals' odds of receiving any of these four types of follow-up action.

Are there differences in demographic characteristics between all MTM ELIGIBLE Medicaid recipients (n=652) and those selected for intervention with a completed intervention (n=147)?

Of the 652 people eligible for the MTM program, 199 were scheduled for a CMR in the MTM program and 147 eventually completed the CMR and three QFURs. The 52 MTM ELIGIBLE recipients who did not participate in the intervention were lost to follow-up because they declined to finish the CMR process after initially scheduling a session. Table 19, Table 20, and Table 21 report the distribution of MTM ELIGIBLE recipients (n=651) and MTM PARTICIPANTS by CMR status and age, race, and gender respectively. The UF COP post-CMR summary file of MTM ELIGIBLE persons does not include gender or race indicators. Therefore, the UF COP was merged with the AHCA recipient demographic file. This resulted in one less record because of a duplicate record in the UF COP file. Therefore, frequencies for the MTM ELIGIBLE group in this section only sum to 651 persons. The distribution of persons by gender did not vary significantly between MTM program participants and MTM ELIGIBLE persons who did not receive the intervention. However, there were differences observed across racial/ethnic categories that were statistically significant. Hispanic recipients were 72.3% less likely to be in the intervention group (p=0002); and persons age 51 to 55 were over twice as likely to have a

completed CMR as the lowest age group, persons age 21 to 40. A logistic regression model was used to further test for differences in the likelihood of membership in these two populations after adjustment for age, race, and gender simultaneously. No statistically significant differences were found in the demographic distribution of MTM ELIGIBLE persons with and without a completed CMR. This suggests that persons who completed a CMR were demographically similar to persons who did not complete a CMR and reduces concerns that characteristics other than intervention processes might influence observed outcomes. However, this is based only on three demographic characteristics and a more comprehensive set of characteristics will have to be examined to insure comparisons between the intervention and non-intervention groups are "apple to apple" comparisons. Additional characteristics to be added in future models will include level of disease or condition severity, length of enrollment in the MTM program, length of Medicaid eligibility, number of chronic conditions, and number of prescriptions filled in the previous year.

Are there differences in characteristics of persons who declined the intervention at the initial telephone contact (n=73) and those for whom a CMR was completed?

Of the 220 people successfully contacted by UF COP, 199 scheduled a CMR with the UF COP team and 73 others declined outright. This analysis compared the 147 people with complete CMRs to the 73 who declined to participate at the initial phone contact. The distribution of racial/ethnic categories and recipient sex were no different between the two groups. However, persons with a completed CMR were more common among older recipients as compared to those who declined the intervention outright. See Table 22, Table 23 and Table 24 for the distribution by race categories, sex, and age group respectively.

Preliminary Examination of Utilization and Expenditures in the MEG1 population, MTM ELIGIBLE NON-PARTICPANTS, MTM PARTICIPANTS

Evaluation Question 4:

Are there differences in the utilization and expenditure profiles of the MEG1 population, the MTM ELIGIBLE NON-PARTICPANTS, and MTM PARTICIPANTS for calendar year 2011 and project Year 1 (June 1, 2012 to May 31, 2013) based on the claims and enrollment data available at the time of this report?

Utilization and Expenditure Estimates Using Johns Hopkins University ACG© System Version 10.0

Preliminary risk adjustment and statistical analyses were performed on the 147 Year 1 MTM PARTICIPANTS, 505 MTM ELIGIBLE NON-PARTICIPANTS and the MEG1 population of 14,891. Using calendar year 2011 enrollment and claims data, risk adjustment and descriptive tests were performed using The Johns Hopkins Adjusted Clinical Groups® (ACG) System and statistical tests were done using SAS® 9.3.

The ACG System measures the morbidity burden of patient populations based on disease patterns, age and gender. Diagnostic and pharmaceutical code information is used to provide a representation of the morbidity burden of populations, subgroups or individual patients allowing comparisons across these groups on various measures.

The risk adjustment of these cohorts allowed tests of statistical significance to be performed on selected attributes of the eligible participants and the eligible non-participants in the MEDS-AD MTM program. The results from these tests will be used to perform further statistical analyses which can determine whether a suitable cohort exists within the 14,891 of all individuals eligible for the MEDS-AD MTM with attributes similar enough so that they can be matched with the 147 individuals eligible and participating in MEDS-AD MTM for program evaluation purposes. This analysis will also provide information on whether statistically significant differences exist between the 505 individuals eligible but not participating in the MEDS-AD MTM program and these two groups which can indicate the extent of heterogeneity between these three cohorts.

The metrics used for comparisons between the three groups were Total Cost, Pharmacy Cost, Inpatient Hospital Discharges and Outpatient Hospital Visits. Actual risk adjustment scores will be reported when complete outpatient professional claims data files for this cohort are available.

Total Cost measures the total Medicaid expenditures for filled prescriptions plus medical inpatient and outpatient hospital expenditures for the individual during the year. Inpatient Hospital Discharges is a measure of the number of acute care inpatient discharges the individual has during the year for causes that are not related to child-birth and injury. Outpatient Hospital Visits measure the number of times the individual visits ambulatory and hospital outpatient departments (excluding emergency departments) during the year.

Therefore, t-tests were performed to determine whether there were statistically significant differences in the means of the respective metrics between each of the three cohorts: the 147 individuals eligible and participating in MEDS-AD MTM program (denoted "MTM Participants in Year 1"), the 505 individuals eligible and not participating in the MEDS-AD MTM program (MTM Eligible Non-Participants in Year 1), and the 14,891 population of all individuals eligible for the MEDS-AD MTM under the Section 1115 waiver (MEG1 Population Year 1). The level of statistical significance was set at $\alpha = 0.05$ and no adjustment was made for multiple comparisons. No adjustment is made for the length of Medicaid enrollment during calendar year 2011.

Table 25 contains a summary of the results of these analyses. Tables 26 to 37 provide more statistical detail on each comparison.

The results in the first column of Table 25 show that the mean values of Pharmacy Cost and Outpatient Visits were not statistically significantly different for the 147 MTM PARTICIPANTS and the 505 MTM NON-PARTICIPANTS. The lack of statistical significance on these measures indicates that these groups are relatively homogenous for this measure.

However, results in the second column show that for the 147 MTM PARTICIPANTS and the 14,891 MEG1 population have statistically significant differences in the mean values of Total

Cost, Pharmacy Cost, and Outpatient Hospital Visits. Results in the third column of Table 1 also denote statistically significant differences exist in the means of these measures for the 505 MTM NON-PARTICIPANTS and the MEG1 population.

This last result reinforces the homogeneity between the MTM PARTICIPANTS and MTM NON-PARTICIPANTS. However, the statistically significant differences between these two groups and the MEG1 population indicate a closer analysis is needed for selection of an appropriate comparison group from the MEG1 population.

The additional analysis of differences between the attributes of all three population groups will include an analysis of ranges, medians, modes, tests of normality and squared deviations from the means of relevant variables in order to determine if outliers or other factors are related to the statistically significant differences between the groups. This information will be used to derive a suitable comparison group from the MEG1 population for the MTM PARTICIPANT group.

Preliminary Examination of Utilization and Expenditures in the MEG1 population, MTM ELIGIBLE NON-PARTICPANTS, MTM PARTICIPANTS for Program Year 1, June 1, 2011 to May 31, 2012

In this section, the evaluation team summarized Total Medicaid expenditures and total services received by Medicaid recipients in the MEG1, MTM PARTICIPANT and MTM Non-PARTICIPANT populations for program Year 1, June 1, 2011 to May 31, 2012. Claims data for Medicaid utilization in this analysis included inpatient and outpatient hospital services, skilled nursing facility services and filled prescriptions only. Estimates are not adjusted for length of enrollment in Medicaid during calendar year 2011.

Table 38 summarizes the results of this analysis. Only inpatient hospital expenditures were different for comparisons between the MTM PARTICIPANTS and the MEG1 population. MTM PARTICPANTS averaged $5,907 less per hospital stay than their MEG1 counterparts (p=.025). However, the small number of inpatient discharges among MTM PARTICPANTS (25) may influence the precision of the estimate. See Table 44 for details.

Comparisons between the MTM Eligible Non-PARTICIPANTS and the MEG1 population summarized in Table 38 indicate statistically significant differences in total expenditures and pharmacy expenditures. For both measures, the MTM Non-PARTICIPANTS had higher expenditures than the MEG1 population (p=.004 in both cases). Non-PARTICIPANTS averaged $11,221 in reimbursements for 496 inpatient stays while the MEG1 population members averaged $8,648 for 11284 inpatient stays. See Table 39 and Table 41 for details. Pharmacy expenditures in the Non-PARTICPANT group averaged $6,937 per person (n=479) and $5,125 per person (n=10-577) among the MEG1 group. See Table 41 for details. However, the MEG1 is likely a more heterogeneous population so unadjusted estimates may be misleading. Additional details for all comparisons are presented in Tables 39 through 47.

Adjusted Comparisons

A linear model for log total expenditures adjusted for study population category, age, race, and gender of the recipients is presented in Table 47. Total expenditures are calculated as described above. Only the MEG1 population had a statistically different value for total expenditures. The MTM PARTICIPANT and Non-PARTICPANTS were statistically equal after adjustment. Only the 51-55 and 56-60 age categories were statistically different from the reference group (age 61 and above). This simple model explained relatively little variation (R-squared =.006). After exponentiation of the estimates presented in Table 47, the MEG1 population was found to have 61.6% of the expenditures of the reference group; the MTM PARTICIPANTS. Two age groups with significant differences were associated with about 15% higher expenditures than the reference age group of 61 and above.

A negative binomial model for total services received (hospital discharges, outpatient hospital visits, and total prescriptions filled adjusted for study population category, age, race, and gender of the recipients) is presented in Table 48. The only statistically significant predictor of the number of services received was the MEG1 population indicator. The MEG1 population used only 33% of the services used by the MTM PARTICIPANTS.

A detailed table of mean total expenditures and total services received by all 84 ethnoracial, sex, and age categories is presented in Table 49.

Future Activities

Upon receipt of a full set of claims and enrollment records for the MEG1, MTM PARTICPANT, AND MTM Non-PARTICPANT population for year 1 cohort covering the period January 1, 2010 to December 31, 2012, the Evaluation Team will complete the following analyses:

1. Summarize all utilization and expenditures for all three populations by calendar year and report findings.
2. Summarize all utilization and expenditures for all three populations for program year 1, June 1, 2011 to May 31, 2012 and report findings.
3. Risk adjust all three populations using Johns Hopkins ACG© software and other selected algorithms.
4. Conduct a propensity score analysis to assess the validity of the MTM Non-PARTICPANT population as Comparison Group 1 for the MTM PARTICIPANT and identify a suitable Comparison Group 2 from the MEG1 population. The propensity analysis will include risk adjustment, utilization and expenditures, and patient characteristics.
5. Identify the clinical outcomes of interest in the claims data and report on findings.

Upon receipt of the UF COP records for the Year 2 cohort for the period June 1, 2012 to May 31, 2013, the Evaluation Team will complete the following analyses:

1. Extract and summarize individual patient chart data from Excel files created and maintained by the MTM staff.
2. Merge Year 1 and Year 2 UF COP data for MTM PARTICIPANTS and conduct descriptive analysis of differences.
3. Merge Year 2 PARTICPANT data with claims and enrollment data for calendar year 2010 to 2012 and conduct descriptive analysis.

Upon receipt of a full set of claims and enrollment records for the MEG1, MTM PARTICPANT, AND MTM Non-PARTICPANT population for year 1 and year 2 cohort covering the period January 1, 2010 to December 31, 2013, the Evaluation Team will complete the following analyses:

1. Summarize calendar year data by population group for
    a. Expenditures and Utilization
    b. Clinical Outcomes
2. Summarize program year data by cohort and population group for
    a. Expenditures and Utilization
    b. Clinical Outcomes
3. Complete risk adjustment with full set of claims for calendar years 2010 to 2013.
4. Conduct multivariable regression models for key outcomes as defined by contract with interpretation of key differences between the MTM PARTICIPANTS, and Comparison Group 1 and Comparison Group 2.

Summary

The Quantitative Evaluation Team conducted a thorough descriptive analysis of UF COP summary reports, patient charts, and associated records. Review of their data quality and record keeping processes indicated generally good quality data that was sometimes recorded in a fashion inconsistent with good research or evaluation practices. From a program point of view, their approach is no doubt reasonable. However, from an evaluation point of view, the data was very difficult to extract and use as it was recorded in Microsoft Excel worksheets. The issues with data recording were time consuming to resolve and added another process where error could have been introduced by the Evaluation Team's efforts to move the data from individual, non-standardized spreadsheets into rectangular tables suitable for analysis.

Recommendation

A relational data base should be created using Microsoft Access or other software that stores data in standard rectangular tables and does not use images or other data storage mechanisms that cannot be easily manipulated. A relatively small investment in programming could produce a user "front end" that represents the patient charts in much the same manner as the current Excel-based system but stores the data in the "back end" in a standardized form. This should be implemented at the start of any new contract period with the UF COP.

The Evaluation Team attempted to reproduce summary results presented by the UF COP in their Year 1 summary report by extracting information from the 147 MTM recipient records stored as Excel files with 15 sheets per recipient. The Evaluation Team was generally able to reproduce good concordance with the UF COP reports for the 10 sheets that could be converted to SAS data tables. Some interventions were difficult to track because they were entered multiple times per patient or, in the case of resolutions to provider intervention, the Evaluation Team could not identify the system for recording this information. Generally, important clinical and process measures were intermingled with more mundane traffic information recorded by MTM staff as part of the overall program. Some thought could be applied to recording the most important outcomes separately from other information, a step that would naturally occur if Recommendation 1 were implemented.

The Evaluation Team conducted descriptive examination of the MTM PARTICPANT, MTM Non-PARTICIPANT, and MEG1 populations by age, race, and gender categories and more detailed examination of the MTM PARTICIPANTS by post-CMR actions. The goal was to identify the potential for systematic bias in which Medicaid recipients were selected for the MTM ELIBIGLE population (n=652) and those who subsequently completed a CMR based on age, race, and gender. Female recipients were found to be somewhat more likely to be MTM ELIGIBLES with a scheduled CMR (n=199) than to refuse or not be reachable (n=270) during the initial UF COP phone encounter. The distribution of racial categories in the MTM PARTICPANT group (n=147) versus MTM Non-PARTICIPANT group (n=505) suggests that Black recipients were less likely to be in the CMR completed group, although subsequent multivariable analysis adjusting for age, race, and gender appear to negate this finding. There was some evidence that MTM PARTICIPANTS were more likely to be older than persons who refused to initiate a CMR appointment (n=73), a finding perhaps consistent with increased need for the MTM services in those who agreed to schedule and complete a CMR.

The Evaluation Team employed the Johns Hopkins ACG software for risk adjusting for disease prevalence and severity in the MTM PARTICPANT, MTM Non-PARTICIPANT, and MEG1 populations employing the claims and enrollment data available prior to this report. The ACG

program adjusts for patient age and gender and has a sophisticated weighting scheme for grouping conditions. Reporting of actual risk scores will wait for a full set of all claim types. However, examination of total costs and total pharmacy costs output as a byproduct of the ACG algorithm indicate statistically significant differences in total costs in all three pair-wise group comparisons between PARTICPANTS, Non-PARTICIPANTS, and MEG1 populations. Pharmacy costs were similar in the PARTICPANTS and Non-PARTICIPANT groups but the MEG1 population had lower pharmacy costs than either the MTM PARTICIPANTS or Non-PARTICIPANTs. For this reason care will need to be taken in choosing an appropriate comparison group from the MEG1 population.

Additional analysis was done to examine differences in expenditures and service utilization for calendar year 2011 among the MTM PARTICPANT, MTM Non-PARTICIPANT, and MEG1 populations. There was some congruence between these unadjusted analyses and the adjusted ACG findings. For example, total costs were lower in the MEG1 population as were pharmacy costs relative to the Non-PARTICPANTS. However, the unadjusted analysis indicated higher inpatient costs for the MEG1 population relative to the MTM PARTICIPANTS. This finding was possible due to the relatively small number of hospital discharges in the MTM PARTICIPANT population in calendar year 2011.

Finally the Evaluation Teams adjusted analysis of total expenditures in a semi-log model that included recipient age, race, and gender suggested that the MEG1 population had lower total expenditures than either MTM PARTICIPANTS and Non-PARTICPANTS.

The Evaluation Team has summarized a series of next steps and anticipates meeting all evaluation goals on time.

Appendix of Tables and Figures

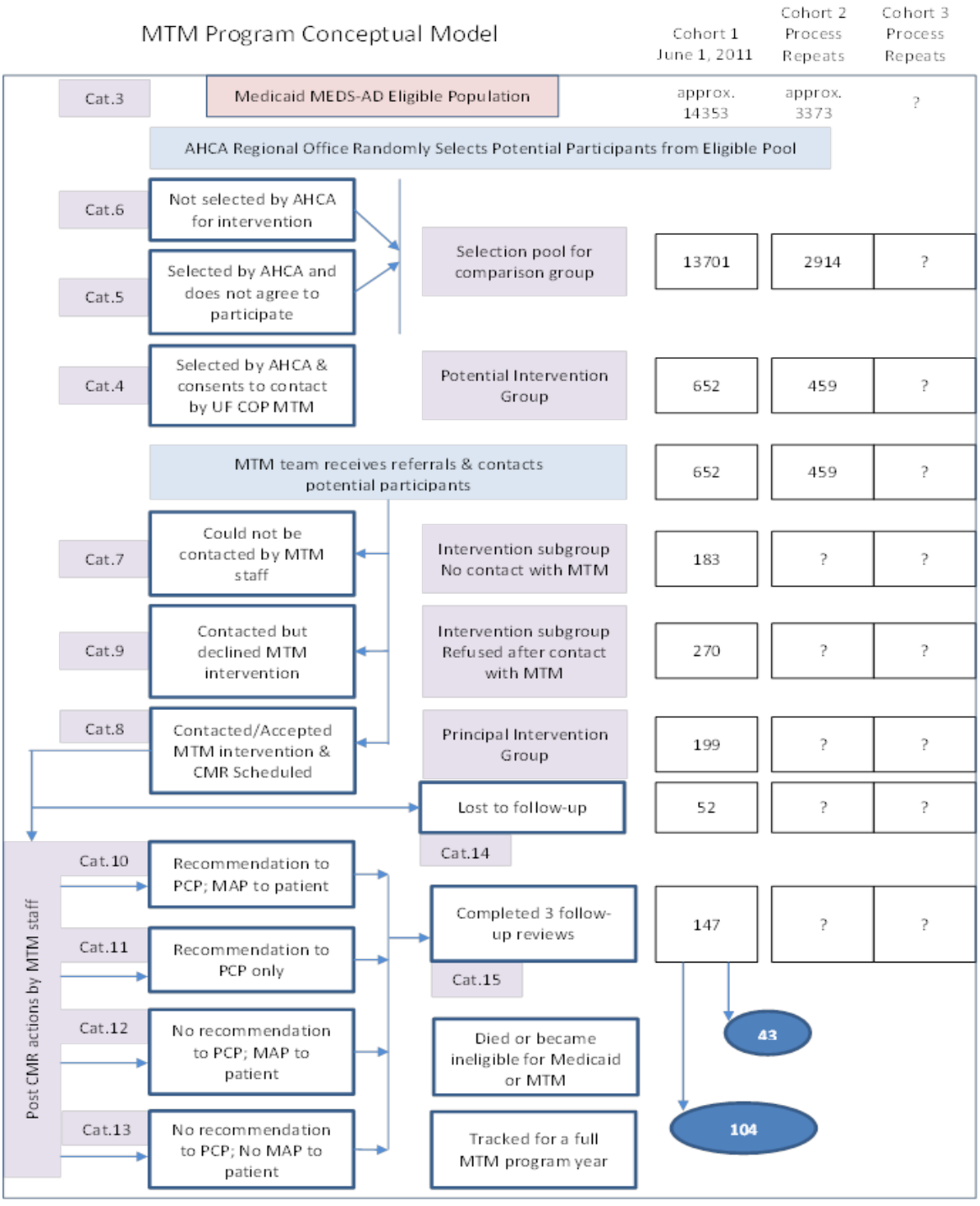

Figure 1. Florida Medicaid and University of Florida Medication Therapy Management Program recipient selection and intervention processes, June 1, 2011 to May 31, 2012

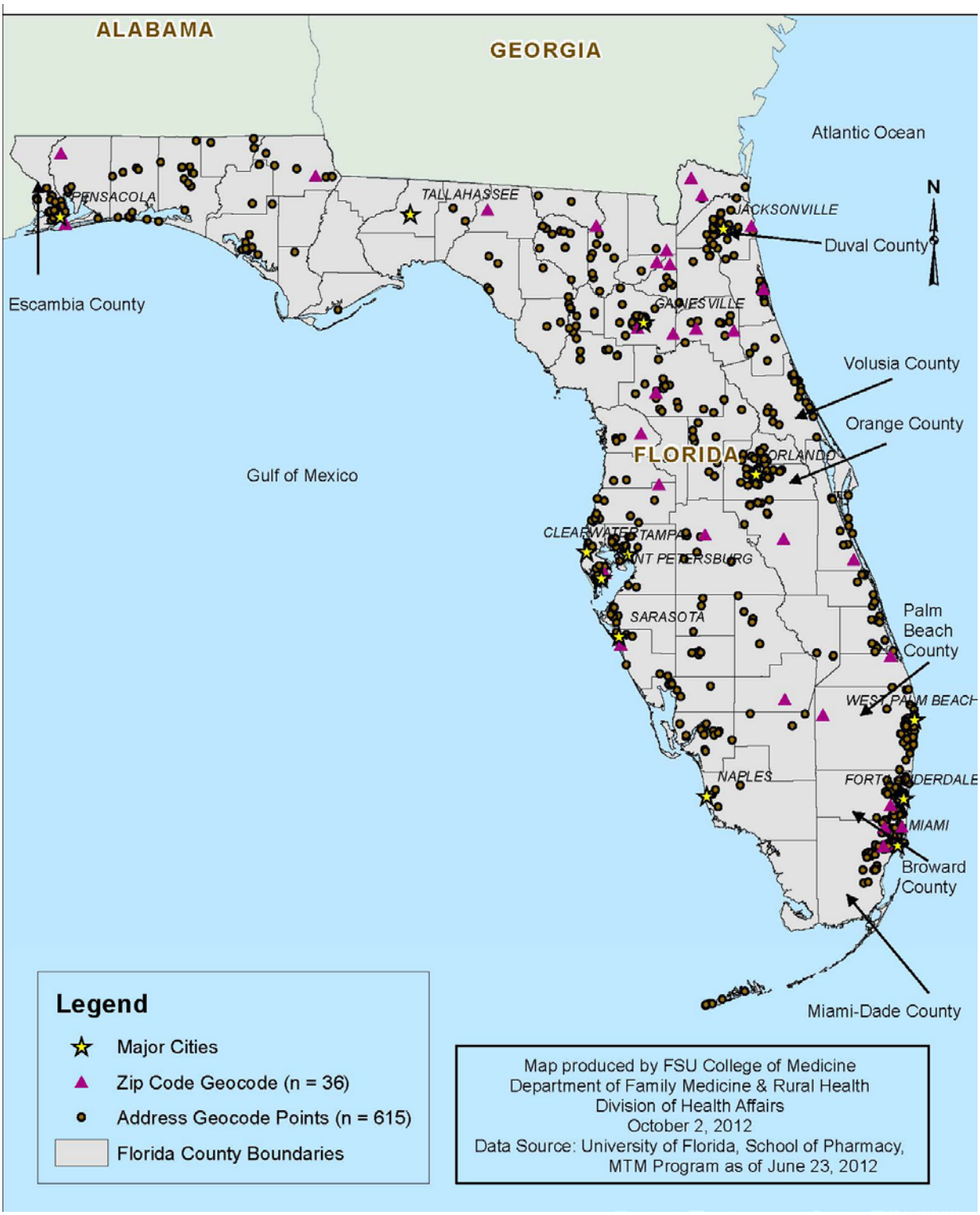

Figure 2. Geographic distribution of Florida MTM eligible recipients in Program Year 1: Recipient residential location geocoded by address or zip code, June 2011.

Note: One duplicate record removed and records identified by a triangle are geocoded to the zip code center due to incomplete address.

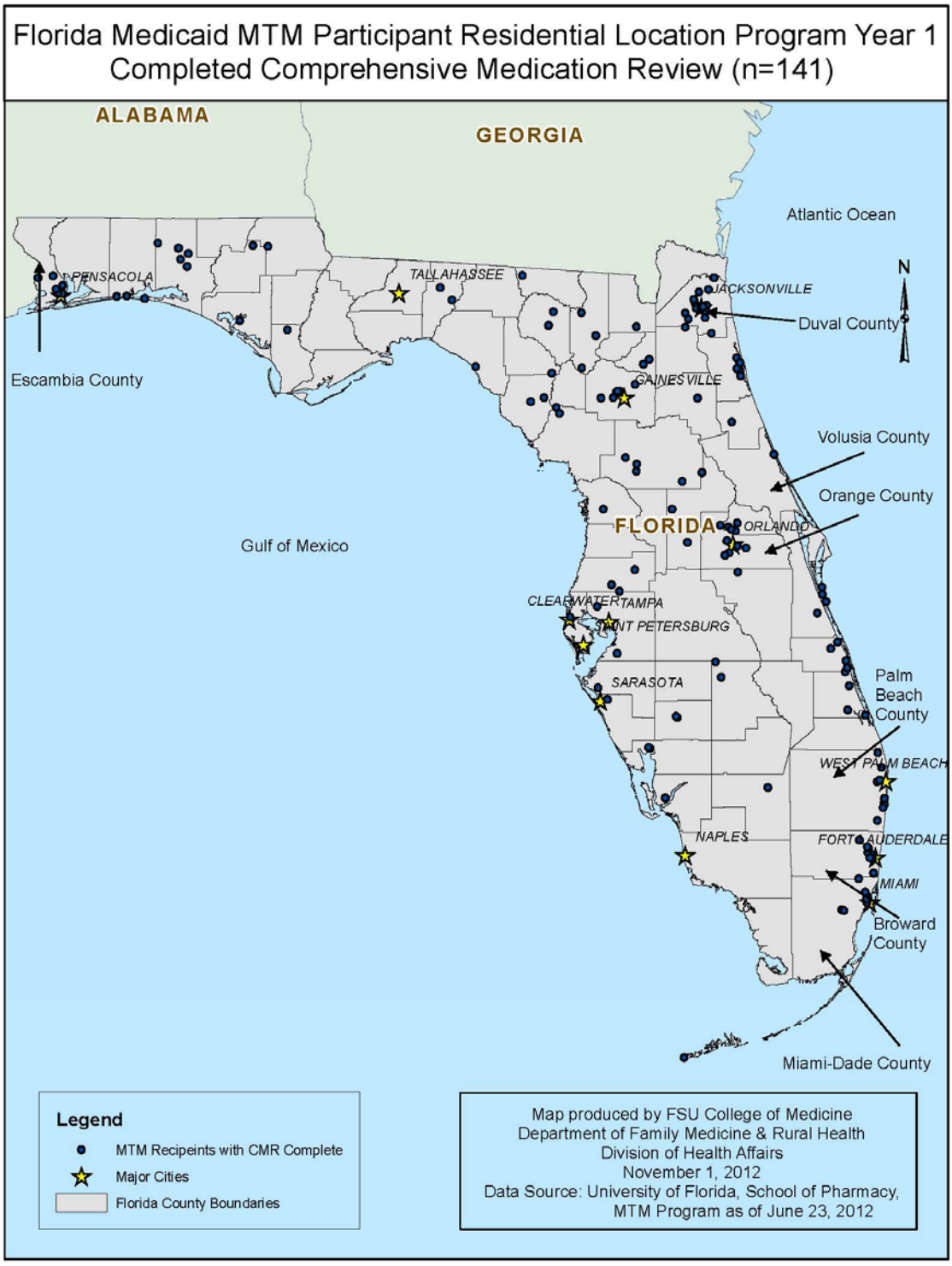

Figure 3. Geographic distribution of Florida MTM participants geocoded by address or zip code, June 2011.
Note: Only 141 of 147 participants with a completed CMR were geocoded due to missing address information.

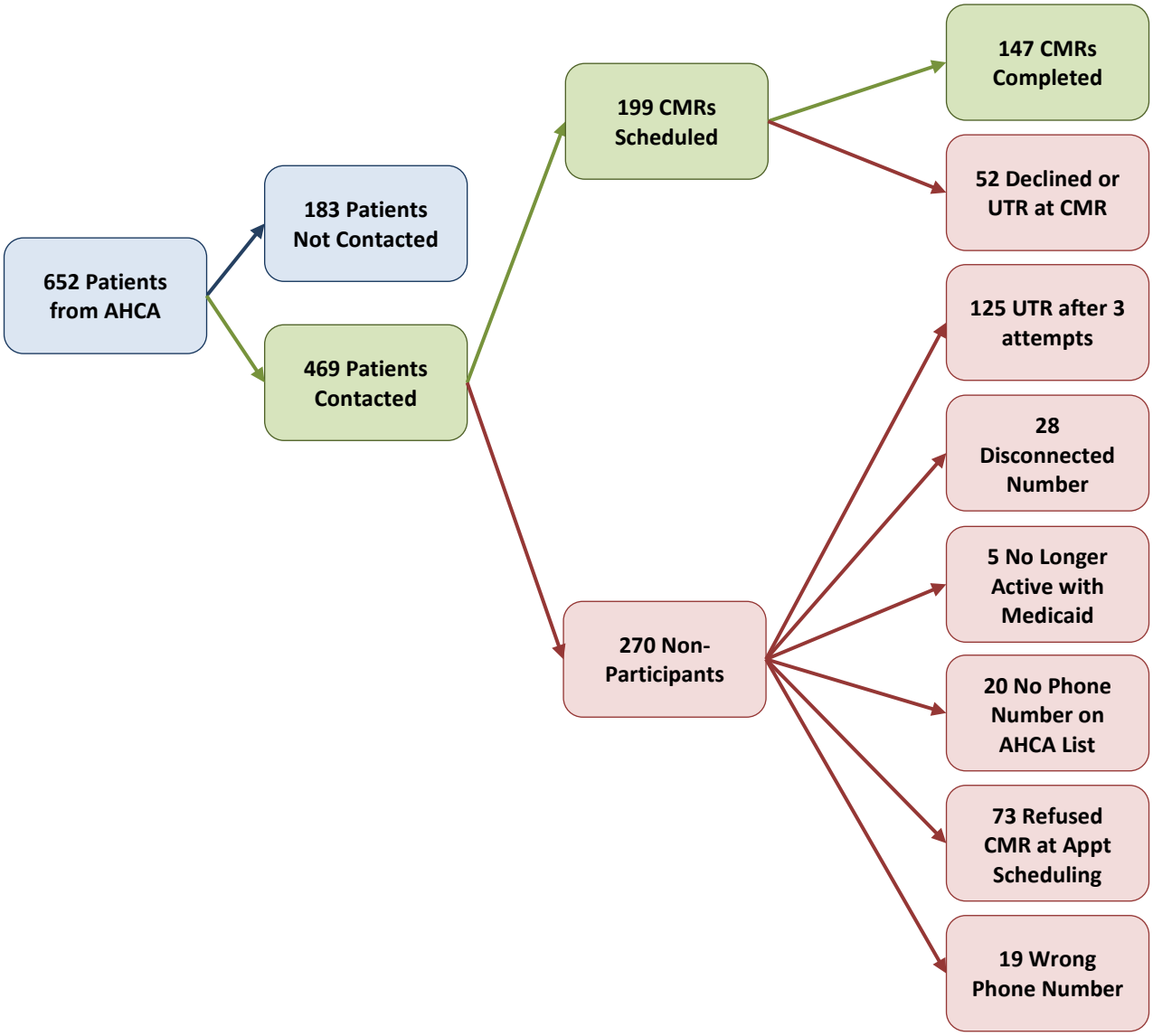

Figure 4. University of Florida College of Pharmacy recipient selection process and resolution for Year 1 of the MTM program, August 2011.

Note: Adapted from UF College of Pharmacy document: *UF MEDS-AD Post CMR 2011 Data (8-16-11)*

Table 1. Data elements, content, and data quality issues identified by the FSU COM evaluation team with patient chart files by spreadsheet name for MTM Program Year 1

Sheet No.	Patient Chart Spreadsheet and Name	Data Storage Type	Content	Issues
1	Demographics	Text, numeric, & date	Patient, provider, and pharmacy contact information.	Non-standard format: columns include more than one data domain and different storage types; extra rows with no data.
2	ICD-9 Codes	Text, numeric, & date	Pre-intervention diagnosis codes, first and last date of occurrence, and frequency.	None.
3	Interventions	Text & dates	Multiple interventions by contact date with Notes and Action Taken.	Notes are entered as free text; standard categories could have been achieved in many cases; some important information (Potential Inactive Status) should have been tracked separately with standard codes.
4	MedList_CMR	Text, numeric, & date	Drug class, NDC, name, strength, supply in days, prescriber id, refill indicator.	Therapeutic drug class should be recorded in columns; extra lines should be removed and therapeutic class is missing from first set of drugs in some patient charts.
5	Chart_CMR	Text & images	List of current medications, dosage, indication, dosing schedule, prescriber, side effects, complaints, comments, potential drug interactions, gaps in therapy, or other areas of concern. MTM reviewers Assessment and Plan for this patient.	Data recorded under Assessment and Plan is stored as an image rather than in a cell. This is problematic for efficient research/evaluation tasks.
6	Gen_Info_CMR	Text	Lifestyle, laboratory values, vaccines and allergies from patient report.	Non-standard format: columns include more than one data domain and different storage types; extra rows with no data.
7	Questions_CMR	Text	Adherence and quality assurance survey questions.	Non-standard format: columns include more than one data domain and different storage types; extra rows with no data.
8	MAP_CMR	Text & image	Duplicates most information from Chart_CMR but includes additional information for patient about steps and results by area of concern.	Non-standard format: columns include more than one data domain and different storage types; extra rows with no data. Only an issue for areas of concern, action steps, and result notes which not duplicated in Chart_CMR information.

Sheet No.	Patient Chart Spreadsheet and Name	Data Storage Type	Content	Issues
9	Fax_CMR	Text & image	Duplicates most information from Chart_CMR but includes additional information for prescriber about recommendations for change.	Non-standard format: columns include more than one data domain and different storage types; extra rows with no data. Only an issue for Identified Therapeutic Opportunities, Patient Report Problems, & Patient Adverse Reaction not duplicated in Chart_CMR information.
10	Fax_Cover_QFUR	Text & image	Cover sheet for Fax to prescriber.	None
11	MedList_QFUR-3	Text, numeric, & date	Drug class, NDC, name, strength, supply in days, prescriber id, refill indicator.	Same as MedList_CMR
12	Chart_QFUR-3	Text & image	MTM reviewers Assessment and Plan for this patient.	Data recorded under Assessment and Plan is stored as an image rather than in a cell. This is problematic for efficient research/evaluation tasks.
13	MedList_QFUR-6	Text, numeric, & date	Drug class, NDC, name, strength, supply in days, prescriber id, refill indicator.	Same as MedList_CMR
14	Chart_QFUR-6	Text & image	MTM reviewers Assessment and Plan for this patient.	Data recorded under Assessment and Plan is stored as an image rather than in a cell. This is problematic for efficient research/evaluation tasks.
15	MedList_QFUR-9	Text, numeric, & date	Drug class, NDC, name, strength, supply in days, prescriber id, refill indicator.	Same as MedList_CMR
16	Chart_QFUR-9	Text & image	MTM reviewers Assessment and Plan for this patient.	Data recorded under Assessment and Plan is stored as an image rather than in a cell. This is problematic for efficient research/evaluation tasks.

Table 2. Comparison between UF COP first year summary report Table C (Summary of Interventions by Patient Specific Interventions- These include interventions documented during a phone conversation with the patient) counts to FSU COM findings extracted from first year patient charts

	UF COP Totals	FSUCOM Totals
CMR Interventions or Other Counseling at QFUR		
Adverse Drug Event Identified	1	1
Educated on Heart Failure	1	1
Explained MTM Program to Patient	1	12
Insufficient Dosage Identified	1	1
Educated on Dyslipidemia	2	2
Educated on GERD	2	2
Counseled on Preventative Screenings/Vaccinations	3	3
OTC Therapy Recommended	3	3
Counseled on Smoking Cessation	7	7
Educated on Asthma/COPD	7	7
Counseled on Diet/Exercise	10	10
Counseled on Medication Adherence/Compliance	37	10
Educated on Disease State (Other)	12	11
Educated on Hypertension	11	11
Recommended Preferred Drug List Alternative	10	10
Educated on Diabetes	12	12
Counseled on Medication Administration/Technique	26	26
Counseled on Medication (General, side effects, indication, etc.)	81	79
Map Interventions		
Counseled on Lifestyle Modifications	1	1
Educated on Dyslipidemia	1	1
Excessive Pill Burden Identified (multiple tablets of lower strength)	1	1
Level 1 Clinically Significant Drug-Drug Interaction Identified	1	1
Combination Therapy Recommended (decrease pill burden)	2	2
Counseled on Smoking Cessation	2	2
Educated on GERD	2	2
Educated on Hypertension	2	2
Insufficient Dosage Identified	2	2
Lack of Therapy (Indication) Identified	2	2
Educated on Asthma/COPD	3	3
OTC Therapy Recommended	3	3
Counseled on Medication Adherence/Compliance	4	4
Counseled on Preventative Screenings/Vaccinations	4	4
Educated on Diabetes	4	4
Recommended Preferred Drug List Alternative	13	13
Counseled on Medication Administration/Technique	13	13

	UF COP Totals	FSUCOM Totals
Educated on Disease State (Other)	13	13
Counseled on Medication (General, side effects, indication, etc.)	30	30
Provider Specific Interventions - These include interventions that were communicated to providers via Fax		
Contraindication Identified (Drug - Disease)	1	1
Excessive Duration of Therapy Identified	1	1
Gap in Therapy - Heart Failure without a Beta-Blocker	1	1
Gap in Therapy - Potentially Inappropriate Beta-Blocker Selection in Heart Failure	1	1
Needs Preventative Screening / Immunizations	1	1
Counseled on Medication (General, side effects, indication, etc.)	2	2
Counseled on Medication Administration/Technique	2	2
Gap in Therapy - Heart Failure without an ACE-I or ARB	2	2
Gap in Therapy - Lack of Controller Medication / Beta-Agonist Overuse in Asthma	3	3
Gap in Therapy - Long-Term Steroid without Antiresorptive Agent	2	2
Insufficient Duration of Therapy Identified	2	2
OTC Therapy Recommended	2	2
Duplicate Therapy Identified	4	4
Excessive Dosage Identified	6	6
Excessive Pill Burden Identified (multiple tablets of lower strength)	5	5
Gap in Therapy - Diabetic without an ACE-I or ARB	5	4
Adverse Drug Event Identified	6	6
Level 1 Clinically Significant Drug-Drug Interaction Identified	7	7
Drug-Disease Interaction Identified	8	8
Gap in Therapy - Diabetic without a Statin	8	9
Insufficient Dosage Identified	8	8
Recommended Preferred Drug List Alternative	8	8
Lack of Efficacy Identified	10	10
Combination Therapy Recommended (decrease pill burden)	11	11
Level 2 Clinically Significant Drug-Drug Interaction Identified	15	14
Lack of Therapy (Indication) Identified	19	19

Table 3. Comparison between UF COP first year summary report Table D (*Tabulation of Interactions (by category*)) counts to FSU COM findings extracted from first year patient charts

	UF COP	FSUCOM
Intervention	Sum Totals	Sum Totals
Drug-Age Interaction Identified (Beers List)	0	0
Drug-Allergy Interaction Identified	0	0
Drug-Disease Interaction Identified	8	8
Drug-Food Interaction Identified	0	0
Drug-Pregnancy Interaction Identified	0	0
Level 1 Clinically Significant Drug-Drug Interaction Identified	8	8
Level 2 Clinically Significant Drug-Drug Interaction Identified	15	15
Level 3 Clinically Significant Drug-Drug Interaction Identified	0	0
Level 4 Clinically Significant Drug-Drug Interaction Identified	0	0

Table 4. Comparison between UF COP first year summary report Table E (*Patient Response/Rating of CMR—Quality Assurance Questions*) [3] counts to FSU COM findings extracted from first year patient charts

UF COP				FSUCOM			
Yes Count	Yes %	No Count	No %	Yes Count	Yes %	No Count	No %
113	76.9%	34	23.1%	113	76.9%	34	23.1%
140	95.2%	7	4.8%	140	95.2%	7	4.8%
39	90.7%	4	9.3%	39	90.7%	4	9.3%
63	95.5%	3	4.5%	63	95.5%	3	4.5%

Table 5.Comparison between UF COP first year summary report Table F (Provider Responses--These include resolved interventions documented or determined from review of the patient's prescription claims data or follow-up with the patient via telephone)[3] counts to FSU COM findings extracted from first year patient charts

	UF COP			FSU COM		
Provider Interventions	Interventions Identified (1st-4th Qtr.)	Intervention Resolutions (2nd - 4th Quarter)	Resolution Rate Year 1, by individual intervention	Intervention Identified (1st - 4th Quarter)	Interventions Resolutions (2nd - 4th Quarter)	Resolution Rate Year 1, by individual intervention
Adverse Drug Event Identified	6	-	0%	6	-	0%
Combination Therapy Recommended (decrease pill burden)	11	2	18%	11	2	18%
Contraindication Identified (Drug - Disease)	1	-	0%	1	-	0%
Counseled on Medication (General, side effects, indication, etc.)	2	-	0%	2	-	0%
Counseled on Medication Administration/Technique	2	1	50%	2	1	50%
Drug-Disease Interaction Identified	8	6	75%	8	6	75%
Duplicate Therapy Identified	4	2	50%	4	2	50%
Excessive Dosage Identified	6	4	67%	6	4	67%
Excessive Duration of Therapy Identified	1	-	0%	1	-	0%
Excessive Pill Burden Identified (multiple tablets of lower strength)	5	1	20%	5	1	20%
Gap in Therapy - Diabetic without a Statin	8	1	13%	9	1	11%
Gap in Therapy - Diabetic without an ACE-I or ARB	5	1	20%	4	1	25%
Gap in Therapy - Heart Failure without a Beta-Blocker	1	-	0%	1	-	0%
Gap in Therapy - Heart Failure without an ACE-I or ARB	2	-	0%	2	-	0%

	UF COP			FSU COM		
Provider Interventions	Interventions Identified (1st-4th Qtr.)	Intervention Resolutions (2nd - 4th Quarter)	Resolution Rate Year 1, by individual intervention	Intervention Identified (1st - 4th Quarter)	Interventions Resolutions (2nd - 4th Quarter)	Resolution Rate Year 1, by individual intervention
Gap in Therapy - Lack of Controller Medication / Beta-Agonist Overuse in Asthma	3	2	67%	3	3	100%
Gap in Therapy - Long-Term Steroid without Antiresorptive Agent	2	-	0%	2	-	0%
Gap in Therapy - Potentially Inappropriate Beta-Blocker Selection in Heart Failure	1	-	0%	1	-	0%
Insufficient Dosage Identified	8	7	88%	8	6	75%
Insufficient Duration of Therapy Identified	2	1	50%	2	1	50%
Lack of Efficacy Identified	10	4	40%	10	*	
Lack of Therapy (Indication) Identified	19	2	11%	19	*	
Level 1 Clinically Significant Drug-Drug Interaction Identified	7	4	57%	7	4	57%
Level 2 Clinically Significant Drug-Drug Interaction Identified	14	7	50%	14	7	50%
Needs Preventative Screening / Immunizations	1	-	0%	1	-	0%
OTC Therapy Recommended	2	-	0%	2	-	0%
Recommended Preferred Drug List Alternative	8	5	63%	8	*	
Total	139	50		139	39	
Year One Program Resolution Rate, Overall			36%			28%
*Could not identify *Resolutions* data element						

Table 6. Summary of Morisky Adherence Scale questions and summary score: Administered by UF COP staff directly following the initial CMR interview with the Year 1 cohort (n=147), June 1, 2011 to May 31, 2012

Do you sometimes forget to take your medicine?	
People sometimes miss taking their medicines for reasons other than forgetting. Thinking over the past two weeks, were there any days when you did not take your medicine?	
Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it?	
When you travel or leave home, do you sometimes forget to bring along your medicine?	
Did you take all of your medicine yesterday? *****	
When you feel like your symptoms are under control, do you sometimes stop taking your medicine?	
Taking medicine every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your treatment plan?	
How often do you have difficulty remembering to take all of your medicine?******	
Mean Summary Score for 147 MTM PARTICIPANTS Year 1	6.31

Patients who answer yes to a survey item receive 1 point toward the total MMAS-8 summary score.
**Directionality of question was reversed (yes=0, no=1).*
***Question was dichotomized (Never/rarely=0, once in a while/sometimes/usually/all the time=1).*
Ref: Morisky 8-Item Medication Adherence Scale: Morisky DE, Ang A, Krousel-Wood M, Ward HJ. Predictive validity of a medication adherence measure in an outpatient setting. J Clin Hypertens.(Greenwich.). 2008;10(5):348-354.

Table 7. Number and percent of MTM ELIGIBLE Medicaid recipients with a scheduled CMR (199) versus persons who declined without scheduling a CMR or could not be successfully contacted (270) by race, Florida Medicaid MEDS-AD Waiver Program, June 1, 2011 through May 31, 2012

Participants versus Non-Participants	Race							
Count Overall %	White or European American	Black or African American	Hispanic	Asian American	American Indian or Alaskan Native	Other	Not Determined	Total
Non-Participant	155 33.0%	65 13.9%	19 4.1%	1 0.2%	1 0.2%	3 0.6%	26 5.5%	270 57.6%
Participant	122 26.0%	49 10.4%	14 3.0%	1 0.2%	0 0.0%	2 0.4%	11 2.3%	199 42.4%
Total	277 59.1%	114 24.3%	33 7.0%	2 0.4%	1 0.2%	5 1.1%	37 7.9%	469 100.0%

Pearson chi2(6) = 3.5486 Pr = 0.737 (no difference among participants and non-participants by race

Table 8. Number and percent of MTM ELIGIBLE Medicaid recipients with a schedule CMR (199) versus persons who declined without scheduling a CMR or could not be successfully contacted (270) by Gender, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Participants versus Non-Participants	Gender		
Count Overall %	Female	Male	Total
Non-Participant	102 21.7%	168 35.8%	270 57.6%
Participant	94 20.0%	105 22.4%	199 42.4%
Total	196 41.8%	273 58.2%	469 100.0%

Pearson chi2(1) = 4.2131 Pr = 0.040 (females are more likely to be participants that males)

Table 9. Number and percent of MTM ELIGIBLE Medicaid recipients with a schedule CMR (199) versus persons who declined without scheduling a CMR or could not be successfully contacted (270) by Age, Florida Medicaid Meds-AD Waiver Program June 1, 2011 through May 31, 2012

Participants versus Non-Participants	Age Categories in Years						
Count Overall %	0-20	21 - 40	41 - 50	51 - 55	56 - 60	61-65	Total
Non-Participant	1 0.2%	36 7.7%	55 11.8%	55 11.8%	57 12.2%	65 13.9%	269 57.5%
Participant	0 0.0%	18 3.8%	40 8.5%	46 9.8%	48 10.3%	47 10.0%	199 42.5%
Total	1 0.2%	54 11.5%	95 20.3%	101 21.6%	105 22.4%	112 23.9%	468§ 100.0%

Pearson chi2(5) = 3.4416 Pr = 0.632 (no difference among participants and non-participants by age category.

§Note: records sum to 468 due to deletion of a duplicate record in the UF COP MTM ELIGIBLE Non-PARTICIPANT group.

Table 10. Number and percent of MTM participants with an initial scheduled CMR (n=199) who then declined (52) by Age, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Initial Scheduled CMR, then Declined	Age in Years					
Count Overall %	21 - 40	41 - 50	51 - 55	56 - 60	61-65	Total
CMR Declined	8 4.0%	14 7.0%	11 5.5%	12 6.0%	7 3.5%	52 26.1%
CMR Completed	10 5.0%	26 13.1%	35 17.6%	36 18.1%	40 20.1%	147 73.9%
Total	18 9.0%	40 20.1%	46 23.1%	48 24.1%	47 23.6%	199 100.0%

Pearson chi2(4) = 7.9814 Pr = 0.092; Fisher's exact = 0.090 (no differences by age)

Table 11. Number and percent of MTM participants with an initial scheduled CMR (n=199) who then declined (52) by Race, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Initial Scheduled CMR, then Declined	Race and Ethnicity						
Count Overall %	White or European American	Black or African American	Hispanic	Asian American	Other	Not determined	Total
CMR Declined	30 15.1%	16 8.0%	3 1.5%	1 0.5%	0 0.0%	2 1.0%	52 26.1%
CMR Completed	92 46.2%	33 16.6%	11 5.5%	0 0.0%	2 1.0%	9 4.5%	147 73.9%
Total	122 61.3%	49 24.6%	14 7.0%	1 0.5%	2 1.0%	11 5.5%	199 100.0%

Pearson chi2(5) = 5.2848 Pr = 0.382; Fisher's exact = 0.485 (no differences by race)

Table 12. Number and percent of MTM participants with a initial scheduled CMR (n=199) who then declined (52) by Gender, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Initial Scheduled CMR, then Declined	Gender		
Count Overall %	Female	Male	Total
CMR Declined	30 15.1%	22 11.1%	52 26.1%
CMR Completed	64 32.2%	83 41.7%	147 73.9%
Total	94 47.2%	105 52.8%	199 100.0%

Pearson chi2(5) = 5.2848 Pr = 0.382; Fisher's exact = 0.485 (no difference by gender)

Table 13. Number and percent of MTM participants with a completed CMR and three completed quarterly follow-up reviews with or without a MAP by Age, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed Intervention (CMR and three Quarterly follow-ups) with and without a MAP	Age in Years					
Count Overall %	21 - 40	41 - 50	51 - 55	56 - 60	61-65	Total
No MAP	1 1%	2 1%	1 1%	3 2%	1 1%	8 5%
MAP	9 6%	24 16%	34 23%	33 22%	39 27%	139 95%
Total	10 7%	26 18%	35 24%	36 24%	40 27%	147 100%

Pearson chi2(4) = 2.3716 Pr = 0.6678; Fisher's exact = 0.524 (no difference in age)

Table 14. Number and percent of MTM participants with a completed CMR and three completed quarterly follow-up reviews with or without a MAP by Race, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed Intervention (CMR and three Quarterly follow-ups) with and without a MAP	Race					
Count Overall %	White or European American	Black or African American	Hispanic	Other	Not Determined	Total
No MAP	8 5.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	8 5%
MAP	84 57%	33 22%	11 7%	2 1%	9 6%	139 92%
Total	92 63%	33 22%	11 7%	2 1%	9 6%	147 100.0%

Pearson chi2(4) = 5.0579 Pr = 0.2814; Fisher's exact =0.3836 (no difference by race)

Table 15. Number and percent of MTM participants with a completed CMR who received a MAP, and three completed quarterly follow-up reviews by Gender, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed Intervention (CMR and three Quarterly follow-ups) with and without a MAP	Gender		
Count Overall %	Female	Male	Total
No MAP	6 4%	2 1%	8 5%
MAP	77 52%	62 42%	139 95%
Total	83 56%	64 44%	147 100%

Pearson chi2(1) = 1. 1827 Pr = 0.277; Fisher's exact p=0.466 (no difference by gender)

Table 16. Number and percent of Post CMR actions by MTM staff by Age, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Post CMR Actions by MTM Staff	Patient Age Categories					
Count Overall %	21 - 40	41 - 50	51 - 55	56 - 60	61-65	Total
Both PCP Contact and MAP to Patient	9 6.1%	22 15.0%	34 23.1%	33 22.4%	38 25.9%	136 92.5%
PCP Contact Only	1 0.7%	2 1.4%	1 0.7%	2 1.4%	0 0.0%	6 4.1%
MAP to Patient Only	0 0.0%	2 1.4%	0 0.0%	0 0.0%	1 0.7%	3 2.0%
Neither MAP to Patient nor PCP Contact	0 0.0%	0 0.0%	0 0.0%	1 0.7%	1 0.7%	2 1.4%
Total	10 6.8%	26 17.7%	35 23.8%	36 24.5%	40 27.2%	147 100.0%

Pearson chi2(4) = 3.8549 Pr = 0.426; Fisher's exact = 0.251 (no difference by age)

Table 17. Number and percent of Post CMR actions by MTM staff by Gender, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Post CMR Actions by MTM Staff	Patient Gender		
Count Overall %	Female	Male	Total
Both PCP Contact and MAP to Patient	60 40.8%	76 51.7%	136 92.5%
PCP Contact Only	1 0.7%	5 3.4%	6 4.1%
MAP to Patient Only	2 1.4%	1 0.7%	3 2.0%
Neither MAP to Patient nor PCP Contact	1 0.7%	1 0.7%	2 1.4%
Total	64 43.5%	83 56.5%	147 100.0%

Pearson chi2(3) = 3.3091 Pr = 0.346; Fisher's exact = 0.362 (no difference by gender)

Table 18. Number and percent of Post CMR actions by MTM staff by Race, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Post CMR Actions by MTM Staff	Race					
Count Overall %	White or European American	Black or African American	Hispanic	Other	Not determined	Total
Both PCP Contact and MAP to Patient	82 55.8%	32 21.8%	11 7.5%	2 1.4%	9 6.1%	136 92.5%
PCP Contact Only	6 4.1%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	6 4.1%
MAP to Patient Only	2 1.4%	1 0.7%	0 0.0%	0 0.0%	0 0.0%	3 2.0%
Neither MAP to Patient nor PCP Contact	2 1.4%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	2 1.4%
Total	92 62.6%	33 22.4%	11 7.5%	2 1.4%	9 6.1%	147 100.0%

Pearson chi2(12) = 5.7158 Pr = 0.930; Fisher's exact =0.863 (no difference by race)

Table 19. Number and percent of MTM ELIGIBLE recipients with and without a completed CMR by Age, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed CMR	Age in Years							
Count Overall %	0-20	21 - 40	41 - 50	51 - 55	56 - 60	61-65	66	Total
No Completed CMR	1 0.2%	54 8.3%	102 15.7%	84 12.9%	107 16.4%	132 20.3%	24 3.7%	504 77.4%
Completed CMR	0 0.0%	10 1.5%	26 4.0%	35 5.4%	36 5.5%	40 6.1%	0 0.0%	147 22.6%
Total	1 0.2%	64 9.8%	128 19.7%	119 18.3%	143 22.0%	172 26.4%	24 3.7%	651§ 100.0%

Pearson chi2(5) = 5.7889 Pr = 0.327; Fisher's exact = 0.319 (no difference by age)

§Note: records sum to 651 due to deletion of a duplicate record in the UF COP MTM ELIGIBLE Non-PARTICIPANT group.

Table 20. Number and percent of MEDS-AD MTM ELIGIBLE recipients with and without a completed CMR by race, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed CMR	Race							
Count Overall %	White or European American	Black or African American	Hispanic	Asian American	American Indian or Alaskan Native	Other	Not determined	Total
No Completed CMR	234 35.9%	114 17.5%	101 15.5%	3 0.5%	3 0.5%	7 1.1%	42 6.5%	504 77.4%
Completed CMR	92 14.1%	33 5.1%	11 1.7%	0 0.0%	0 0.0%	2 0.3%	9 1.4%	147 22.6%
Total	326 50.1%	147 22.6%	112 17.2%	3 0.5%	3 0.5%	9 1.4%	51 7.8%	651§ 100.0%

Pearson chi2(6) = 18.8244 Pr = 0.004; Fisher's exact = 0.002 (observed distribution of race is different than expected)

§Note: records sum to 651 due to deletion of a duplicate record in the UF COP MTM ELIGIBLE Non-PARTICIPANT group.

Table 21. Number and percent of MEDS-AD MTM ELIGIBLE recipients with and without a completed CMR by gender, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed CMR	Gender		
Count Overall %	Female	Male	Total
No Completed CMR	206 31.6%	298 45.8%	504 77.4%
Completed CMR	64 9.8%	83 12.7%	147 22.6%
Total	270 41.5%	381 58.5%	651§ 100.0%

Pearson chi2(1) = 0.3328 Pr = 0.564; Fisher's exact = 0.569 (no difference by gender)

§Note: records sum to 651 due to deletion of a duplicate record in the UF COP MTM ELIGIBLE Non-PARTICIPANT group.

Table 22. Number and percent of MTM PARTICIPANTS with a completed CMR and MTM ELIGIBLE NON-PARTICPANTS who refused CMR by Age, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed CMR or Refused CMR	Age in Years					
Count Overall %	21 - 40	41 - 50	51 - 55	56 - 60	61-65	Total
Refused CMR	2 0.9%	8 3.6%	22 10.0%	15 6.8%	26 11.8%	73 33.2%
Completed CMR	10 4.5%	26 11.8%	35 15.9%	36 16.4%	40 18.2%	147 66.8%
Total	12 5.5%	34 15.5%	57 25.9%	51 23.2%	66 30.0%	220 100.0%

Pearson chi2(5) = 11.7901 Pr = 0.0378; Fisher's exact = 0.0324 (age distribution is different in the Refused CMR vs. Completed CMR group)

Table 23. Number and percent of MTM PARTICIPANTS with a completed CMR and MTM ELIGIBLE NON-PARTICPANTS who refused CMR by race, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed CMR or Refused CMR	Race						
Count Overall %	White or European American	Black or African American	Hispanic	Asian American	Other	Not determined	Total
Refused CMR	48 21.8%	12 5.5%	4 1.8%	1 0.5%	1 0.5%	7 3.2%	73 33.2%
Completed CMR	92 41.8%	33 15.0%	11 5.0%	0 0.0%	2 0.9%	9 4.1%	147 66.8%
Total	140 63.6%	45 20.5%	15 6.8%	1 0.5%	3 1.4%	16 7.3%	220 100.0%

Pearson chi2(5) = 4.0454 Pr = 0.5429; Fisher's exact = 0.5397 (race distribution is no different in the Refused CMR vs. Completed CMR group)

Table 24. Number and percent of MTM PARTICIPANTS with a completed CMR and MTM ELIGIBLE NON-PARTICPANTS who refused CMR by gender, Florida Medicaid MEDS-AD Waiver Program June 1, 2011 through May 31, 2012

Completed CMR or Refused CMR	Gender		
Count Overall %	Female	Male	Total
Refused CMR	26 11.8%	47 21.4%	73 33.2%
Completed CMR	64 29.1%	83 37.7%	147 66.8%
Total	90 40.9%	130 59.1%	220 100.0%

Pearson chi2(5) = 1.2660 Pr = 0.2605; Fisher's exact = 0.3086 (gender distribution is no different in the Refused CMR vs. Completed CMR group)

Expenditures and Service Utilization Using the JHU Risk Adjustment ACG V.10

Table 25. Summary of Statistical Analysis for MTM PARTICIPANTS, MTM ELIGIBLE NON-PARTICIPANTS, and the MEG1 population for calendar year 2011 utilization using the JHU ACG software.

	MTM Participants in Year 1 vs. MTM Eligible Non-Participants in Year 1	MTM Participants in Year 1 vs. MEG1 Population Year 1	MTM Eligible Non-Participants in Year 1 vs. MEG1 Population Year 1
Total Cost	**s. s.**	**s. s.**	**s. s.**
Pharmacy Cost	not s. s.	**s. s.**	**s. s.**
Inpatient Hospital Visits	**s. s.**	not s. s.	not s. s.
Outpatient Hospital Visits	not s. s.	**s. s.**	**s. s.**

Note: **s. s.** = statistically significant difference; not s. s. = not a statistically significant difference

Table 26. Comparison of ACG "Total Cost" for MTM ELEGIBLE NON-PARTICIPANTS and MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Total Cost		N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS		505	25147.9	43170.5	7.1000	469415
MTM PARTICIPANTS		147	19123.5	22810.7	52.9600	134087
Method	Variances	DF		t Value		Pr > |t|
Satterthwaite	Unequal	463.27		2.24		0.0255

Table 27. Comparison of ACG "Total Cost" for the MEG1 population and MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Total Cost	N	Mean	Std. Dev.	Minimum	Maximum
MEG1 POPULATION	14399	15159.2	59041.6	0	4445691
MTM PARTICIPANTS	147	19123.5	22810.7	52.9600	134087

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	166.65	-2.04	0.0431

Table 28. Comparison of ACG "Total Cost" MTM ELEGIBLE NON-PARTICIPANTS and MEG1 Population Year 1 cohort, calendar year 2011

Total Cost	N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS	505	25147.9	43170.5	7.1000	469415
MEG1 population	14399	15159.2	59041.6	0	4445691

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	572.21	5.04	<.0001

Table 29. Comparison of ACG "Pharmacy Cost" MTM ELEGIBLE NON-PARTICIPANTS and MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Pharmacy Cost	N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS	505	9400.7	22209.3	0	252431
MTM PARTICIPANTS	147	7372.0	14528.5	19.5500	123426

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	363.46	1.31	0.1923

Table 30. Comparison of ACG "Pharmacy Cost" MEG1 population and MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Pharmacy Cost	N	Mean	Std. Dev.	Minimum	Maximum
MEG1 population	14399	4766.9	30138.3	0	1995422
MTM PARTICIPANTS	147	7372.0	14528.5	19.5500	123426

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	159.11	-2.13	0.0349

Table 31. Comparison of ACG "Pharmacy Cost" MTM ELEGIBLE NON-PARTICIPANTS and MEG1 population Year 1 cohort, calendar year 2011

Pharmacy Cost	N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS	505	9400.7	22209.3	0	252431
MEG1 population	14399	4766.9	30138.3	0	1995422

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	571.12	4.54	<.0001

Table 32. Comparison of ACG "Inpatient Hospital discharges" MTM ELEGIBLE NON-PARTICIPANTS and MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Inpatient Hospital Discharges	N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS	505	0.7960	1.9700	0	29.0000
MTM PARTICIPANTS	147	0.4966	1.3718	0	12.0000

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	338.56	2.09	0.0372

Table 33.Comparison of ACG "Inpatient Hospital discharges" MEG1 population and MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Inpatient Hospital Discharges	N	Mean	Std. Dev.	Minimum	Maximum
MEG1 population	11227	0.6745	1.4372	0	24.0000
MTM PARTICIPANTS YEAR 1	147	0.4966	1.3718	0	12.0000

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	150.23	1.56	0.1205

Table 34.Comparison of ACG "Inpatient Hospital discharges" MTM ELEGIBLE NON-PARTICIPANTS YEAR 1 MEG1 Year 1 cohort, calendar year 2011

Inpatient Hospital Discharges	N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS	505	0.7960	1.9700	0	29.0000
MEG1 population	11227	0.6745	1.4372	0	24.0000

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	528.41	1.37	0.1714

Table 35. Comparison of ACG "Outpatient Hospital Visits" MTM ELEGIBLE NON-PARTICIPANTS YEAR 1 MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Outpatient Hospital Visits	N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS	505	8.1149	15.8826	0	167.0
MTM PARTICIPANTS	147	6.9388	8.7345	0	56.0000

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	443.33	1.17	0.2445

Table 36. Comparison of ACG "Outpatient Hospital Visits" MEG1 population MTM PARTICIPANTS Year 1 cohort, calendar year 2011

Outpatient Hospital Visits	N	Mean	Std. Dev.	Minimum	Maximum
MEG1 population	11227	4.9554	11.6462	0	365.0
MTM PARTICIPANTS	147	6.9388	8.7345	0	56.0000

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	152.88	-2.72	0.0072

Table 37.Comparison of ACG "Outpatient Hospital Visits" MTM ELEGIBLE NON-PARTICIPANTS and MEG1 population Year 1 cohort, calendar year 2011

Outpatient Hospital Visits	N	Mean	Std. Dev.	Minimum	Maximum
MTM ELEGIBLE NON-PARTICIPANTS	505	8.1149	15.8826	0	167.0
MEG1 population	11227	4.9554	11.6462	0	365.0

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	528.66	4.42	<.0001

Total Medicaid Expenditures and total Services includes utilization for inpatient and outpatient hospital services, skilled nursing facilities and filled prescriptions only. Estimates are not adjusted for length of enrollment

Table 38.Summary of tests for differences in Medicaid expenditures and total services utilized for MTM PARTICIPANTS, MTM Non-PARTICIPANTS and the MEG1 population program Year 1, June 1, 2011 to May 31, 2012

	MTM Participants in Year 1 vs. MTM Eligible Non-Participants in Year 1	MTM Participants in Year 1 vs. MEG1 Population Year 1	MTM Eligible Non-Participants in Year 1 vs. MEG1 Population Year 1
Total Expenditures		n.s.	(+) p=.004
Pharmacy Expenditures		n.s.	(+) p=.004
Inpatient Hospital Expenditures		(-) p=.025	n.s.
Outpatient Hospital Expenditures		n.s.	n.s

n.s. = not significant (+) first measure in each column is higher than 2nd; (-) first measure in each column is lower than 2nd.

Table 39. Equality of mean total Medicaid expenditures: MTM Eligible Non-PARTICIPANTS versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std. Dev.	Std. Err.	Minimum	Maximum
MTM Eligible Non-participants	496	11221	19409	872	0	165224
MEDS-AD Eligible Recipients (MEG1)	11284	8648	21872	206	0	983344
Diff (1-2)		2574	21774	999	t-Value	Pr > |t|
				Satterthwaite	2.87	0.0042

Table 40. Equality of mean total Medicaid expenditures: MTM PARTICIPANTS versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std.. Dev.	Std.. Err.	Minimum	Maximum
MTM Eligible non-Participants	146	9636	17248	1428	8	143169
MEDS-AD Eligible Recipients (MEG1)	11284	8648	21872	206	0	983344
Diff (1-2)		989	21819	1817	t-Value	Pr > |t|
				Satterthwaite	0.69	0.494

Table 41. Equality of mean total Medicaid pharmacy expenditures: MTM Eligible Non-PARTICIPANTS versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std. Dev.	Std. Err.	Minimum	Maximum
MTM Eligible Non-participants	478	6937	13235	605	0	136015
MEDS-AD Eligible Recipients (MEG1)	10577	5125	18594	181	0	966440
Diff (1-2)		1812	18395	860	t-Value	Pr > |t|
				Satterthwaite	2.87	0.0043

Table 42. Equality of mean total Medicaid pharmacy expenditures: MTM PARTICIPANTS versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std. Dev.	Std. Err.	Minimum	Maximum
MTM Eligible with a CMR	142	6524	15383	1291	0	143169
MEDS-AD Eligible Recipients (MEG1)	10577	5125	18594	181	0	966440
Diff (1-2)		1399	18556	1568	t-Value	Pr > |t|
				Satterthwaite	1.07	0.2849

Table 43. Equality of mean total Medicaid inpatient expenditures: MTM Eligible Non-PARTICIPANTS versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std. Dev.	Std. Err.	Minimum	Maximum
MTM Eligible Non-participants	107	13266	16528	1598	0	83659.2
MEDS-AD Eligible Recipients (MEG1)	2021	16251	21539	479	0	190958
Diff (1-2)		-2985	21317	2115	t-Value	Pr > |t|
				Satterthwaite	-1.79	0.0759

Table 44. Equality of mean total Medicaid inpatient expenditures: MTM PARTICIPANTS versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std. Dev.	Std. Err.	Minimum	Maximum
MTM Eligible with a CMR	25	10343	12141	2428	0	59857
MEDS-AD Eligible Recipients (MEG1)	2021	16251	21539	479	0	190958
Diff (1-2)		-5907	21452	4317	t-Value	Pr > |t|
				Satterthwaite	-2.39	0.0246

Table 45. Equality of mean total Medicaid outpatient hospital expenditures: MTM Eligible Non-PARTICIPANTS versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std. Dev.	Std. Err.	Minimum	Maximum
MTM Eligible Non-participants	333	2464	5887	323	0	62238
MEDS-AD Eligible Recipients (MEG1)	5206	1905	3886	54	0	64507
Diff (1-2)		559	4034	228	t-Value	Pr > |t|
				Satterthwaite	1.71	0.0886

Table 46. Equality of mean total Medicaid outpatient hospital expenditures: MTM Eligible with CMR versus MEG1 population, June 1, 2011 to May 31, 2012

Population Group	N	Mean($)	Std. Dev.	Std. Err.	Minimum	Maximum
MTM Eligible with a CMR	101	2198	5945	592	0	55459
MEDS-AD Eligible Recipients (MEG1)	5206	1905	3886	54	0	64507
Diff (1-2)		293	3934	395	t-Value	Pr > |t|
				Satterthwaite	0.49	0.6235

Table 47. Linear model for total Medicaid program Expenditures among the MEG1, MTM ELIGIBLE NON-PARTICIPANT, and MTM PARTICIPANT populations by age, race, and gender, Year 1 (June 1, 2011 to May 31, 2012)

Dependent Variable: Log of Total Expenditures				
Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	8.048	0.168	47.78	<.0001
MEG1 Population	-0.484	0.165	-2.93	0.0034
Group MTM Eligible Non-PARTICIPANTS	0.152	0.187	0.82	0.4151
Group MTM PARTICIPANTS	0.000	.	.	.
Gender Female	0.000	0.037	0	0.9994
Gender Male	0.000	.	.	.
Race American Indian or Alaskan Native	-0.014	0.315	-0.04	0.9657
Race Asian American	-0.111	0.240	-0.46	0.6437
Race Black or African American	0.035	0.051	0.68	0.4972
Race Hispanic	-0.017	0.044	-0.38	0.7026
Race Not determined	0.024	0.082	0.29	0.7709
Race Other	-0.009	0.147	-0.06	0.9518
Race White or European American	0.000	.	.	.
Age Group 0 – 20	0.188	0.142	1.32	0.1858
Age Group 21 – 40	0.052	0.060	0.87	0.3863
Age Group 41 – 50	0.016	0.055	0.29	0.7737
Age Group 51 – 55	0.142	0.057	2.49	0.0128
Age Group 56 – 60	0.139	0.054	2.56	0.0105
Age Group > 60	0	.	.	.

R-squared 0.006 Model F=5.05 p<.0001

Exponentiation of coefficient of MEG1 Population (-.484=.616); Age Group 51-55 (.142=1.15); and Age Group 56-60 (.139=1.149)

Table 48. Negative binomial model for the number of total Medicaid Svs. received among the MEG1, MTM ELIGIBLE NON-PARTICIPANT, and MTM PARTICIPANT populations by age, race, and gender, Year 1 (June 1, 2011 to May 31, 2012)

Dependent Variable: Total number of Services				
Parameter	Maximum Likelihood Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	4.23	0.08	2568.94	<.0001

MEG1 Population	-0.33	0.08	15.92	<.0001
Group MTM Eligible Non-PARTICIPANTS	0.01	0.09	0.02	0.88
Group MTM PARTICIPANTS	0.00	0.00	.	.
Gender Female	0.02	0.02	1.24	0.26
Gender Male	0.00	0.00	.	.
Race American Indian or Alaskan Native	-0.05	0.16	0.1	0.75
Race Asian American	0.02	0.12	0.02	0.89
Race Black or African American	0.00	0.03	0.03	0.87
Race Hispanic	0.00	0.02	0	0.95
Race Not determined	0.05	0.04	1.41	0.23
Race Other	0.05	0.07	0.41	0.52
Race White or European American	0.00	0.00	.	.
Age Group 0 - 20	0.06	0.07	0.76	0.38
Age Group 21 - 40	0.01	0.03	0.11	0.74
Age Group 41 - 50	0.04	0.03	1.81	0.18
Age Group 51 - 55	0.04	0.03	1.69	0.19
Age Group 56 - 60	0.02	0.03	0.81	0.37
Age Group > 60	0.00	0.00	.	.
Dispersion	.95	.01		

The MEG1 Population used 33% fewer total Services than MTM PARTICPANTS.

Table 49. Mean total Medicaid expenditures and mean total services for the MEG1 population, MTM PARTICIPANTS, and MTM ELIGIBLE Non-PARTICPANTS by age, race, sex, June 1, 2011 to May 31, 2012

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
MEDS-AD Eligible Recipients (MEG1)	White or European American	Female	0 - 20	Tot. Expnd.	46	5796	56374536	41	33291
				Tot. Svs.	46	57	2585	1	204
			21 - 40	Tot. Expnd.	388	8186	203611711	6	104610
				Tot. Svs.	388	54	2922	1	360
			41 - 50	Tot. Expnd.	453	7514	197549180	6	103356
				Tot. Svs.	453	51	2862	1	379
			51 - 55	Tot. Expnd.	438	9608	1514505333	6	768708
				Tot. Svs.	438	53	2555	1	336
			56 - 60	Tot. Expnd.	385	8283	221269441	4	120171
				Tot. Svs.	385	50	2030	1	232
			> 60	Tot. Expnd.	441	8177	266854107	4	176624
				Tot. Svs.	441	53	2884	1	318
		Male	0 - 20	Tot. Expnd.	31	8977	283442826	18	64281
				Tot. Svs.	31	57	3959	1	329
			21 - 40	Tot. Expnd.	336	8722	244957963	5	137635
				Tot. Svs.	336	50	2471	1	381
			41 - 50	Tot. Expnd.	558	7820	230701698	4	135567
				Tot. Svs.	558	48	2474	1	319
			51 - 55	Tot. Expnd.	519	9645	388850088	4	266400
				Tot. Svs.	519	51	2254	1	282
			56 - 60	Tot. Expnd.	518	8915	283727335	5	155638
				Tot. Svs.	518	51	2306	1	316
			> 60	Tot. Expnd.	652	8190	248864518	4	135767
				Tot. Svs.	652	51	2619	1	290
	Black or African American	Female	0 - 20	Tot. Expnd.	26	8567	192623964	9	48956
				Tot. Svs.	26	43	2091	1	202
			21 - 40	Tot. Expnd.	192	7882	230542672	4	141562
				Tot. Svs.	192	49	2572	1	329
			41 - 50	Tot. Expnd.	242	9429	288615792	5	120433
				Tot. Svs.	242	58	2687	1	277
			51 - 55	Tot. Expnd.	163	8771	287140744	7	101761
				Tot. Svs.	163	53	2539	1	325
			56 - 60	Tot. Expnd.	203	10661	423588049	8	144507
				Tot. Svs.	203	55	2823	1	496
			> 60	Tot. Expnd.	224	7642	268912748	16	131730
				Tot. Svs.	224	49	2264	1	227

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
		Male	0 - 20	Tot. Expnd.	19	15028	674735196	8	86827
				Tot. Svs.	19	54	1427	4	123
			21 - 40	Tot. Expnd.	168	14031	5890898660	8	983344
				Tot. Svs.	168	54	3069	1	328
			41 - 50	Tot. Expnd.	167	9869	281552188	4	121412
				Tot. Svs.	167	58	3090	1	290
			51 - 55	Tot. Expnd.	150	9387	449701479	4	160742
				Tot. Svs.	150	49	2290	1	280
			56 - 60	Tot. Expnd.	172	10219	359604674	5	166935
				Tot. Svs.	172	54	3045	1	295
			> 60	Tot. Expnd.	260	8169	218009066	4	128501
				Tot. Svs.	260	46	1979	1	253
	Hispanic	Female	0 - 20	Tot. Expnd.	21	12914	528439987	47	77041
				Tot. Svs.	21	30	903	1	120
			21 - 40	Tot. Expnd.	242	8438	377405590	4	158675
				Tot. Svs.	242	47	2137	1	238
			41 - 50	Tot. Expnd.	284	8919	294308743	4	149968
				Tot. Svs.	284	57	2995	1	339
			51 - 55	Tot. Expnd.	230	11704	1481561012	18	506841
				Tot. Svs.	230	53	3499	1	538
			56 - 60	Tot. Expnd.	336	9782	338064991	4	175903
				Tot. Svs.	336	55	2642	1	298
			> 60	Tot. Expnd.	568	7983	264019501	4	197949
				Tot. Svs.	568	48	2444	1	294
		Male	0 - 20	Tot. Expnd.	22	6534	85628445	20	36101
				Tot. Svs.	22	49	1957	1	172
			21 - 40	Tot. Expnd.	169	8538	451825885	8	190983
				Tot. Svs.	169	46	1958	1	288
			41 - 50	Tot. Expnd.	285	7102	165315354	4	97800
				Tot. Svs.	285	50	2254	1	256
			51 - 55	Tot. Expnd.	231	10384	339946317	5	104994
				Tot. Svs.	231	54	2357	1	324
			56 - 60	Tot. Expnd.	320	7998	201250529	8	99860
				Tot. Svs.	320	48	1845	1	210
			> 60	Tot. Expnd.	647	9038	873075508	4	510002
				Tot. Svs.	647	53	2586	1	319
	Asian American	Female	0 - 20	Tot. Expnd.	1	49	.	49	49
				Tot. Svs.	1	9	.	9	9
			21 -	Tot. Expnd.	7	7159	114006949	4	28207

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
			40	Tot. Svs.	7	57	6944	1	236
			41 - 50	Tot. Expnd.	3	9940	99438317	136	20072
				Tot. Svs.	3	76	6993	7	169
			51 - 55	Tot. Expnd.	4	2522	7275124	436	6250
				Tot. Svs.	4	28	952	2	70
			56 - 60	Tot. Expnd.	5	29934	2610444155	1073	120696
				Tot. Svs.	5	65	4843	14	171
			> 60	Tot. Expnd.	13	4887	55332741	38	27803
				Tot. Svs.	13	59	2601	5	163
		Male	0 - 20	Tot. Expnd.	1	364	.	364	364
				Tot. Svs.	1	5	.	5	5
			21 - 40	Tot. Expnd.	5	25547	2436874307	23	113633
				Tot. Svs.	5	59	2722	2	123
			41 - 50	Tot. Expnd.	4	4468	48822952	104	14794
				Tot. Svs.	4	26	332	8	47
			51 - 55	Tot. Expnd.	2	3275	21327960	9	6540
				Tot. Svs.	2	41	882	20	62
			56 - 60	Tot. Expnd.	9	4840	31268214	12	14582
				Tot. Svs.	9	36	938	2	80
			> 60	Tot. Expnd.	12	8679	173898085	599	45426
				Tot. Svs.	12	61	3063	3	191
	American Indian or Alaskan Native	Female	21 - 40	Tot. Expnd.	2	360	159420	78	642
				Tot. Svs.	2	21	61	15	26
			41 - 50	Tot. Expnd.	6	4812	77140667	23	22604
				Tot. Svs.	6	43	3431	1	156
			51 - 55	Tot. Expnd.	4	8896	7646354	5224	11058
				Tot. Svs.	4	31	262	12	47
			56 - 60	Tot. Expnd.	1	1033	.	1033	1033
				Tot. Svs.	1	44	.	44	44
			> 60	Tot. Expnd.	4	9221	127757768	2633	26069
				Tot. Svs.	4	34	1346	14	89
		Male	21 - 40	Tot. Expnd.	3	25280	667951725	14	51667
				Tot. Svs.	3	58	2512	2	98
			41 - 50	Tot. Expnd.	10	5161	30127540	22	16983
				Tot. Svs.	10	73	4057	12	186
			51 - 55	Tot. Expnd.	1	5264	.	5264	5264
				Tot. Svs.	1	37	.	37	37
			56 -	Tot. Expnd.	2	10240	124281171	2357	18123

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
			60	Tot. Svs.	2	72	2521	36	107
			> 60	Tot. Expnd.	4	2850	6403336	141	5716
				Tot. Svs.	4	30	444	1	49
	Other	Female	0 - 20	Tot. Expnd.	4	18122	325680703	1057	43512
				Tot. Svs.	4	97	3916	46	188
			21 - 40	Tot. Expnd.	16	8783	146044196	16	41112
				Tot. Svs.	16	76	4803	2	208
			41 - 50	Tot. Expnd.	8	2063	8872872	6	6878
				Tot. Svs.	8	32	689	1	77
			51 - 55	Tot. Expnd.	8	3361	12959037	40	11314
				Tot. Svs.	8	33	945	1	82
			56 - 60	Tot. Expnd.	7	9393	144335933	256	35864
				Tot. Svs.	7	84	8879	19	289
			> 60	Tot. Expnd.	27	7457	172680172	9	57803
				Tot. Svs.	27	55	2834	1	236
		Male	0 - 20	Tot. Expnd.	4	11691	135715466	42	26554
				Tot. Svs.	4	73	3878	6	142
			21 - 40	Tot. Expnd.	11	6985	123153214	162	38018
				Tot. Svs.	11	59	1388	22	157
			41 - 50	Tot. Expnd.	17	5091	60633853	38	25816
				Tot. Svs.	17	36	1048	2	126
			51 - 55	Tot. Expnd.	18	6182	75332614	60	37922
				Tot. Svs.	18	47	2003	5	168
			56 - 60	Tot. Expnd.	26	7730	207242025	13	55689
				Tot. Svs.	26	38	1275	2	136
			> 60	Tot. Expnd.	35	13361	501382517	24	98431
				Tot. Svs.	35	63	2297	3	223
	Not determined	Female	0 - 20	Tot. Expnd.	18	10511	167007235	372	43154
				Tot. Svs.	18	87	8546	2	372
			21 - 40	Tot. Expnd.	28	8678	139371454	4	45893
				Tot. Svs.	28	64	2342	2	161
			41 - 50	Tot. Expnd.	46	11015	543009490	4	129467
				Tot. Svs.	46	55	2552	2	207
			51 - 55	Tot. Expnd.	55	10536	341435051	6	97657
				Tot. Svs.	55	53	2244	1	162
			56 - 60	Tot. Expnd.	62	10163	401423079	120	123867
				Tot. Svs.	62	55	2510	1	209
			> 60	Tot. Expnd.	104	13533	2073948725	12	438775

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
				Tot. Svs.	104	48	2556	1	308
		Male	0 - 20	Tot. Expnd.	12	5521	42813322	54	23628
				Tot. Svs.	12	56	2052	1	133
			21 - 40	Tot. Expnd.	24	12847	553737891	8	94847
				Tot. Svs.	24	56	4223	1	228
			41 - 50	Tot. Expnd.	42	10361	539583063	22	145577
				Tot. Svs.	42	56	1817	4	143
			51 - 55	Tot. Expnd.	28	3200	14472994	20	14749
				Tot. Svs.	28	47	1448	3	130
			56 - 60	Tot. Expnd.	71	5838	70588495	5	33822
				Tot. Svs.	71	49	2578	1	273
			> 60	Tot. Expnd.	130	7182	183209782	18	78253
				Tot. Svs.	130	44	1870	1	289
MTM PARTICIPANTS with a CMR	White or European American	Female	21 - 40	Tot. Expnd.	4	9820	168089593	1726	29114
				Tot. Svs.	4	59	3415	16	145
			41 - 50	Tot. Expnd.	9	5990	73308053	106	23815
				Tot. Svs.	9	51	3248	5	165
			51 - 55	Tot. Expnd.	9	19032	492446060	767	66903
				Tot. Svs.	9	94	3213	8	149
			56 - 60	Tot. Expnd.	12	3109	16345961	27	11800
				Tot. Svs.	12	56	2911	3	152
			> 60	Tot. Expnd.	6	4017	15343074	183	10131
				Tot. Svs.	6	63	1887	16	116
		Male	21 - 40	Tot. Expnd.	5	14951	286963009	373	43242
				Tot. Svs.	5	107	5391	14	199
			41 - 50	Tot. Expnd.	11	10445	252514850	126	55661
				Tot. Svs.	11	66	1691	11	130
			51 - 55	Tot. Expnd.	10	6551	23879739	1719	17030
				Tot. Svs.	10	84	2446	6	166
			56 - 60	Tot. Expnd.	13	14070	580944111	167	89705
				Tot. Svs.	13	90	2145	12	170
			> 60	Tot. Expnd.	12	16910	1600179595	473	143169
				Tot. Svs.	12	76	3371	19	223
	Black or African American	Female	0 - 20	Tot. Expnd.	1	15421	.	15421	15421
				Tot. Svs.	1	9	.	9	9
			41 - 50	Tot. Expnd.	3	3360	9167214	24	5934
				Tot. Svs.	3	60	3806	4	126

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
			51 - 55	Tot. Expnd.	4	10525	108760281	1071	20866
				Tot. Svs.	4	52	1890	4	103
			56 - 60	Tot. Expnd.	4	1857	2346322	75	3499
				Tot. Svs.	4	24	434	2	42
			> 60	Tot. Expnd.	4	8980	102594990	259	19929
				Tot. Svs.	4	60	1304	16	96
		Male	41 - 50	Tot. Expnd.	7	10892	242203142	223	45053
				Tot. Svs.	7	72	1892	13	135
			51 - 55	Tot. Expnd.	2	5551	42684273	931	10171
				Tot. Svs.	2	47	18	44	50
			56 - 60	Tot. Expnd.	5	3365	16562312	350	10499
				Tot. Svs.	5	62	2613	6	145
			> 60	Tot. Expnd.	3	1414	1459162	636	2805
				Tot. Svs.	3	18	208	2	30
	Hispanic	Female	51 - 55	Tot. Expnd.	1	18946	.	18946	18946
				Tot. Svs.	1	24	.	24	24
			> 60	Tot. Expnd.	2	2844	690489	2257	3432
				Tot. Svs.	2	24	288	12	36
		Male	51 - 55	Tot. Expnd.	2	2733	67293	2550	2916
				Tot. Svs.	2	40	1458	13	67
			56 - 60	Tot. Expnd.	1	8044	.	8044	8044
				Tot. Svs.	1	197	.	197	197
			> 60	Tot. Expnd.	5	13977	471889674	419	52194
				Tot. Svs.	5	104	3971	35	180
	Other	Female	51 - 55	Tot. Expnd.	1	699	.	699	699
				Tot. Svs.	1	20	.	20	20
		Male	> 60	Tot. Expnd.	1	12976	.	12976	12976
				Tot. Svs.	1	82	.	82	82
	Not determined	Female	51 - 55	Tot. Expnd.	3	10700	276556143	8	29859
				Tot. Svs.	3	52	2131	2	93
			> 60	Tot. Expnd.	1	2321	.	2321	2321
				Tot. Svs.	1	80	.	80	80
		Male	51 - 55	Tot. Expnd.	1	11086	.	11086	11086
				Tot. Svs.	1	117	.	117	117
			56 - 60	Tot. Expnd.	3	16738	209705931	4389	32676
				Tot. Svs.	3	175	6832	80	227
			> 60	Tot. Expnd.	1	3237	.	3237	3237
				Tot. Svs.	1	103	.	103	103

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
MTM Eligible Non-PARTICIPANTS	White or European American	Female	21 - 40	Tot. Expnd.	16	20182	1164004022	117	124660
				Tot. Svs.	16	68	3129	3	218
			41 - 50	Tot. Expnd.	23	24620	1159496114	7	153325
				Tot. Svs.	23	78	2909	1	209
			51 - 55	Tot. Expnd.	21	13649	1224516476	51	165224
				Tot. Svs.	21	78	2564	2	202
			56 - 60	Tot. Expnd.	20	14785	321847684	114	60909
				Tot. Svs.	20	71	4024	1	229
			> 60	Tot. Expnd.	15	6143	111180290	61	40592
				Tot. Svs.	15	46	845	4	98
		Male	21 - 40	Tot. Expnd.	11	6320	33383678	803	18255
				Tot. Svs.	11	59	1929	17	172
			41 - 50	Tot. Expnd.	22	6806	65288920	98	34817
				Tot. Svs.	22	66	2104	1	158
			51 - 55	Tot. Expnd.	24	7633	171049448	305	65205
				Tot. Svs.	24	75	4375	1	216
			56 - 60	Tot. Expnd.	32	13717	393489511	151	85297
				Tot. Svs.	32	90	4205	4	253
			> 60	Tot. Expnd.	46	6198	65209820	103	43947
				Tot. Svs.	46	66	3047	9	226
	Black or African American	Female	21 - 40	Tot. Expnd.	7	4077	30343348	32	15752
				Tot. Svs.	7	19	352	1	56
			41 - 50	Tot. Expnd.	7	11548	146302677	103	30453
				Tot. Svs.	7	61	1706	6	143
			51 - 55	Tot. Expnd.	4	34159	1809843306	1460	91340
				Tot. Svs.	4	116	23424	11	343
			56 - 60	Tot. Expnd.	10	10883	428421343	112	65151
				Tot. Svs.	10	63	3829	3	198
			> 60	Tot. Expnd.	14	3671	12484654	139	12097
				Tot. Svs.	14	69	2152	22	155
		Male	21 - 40	Tot. Expnd.	12	12311	174032086	393	40301
				Tot. Svs.	12	50	1017	6	103
			41 - 50	Tot. Expnd.	13	5222	30641546	432	16038
				Tot. Svs.	13	64	3033	14	227
			51 - 55	Tot. Expnd.	13	10640	331852292	398	67362
				Tot. Svs.	13	67	3654	1	186
			56 -	Tot. Expnd.	11	14660	329764606	1740	46825

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
			60	Tot. Svs.	11	64	1010	15	110
			> 60	Tot. Expnd.	18	11949	545282832	36	92100
				Tot. Svs.	18	61	3437	1	232
	Hispanic	Female	21 - 40	Tot. Expnd.	6	24362	516065409	227	60316
				Tot. Svs.	6	106	5963	23	214
			41 - 50	Tot. Expnd.	9	13725	252560710	1002	45585
				Tot. Svs.	9	73	5205	4	233
			51 - 55	Tot. Expnd.	6	18665	538458010	1236	49323
				Tot. Svs.	6	75	828	34	121
			56 - 60	Tot. Expnd.	8	9811	159473804	1176	38310
				Tot. Svs.	8	47	1340	12	131
			> 60	Tot. Expnd.	12	5564	64701223	379	28308
				Tot. Svs.	12	54	1052	12	110
		Male	41 - 50	Tot. Expnd.	11	26998	1929186904	631	153058
				Tot. Svs.	11	82	4850	5	206
			51 - 55	Tot. Expnd.	7	11189	167691165	1597	35177
				Tot. Svs.	7	94	1630	64	180
			56 - 60	Tot. Expnd.	16	4826	26881650	39	14150
				Tot. Svs.	16	77	4555	3	209
			> 60	Tot. Expnd.	24	5701	39928912	210	24960
				Tot. Svs.	24	66	2041	8	153
	Asian American	Female	41 - 50	Tot. Expnd.	1	18882	.	18882	18882
				Tot. Svs.	1	55	.	55	55
		Male	41 - 50	Tot. Expnd.	2	6200	41299235	1656	10745
				Tot. Svs.	2	103	3200	63	143
	American Indian or Alaskan Native	Male	41 - 50	Tot. Expnd.	1	4399	.	4399	4399
				Tot. Svs.	1	129	.	129	129
			> 60	Tot. Expnd.	2	4161	29953955	291	8031
				Tot. Svs.	2	42	2888	4	80
	Other	Female	21 - 40	Tot. Expnd.	1	6500	.	6500	6500
				Tot. Svs.	1	25	.	25	25
			51 - 55	Tot. Expnd.	1	21309	.	21309	21309
				Tot. Svs.	1	172	.	172	172
			56 - 60	Tot. Expnd.	2	471	6784	413	530
				Tot. Svs.	2	25	32	21	29
		Male	> 60	Tot. Expnd.	3	9326	216753576	144	26307
				Tot. Svs.	3	65	2206	22	115

Population Group	Race / Ethnicity	Sex	Age Grp.	Measure Expnd. ($) Svs. (#)	Obs.	Mean	Variance	Min.	Max.
	Not determined	Female	21 - 40	Tot. Expnd.	2	4061	31166144	114	8009
				Tot. Svs.	2	72	6962	13	131
			41 - 50	Tot. Expnd.	5	16922	942484059	17	71547
				Tot. Svs.	5	107	16052	2	317
			51 - 55	Tot. Expnd.	2	11373	1181369	10604	12142
				Tot. Svs.	2	174	450	159	189
			56 - 60	Tot. Expnd.	5	21590	585304445	496	60024
				Tot. Svs.	5	87	4554	1	168
			> 60	Tot. Expnd.	6	11164	114274435	335	27533
				Tot. Svs.	6	133	3214	49	184
		Male	0 - 20	Tot. Expnd.	1	12723	.	12723	12723
				Tot. Svs.	1	41	.	41	41
			21 - 40	Tot. Expnd.	1	2310	.	2310	2310
				Tot. Svs.	1	76	.	76	76
			41 - 50	Tot. Expnd.	6	7254	71290715	209	23458
				Tot. Svs.	6	94	4884	27	212
			51 - 55	Tot. Expnd.	4	12608	82930192	1902	22309
				Tot. Svs.	4	118	196	97	127
			56 - 60	Tot. Expnd.	4	20653	546519231	1637	54610
				Tot. Svs.	4	119	7855	12	223
			> 60	Tot. Expnd.	5	8022	32460940	1504	16501
				Tot. Svs.	5	117	2505	51	169

SECTION II:
Interim Report on the Preliminary *Qualitative* Data Analysis

An Overview of the Qualitative Evaluation Team Effort

The qualitative component of this mixed methods project lends a much deeper understanding of the underlying processes that provide a more nuanced evaluation of the MEDS-AD Demonstration project (MEDS-AD) based on Medication Therapy Management (MTM) principles. The data for this evaluation emanates from a series of personal interviews conducted by our research team with specifically chosen key informants, MTM recipients, and primary care physicians.

The Research Investigative Team (RIT) associated with the qualitative evaluation effort consists of multidiscipline members who represent three academic institutions. The Lead Analyst, an Associate Professor at the FSU College of Social Work and a Co-PI of the project, is an expert in qualitative methodology and served as an essential participant in all five interviews with University of Florida College of Pharmacy (UF COP) Call Center and Medicaid Administrative Personnel (MCAP) Key Informants. She is also overseeing all interviews conducted by the RIT Research Assistants (RAs). In addition, she, along with Florida A&M University (FAMU) Pharmacists, constructed the interview guides.

The Pharmacists are experts in MTM and geriatrics and provide extensive knowledge of patient interactions gained from hands-on clinical experience. The RIT also includes the Associate Chair of Research in the Department of Medical Humanities and Social Science at the FSU College of Medicine, who is a clinical psychologist and expert in health behavior, the Associate Dean of Research at the FSU College of Social Work, who is an interdisciplinary scholar, bringing to the team extensive research experience in health care. Their insights into health behavior will be essential in discussing best practices in later reports.

In addition, the interviews with 21 MEDS-AD participants were conducted by a staff of five graduate student research assistants (RAs) at the College of Social Work, who have been

trained by the Lead Analyst in all aspects of qualitative research methodology. These RAs conducted, transcribed and coded interviews with MEDS-AD participants under the supervision of the Lead Analyst. Their commitment to the evaluation of the MEDS-AD Demonstration project has been exemplary.

As of April 2013, the Research Investigative Team (RIT) has completed interviews with five members of Florida's Agency for Health Care Administration (AHCA) Medication Administrative Personnel (MCAP), UF COP administration and staff, and 21 MEDS-AD participants who have completed the MTM program.

Qualitative Evaluation: Key Informant Interviews

These specific preliminary findings are based on a series of interviews with MTM staff at the University of Florida College of Pharmacy (UF COP) Call Center and Medicaid Administrative Personnel (MCAP) who served as key informants. These key informants were the most knowledgeable persons available regarding the development and implementation of the current MEDS-AD Demonstration project. The Bureau Chief of Pharmacy Services for Florida Medicaid, provided insights into the etiology of the current program as well as lessons learned from other models of care. The Clinical Administrator of Medicaid Pharmacy Services provided invaluable information regarding the implementation of the current program, including outcomes measured, characteristics of participants, and knowledge of the Medicaid population. The Bureau Chief and Clinical Administrator were interviewed together in an interview that took approximately two hours.

Furthermore, the RIT interviewed four key informants at the UF COP chosen by AHCA as being most knowledgeable about the MEDS-AD Demonstration project. The UF COP Call Center Director took great pains to describe the MTM program's implementation with a PowerPoint presentation that included detailed information regarding the MEDS-AD Demonstration project. The UF COP Call Center Director also made available information regarding another concurrent MTM program conducted by UF COP personnel under contract with a Health Maintenance Organization (HMO). While the outcome data from the HMO program were not

included in evaluating the MEDS-AD Demonstration project, the lessons learned from that program were considered to be transferable to the MEDS-AD Demonstration project. This provided one example of the value added by UF COP staff who participated in the HMO program as well. Furthermore, the RIT interviewed three UF COP pharmacists who have direct knowledge, current and historic, regarding the training and implementation of all the MTM programs implemented at UF COP. Two of the UF COP pharmacists have both current and historic knowledge of the MEDS-AD Demonstration project. The third UF COP pharmacist interviewed is involved in the current day-to-day implementation of the MEDS-AD Demonstration project. Each of these interviews lasted from one to two hours.

Initially, the intent of the key informant interviews included developing a global perspective on the MEDS-AD Demonstration project and providing guidance in developing protocols for MTM participant interviews. Although the RIT had previously gained insight into the training and implementation of the MEDS-AD Demonstration project during one phone call and overviews of the project provided by AHCA, this information was not directed toward protocol development. Therefore, the information from the key informant interviews described here was essential to the development of MTM participant interview protocols currently in use. However, the beauty of qualitative research came in finding the unexpected. Without the direct conversations with the key informants described here and the resulting 40+ hours of transcription time and 97 pages of data, it would have been impossible to appreciate the dedication and thoughtfulness that these key informants expressed for the MEDS-AD Demonstration project participants who live with complex medical problems and take medications daily. The theme “value added” included below seeks to portray the additional services provided above and beyond the basic MTM model. Furthermore, when appropriate, the words of the key informants are used to convey the empathy they exhibit for the patients they serve.

Evaluation Aims

While the qualitative component of this study will be essential in understanding responses to multiple research questions, the preliminary findings associated with these specific interviews will be most useful in responding to the following study aims:

- How is program utilization consistent with best practice guidelines and Medicaid policies? (e.g., How do MTM pharmacists implement and Primary Care Physicians [PCPs] respond to the program?)

- What are the lessons learned from this program from the perspectives of Florida Medicaid Administrative Personnel (MCAP), UF COP staff, recipients and PCPs?

Other study aims, more closely aligned with the participant and PCP input, will be addressed when those populations are interviewed during subsequent phases of this evaluation. In addition, the final report, due February 24, 2014, will include a comparison of these findings with best practices as well as enhancing the understanding of the quantitative components.

Qualitative Evaluation Methods and Processes

This project used established methods of qualitative research to provide information helpful in understanding the underlying processes while evaluating the MEDS-AD Demonstration project as it is implemented by the call center at UF COP. The Research Investigative Team (RIT) from the FSU College of Social Work and FAMU College of Pharmacy conducted the interviews with these key informants.

Data Sources

Study Population. The RIT conducted interviews with a purposive sample drawn from key informants comprising Florida Medicaid Administrative personnel (MCAP) identified by AHCA and UF COP staff described above.

Interview Protocol. The RIT used a semi-structured interview guide with questions and prompts based on an initial literature review and approved by AHCA personnel. In addition, the RIT interviewers followed up on new areas and topics mentioned by the key informants, in accordance with standard interview conduct. The RIT audiotaped each interview with

permission of the participants. AHCA and Institutional Review Boards approved all interview protocols, surveys, and scripts prior to implementation. Interviews were conducted on October 29, 2012 and November 19, 2012. The RIT interviewers conducted the interviews in private conference rooms or offices. UF COP staff were interviewed individually. MCAP were interviewed together at their request. There were at least two members of the RIT, one methodologist and one pharmacist, at each interview.

Data Collection. Interviews were digitally recorded with permission of the participants and transcribed word for word. All tapes and transcriptions were kept on password-protected computers with access limited to the RIT and their Research Assistants (RAs).

Data Management. Data were entered into Atlas/ti software for analysis, an established software package that allowed for the storage of codes and served as an organization tool for studies using multiple interviews. Two members of the RIT coded one transcript, with consensus being reached on codes, themes and domains. A code list was established and used in coding subsequent transcripts.

Analytic Method. The RIT examined each interview for emerging themes, and relevant codes were developed utilizing the constant comparative method. This method allowed coders to compare new information to codes identified earlier and develop new codes if none existed for the current data. This process allowed for a structured and systematic data analysis method while optimizing the emergence of new codes to capture new ideas as they developed.

Data Analysis Process. The analytic process began with immersion in the data; that is, the RIT read the transcripts multiple times to become familiar with the content and flow. The RIT then made notations (codes) for each small bit of data, a process called “open coding.” These codes were recorded in Atlas/ti as the initial code list. Atlas/ti also allowed for “memoing;” that is, the RIT was able to make and retain notations related to underlying themes during the coding process. For the next step, the RIT looked at relationships among the initial codes, including where they co-occur, a process called axial coding. For example, one code, “I have time,” was coded word-for-word (in vivo) during the coding process.

When the overall coding process was complete, this code became part of a larger code family, "value added." The value added category included other aspects of support provided by the UF COP Call Center staff that went beyond the standard MEDS-AD Demonstration project MTM process (e.g., providing information regarding non-pharmaceutical services). The prevalence of this code family led to it being identified as a theme, an underlying (latent) process that gave meaning to the data beyond simple categorization.

There were no codes established prior to beginning this process, as this set of key informant interviews was essential to establishing contextual information. The data were analyzed for both manifest and latent codes and themes. For example, a manifest code might include the aspects of training (e.g., protocol, sequence) that were parts of the training process. However, that UF COP staff observed and supported traits such as empathy became evident when describing the training process, a latent theme that emerged.

Strategies for Rigor. A key element in establishing validity in qualitative research is triangulation (i.e., use of more than one data source or method of data collection). This portion of the study incorporated two methods of triangulation: analytic triangulation and interdisciplinary triangulation. First, during data analysis, coding involved two (2) independent coders. The interdisciplinary nature of the RIT supported interdisciplinary triangulation as both a pharmacist and a methodological expert attended each interview. At the completion of this project, data from the qualitative component will be integrated with data from the quantitative component of the MEDS-AD Demonstration project evaluation.

Key Informant Interviews -- Initial Findings

Four general themes related to the underlying processes emerged from the analyses: value added; training and implementation; continuity and connection; and special circumstances. These four themes were retained as they emerged in each of the interviews with UF COP staff and MCAP. Each theme is described below.

Value added. Embedded in all the themes described below and prevalent in every conversation with UF COP staff was a theme noted as value added. This latent theme was

broadly defined as UF COP staff providing services beyond those included in the scope and standard definition of MTM. Furthermore, the value added theme included the attitudes of the UF COP staff as honoring the MEDS-AD Demonstration project participants, treating them with dignity and genuine concern for their well-being. It was difficult, indeed impossible, to separate the value added services from the personal characteristics (i.e., commitment and dedication) of the UF COP staff. One example of this commitment was contained in the UF COP staff expression "We get excited about everything." The UF COP pharmacist went on to state "We get excited when the doctor says they're not changing it [THE MEDICATION]. We get excited because we know that they've read it [THE FAX FROM THE UF COP TEAM]." These value added services were also a function of the collaborative nature of the relationship between MCAP and UF COP that included some flexibility within the contracting process.

Indeed, the UF COP Call Center Director indicated that flexibility provided by the MCAP Bureau Chief was essential to allowing the UF COP to design the optimal MTM program. This comment was echoed by the Bureau Chief who indicated a willingness to allow UF COP personnel to use their knowledge of the help-desk model of MTM implementation in developing the MTM model specific to the MEDS-AD Demonstration project.

Examples of value added services were best described by the words of the UF COP staff themselves. For example, one simple statement "I have time for you" poignantly described the contribution to quality of life that a one-time interview, while purposed for MTM, can make. And while the gold standard of satisfaction lies in the interviews with participants themselves, it became evident to the RIT interviewers that the commitment on the part of the UF COP staff to patient well-being transcended the limitations of the MEDS-AD Demonstration project while maintaining the integrity of the MTM process. For example, when UF COP staff inadvertently contacted someone still in the Medicaid application process, they were willing to re-contact that person later when he/she had become eligible for the MEDS-AD Demonstration project.

Indeed, UF COP staff were performing tasks often defined as medical social services. Examples of these services included identifying transportation services from Tampa to Orlando to aid a patient in obtaining services from the only pain specialist who accepted patients with Medicaid.

Furthermore, UF COP staff provided information on Medicaid coverage for non-medication services such as environmental counseling for patients with diagnoses of asthma.

On the other hand, participation in the program added value to the educational experience of UF COP students who rotate through the call center, as participation provided successful training for pharmacy students to work with this socio-demographic population. These unintended outcomes suggest the potential need for additional outcome measures to capture the complete picture of the MEDS-AD Demonstration project as implemented here.

Training and Implementation. UF COP staff explained and provided detailed information, written and oral, regarding the training and implementation of the MEDS-AD Demonstration project. UF COP staff indicated that there was no one service model for MTM and that "We were gonna encourage collaboration. We were gonna talk about appropriate prescribing patterns and the goals were to improve the quality of care, improve adherence, reduce clinical risk, lower prescribed drug cost and lower the rate of inappropriate spending on certain medications, alright." It became apparent that the UF COP staff took these goals seriously and had been directly involved in working constantly toward process development and improvement. Key components included a comprehensive orientation for schedulers and interviewers, a rotation of student staff, development of a computerized record using Excel software, a specific protocol for contacting primary care physicians (PCPs), and benchmarks for identifying problem resolution. For example, as per protocol, UF COP staff faxed PCPs notifications of issues that merited review and possible modification. The issue was noted as resolved if claims data confirmed a change in response to the notification.

The data from these key informant interviews described a program structure that both imposed restrictions and allowed for some flexibility. For example, the program as described set standards for contacting participants, indicating detail as granular as the maximum and minimum number of phone calls appropriate in attempting to reach a potential participant. However, as the program developed, the UF COP staff instituted a follow-up call performed between 30 and 90 days post Comprehensive Medication Review (CMR) in order to check in with participants. Including this call was a modification of the original protocol initiated

because UF COP staff wanted to stay in touch with patients and understand their evolving situations, a clear indicator of the empathy and concern staff felt.

Within the established protocol, the UF COP staff described strategies that allowed them to optimize responses and effectiveness of the program. They used strategies such as asking the participant to gather and enumerate their medications prior to the CMR in order to increase participant engagement. In addition, UF COP staff were sensitive to "little cues" such as whether participants reported psychiatric medications initially or "held back". These examples demonstrate how perceptive UF COP staff were and how attuned they were to the participants. They also demonstrate the minutely detailed attention that UF COP staff were willing to employ in order to achieve optimal results. These strategies were shared with other staff and became part of the training process. Thus, UF COP training included creating an empathetic demeanor as demonstrated when UF COP staff encouraged student trainees to connect with patients by saying, "pretend that's your grandmother or your grandfather, your favorite aunt or uncle."

The MEDS-AD Demonstration project protocol includes two targeted outcome measures, one for adherence (the Morisky 8-item Medication Adherence Scale [MMAS-8]) and two follow up questions regarding satisfaction with the services ("Did you find this appointment to be helpful" and "Did this interview help clarify any concerns you may have had with your medications?"). Furthermore, in cases in which recommendations had been faxed to the PCP, UF COP staff reviewed claims data for changes in medication. Yet, this program went beyond adherence, satisfaction, and medication modification for both UF COP staff and MCAP. For example, when asked about what contributed to the strength of the program, the AHCA Bureau Chief stated, "…because there is one-to-one interaction with the patient. There is an understanding of who the patient is." A recommendation to capture this important outcome is included in the Initial Lessons Learned section of this report.

Continuity and connection. UF COP staff expressed a desire for continuity in contact. Although the MEDS-AD Demonstration project protocol calls for only two direct contacts between UF COP staff and program participants (i.e., the scheduling call and the CMR), UF COP key informants suggested that a seemingly important relationship occurs during these calls and that

an undergirding sense of connection potentially enhances the effectiveness of the program. As one UF COP staff stated "And some patients I did leave a card [INCLUDE A BUSINESS CARD] in what [THE MATERIALS] I sent them in the mail. It was one of those [PARTICIPANTS] that you just bonded with over the phone, or they needed the extra help." UF COP staff expressed concern when there were breaks in this connection. Breaks occurred when participants were no longer part of the program as evidenced by the absence of their claims data. As one UF COP staff member stated: "I want to follow up with them because I want to know where they're at and maybe they need an extra touch. "

Also, there were instances when the UF COP staff member who made the original call was replaced by someone else for follow up. UF COP staff related anecdotes in which participants tried to reconnect with the staff member who made the original call. One participant, who had finally requested a nicotine patch and was able to stop smoking, asked to speak to the UF COP staff member who had conducted the CMR in order to share their success story. However, when describing this anecdote, the UF COP staff pharmacist stated "And I think that's why I don't know more success stories because they [OTHER UF COP STAFF] do the follow up call." This finding provides an area for exploration during the participant interviews currently being conducted to see if participants also express the need for longer and more frequent contact.

Special circumstances. This theme emerged as a response to queries about exceptions to protocol. However, it should be noted that some of these instances included MTM participants who were contacted as a result of their participation in another contracted study conducted by UF COP staff. These anecdotes were informative, however, as they described responses to situations that could arise with the MEDS-AD Demonstration project participants as well.

The UF COP staff described events that prompted them to make quick judgments and unique responses. UF COP staff noted that they utilized a crisis management protocol; however, specific conditions such as the presence of depression, sometimes coupled with chronic pain and/or including suicidal ideation; participants at the end of life; and use of drugs not prescribed for them, prompted the need for somewhat unique responses. These events also required that UF COP staff make judgments regarding the severity of the condition and

consequent actions. For example, one UF COP staff member described two separate instances related to suicidal ideation that occurred in one day. While both participants were referred to an intervention hot line, one required an immediate conference call with hot-line staff based on the patient's condition. In the other case, the follow-up contact was left up to the patient. This need to evaluate and triage critical situations became a part of what might have been expected to be a routine call and demonstrates the challenging nature of conducting any MTM program by telephone.

End-of-life circumstances presented another unique challenge for UF COP staff due to limitations of medical information. Staff reported that they had ICD-9 codes that indicated a potentially terminal diagnosis such as breast cancer, but they did not know the stage of the disease. However, UF COP staff also noted that some patients are open in describing their end-of-life circumstances and included references beyond medical needs. Again, UF COP staff were positioned and challenged to provide support to MEDS-AD Demonstration project participants, who were often isolated at this critical juncture in their lives.

UF COP staff indicated that they routinely asked about use of drugs not prescribed for participants. Since this question inferred behavior that might be socially undesirable, UF COP staff strategically prefaced the question with a statement that all patients are asked the same questions. Some patients openly acknowledged this drug use and were forthcoming, suggesting that the UF COP staffs' sensitivity and strategic thought were helpful.

Key Informant Interviews -- Conclusions

These preliminary findings indicate that qualitative methods, specifically interviews with key informants identified by AHCA, provide information that is not available from other sources. Furthermore, the findings from the key informant interviews are helpful in developing interview guides appropriate for the MEDS-AD Demonstration project participants who are currently being interviewed. However, most notably, these key informant interviews went beyond these basic goals and painted a picture of caring UF COP staff and MCAP who were genuinely

concerned for the well-being of the MEDS-AD Demonstration Project participants and sought to add value to the participants' lives as well.

Qualitative Evaluation: MTM Participant Interviews

It is the very essence of this evaluation to hear the opinions of MEDS-AD participants, often in their own words, that provide information not available from any other source. Indeed, they, the participants, are the true experts on the effectiveness and meaning of the MEDS-AD effort.

Research Questions

The interviews with MEDS-AD participants are most closely aligned with the following Research Questions:

- What are the most successful aspects of the MTM program based on participant perspectives?
- What are the lessons learned from this program from the perspectives of Florida Medicaid administrative personnel (MCAP), MTM staff, recipients (i.e., participants) and PCPs?
- How does this program impact recipients' (i.e., participants') ability to understand medications, take a more active part in their care, and understand the questions to ask their doctor or when to contact their doctor?

This project used established methods of qualitative research to provide information helpful in understanding the underlying processes while evaluating the MEDS-AD Demonstration project as it is implemented by the call center at UF COP.

Methods and Processes

Data Sources

Study Population (MTM Participants). The RAs conducted interviews with a sample randomly selected from the universe of MEDS-AD participants (n = 147) who had completed the program (i.e., had a completed CMR and three subsequent claims reviews). An initial sampling frame of

45 potential participants was not sufficient to meet the goal of 20 completed interviews. Therefore the sampling frame was refreshed with additional potential respondents, 20 of whom had agreed to participate in a second year of the MEDS-AD Demonstration project.

Recruitment. RIT mailed a letter to each potential participant that explained the study and invited their participation. The letters were written in easily understandable language and included the name of the UF COP staff member who had conducted the CMR. This method was designed to aid participants in understanding the specific program referenced in the letter and consequent interview. Furthermore, the letter stated that findings would be kept confidential and that neither participation nor refusal would have any effect on their Medicaid benefits. The letter was followed by a phone call that included additional information, an opportunity for potential participants to ask questions, and informed consent for those participants who wished to participate. A copy of the informed consent was mailed to each interview participant.

Interview Protocol. The RIT used a semi-structured interview guide with questions and prompts based on an initial literature review, input from MCAP and UF COP Call Center staff, and approved by AHCA personnel. Interviewers used screening questions that determined that the participant was the person identified and an additional question to determine if they remembered the MEDS-AD Demonstration project. There were three overarching, open-ended questions (1. How would you describe the medication management program in which (CONTACT NAME) asked you about your medicines? 2. What do you see as the best part of the program? 3. If you could change one thing about the program, what would it be?)

In addition, the interviewers followed up on new areas and topics mentioned by the MEDS-AD participants, in accordance with standard interview conduct. Finally, there were five closed-ended (yes/no) questions and one global rating item. The RAs audiotaped each interview with permission of the participants. AHCA and Institutional Review Boards approved all interview protocols, surveys, and scripts prior to implementation. Interviews with participants who have completed the MEDS-AD program were conducted between March 1, 2013 and April 26, 2013. All interviews were conducted by telephone and were scheduled for the convenience of the MEDS-AD participants.

Data Management. A tracking database in Microsoft ACCESS was maintained throughout the project to record pertinent information regarding contacts made with participants, enrollment status, and to provide interviewers with background information regarding diagnoses, health behaviors, and medications. Interviews were digitally recorded with permission of the participants and transcribed word for word using Dragon Naturally Speaking software. All tapes and transcriptions were kept on password-protected computers with access limited to the RIT and RAs.

Data Analysis. Data were entered into Atlas/ti software for analysis, an established software package that allowed for the storage of codes and served as an organizational tool for studies using multiple interviews. Four RAs coded one transcript, with consensus being reached on codes, themes and domains under the supervision of the Lead Analyst. A code list was established and used in coding subsequent transcripts. However, additional codes were allowed to emerge during the coding process. At the end of the coding process, there were 31 codes identified. These codes were organized into code families (i.e., codes with associated meanings or references) and themes allowed to emerge. However, qualitative coding is an iterative process and will continue throughout the project. Further analyses will be completed that will compare themes with the MCAP interviews and well as other respondents (i.e., physicians) who have not yet been interviewed. In addition, the responses to the closed-ended questions included in the interview guide were tabulated.

MTM Participant Interviews -- Initial Findings

There were 66 cases randomly selected for recruitment. After removal of ineligible participants, letters were sent to 58 potential participants with phone follow-up, twenty-three interviews were completed. Unfortunately, one was not usable due to a technical problem and one was considered an unreliable respondent (i.e., did not seem to understand fully the focus of the interview as the MEDS-AD Demonstration project). Thus, these findings are drawn from 21 interviews with MEDS-AD participants who indicated they remembered the project and provided information that would substantiate their understanding.

Of the participants with completed interviews (n=21) as of April 26, 2013, 13 (62%) were female; 8 (38%) were white, 4 (19%) were black, and nine (43%) lacked information regarding race. Ages ranged from 45 to 64 years old.

Open-Ended Questions

The overall responses to questions in this category were positive and enthusiastic. When asked about the experience of participating in the MEDS-AD Demonstration project, the participants were overwhelmingly positive in their responses. One participant's response was that: "It [MEDS-AD] was great. It was really, really great." The responses grouped into four categories, or code families: 1) Evaluation of the pharmacist(s); 2) Evaluation of the MEDS-AD program process; 3) Best practices; and 4) Recommendations.

Evaluation of the Pharmacist(s). The participants were especially appreciative of the concern they felt that the pharmacists demonstrated for them. As one participant stated, "She always talked with me, and that felt good talking with her." Another said: "That they was (sic) concerned."

Evaluation of the MEDS-AD program process. Participants found the process helpful, especially in providing information not readily available from other sources. One participant indicated "Well if you don't know what you're taking, she can tell you that" and "basically…I got all of my meds on one sheet." The interactive nature of the call was depicted in this quotation "She

asked me some questions and I said well yeah and she said you might want to mention that to your doctor."

Best practices. When asked about the best part of the program, most participants focused on the increased understanding of their medications. One participant stated "the information she gave me" and another said simply "It was informative." Other responses to the question regarding best part included "just really starting to understand my medicines better." However, it was not unusual to hear that "It was all good."

Recommendations. When asked for recommendations, participants again provided a positive context indicating most often that they would support additional contacts. As one participant stated, "I just wish they would keep calling me. It's been a long time"; and another said: "I'd say keep going and never stop."

Close- Ended Questions

Positive experiences of participants were also reflected in their answers to questions under this category. These findings align with those found in the open-ended questions in that participants were satisfied with the program overall, received helpful information and were positive in describing the treatment they received from the UFSOP staff who conducted the CMRs.

Interview Responses

Responses to the five closed-ended (yes/no) questions are summarized in Table 1. These questions were derived from existing measures of quality related to MTM programs.

Table 1: Answers to Closed-ended Questions

	Yes N(%)	No N(%)	NA[1] N(%)
1. Was the CONTACT NAME [2]*(or use pharmacist)* from the University of Florida who talked to you about your medicines respectful?	20(95)	0(0)	1(5)
2. Did CONTACT NAME[2] *(or use the pharmacist)* go through your medications and provide helpful information about your medications?	19(90)	1(5)	1(5)
3. Where you happy with the assistance CONTACT NAME[2] *(or use the pharmacist)* provided?	21(100)	0(0)	0(0)
4. Did you feel that you had a better understanding of your medications after your Medication Therapy call?	18(86)	3(14)	0(0)
5. Did you find the information that CONTACT NAME[2] *(or use the pharmacist)* sent you in the mail helpful?	16(76)	3(14)	2(10)

[1] Not answered.

[2] In order to enhance recognition of the program, whenever possible, interviewers used the name(s) of the pharmacist(s) who had conducted the CMR.

Participants also were asked to make one global evaluation of the program overall. These results are indicated on Table 2.

Table 2: Global Evaluation of the MEDS-AD Demonstration Project

	Very Poor N(%)	Poor N(%)	Fair N(%)	Good N(%)	Very Good N(%)
How would you rate the overall care that you experienced with the medication program?	0(0)	0(0)	0(0)	7(33)	14(67)

MTM Participant Interviews -- Limitations

These findings are limited by the small sample size (n=21) and the sample biases often associated with interviews or surveys conducted with participants who choose to participate. That is, it is assumed that those with the strongest opinions are the most likely to respond and complete the interview process. Also, the interviews took place retrospectively with participants who may have completed the MEDS-AD program more than a year before. However, the RIT sought to overcome these issues by being certain that participants indicated that they remembered the program and interviews were terminated if they did not or removed from analyses if the participant was deemed unreliable. The RIT will also interview members of a more reluctant group for MTM in the literature, primary care physicians, to gather their perspective on this intervention.

MTM Participant Interviews -- Conclusions

Despite the limitations stated above, it is clear that MEDS-AD recipients who participated in the first cohort of qualitative interviews were pleased with the program as administered and found the information provided during the CMR helpful. They provided nuanced (i.e., appreciation for the concern of the UFSOP staff; the mailed information was the least helpful) and global support for the MEDS-AD Demonstration project. All participants rated the program good or very good overall. The recommendation that the program continue provides insight into the needs of participants for support in addressing their complex medical issues and a strong basis for continuation.

Future Activities

The formal Qualitative Evaluation of the MEDS-AD Waiver Medication Therapy Management Program continues with three additional series of interviews, either currently underway or planned during the next several months. RIT staff will interview:

- Primary Care Physicians responsible for medication therapy delivery to MTM recipients
- MTM Participants who completed a CMR but became ineligible to continue in the full MTM program, and
- 20 respondents from the second-year study cohort who refused to participate in the MTM program.

Qualitative Evaluation -- Primary Care Physician Interviews

Another essential source of data is interviews with Primary Care Physicians (PCPs) who are associated with the MEDS-AD Demonstration project participants.

Research Questions

PCP interviews are most closely aligned with the following Research Questions:

- What are the lessons learned from this program from the perspectives of Florida Medicaid administrative personnel (MCAP), MTM staff, recipients (i.e., participants) and *PCPs*?

- How does this program impact recipients' (i.e., participants') ability to understand medications, take a more active part in their care, and *understand the questions to ask their doctor or when to contact their doctor?*

Methods and Processes

Data Sources

Access to PCPs for any research questions is an ongoing problem that is well-established in the literature and well-acknowledged within the RIT. Thus, the focus at this point in the evaluation of the MEDS-AD Demonstration project is establishing strategies that will enhance recruitment and participation.

Study Population. The initial sampling frame for this study population was drawn by including the names of PCPs who were linked with the 66 potential MEDS-AD participant interviewees. That is, for each potential MEDS-AD participant, there was one PCP named as caring for that MEDS-AD participant. The RAs contacted the PCP offices, confirming or establishing correct contact information and deleted names of PCPs who could not be contacted.

In addition, initial findings from the Quantitative Component indicated that 28% of recommendations to PCPs had been resolved. (Resolved status is a function of UFSOP staff noting a change in Medicaid claims data that occurred after and congruent with a recommendation communicated from the UF SOP staff to the PCP, usually by FAX). Thus, it became evident that the evaluation would benefit (i.e., be more comprehensive) from identifying and interviewing a subset of those physicians as well as other PCPs who had received recommendations that were not noted as resolved. Therefore, the RIT is currently, in conjunction with the Lead Analyst on the Quantitative Component, developing a sampling frame that includes PCPs with resolved cases; PCPs who received faxes, but cases were not resolved; and PCPs who were associated with MEDS-AD Demonstration project recipients but did not receive faxes. It is the goal of the RIT to interview at least 7 from each group.

Recruitment. Another strategy underway to enhance PCP participation is the use of a key informant (i.e., a Medical Doctor [MD] who will provide information regarding the optimal recruitment methods for approaching and engaging PCPs). At this juncture, the RIT is examining the universe of PCPs associated with the MEDS-AD Demonstration project as well as the Research Network maintained by the FSU College of Medicine in order to identify at least one key informant who is listed on both.

Interview Protocol. Information from the key informant, as well as current practices identified in the literature review, and input from the completed MCAP, UF SOP staff, and MEDS-AD participants will be used in finalizing an interview protocol. With the exception of one or more key informant interviews, PCP interviews will be conducted by phone and at the convenience of the PCP.

Primary Care Physician Interviews – Initial Conclusion

The multi-disciplinary nature of the RIT along with cooperation of the Lead Analyst and other personnel from the Quantitative Component are essential in developing an optimal strategy for approaching and engaging PCPs in the evaluation of the MEDS-AD Demonstration project. It is expected that this portion of the project will be completed according to the MED143 Contract deliverable schedule.

Qualitative Evaluation -- MTM Participant Interviews (Non-Program Completions)

In order to understand the MEDS-Ad Demonstration project fully, the RIT will interview 20 MTM participants who have a completed CMR, however, became ineligible for the program or were removed from the program prior to the completion of three claims reviews.

To optimize these interviewees recall, participants will be drawn from the second-year cohort of recipients. As their experiences will most closely resemble the MTM participants who have completed the program (i.e., they are unlikely to realize that their program was not completed and their CMR experience would have been similar), they will be interviewed using the same methods and protocols described above, allowing for changes in the protocol should such changes be indicated. Therefore, after three interviews have been completed, the RIT will review the responses and adjust the protocol if necessary. These interviews will be completed according to the MED143 Contract deliverable schedule.

Qualitative Component: MTM Participant Refusals Interviews

Finally, 20 respondents from the second-year cohort, those who refused to participate, will be interviewed to determine their reasons for not participating. In order to minimize time between refusal and interview and, therefore, optimize the validity of responses, the interviews will be conducted beginning with the most recent refusals. Protocols will be developed with input from participants, UF SOP staff, MCAP, and physicians. These interviews will be completed according to the MED143 Contract deliverable schedule.

Qualitative Evaluation Summary

The Qualitative Component of the evaluation of the MEDS-AD Demonstration project will provide a comprehensive understanding of the program from the views of those who are most closely involved in its development, implementation, and outcomes. For the final report, these qualitative findings will be integrated with the quantitative component to enhance the understanding of the MEDS-AD Demonstration project from multiple perspectives.

Interim Report Findings and Recommendations

Findings

I. Quantitative Evaluation Findings:

   a. The first year cohort of 147 MTM participants with CMR and the 505 MTM ELIGIBLE NON-PARTICIPANTS appear to be reasonably homogeneous in terms of demographics, expenditures, and utilization levels.

      i. MTM ELIGIBLE NON-PARTICIPANTS should make a reasonable comparison group for the MTM PARTICIPANTS (Comparison Group 1) but further testing on a wider group of comparative variables will be done.

   b. The MEG1 population is a more heterogeneous population than MTM PARTICIPANTS and MTM ELIGIBLE Non-PARTICIPANTS and selection of Comparison Group 2 from the MEG1 population will require propensity score matching in order to identify a suitable second comparison group.

   c. However, these findings are based on claims data available at the time of the report which did not include any professional medical claims. This additional data is expected shortly and will become part of further analysis and reporting under this contract.

II. Qualitative Evaluation Findings:

a. As of April 2013, the Research Investigative Team (RIT) has completed all key informant interviews directed by Florida's Agency for Health Care Administration (AHCA) Medication Administrative Personnel (MCAP). Those interviews included MCAP administrators and University of Florida College of Pharmacy (UF COP) administration and staff. The RIT has also completed interviews with 21 MEDS-AD participants who have completed the MTM program.

b. Qualitative methods, specifically interviews with key informants identified by AHCA, provided information for the MEDS-AD program evaluation that is not available from any other sources.

c. All key informants interviewed were the most knowledgeable persons available regarding the development and implementation of the current MEDS-AD Demonstration project. The Bureau Chief of Pharmacy Services for Florida Medicaid provided insights into the etiology of the current program as well as lessons learned from other models of care. The Clinical Administrator of Medicaid Pharmacy Services provided invaluable information regarding the implementation of the current program, including outcomes measured, characteristics of participants and knowledge of the Medicaid population.

d. Four key informants at the University of Florida's College of Pharmacy chosen by AHCA as being most knowledgeable about the MEDS-AD Demonstration project were also interviewed for this evaluation. The Center Director and three highly experienced pharmacists took great pains to describe the MTM program's implementation with a PowerPoint presentation that included detailed information regarding the MEDS-AD Demonstration project.

e. Twenty-one MTM participants have been interviewed regarding their perceptions of the services provided under the MEDS-AD Demonstration project using both open- and closed-ended questions. Preliminary findings from these

interviews provide insight into their overall satisfaction with the MTM program and, additionally, feedback on specific issues such as information provided and characteristics of care provision.

f. The MTM PARTICIPANTS who participated in the first cohort of qualitative interviews were pleased with the program as administered and found the information provided during the CMR process helpful.

Recommendation

Based on the findings to date, we believe that valid comparisons of the MTM PARTICIPANTS and two planned comparison groups are possible and will provide valid results. Therefore the evaluation should continue.