

Collaborative Management
Program Evaluation

*Colorado Department of Human
Services*

State Fiscal Year 2016 Evaluation
Report Appendices



Social Work Research Center

Research for Results

**Colorado
State**
University

COLLEGE OF HEALTH
AND HUMAN SCIENCES

School of Social Work

110 Education
Fort Collins, CO 80523
(970) 491-0885
<http://www.ssw.chhs.colostate.edu/research/swrc/index.aspx>

Collaborative Management Program Evaluation State Fiscal Year 2016

Prepared by:

Marc Winokur, Ph.D.
Helen Holmquist-Johnson, Ph.D.
Chris Lee, Ph.D.
Zach Timpe

Social Work Research Center
School of Social Work

Colorado State University

Dallas J. Elgin, Ph.D.
Jessica Smith
Jesualdo Barbosa



Prepared for:

Division of Child Welfare
Colorado Department of Human Services



COLORADO

**Office of Children,
Youth & Families**

Division of Child Welfare

APPENDICES

A. CMP Program Evaluation Project Plan	1
B. SFY16 Performance Measures Selected by CMP Counties.....	4
C. Data Cleaning and Merging Steps.....	12
D. Outcome Measure Calculation Detail	21

DRAFT

Appendix A CMP Program Evaluation Project Plan

Process Evaluation Project Plan

Task / Activity	Period of Performance											
	SFY 2017											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Task 1. Documenting Coordinated Service Provision (Leads: Marc Winokur and Helen Holmquist-Johnson)												
Collect demographic and service data from ETO database			■	■								
<i>Deliverable: Evaluation report</i>				△	▲							
Task 2. Measure Collaboration (Lead: Helen Holmquist-Johnson and Chris Lee)												
Administer IOG/ISST survey			■	■								
<i>Deliverable: Evaluation report</i>				△	▲							
Task 3. Assessing System Integration (Leads: Helen Holmquist-Johnson and Marc Winokur)												
Collect process metrics from ETO			■	■								
<i>Deliverable: Evaluation Report</i>				△	▲							
Task 4. Evaluating Family Engagement (Lead: Helen Holmquist-Johnson and Chris Lee)												
Administer Family Voice survey			■	■								
<i>Deliverable: Evaluation Report</i>				△	▲							
Key: Draft: △ Final: ▲ Work Period: ■												

Outcome Evaluation Project Plan

TASK / ACTIVITY	Period of Performance										
	FY 2017										
	August	September	October	November	December	January	February	March	April	May	June
Task 1. Outcome Evaluation (Leads: Dallas Elgin)											
Conduct a Descriptive Outcome Evaluation of the CMP	■										
<i>Deliverable: Draft Outcome Evaluation Section of the 'SFY 15-16 CMP Evaluation Report'</i>				△	▲						
Task 2. Data Audit (Leads: Dallas Elgin & Jesualdo Barbosa)											
Conduct Annual Data Audit of the Trails and ETO Databases							■				
<i>Deliverable: Memo Summarizing the Findings from the Audit</i>									△	▲	
Task 3. Capacity Building (Leads: Marc Winokur & Dallas Elgin)											
Develop Propensity Score Matching Research Design and Work with Stakeholders to Address Data Silo Issues	■										
<i>Deliverable: Draft Propensity Score Matching Reserch Design for SFY 16-17</i>										△	▲
Key: Draft: △ Final: ▲ Work Period: ■											

Cost Evaluation Project Plan

Task / Activity	Period of Performance											
	SFY 2017											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Task 1. Identify Sample Sites (Leads: Kristy Beachy-Quick, Zach Timpe)												
Work with CMP Subcommittee to select sample counties			■									
<i>Deliverable: List of sample counties</i>				▲								
Task 2. Modify Cost Survey (Lead: Zach Timpe)												
Modify cost survey for IOG and ISST meetings	■	■	■									
<i>Deliverable: Modified cost survey</i>			▲									
Task 3. Administer Cost Survey to Sample Sites (Leads: Zach Timpe, Kristy Beachy-Quick)												
Collect cost survey data from sample counties				■								
<i>Deliverable: Evaluation Report</i>				△	▲							
Task 4. Develop and Refine a Data Analysis Plan (Lead: Zach Timpe)												
Develop plan for measuring costs across domains							■	■	■	■	■	
<i>Deliverable: Detailed plan for FY18</i>												▲
Key: Draft: △ Final: ▲ Work Period: ■												

Appendix B
SFY16 Performance Outcome Measures Selected by CMP Counties

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Adams	90% or more of the youth will not experience any repeat maltreatment within 6 months of abuse or neglect during the FY	70% or more of youth will be discharged to a permanent home during the FY.	The commitment rate of youth will be less than 35% during the FY for youth served through Connections or STMs.	
Alamosa	75% of CMP youth with no substantiated abuse finding after CMP services begin.	15% of children and youth with improved school attendance rates while involved with CMP services	75% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage	
Rio Grande	75% of CMP youth with no substantiated abuse finding after CMP services began.	15% of children and youth with improved school attendance rates while involved with CMP services.	75% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
Baca	75% of CMP youth with no substantiated abuse finding after CMP services begin.	80% of CMP youth diverted from being committed to DYC.	60% of CMP youth with improved school attendance rate between Family Engagement Support Team (or at a specified date after the intake).	70% of children and youth who establish linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Kiowa	75% of CMP youth with no substantiated abuse finding after CMP services began.	80% of CMP youth diverted from being committed to DYC.	60% of CMP youth with improved school attendance rate between Family Engagement Support Team (or at a specified date after the intake).	70% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.
Prowers	75% of CMP youth with no substantiated abuse finding after CMP services began.	80% of CMP youth diverted from being committed to DYC.	60% of CMP youth with improved school attendance rate between Family Engagement Support Team (or at a specified date after the intake).	70% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.
Cheyenne	80% of CMP youth diverted from being committed to DYC.	60% of CMP youth with improved school attendance rate between Family Engagement Support Team (or at a specified date after the intake).	70% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	75% of CMP youth with no substantiated abuse finding after CMP services began.
Bent	90% of CMP youth with no substantiated abuse findings after CMP services began.	95% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	80% of children and youth who have two or fewer school moves while involved with CMP services.	

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Crowley	90% of CMP youth with no substantiated abuse findings after CMP services began.	95% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	80% of children and youth who have two or fewer school moves while involved with CMP services.	
Otero	90% of CMP youth with no substantiated abuse findings after CMP services began.	95% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	80% of children and youth who have two or fewer school moves while involved with CMP services.	
Boulder	94.6% of CMP youth will have no recurrence of maltreatment within six months of a confirmed report of intra-familial abuse or neglect.	80% of all youth on probation will successfully complete.	65% of clients enrolled in Teen Programs will complete at least 90 days of substance abuse treatment.	
Denver	92% of CMP youth with no new open involvements in Trails after CMP services began.	55% of CMP youth who successfully complete probation or parole.	10% of CMP children and youth who experience two or fewer moves while in/out of home placement.	
Dolores Montezuma	85% of CMP youth with no substantiated abuse finding after CMP services began.	75% of CMP youth who successfully complete probation or parole.	45% of children and youth with improved school attendance rates while involved with CMP services.	75% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Douglas	70% of children and youth who remain in their home during CMP involvement.	40% of CMP youth who successfully complete probation or parole.	40% of children and youth with improved school attendance rates while involved with CMP services.	
Eagle	75% of children and youth who remain in their home during CMP involvement.	50% of children and youth with improved school attendance rates while involved with CMP services.	85% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
El Paso	90% of CMP youth with no new open involvements in Trails after CMP services began.	65% of CMP youth who successfully complete probation and/or parole.	60% of CMP youth with improved school attendance rate between ISST intake and case closure (or a specific date after ISST intake).	
Elbert	75% of children and youth who remain in their home during CMP involvement.	75% of children and youth who do not enter into detention due to CMP involvement while involved with CMP.	90% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
Lincoln	95% of CMP youth with no new substantiated abuse finding after CMP services began.	95% of children and youth who have two or fewer school moves while involved with CMP services.	95% of children and youth who have established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	75% of children and youth who did not enter into detention due to CMP involvement while involved with CMP.

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Fremont	94.6% of CMP children and youth will have no substantiated abuse finding after CMP services begin.	90% of children and youth will remain in their home during CMP involvement.	40% of children and youth will improve their school attendance while involved with CMP services.	
Garfield	92% of CMP youth with no new open involvements in Trails after CMP services began.	70% of children and youth who remain in their home during CMP involvement.	70% of CMP children and youth with improved school attendance rates while involved with CMP services.	
Grand	92% of CMP youth with no substantiated abuse finding after CMP services began.	75% of children and youth with improved academic performance while involved with CMP services.	90% of CMP children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
Gunnison	80% of CMP youth with no substantiated abuse finding after CMP services began.	80% of children and youth will show improved school attendance rates while involved with CMP services.	90% of CMP children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
Hinsdale				
Huerfano	60% of CMP youth with no substantiated abuse finding after CMP services began.	75% of children and youth who remain in their home during CMP involvement.	75% children and youth with improved school attendance rates while involved with CMP services.	75% CMP youth will successfully complete probation or parole.
Jefferson	60% of children and youth with improved academic performance while involved with CMP services.	25% of children and youth with decreased concerns according to the Trauma Screening Tool.	85% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Lake	70% of children and youth served in the High Fidelity Wraparound Process will remain in their home while participating in High Fidelity Wraparound.	80% of children and youth served through the High Fidelity Wraparound Process will have improved school attendance rates while participating in the High Fidelity Wraparound process.	90% of CMP youth with decreased problem severity and improved level of functioning on CCAR or similar tool while involved with CMP services.	
La Plata	80% of CMP youth will have no substantiated abuse finding after CMP services begin.	50% of children and youth will improve school attendance rates while involved with SMART and RP services.	60% of children and youth will establish linkages to: a) primary care provider; b) oral provider; c) substance abuse provider; d) mental health provider; e) health insurance coverage.	
Archuleta	20% of CMP youth with no substantiated abuse finding after CMP services have begun.	20% of children and youth who safely remain in their home during CMP involvement.	20% of children and youth with improved school attendance rates while involved with CMP services.	
Larimer	90% of CMP youth with no recurrence of substantiated abuse finding after CMP services began.	86% of children and youth will remain in their home during CMP involvement.	55% of CMP youth who successfully complete probation or parole.	
Logan	70% of children and youth who remain in their home during CMP involvement.	60% of RE-1 students whose parents have engaged in an ISST (with a goal of addressing attendance) will improve their average daily attendance by at least 5% after 30 academic calendar days, based on the previous 60 academic calendar days.	50% of CMP children and youth with improved: a) problem severity, and b) level of functioning on CCAR or similar tool while involved with CMP services.	

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Mesa	85% of CMP youth with no substantiated abuse finding after CMP services began.	85% of children and youth served by CMP will be discharged to a permanent home.	70% of CMP youth will successfully complete probation or parole.	
Moffat	90% of CMP youth with no substantiated abuse findings after CMP services began.	60% of CMP youth who successfully complete probation or parole.	90% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
Montrose	Less than 35% of CMP youth will have new involuntary open involvements in TRAILS after CMP services begin.	75% of youth receiving CMP services will not receive a major violation (referral, suspension, expulsion) while receiving CMP services.	Less than 10% of youth will recidivate resulting in unsuccessful completion of probation and/or parole while receiving CMP services.	
Morgan	85% of CMP youth with no substantiated abuse finding after CMP services began.	45% of children and youth with improved school attendance rates while involved with CMP services.	55% of CMP youth who successfully complete probation or parole.	
Park	At least 50% of CMP served children and youth do not enter (if previously uninvolved) or re-enter detention while involved with CMP services.	75% of CMP served children and youth will show improved academic performance while involved with CMP services.	At least 80% of CMP served children and youth will have established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	

CMP County	Performance Measure 1	Performance Measure 2	Performance Measure 3	Performance Measure 4
Pitkin	50% of CMP youth had no new open involvements in Trails after CMP services began.	50% of CMP youth have fewer disciplinary actions (referrals, suspensions or expulsions) while involved with CMP services.	75% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
Pueblo	30% of children and youth will show improved school attendance rates while involved with CMP services.	75% of children and youth will have two or fewer school moves while involved with CMP services.	50% of CMP children and youth with improved: a) problem severity, and b) level of functioning on CCAR or similar tool while involved with CMP services.	
Routt	80% of CMP youth will not have substantiated abuse findings after CMP services begin.	80% of ISST youth will show improved school attendance rates between ISST intake and case closure (or at three months after ISST intake).	80% of ISST youth will establish, if not already in place and/or needed: a) Primary care provider, b) mental health care.	
Teller	50% of children and youth who remain in their home during CMP involvement.	50% of children and youth who did not enter into detention due to CMP involvement while involved with CMP.	50% of children and youth who established linkages to: a) primary care provider; b) oral care provider; c) substance abuse provider; d) mental health provider; or e) health insurance coverage.	
Weld	70% of CMP youth with no substantiated abuse finding after CMP services begin.	75% of children and youth do not enter into detention due to CMP involvement.	70% of children and youth with improved school attendance rates while involved with CMP services.	77% of families with improved MST outcome indicators or successful complete mental health treatment.

Appendix C

Data Cleaning and Merging Steps

This Appendix describes the process of building a SFY17 CMP Evaluation Master Dataset (Master Dataset) from the set of ETO and Trails data files provided by the Colorado Department of Human Services' Division of Child Welfare (DCW). The Master Dataset identifies the CMP client population included in the outcome evaluation. This document begins with a description of the set of CMP data files provided to the evaluation team for the analysis. The remainder of this document walks through the data cleaning, merging, and post-merging data processing steps for creating the final Master Dataset. The key problems identified and addressed in the data cleaning and merging process included: files without unique IDs, duplicate observations, observations with missing or invalid data, and observations with values that were outside the SFY17 period of analysis (which consisted of CMP clients with an initial ISST meeting in SFY15 and their associated outcomes in SFY16). Appendix A closes with a brief summary of data limitations.

1. Data Files

Exhibit A1 details the files provided by DCW for the CMP Outcome Evaluation. The first three files are demographic and program administrative files that were used to build the Master Dataset. The last seven files contain the outcome data that was used to determine whether children and youth served by CMPs in SFY15 had achieved their associated performance outcomes within the Child Welfare and Juvenile Justice domains.¹ Appendix B describes the process used to calculate the outcome performance measures.

¹ As the SFY16-17 Outcome Evaluation Report noted, the education and health/mental health domains continue to pose a significant challenge to the CMP evaluation. Most notably, the extent to which data within these domains is collected and reported is subject to considerable variance across the CMPs. Some CMPs are unable to effectively measure performance outcomes within these two domains, which has resulted in these domains receiving comparatively less attention than the child welfare and juvenile justice domains. The cumulative effect of these data and reporting issues is a minimized ability to effectively evaluate the CMP program against all 19 of the SFY16 performance measures.

Exhibit A1: Data Files in Outcome Evaluation

Data Type	File Name	Description	Raw Record Count
Client Demographics and CMP Administrative Data	<i>ETO Assessment Flat File</i>	Contains CMP data from the CMP ETO database. The database includes children and youth who were served by the CMP program but were not necessarily served by the child welfare system and included within the Trails database. Key fields include: participant ID, name, birthdate, gender, program, ISST meeting date, TrailsID, and outcome goal indicator flags for clients served by the Child Welfare, Judicial, Health/Mental Health, and Education domains.	8,706
	<i>CW Assessment Flat File – Judicial*</i>	Contains CMP clients who received Child Welfare services from the DCW’s Trails database. This file also includes matched judicial outcome records from the Colorado Judicial Branch. Key fields include: name, birthdate, and the judicial outcome data “case status.” This file was originally missing a TrailsID.	4,343
	<i>CMP_SFY2016</i>	This file was provided as a supplement to the CW Assessment Flat File that lacked TrailsIDs. Contains clients who received Child Welfare services as well as their TrailsID, county name, name, birthdate, and gender. This file required an additional round of merging between the two files.	6,236
Client Outcomes	<i>Services</i>	Contains records of services provided to Child Welfare clients, including TrailsID, service beginning and end date, and the service category.	15,076
	<i>Services CMP Outcomes</i>	Contains records of services provided to Child Welfare clients, including TrailsID, service beginning and end date, and the service category.	51,030
	<i>Referrals</i>	Contains records of Child Welfare referrals, including TrailsID, referral date, and whether there was a substantiated finding (yes/no)	1,524
	<i>Referrals CMP Outcomes</i>	Contains records of Child Welfare referrals, including TrailsID, referral date, and whether there was a substantiated finding (yes/no)	3,204
	<i>Removals</i>	Contains records of Child Welfare removals, including TrailsID, removal date, and removal end reason.	3,962
	<i>Removals CMP Outcomes</i>	Contains records of Child Welfare removals, including TrailsID, removal date, and removal end reason.	11,507
	<i>CMP Client Open Cases</i>	Contains TrailsID and variables to indicate if the client had an open case: Case Open Date and Case Category. This file was not originally provided, but was requested by the evaluation team to calculate the Child Welfare outcome: “Decrease # of children/youth involved in child welfare.”	2,611

*File contains both client demographics and judicial outcome data.

2. Initial Cleaning

The initial data cleaning steps for the three main data files are listed below. Throughout these steps, data anomalies were documented to support the CMP program’s capacity building efforts.

A. File: *ETO Assessment Flat File*. The ETO Assessment flat file was generated by the CMP ETO database. The CMP ETO database includes children and youth who were served by the CMP program but not necessarily served by the child welfare system and included within the Trails database. Key fields include: participant ID, name, birthdate, gender, program, ISST meeting date, TrailsID, and outcome goal indicator flags on clients served by the Child Welfare, Judicial, Health/Mental Health, and Education domains.

Action steps

- **Manually fixed data errors on some Initial ISST Meetings Dates for ~30 observations.** Some of the “Initial ISST Meeting Dates” had considerably out-of-range values for the year but the month and day matched the “Date Taken” variable (i.e., some values consisted of 2000, 2001, 2002, 2004, 2007, 2010, 2017, 2024, 2025, 2026). To address these assumed data entry errors, the evaluation team replaced the out of range date values with the “Date Taken” variable. In 89 percent of the observations in the *ETO Assessment Flat File*, the ISSTDate was the same as Date Taken, thereby providing a strong justification for the approach.
- **Removed out of range Program Names:** Removed observations with non-CMP Program Names (i.e., Arapahoe, Broomfield, Chafee, Custer, Delta), which dropped 70 observations.

Notes:

- **Unique ID.** The unique identifier in this file is the ParticipantSiteID.
- **Date of Birth:** 270 blanks
- **Gender:** 844 blanks
- **FirstName:** 146 observations from ETO are missing a valid First Name from El Paso. In these instances, the First Name consists of a string of numbers.
- **LastName:** 154 observations from ETO have “EPCO” rather than the LastName. These observations consist entirely of El Paso Clients.
- **Initial ISST Meeting Date:** ISST dates that were outside the period of analysis (clients with an initial ISST meeting between July 1, 2014 and June 30, 2015) were incorrectly included within the evaluation files.
- **ML#:** The data within this variable from the ETO dataset was of limited utility. More specifically, 587 observations had some value in the ML field, but many of the entries

were invalid, with zeros, missing digits, a mix of letters and numbers, or labeled “unknowns.”

- **TrailsID:** Some TrailsIDs appeared to have invalid values, such as a combination of letters and numbers. TrailsID is a critically important variable that allows the evaluation team to uniquely identify observations and subsequently merge this file with the child welfare data from the DCW Trails Database.
- **Missing outcome flags:**
 - This file does not have a variable with an outcome flag for the following child welfare outcome: “Increase the number of children and youth who remain home.”
 - This file does not have a variable with an outcome flag for two of the juvenile justice outcomes: “Decrease commitment to the Division of Youth Correction” and “Decrease child and youth involved in truancy court.”

B. File: *CW Assessment Flat File – Judicial.* This file was generated from the DCW Trails Database and also includes matched judicial outcome data from the Colorado Judicial Branch

Key fields include name, birthdate, and the judicial outcome data field “case status.”

Action steps

- **Removed out of range Program Names:** Removed observations with non-CMP Program Names (i.e., Arapahoe, Broomfield, Chaffee), which dropped 70 observations.

Notes:

- **TrailsID:** This file is missing the TrailsID, which is critical for uniquely identifying observations.
- **ML #:** 733 of the observations have a valid ML number, which indicates that the client is receiving judicial services.
- **Missing outcome data:** The judicial outcome data is provided only for “probation” and not “parole.” No outcome measures related to parole could be calculated. In addition, data was not provided to allow calculation of two of the juvenile justice outcome measures: “Decrease commitment to the Division of Youth Corrections” and “Prevent involvement with juvenile justice system.”

C. File: *CMP_SF2016.* This file was provided as a supplement to the CW Assessment Flat File that lacked TrailsIDs. It contains clients who received Child Welfare services as well as their TrailsID, county name, name, birthdate, and gender. This file required the evaluation team to conduct another round of merging between the two files.

Action steps

- **Removed out of range Program Names:** Removed observations with non-CMP Program Names (Conejos), which dropped 138 observations.
- **Dropped duplicates for which the only difference was the field Case_REF_ID.** These observations were exactly the same on all the fields of interest, such as TrailsID, county name, name, birthdate. A total of 188 observations were dropped.

Notes:

- The CMP_SF2016 file had a variable called “County_Name,” which was assumed to be the same as “Program_Name” in the *CW Assessment Flat File – Judicial*.

3. Merging Files

The ultimate goals of the merging steps were to create a single Master Dataset containing the requisite information for all CMP clients within the period of analysis and ensure that there was only one record per client.

Step 1: Merge *CW Assessment Flat File-Judicial* with *CMP_SF2016 File* based on “LastName” “FirstName,” “DateofBirth,” and “Gender.”

This first step of the merging process consisted of constructing a dataset of the Child Welfare clients who contained a TrailsID for each client so that the data could be matched to the *ETO Assessment Flat File* by TrailsID (as Step 2 describes). The *CW Assessment File* provided by DCW lacked TrailsIDs, and the evaluation team subsequently requested a file with the matching TrailsIDs. DCW provided the *CMP_SF2016 File*, which had the TrailsIDs and demographic fields name, birth date, and program name for matching. The evaluation team merged these two files together to obtain a TrailsID associated with the *CW Assessment Flat File-Judicial*. After the merge, only the observations that were matched across both files were retained (Exhibit A2 shows the merge results). This process resulted in a master file of Child Welfare clients with a TrailsID.

Exhibit A2: Merge Results from merge of *CW Assessment Flat File-Judicial* & *CMP_SF2016 File*

	Merge Result	Count	Action Taken
1	Matched observation in both files (match variables: LastName, FirstName, DateofBirth, Gender)	4,110	Keep observations
2	Observation existed only in the <i>CMP_SF2016 File</i>	2,514	Drop observations
3	Observation existed only in the <i>CW Assessment Flat File-Judicial</i>	188	Drop observations

*There were also three observations that had missing values for the DateofBirth that were retained.

After the merging process, the evaluation team did a small amount of de-duplication work. The merge generated some duplicate TrailsIDs where one of the duplicates had a County_Name from the CMP_SFY2016 File that did not match the Program_Name from the *CW Assessment Flat File-Judicial*, and the other duplicate had a County_Name that did match the Program_Name. In these instances, only the observations with the matched Program_Name and County_Name were retained, which resulted in dropping 19 observations. The merge also created duplicates in the *CW Assessment Flat File-Judicial* where the demographic variables matched to more than one TrailsID within the CMP_SFY2016 file. In these instances, observations for which the County_Name from the CMP_SFY2016 file did not match the Program_Name from the *CW Assessment Flat File-Judicial* were dropped (which resulted in five observations being dropped).

Step 2: Merge the Child Welfare Clients file in Step 1 with the ETO Assessment Flat File based on “TrailsID.”

This step merged the Child Welfare clients from the DCW Trails database (via the merged dataset that Step 1 described) with the rest of the CMP clients from the ETO database to create the Master Dataset. Some overlap between the Trails and ETO populations was anticipated (Exhibit A3, row 1). As expected, not all the Child Welfare clients matched on TrailsID to the *ETO Assessment Flat File* (Exhibit A3, row 2).

However, a large number of observations in the ETO file with a TrailsID could not be matched to the TrailsID in the Child Welfare file (Exhibit A3, row 3). The evaluation team noted this to DCW, and DCW suggested that these unmatched observations represent a problem with the ETO database that will be reconciled in the near future. The merges in Step 2 produced a full list of the clients in the CMP program via the Master Dataset.

Exhibit A3: Merge Results from merge of CW clients with ETO Assessment Flat File

	TrailsID Merge Result*	Count	Action Taken
1	Matched TrailsID across both files	676	Keep observations
2	TrailsID existed only in the <i>Child Welfare merged file</i> (date from Trails database)	3,524	Keep observations
3	TrailsID existed only in the <i>ETO Assessment Flat File</i> (date from ETO database)	3,591	Keep observations

*There were also 4,517 observations in the ETO Assessment Flat File that did not have a TrailsID (presumably, because they did not receive Child Welfare services) and were retained as part of the Master Dataset.

4. Post-Merge Data Cleaning

A five-step data cleaning process removed duplicate observations and addressed other data cleaning needs.

1. **Date censoring.** Observations that were outside the period of analysis (clients with Initial ISST Meeting Dates between July 1, 2014 and June 30, 2015) were dropped, which consisted of a total of 3,765 observations. ISST Meeting Dates were only provided for observations from the *ETO Flat Assessment File*.
2. **De-duplicate.** There were numerous instances of observations with duplicate ParticipantSiteIDs, which is the unique identifier in the ETO dataset. Discussions with DCW revealed that duplicate ParticipantSiteIDs occur when a caseworker forgets to look up the child's name in the ETO database before they enter new information on the child. As a result, caseworkers often erroneously start a new record for the child. To address this issue, the following actions were taken:
 - Duplicate observations with the same ParticipantSiteID, Program Name, and ISST Meeting Date were dropped (159 observations).
 - Duplicate observations with the same ParticipantSiteID and Program Name but with DIFFERENT ISST Meeting Dates were dropped (597 observations). The rule used to determine which duplicate to drop was to retain the observation with the earliest ISST Meeting Date.
3. **Consolidate FirstName, LastName, BirthDate, and ProgramName variables.** The Master Dataset subsequently contained two versions of the aforementioned variables, with one set from the *ETO Assessment Flat File* and the other set from the *CW Assessment Flat File – Judicial*. As a rule, the variable values from the *ETO Assessment Flat File* were kept and any data gaps were filled in via the *CW Assessment Flat File-Judicial*, as possible. Particular attention was paid to mismatches across the name variables, as described below.
 - FirstName & LastName:
 - Unmatched names signaled a problem with the matched data and the equivalence of the variables from the two different datasets were thoroughly checked.
 - 52 LastName & 32 FirstName observations did not match exactly across the variables.
 - A visual check was instituted and most of the remaining issues were determined to be spelling errors. However, there were seven observations with different FirstNames and/or last names that were not matched due to spelling errors. This data could not be trusted for matching, resulting in these seven observations being dropped.
 - A general rule was instituted of keeping the values from the *ETO Assessment Flat File*, if they existed. In instances where those values did not exist, the values from the *CW Assessment Flat File* were used.

4. **Generated Age variable from DateofBirth.** The date of June 30, 2015 (the last day of the intervention period) was used to calculate the age of CMP clients (the assumption that 1 year was equal to 365 days was utilized for this process).
 - Next, out-of-range age values were removed as follows:
 - Observations within the *ETO Assessment Flat File* were determined to have ages greater than 22. These observations were assumed to be data entry errors and the age values were converted to “missing”. This change affected 31 observations.
 - Some observations had a birthdate that occurred after the Initial ISST Meeting Date. These observations were removed, as they were likely data entry errors, but there was no way to determine if the observations should be included in the sample. As a result, 162 observations were dropped.
5. **Removed additional duplicates.** Ensuring that all duplicates were removed was important so that only one observation per client was used to calculate the outcome performance measures. The previous de-duplicating step only de-duplicated observations with the same ParticipantSiteID. However, *only* the observations that came from the ETO Assessment Flat File have a ParticipantSiteID. Therefore, a final deduplication process was applied to the Master Dataset.
 - **Duplicate observations existed with duplicate values on FirstName, LastName, DateofBirth, and ProgramName.** This occurred when there were duplicate observations in the *ETO Assessment Flat File* and the *CW Assessment Flat File*. These duplicates existed because the TrailsID was missing from the *ETO Assessment Flat File* due to data entry errors.
 - Duplicate data was consolidated by manually pulling the TrailsID from the *CW Assessment Flat File* into the record from the *ETO Assessment Flat File*. This effort dropped 82 observations.
 - **After that, duplicate observations still existed on FirstName, LastName, and DateofBirth.** These duplicate observations differed solely on the “Program Name” variable.
 - One of the program name duplicates was randomly dropped, which resulted in dropping 296 observations.
 - **After that, duplicate observations still existed on the TrailsID variable.** These duplicate observations varied on ParticipantSiteID. To get to a final Master List with only one observation per client, a single TrailsID was randomly selected for each of the duplicates, which dropped 214 observations.

5. Key Data Limitations

The data cleaning process highlighted the following set of key data limitations:

- Many ETO clients had a TrailsID in the ETO database but could not be matched to the Child Welfare file pulled from the Trails data system.

- Data in the ETO database on key fields such as TrailsID, gender, and birthdate was missing or invalid.
- Outcome flags were missing for several of the outcome measures in the ETO file.
- The judicial outcome data was only available for CMP clients who also received Child Welfare Services. Therefore, clients who received judicial services but were not involved with child welfare were likely inadvertently excluded from the judicial outcome calculations.

Throughout the remainder of SFY17, the evaluation team will work with DCW to address these key data limitations. In January of 2017, the evaluation team will meet with DCW's Research, Analysis and Data team to discuss these limitations and potential solutions and will support subsequent efforts to address the data limitations. This collaborative approach will provide a detailed strategy for addressing these data limitations, with the goal of producing an improved master dataset that will require comparatively less data cleaning, merging, and post-merging cleaning.

Appendix D

Outcome Measure Calculation Detail

This Appendix briefly describes the components for calculating the performance metrics for the CMP Outcome Evaluation, including the numerator, denominator, associated assumptions, and any criteria used to exclude observations.²

Prepping the Outcome Files

In addition to developing the Master Dataset of the CMP client population as Appendix A described, the evaluation team prepared the outcome data files for analysis (Exhibit B1). The steps to prepare these outcome data files are as follows:

Step 1. Append the matching outcome files. Specifically, the Service file was appended to the Services CMP Outcomes file, the Referrals file was appended to the Referrals CMP Outcomes file, and the Removals file was appended to the Removals CMP Outcomes file.

Step 2. Drop exact duplicates in appended files. Exact duplicate observations were dropped from each of the appended files.

Exhibit B1: Additional Files Used to Calculate Outcome Measures*

File Name	Description	Raw Record Count
Services	Contains records of services provided to Child Welfare clients, including the TrailsID, service beginning and end date, and the service category.	15,076
Services CMP Outcomes	Contains records of services provided to Child Welfare clients, including the TrailsID, service beginning and end date, and the service category.	51,030
Referrals	Contains records of Child Welfare referrals, including TrailsID, referral date, and if there was a substantiated finding (yes/no)	1,524
Referrals CMP Outcomes	Contains records of Child Welfare referrals, including TrailsID, referral date, and if there was a substantiated finding (yes/no)	3,204
Removals	Contains records of Child Welfare removals, including TrailsID, removal date, and removal end reason.	3,962
Removals CMP Outcomes	Contains records of Child Welfare removals, including TrailsID, removal date, and removal end reason.	11,507
CMP Client Open Cases	Contains TrailsID and variables to indicate if the client had an open case: Case Open Date and Case Category. This file was not originally provided, but was requested by IMPAQ to calculate the Child Welfare outcome: "Decrease # of children/youth involved in child welfare."	2,611

*Appendix A describes the process for preparing the other data files to build the Master Dataset. The Master Dataset already included the variables necessary to calculate the judicial outcomes.

² Data for the 'Decrease Commitment to the Division of Youth Corrections' and the 'Prevent Involvement with Juvenile Justice System' performance measures were provided via CMP self-reports. Accordingly, these measures are excluded from the Appendix.

Outcome Calculation Details

Outcome #1: Decrease the number of children and youth involved with Child Welfare

Outcome Flag: -CW- Prevent new involvements in the CW system

Outcome File Used	New Involvements File (key outcome variable = Case Open Date)
Numerator:	Clients who do not have a new involvement in the child welfare system in the year following their ISST meeting date.
Denominator	All ETO clients with a goal of “preventing involvement” and all CW-only clients
Denominator size	4,861 clients
Major Assumptions	<ol style="list-style-type: none"> 1. The Master Dataset lacked outcome flags for CW-only clients (due to the omission of this variable within the Trails data provided by DCW). It was assumed that all CW-only clients also had this outcome goal of “preventing new involvements in the CW system.” 2. The Master Dataset lacked ISST meeting date for CW-only clients (due to the omission of this variable within the Trails data provided by DCW). It was assumed that all the outcome data provided for CW-only clients occurred within 1 year after the client’s ISST meeting date. 3. It was assumed that any child without a Case Open Date/Case Category in the New Involvements file did not have a new involvement in the child welfare system.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Observations were excluded from the calculation if the observed Case Open Date occurred before the ISST meeting date. 2. Observations were excluded from the calculation if the observed Case Open Date occurred more than 1 year after the ISST meeting date. 3. ETO clients were excluded if they did not have this outcome goal.

CW Outcome #2: Increase safety of children and youth

Outcome Flag: -CW – Prevent abuse (no substantiated abuse finding)

Outcome File Used	Appended Referrals (key outcome variable = Substantiated Abuse)
Numerator:	Clients with no substantiated findings of abuse in the year following their ISST meeting date
Denominator	All ETO clients with the outcome goal of “preventing abuse”, and all CW-only clients
Denominator size	4,184 clients
Major Assumptions	<ol style="list-style-type: none"> 1. The Master Dataset lacked outcome flags for CW-only clients (due to the omission of this variable within the Trails data provided by DCW). It was assumed that all CW-only clients also had this outcome goal of “preventing abuse.” 2. The Master Dataset lacked ISST meeting dates for CW-only clients (due to the omission of this variable within the Trails data provided by DCW). It was assumed that all the outcome data provided for CW-only clients occurred within 1 year after their ISST meeting date. 3. There were CW-only observations with TrailsIDs in ETO that did not have a matched TrailsID to the Referrals database. The observations were included within the population and assumed to “not” have a substantiated finding of abuse.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Observations were excluded from the calculation if the observed outcome occurred before the ISST meeting date. 2. Observations were excluded from the calculation if the observed outcome occurred more than 1 year after the ISST meeting date. 3. ETO clients were excluded if they did not have this outcome goal.

CW Outcome #3: Increase placement stability of children and youth

Outcome Flag:-CW – Reduce number of moves in out-of-home placement

Outcome File Used	Appended Services (key outcome variable = # of unique RMVL_IDs per TrailsID)
Numerator:	Clients with less than three completed removals in the year following their ISST meeting date and who are receiving out-of-home services
Denominator	All ETO clients and matched CW-only clients: with a TrailsID and with the outcome goal of “reducing moves in out-of-home placement” and who are receiving out-of-home services
Denominator size	1,576 clients
Major Assumptions	<ol style="list-style-type: none"> 1. The Master Dataset lacked outcome flags for CW-only clients (due to the omission of this variable within the Trails data provided by DCW). It was assumed that all CW-only clients also had this outcome goal of “reducing moves.” 2. The Master Dataset lacked ISST meeting date for CW-only clients (due to the omission of this variable within the Trails data provided by DCW). It was assumed that all the outcome data provided for CW-only clients occurred within 1 year after their ISST meeting date. 3. There were CW-only observations with TrailsIDs in ETO that did not have a matched TrailsID to the Services database. These observations could not be included as part of the measure due to the inability to determine if they were receiving out-of-home services. 4. There were ETO observations with TrailsIDs that did not have a matched TrailsID to the Services database. These observations could not be included as part of the measure due to the inability to determine if they were receiving out-of-home services.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Observations were excluded from the calculation if the observed outcome occurred before the ISST meeting date. 2. Observations were excluded from the calculation if their observed outcome occurred more than 1 year after the ISST meeting date. 3. Observations for which the Service Category was not equal to “out-of-home” were excluded from the calculation. 4. ETO clients who had a “reducing moves” outcome goal but lacked a TrailsID could not be included in the calculation. 5. ETO clients were excluded if they did not have this outcome goal. 6. Observations were excluded if the TrailsID could not be matched to a TrailsID in the Services file.

CW Outcome #4: Increase permanency of children and youth involved in child welfare services

Outcome Flag: CW – Discharge from out-of-home placement to permanent home

Outcome File Used	Removals (RMVL_END REASON="adoption, guardianship, reunion")
Numerator:	Clients whose most <u>recent</u> removal resulted in a permanent outcome (adoption, guardianship, reunion) in the year following their ISST meeting date.
Denominator	All ETO clients matched CW-only clients: with a TrailsID and with the outcome goal of "discharging from out-of-home placement to permanent home" and who had a "removal end reason" that ended in the year following their ISST meeting date.
Denominator size	1,198 clients
Major Assumptions	<ol style="list-style-type: none"> 1. The Master Dataset lacked outcome flags for CW-only clients (due to the omission of this variable within the Trails data provided by DCW). It was assumed that all CW-only clients also had this outcome goal of "increasing permanency." 2. The Master Dataset lacked ISST meeting date for CW-only clients (due to the omission of this variables within the Trails data provided by DCW). It was assumed that all the outcome data provided for CW-only clients occurred within 1 year after their ISST meeting date. 3. There were CW-only observations with TrailsIDs in ETO that did not have a matched TrailsID to the Removals database. These observations could not be included as part of the measure as no values for the RMVL_END Reasons variable was provided. 4. There were also ETO observations with a TrailsID that did not have a matched TrailsID in the Removals Database. These observations could not be included as part of the measure as no values for the RMVL_END Reasons variable was provided.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Observations were excluded from the calculation if the observed outcome occurred before the ISST meeting date. 2. Observations were excluded from the calculation if their observed outcome occurred more than 1 year after the ISST meeting date. 3. ETO clients who had an "increasing permanency" outcome goal but lacked a TrailsID could not be included in the calculation (which consisted of 36 clients). 4. ETO clients were excluded if they did not have this outcome goal. 5. Observations were excluded if the TrailsID could not be matched to a TrailsID in the Services file.

CW Outcome #5: Increase number of children and youth who remain home

No ETO Outcome Flag

Outcome File Used	Services (considered to have not remained in home if RMVL_ID exists)
Numerator:	CW clients who have not been removed from their homes while receiving Child Welfare services in the year following their ISST meeting date
Denominator	All ETO clients and CW-only clients with a TrailsID and who are in their own homes
Denominator size	5,145 clients
Major Assumptions	<ol style="list-style-type: none"> 1. The Master Dataset lacked outcome flags for this measure (due to the omission of this variable within the Trails data provided by DCW). This outcome was assigned to all clients who received CW services. 2. The Master Dataset lacked ISST meeting dates for CW-only clients (due to the omission of this variables within the Trails data provided by DCW). It was assumed that all the outcome data provided for CW-only clients occurred within 1 year after their ISST meeting date. 3. It was assumed that anyone with a RMVL_ID within 1 year from their ISST meeting date was removed from their homes. 4. There were CW-only observations with TrailsIDs in ETO that did not have a matched TrailsID in the Services database. It was assumed that these kids were “not removed” and were part of the population. 5. There were ETO observations with TrailsIDs in ETO that did not have a matched TrailsID in the Services database. It was assumed that these kids were “not removed” and were part of the population.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Observations were excluded from the calculation if the observed outcome occurred before the ISST meeting date. 2. Observations were excluded from the calculation if their observed outcome occurred more than 1 year after the ISST meeting date. 3. ETO clients who lacked a TrailsID could not be included in the calculation. These clients were assumed to not be part of the Child Welfare population. 4. It was assumed that clients who receive OOH services within the period of analysis but do not have a RMVL date were already removed prior to the ISST meeting date and were subsequently excluded from the calculation

JJ Outcome #1: Increase successful involvement with juvenile justice system (probation only)

Outcome Flag: Successful completion of probation

Outcome File Used	CW/Jud Merged (Case Status= "TERM")
Numerator:	Child Welfare clients who are also served by the juvenile justice system with a "successful termination of probation" in the year following their ISST meeting date.
Denominator	Child Welfare clients who are also served by the juvenile justice system with a termination outcome in the year following their ISST meeting date and who have the outcome goal of "successful completion of probation."
Denominator size	259 clients
Major Assumptions	<ol style="list-style-type: none"> 1. The Master Dataset lacked ISST meeting date for CW-only clients. We assumed all the outcome data provided for CW-only clients occurred within 1 year after their ISST meeting date.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Observations were excluded from the calculation if the observed outcome occurred before the ISST meeting date. 2. Observations were excluded from the calculation if their observed outcome occurred more than 1 year after the ISST meeting date. 3. ETO observations were excluded if they did not have a "successful completion of probation" outcome flag. 4. Observations with an ACTV (active) status for their termination outcome were excluded from this calculation. 5. Observations missing a CaseStatus were excluded from the calculation 6. Clients served by judicial but <u>not</u> child welfare were excluded from this calculation due to the lack of Case Status outcome data for these observations. 7. There were ETO clients with a probation outcome flag and TrailsID but the TrailsID did not match to the Services file. These observations were excluded due to the lack of judicial outcome data.