Colorado Department of Health Care Policy and Financing Consumer Directed Care Evaluation

Completed Analysis of Colorado Consumer Directed Care (4.14.1.1)

June 29, 2018

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Table of Contents

Introduction 1
Evaluation Framework and Design 2
Data Sources 2
Key Informant Interviews 2
Survey Protocol 4
Survey Administration 6
Findings 6
Service Cost Analysis 6
Comparative Cost Analysis & Cost Change Analysis 11
Medicaid Costs for Emergency Room and Inpatient Hospital Utilization: EBD Waiver Participants 12
Consumer/Participant Satisfaction 31
Assessment of Health Outcomes for CDASS and IHSS Clients 39
Other Participant Benefits 39

Introduction

In December of 2017, the Colorado Department of Health Care Policy and Financing (Department) contracted with TriWest Group (TriWest) to conduct an evaluation of consumer directed care service programs in Colorado (also known as participant directed care programs). The overall goal of this evaluation effort is to provide the Department with an analysis of the benefits, health outcomes, service satisfaction, and costs of consumer directed service delivery options (Consumer Directed Attendant Support Services and In-Home Support Services).

We built an evaluation design that incorporated information gleaned from reviews of recent studies of similar programs in other states, discussions with the Department and stakeholders regarding the general desired evaluation focus, a 2015 report on the Consumer Directed Attendant Support Services (CDASS) program issued by the Office of the State Auditor, and Department and stakeholder responses to audit report findings.

This report contains five sections:

1. Overview of the Evaluation Framework and Design
2. Service Cost Analysis
3. Comparative Cost and Cost Change Analysis
4. Participant Satisfaction with Services
5. Health Outcomes (self-report, and ER and inpatient utilization)

For each of these areas, we compare Consumer Directed Attendant Support Services (CDASS) participants and In-Home Support Services (IHSS) participants with a comparison group of individuals participating in other agency-based care service delivery options (traditional agency-administered personal care, state plan personal care, long-term home health, and private duty nursing).

Evaluation Framework and Design

This evaluation uses a mixed-methods evaluation framework. The evaluation incorporates quantitative data on costs, health outcomes, and participant satisfaction surveys, as well as qualitative data from key informant interviews. Qualitative data was used to design specific analysis methods and questions, and provide an important context for evaluation findings.

It is important to note that the aim of the evaluation is to make comparisons across different "treatment" options (participation in a service delivery option), not to compare the effects experienced by those who participate in a program vs. those who receive no "treatment." This is an important distinction because there is an assumption that all programs provide some benefits to participants, so any findings of differences in outcomes across groups are likely to be modest.

Our evaluation design was informed not just by conversations with stakeholders, but also a review of evaluations conducted of similar programs in other states. While details vary, all the evaluations reviewed in developing our evaluation plan relied on participant surveys and health data to track participants' outcome and satisfactions. Costs are less frequently and explicitly discussed in these evaluations, particularly in depth.

Data Sources

Based on our discussions with stakeholders, and in order to align with previous state evaluations and federal recommendations, we employed four primary sources of data for the evaluation:

- Key information interviews (KIIs) and meetings (focus groups) with program stakeholders (those implementing program elements, policy and decision makers and representatives of program participants);
- Surveys of program participants;
- Program enrollment data to identify the pool of potential respondents to be sampled for surveys; and
- Secondary analysis of Medicaid claims data

Key Informant Interviews

We contacted over 40 key informants in the first two months of the evaluation. The purpose of these interviews was to ensure that evaluators have a necessary understanding of important program policies and procedures, relevant state statutory authorizations and requirements, implementation processes, strengths and challenges, and important evaluation questions/metrics of program success.

Our objectives for conducting these key informant interviews with stakeholder groups were to 1) develop a deeper understanding of the CDASS and IHSS service delivery options from a variety of stakeholders' perspectives; 2) finalize the list of outcomes that need to be achieved; and 3) explore specific survey options to determine the method most likely to yield higher response rates and ensure enough responses for sufficient statistical power. We randomly selected interviewees based on their role in consumer directed care services (whether they were direct participants, service providers and/or advocates), and which services they had experienced. We created the selection pool from the response to an email invitation we sent to the Participant Directed Programs Policy Collaborative (PDPPC) membership, an invitation on HCPF's website, and partner-agency outreach efforts. This resulted in a sample size of 42 informants. All 42 were contacted to complete a key informant interview. Three of these requested that we send them a paper copy of the interview questions rather than speak with them over the phone.

We conducted a total of 31 interviews with 35 key informants. The interviews occurred during the middle of February 2018 through the second week of April 2018. Since individual responses were confidential, all responses were kept anonymous and combined to provide content for this report.

We developed two protocols for the interviews. Drawing on best practices and input from HCPF staff, one protocol was developed for advocates of consumer directed care services and the other was developed for consumers of consumer directed care services. The content areas included: successes of and barriers to directing one's care in Colorado; consumer satisfaction and choice of services; impact on quality of life, health and well-being; and views on administrative oversight by the Department.

Sampling

The Department sent an email to solicit potential key informants for interviews. The solicitation went to members of the Participant Directed Programs Policy Collaborative (PDPPC), In Home Support Services (IHSS) stakeholder groups, and other key stakeholders on the Department's distribution lists and website. Interested respondents were asked to respond directly to a TriWest scheduler with their contact information and a description of their specific stakeholder role.

Because the number of potential respondents did not exceed available resources, we were able to contact all interested stakeholders and did not need to create a stratified random sample of respondents.

Scheduling

TriWest staff contacted potential respondents by phone or email and conducted 60-minute phone interviews with each.

Conducting and Documenting Interviews

To establish reliability of the interview process, TriWest staff conducted five interviews, using a pair of interviewers. These interviewers then met to refine the wording of questions, prioritize questions if time was limited, and identify potential follow-up/probative questions. Four staff members conducted interviews.

Because the interviews took place over the phone and the consumer's identity was not linked to the interview transcripts, we did not document informed consent. Agreement to continue the interview on the phone was taken as implied consent, as were the three interviews who requested and responded in writing.

Survey Protocol

Participants were surveyed so that we could compare the experiences and outcomes of participants in the CDASS and IHSS programs with those who receive traditional state benefits (agency-based, private duty nursing, and long-term home health care). However, individuals enter the CDASS and IHSS programs through different Medicaid waivers, based on their health needs. Because these populations tend be very different, we used a stratified sampling methodology to select groups of respondents from each waiver type as well as specific comparison group populations.

A full explanation of the survey methodology and tool can be found in the Survey Methodology and Instrument Report document. Table 1, on the following page, shows the 12 different samples selected for surveys.

Survey Sampling Approach

Survey Sampling Approach			
Survey Group	**Target Completed Surveys (30% Response)**	**Sample Frame (Random Sample Requested from Department)**	**Total Population Served**
CDASS/BI Waiver	30	54	54
CDASS/CMHS Waiver	50	173	173
CDASS/EBD Waiver[1]	300	1,000	3,413
CDASS/SCI Waiver	30	58	58
Total CDASS Sample	**410**	**1,285**	**3,698**
IHSS only/EBD Waiver (adults)	200	675	2000
IHSS + Long Term HH	50	165	346
IHSS/CHCBS Waiver (pediatric)	50	165	405
IHSS/SCI Waiver[2]	--	--	--
Total IHSS Sample	**300**	**1,005**	**2,751**
State Plan – Long Term HH only	50	165	--
State Plan – Personal Care only	50	165	NA
State Plan – LTHH and Personal	100	300	NA
State Plan – Pediatric (Personal)	50	165	NA
State Plan – Pediatric (LTHH)	50	165	
Total Comparison Group	**300**	**960**	**NA**
Total Sample	**1,010**	**3,250**	**NA**

The sampling frame included all clients who received services at any time during state fiscal year (SFY) 2017, regardless of enrollment date.

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[1] This includes a distribution of CDASS clients who receive just personal care/home health services, long-term home health care, or both. Because of the size of the sampling frame and the random sampling method, this should match the population overall.

[2] The total population of this group falls below the “Safe Harbor” threshold, meaning there is a risk of identifying an individual just by virtue of group membership. The IHSS/SCI Waiver group is included with the IHSS/EBD waiver group for the purpose of survey sampling.

Survey Administration

We had the opportunity to meet with the Participant Directed Programs Policy Collaborative (PDPPC) and with Department staff to discuss past survey experiences and potential concerns of participants who will be asked to complete a survey. Overall, we made the decision, in conjunction with Department staff, to make the survey administration anonymous, determining that this would be the best option for alleviating participants' concerns and potentially increasing response rates.

We did not collect individual identifying information in the surveys. However, each survey was marked according to the respondent's program/waiver grouping (e.g., CDASS/EBD) to allow us to code responses by targeted subgroup.

Respondents had the option of completing a hard copy of the survey via U.S. mail or an online survey through Survey Monkey.

As part of the overall evaluation of Consumer Directed Care programs in Colorado, TriWest Group conducted surveys with eight (8) groups of service delivery participants: four (4) from the Consumer Directed Support Services (CDASS) and four (4) from the In Home Support Services (IHSS). In addition, surveys were sent to individuals who were randomly selected in four "comparison" groups that were created based on their service utilization profiles within traditional in-home, agency-based care.

Surveys were mailed to selected participants on March 26, 2018. Instructions provided with the surveys allowed participants to submit their responses via mail, phone, or online. Initial response rates were low and varied across groups. Because of this, a second wave of surveys was sent during the week of April 23, 2018. The tables below reflect responses collected through May 10, 2018.

Findings

Service Cost Analysis

The analysis of costs was far less prevalent and explicit in the available evaluations of other state programs reviewed for this study. This may be influenced by the fact that the programs—as they currently exist—are generally limited by quotas and caps. Governments and program administrators typically expect costs to rise because of high demand for desirable programs. To prevent this, states limit the number of beneficiaries and impose strict eligibility criteria (Tilly et al., 2000, pp. 4-5).

Based on recommendations from auditors and stakeholders, and a review of the literature, we focused our cost analysis to prioritize the following features:

- Comparisons across similar groups of clients (based on risk and needs as well as health status and demographic variables),
- Inclusion of comprehensive health care costs (to the degree possible), and
- Consideration of unique needs of CDASS and IHSS participants.

Our service costs analysis contains costs in three main areas:

1. Costs Per Day: CDASS, IHSS, and comparison group - traditional agency based care (by Medicaid Waiver program)
   a. Health Maintenance (IHSS only)
   b. Homemaker Services
   c. Personal Care (including Relative Personal Care)
   d. Long Term Home Health (LTHH) (Home Health Aide)
   e. Long Term Home Health (LTHH) (Skilled Nursing)
2. Costs Per Day: Non-Waiver Long Term Home Health Services and Private Duty Nursing
3. Costs Per Day: Nursing Facility and Hospital Backup Facility

For each type of service, we compare the average cost per participant per day.

The tables below show Medicaid-paid costs per day per client. The tables are separated by Medicaid waiver program, and show costs for CDASS, IHSS and a comparison group made up of individuals who participate in that specific waiver, and who receive similar services, but who do not participate in CDASS or IHSS service delivery options.

Where possible, costs are divided by the type of service provided. These are costs per client per day of service. It is important to note that because of this, it is not appropriate to sum all costs to calculate a total program cost. These tables are intended to compare differences in cost across like services and are not meant to show aggregate costs.

Medicaid Paid Costs per Day: CDASS, IHSS and Traditional Agency Based Care Services : Elderly, Blind, Disability Waiver Participants

Elderly, Blind, Disability (EBD) Waiver	Average Medicaid Paid Cost per Client per Day				
Group	**2013**	**2014**	**2015**	**2016**	**2017**
EBD Waiver - CDASS					
All Services[3]	$95	$101	$104	$104	$103
EBD Waiver - IHSS					
Health Maintenance	$120	$102	$93	$82	$113
Homemaker	$20	$63	$65	$62	$30
Personal Care	$33	$63	$60	$56	$44
Relative Personal Care	$25	$70	$61	$59	$49
EBD Waiver - Comparison					
LTHH - Home Health Services	$51	$67	$70	$70	$70
LTHH – Skilled Nursing	$98	$103	$105	$104	$105
Homemaker	$22	$21	$21	$24	$24
Personal Care	$38	$43	$48	$48	$50
Relative Personal Care	$26	$23	$22	$24	$25

Comparing CDASS costs can be difficult, since homemaker and personal care costs are combined with health services for these clients. These costs seem the most stable for EBD waiver clients. However, on closer look health maintenance related services for IHSS and for comparison group EBD waiver participants, skilled nursing and home health aide (Long Term Home Health) services have also remained relatively stable. Most of the variations in costs are in the personal care and homemaker service areas.

When comparing across these different service types, services for all groups tend to show increasing trends, although it does appear that IHSS costs increased at a slighted higher rate than for CDASS or comparison services.

[3] Claims for CDASS participants are not broken out by specific service types, since participants are given a single allocation to manage at their discretion. The client claims submitted to the FMS do identify personal care, homemaker and health maintenance hours. It is important to note, however, that claims data was used for this report.

Medicaid Paid Costs per Day: CDASS, IHSS and Traditional Agency Based Care Services: Spinal Cord Injury Waiver Participants

Spinal Cord Injury (SCI) Waiver	Average Medicaid Paid Cost per Client per Day				
Group	**2013**	**2014**	**2015**	**2016**	**2017**
SCI Waiver - CDASS					
All Services	**$153**	**$130**	**$137**	**$141**	**$142**
SCI Waiver - Comparison[4]					
Home Health Services (LTHH)	$62	$63	$53	$70	$72
Skilled Nursing (LTHH)	$98	$90	$105	$103	$103
Homemaker	$29	$29	$46	$42	$34
Personal Care	$80	$48	$77	$62	$48
Relative Personal Care	$22	$21	$22	$25	$24

Again, CDASS services are difficult to compare since all services types are aggregated in claims. But trends are similar across services, with small year to year increases in general. Homemaker and personal care services for the comparison group SCI waiver participants did drop off slightly in 2017, but this may be single year anomaly, rather than a trend.

Medicaid Paid Costs per Day: CDASS and Traditional Agency-Based Care Services: Community Mental Health Services Waiver

Community Mental Health Services (CMHS) Waiver	Medicaid Paid Cost per Client per Day				
Group	**2013**	**2014**	**2015**	**2016**	**2017**
CMHS Waiver - CDASS					
All Services	$68	$67	$66	$68	$63
CMHS Waiver - Comparison					
Home Health Services (LTHH)	$57	$61	$61	$61	$63

[4] There were too few IHSS service delivery participants under the SCI waiver to report on costs over time. Sample sizes smaller than 10 cause two issues in these analysis. One is "safe harbor" – the principle that if an individual belongs to an identified group, even when results are aggregated, they could be identified due to the membership of the group being too small. Because all that is being reported, this is a minimal risk. However, these smaller sample sizes also lead to problems when presenting average costs per day because variation across one client can cause large data variations, leading to incorrect assumptions about actual changes in costs for the population as a whole.

Community Mental Health Services (CMHS) Waiver	Medicaid Paid Cost per Client per Day				
Group	**2013**	**2014**	**2015**	**2016**	**2017**
Skilled Nursing (LTHH)	$98	$94	$105	$106	$106
Homemaker	$21	$21	$21	$23	$24
Personal Care	$38	$41	$39	$44	$46
Relative Personal Care	$24	$25	$25	$25	$27

Medicaid Paid Costs per Day: CDASS, IHSS and Traditional Agency-Based Care Services: Children's Home and Community-Based Services Waiver

Children's Home and Community Based Services (CHCBS) Waiver	Average Medicaid Paid Cost per Client per Day				
Group	**2013**	**2014**	**2015**	**2016**	**2017**
CHCBS Waiver - IHSS					
Health Maintenance	$178	$179	$177	$172	$174
CHCBS Waiver - Comparison					
Home Health Services (LTHH)	$78	$83	$70	$85	$88
Skilled Nursing (LTHH)	$99	$102	$105	$105	$106

In looking at costs across the different waiver programs. There is a general trend of higher costs for CDASS and IHSS participants, largely driven by higher costs around health maintenance services. However, stakeholders repeatedly discussed that an important component of CDASS and IHSS services is that participants have needs or requirements that traditional agencies will not provide (being on a ventilator, for example). Many clients told us that without CDASS or IHSS, they would be required to engage in private duty nursing or live in a facility. As shown in the table below, these costs can be significantly higher than CDASS or IHSS services.

Medicaid Paid Costs per Day: Cost Trends for Nursing Facility and Hospital Back Up Facility Costs

Nursing Facility and Hospital Back Up Facility Costs	Average Medicaid Paid Cost per Client per Day				
Facility type	**2013**	**2014**	**2015**	**2016**	**2017**
Nursing Facility	$212	$211	$220	$225	$224
Hospital Back Up Facility	$709	$715	$682	$691	$702

Medicaid Paid Costs per Day: Cost Trends for Long-Term Home Health and Private Duty Nursing

Nursing Facility and Hospital Back Up Facility Costs	Average Medicaid Paid Cost per Client per Day				
Facility type	**2013**	**2014**	**2015**	**2016**	**2017**
Long Term Home Health (IHSS)[5]	$71	$73	$76	$79	$79
Long Term Home Health (non-IHSS)	$77	$82	$84	$86	$87
Private Duty Nursing	$379	$425	$433	$460	$466

Comparative Cost Analysis & Cost Change Analysis

Emergency Room and Inpatient Cost Comparisons

In this cost analysis, we focused on comparing emergency room (ER) and inpatient hospitalizations (inpatient) costs for CDASS and IHSS service participants with ER and inpatient costs for the comparison group that received traditional agency-based services. Because the goal is to determine annual costs, our analysis only included individuals who participated in either CDASS or IHSS for at least 10 months of any given year. This eliminated individuals who may have begun participation at the end of the year, meaning their ER costs likely occurred prior to program participation. Our analysis also excluded any participants who ended participation early in the year and who had subsequent ER costs that were unrelated to their CDASS or IHSS services.

In order to ensure that the CDASS and IHSS populations were being compared to similar populations of participants in other traditional, agency-based long-term home health or State Plan services, CDASS and IHSS participants were divided based on their participation in specific Medicaid waiver programs. Comparison populations were drawn from Medicaid claims data that matched CDASS and IHSS participants according to Waiver program participation and participation in general types of services, for at least 10 months out of the year, that were similar to the CDASS and IHSS services.

[5] This line item reports Long Term Home Health (LTHH) costs for IHSS clients.

This section describes average emergency room and inpatient hospitalization costs for each of three main waiver types:[6]

- Elderly, Blind, Disability (EBD) Waiver
- Community Mental Health Services (CMHS) Waiver (CDASS participants only)
- Children's Home and Community Based Services (CHCBS) Waiver (IHSS participants only)

Medicaid Costs for Emergency Room and Inpatient Hospital Utilization: EBD Waiver Participants

Number of program participants: This is the number of people participating in the waiver program for at least 10 months of the year in which costs were incurred.

Number (percentage) with any ER visit: This is the number and percentage of program participants who had any claim for ER services, even if the amount paid by Medicaid for that claim was $0 (likely because claims were paid by third party insurance).

Average annual ER cost to Medicaid per person with a Medicaid paid ER claim: This is the average annual ER cost to Medicaid for all program participants for whom there was at least one paid ER claim in the year. Using this metric as a comparison is difficult because, while average costs for a program could be higher, the program could have a lower proportion of participants with ER visits, which lowers total program costs.

Average Medicaid paid ER costs per program participant: This is the average cost to Medicaid for all ER visits across all program participants. This number is calculated by summing all Medicaid ER costs for program participants and dividing that sum by the total number of participants. This is the best metric for comparing across programs because it accounts for differences in the percentage of participants with any ER claims.

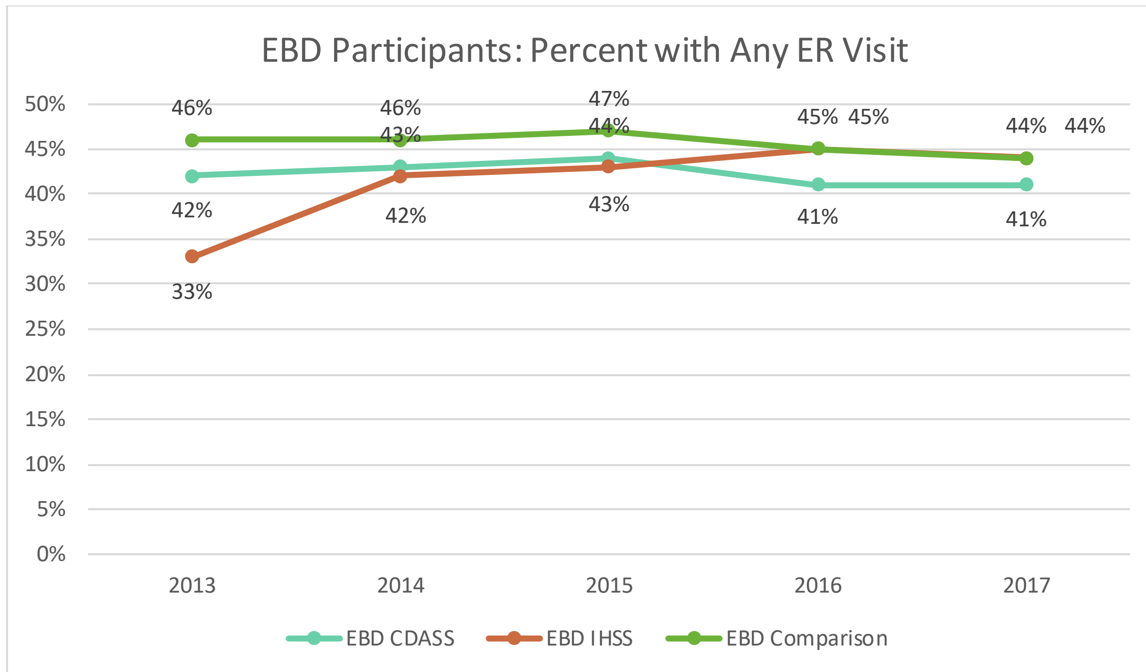
[6] There were too few participants in the Brain Injury and Spinal Cord Injury Waiver programs to report data without the potential of inadvertently identifying an individual.

EBD Comparison Group: Includes all individuals who:

1. Met requirements for the EBD Waiver and participated in that program, but did not participate in CDASS or IHSS;
2. Received the same types of services as CDASS and IHSS participants for at least 10 months of the year (long term home health services , homemaker services, and personal care) through traditional agency-based care options.

Costs to Medicaid: 5 Year Trends in Average Costs: Elderly, Blind, Disability (EBD) Waiver Participants							
	Emergency Room				Inpatient Hospital		
Group	Number of Program Participants	Number (Percent) with Any ER Visit	Average Annual ER Cost to Medicaid per Person with a Medicaid Paid ER Claim	Average Medicaid Paid ER Costs per Program Participant	Number (Percent) with Any Inpatient Claim	Average Annual Inpatient Cost to Medicaid per Person with a Medicaid Paid Inpatient Claim	Average Medicaid paid Inpatient Costs per Program Participant
2013							
EBD CDASS	2,025	858 (42%)	$319	$118	438 (22%)	$281	$52
EBD IHSS	229	75 (33%)	$584	$166	55 (24%)	$317	$43
EBD Comparison	10,012	4,463 (46%)	$316	$123	2,269 (23%)	$275	$38
2014							
EBD CDASS	2,270	971(43%)	$316	$121	452 (20%)	$473	$60
EBD IHSS	340	148 (42%)	$592	$148	80 (24%)	$696	$99
EBD Comparison	10,288	4,725 (46%)	$329	$130	2,241 (22%)	$294	$39
2015							
EBD CDASS	2,458	1,090 (44%)	$365	$137	505 (20%)	$424	$96
EBD IHSS	500	211 (43%)	$411	$173	104 (21%)	$498	$108
EBD Comparison	10,283	4,783 (47%)	$357	$166	2,185 (21%)	$345	$81
2016							

Costs to Medicaid: 5 Year Trends in Average Costs: Elderly, Blind, Disability (EBD) Waiver Participants							
Group	Emergency Room				Inpatient Hospital		
	Number of Program Participants	Number (Percent) with Any ER Visit	Average Annual ER Cost to Medicaid per Person with a Medicaid Paid ER Claim	Average Medicaid Paid ER Costs per Program Participant	Number (Percent) with Any Inpatient Claim	Average Annual Inpatient Cost to Medicaid per Person with a Medicaid Paid Inpatient Claim	Average Medicaid paid Inpatient Costs per Program Participant
EBD CDASS	2,564	1062 (41%)	$502	$182	564 (22%)	$344	$63
EBD IHSS	686	307 (45%)	$551	$207	151 (22%)	$537	$95
EBD Comparison	10,327	4,695 (45%)	$478	$186	2,136 (21%)	$344	$59
2017							
EBD CDASS	2,681	1,111 (41%)	$81	$81	515 (19%)	$344	$34
EBD IHSS	1,262	560 (44%)	$101	$101	283 (22%)	$635	$70
EBD Comparison	10, 701	4,663 (44%)	$67	$67	2,165 (20%)	$600	$33


EBD Participants: Percent with Any ER Visit
50%
45%
40%
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30%
25%
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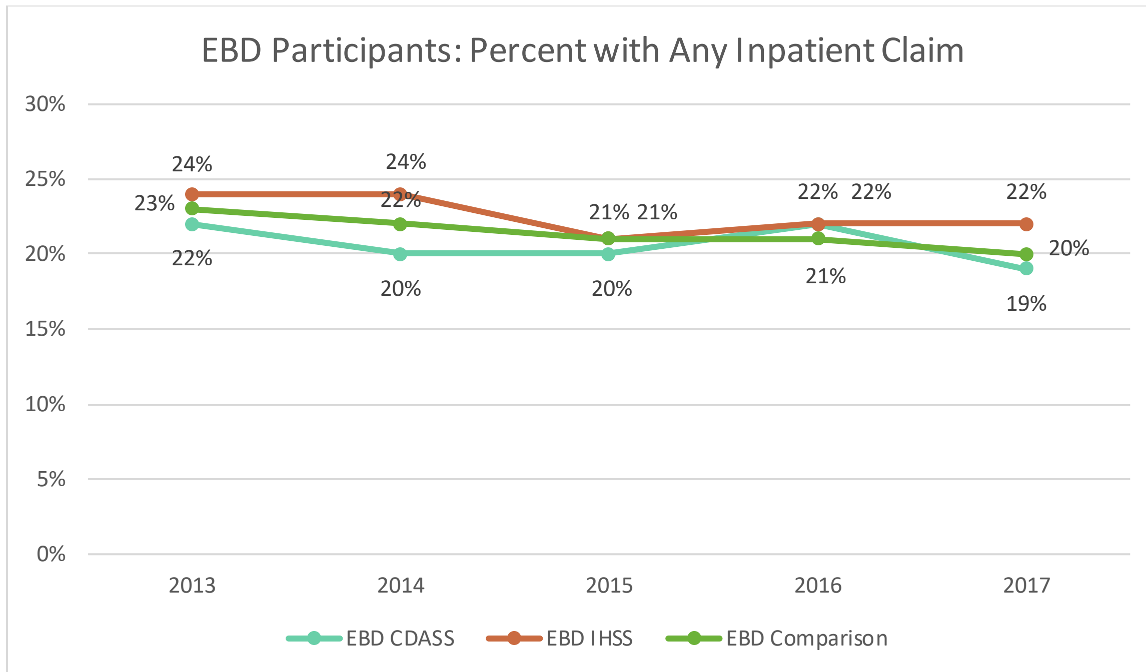
EBD CDASS
EBD IHSS
EBD Comparison



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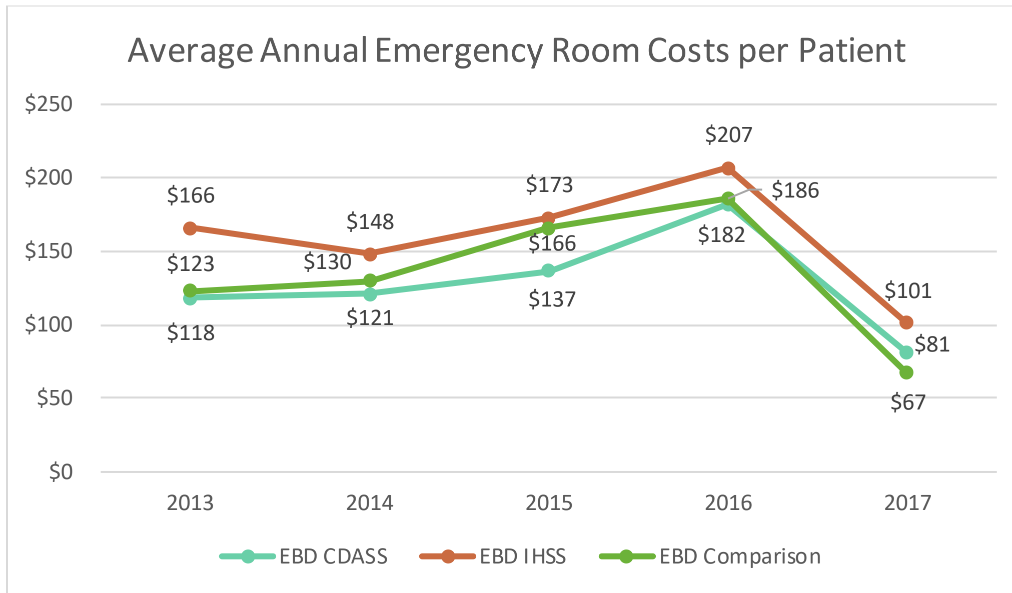

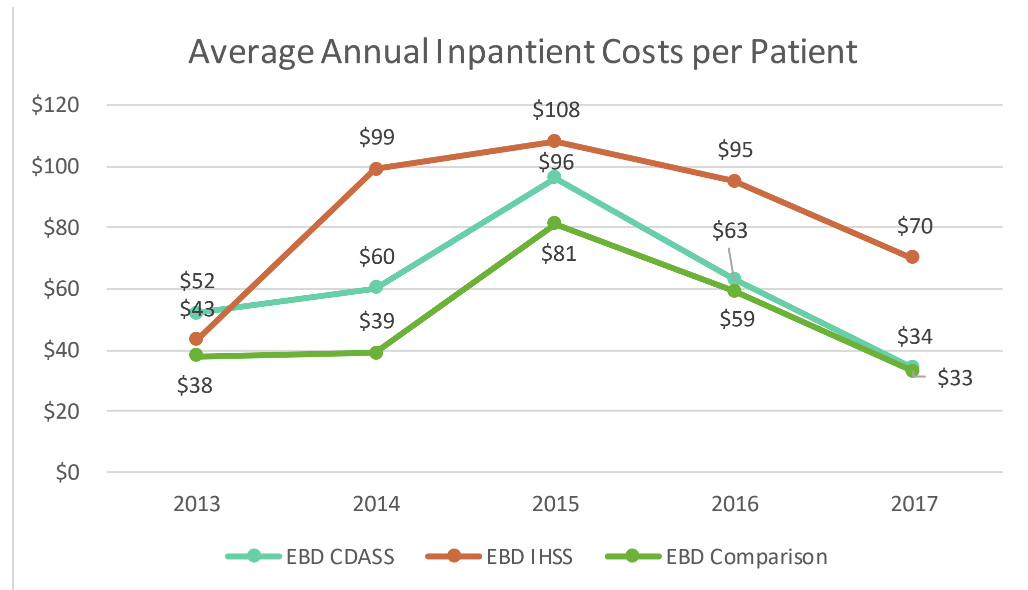

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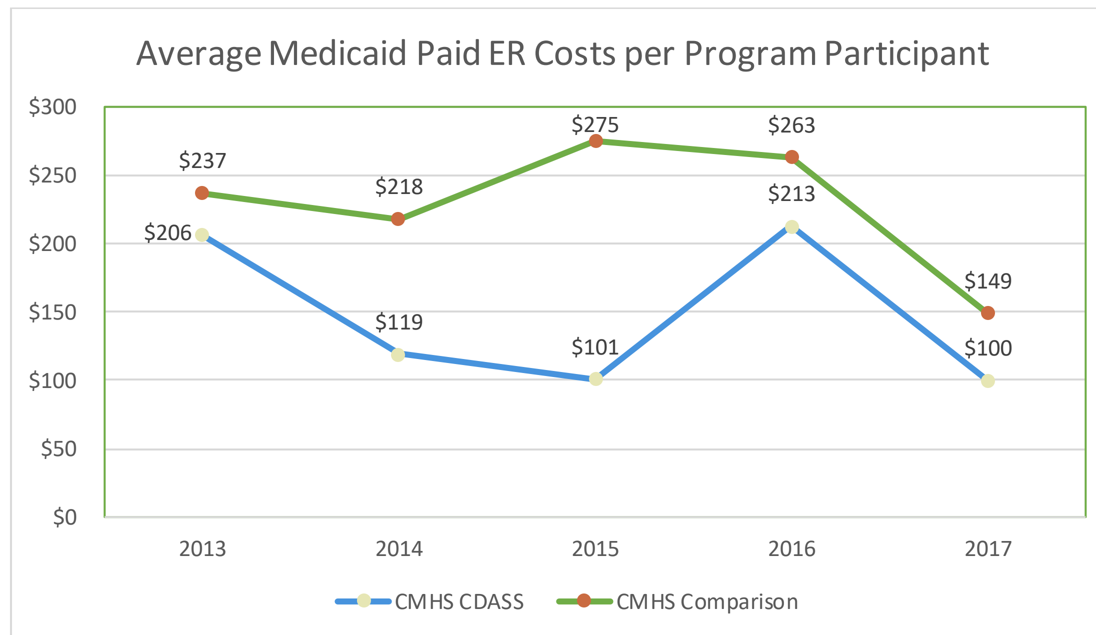
CMHS Comparison Group: Includes all individuals who:

1. Met requirements for the CMHS waiver and participated in that program, but did not participate in CDASS or IHSS;
2. Received the same types of services as CDASS and IHSS participants for at least 10 months of the year (long term home health services , homemaker services, and state plan personal care) through traditional agency-based care options.

Costs to Medicaid: 5 Year Trends in Average Costs: Community Mental Health Services Waiver Participants							
Group	Emergency Room				Inpatient Hospital		
	Number of Program Participants	Number (Percent) with Any ER Visit	Average Annual ER Cost to Medicaid per Person with a Medicaid Paid ER Claim	Average Medicaid Paid ER Costs per Program Participant	Number (Percent) with Any Inpatient Claim	Average Annual Inpatient Cost to Medicaid per Person with a Medicaid Paid Inpatient Claim	Average Medicaid paid Inpatient Costs per Program Participant
2013							
CMHS CDASS	68	37 (54%)	$412	$206	11 (16%)	$183	$29
CMHS Comparison	977	462 (47%)	$538	$237	201(20%)	$314	$44
2014							
CMHS CDASS	95	40 (42%)	$307	$119	16 (17%)	$124	$16
CMHS Comparison	943	447 (47%)	$501	$218	198 (20%)	$332	$36
2015							
CMHS CDASS	107	49 (46%)	$487	$101	11 (10%)	$271	$28
CMHS Comparison	954	458 (48%)	$572	$275	158 (17%)	$443	$75
2016							
CMHS CDASS	120	52 (43%)	$569	$213	18 (15%)	$170	$20
CMHS Comparison	991	454 (46%)	$576	$263	173 (17%)	$393	$54

Costs to Medicaid: 5 Year Trends in Average Costs: Community Mental Health Services Waiver Participants							
Group	Emergency Room				Inpatient Hospital		
	Number of Program Participants	Number (Percent) with Any ER Visit	Average Annual ER Cost to Medicaid per Person with a Medicaid Paid ER Claim	Average Medicaid Paid ER Costs per Program Participant	Number (Percent) with Any Inpatient Claim	Average Annual Inpatient Cost to Medicaid per Person with a Medicaid Paid Inpatient Claim	Average Medicaid paid Inpatient Costs per Program Participant
2017							
CMHS CDASS	138	55 (40%)	$346	$100	15 (11%)	$153	$10
CMHS Comparison	1,195	524 (44%)	$341	$149	213 (18%)	$424	$70



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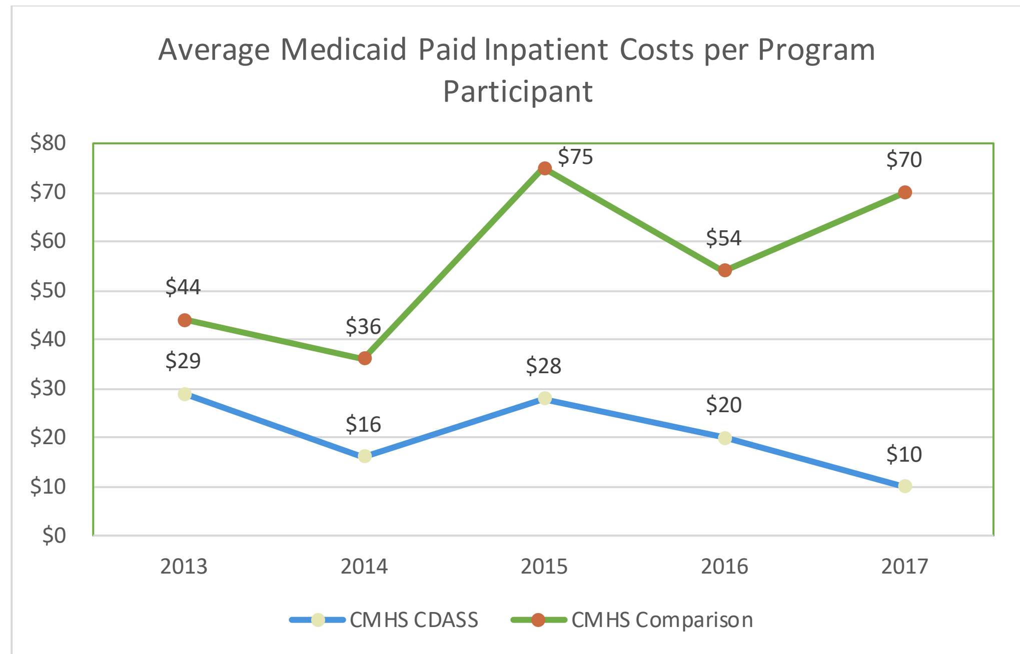

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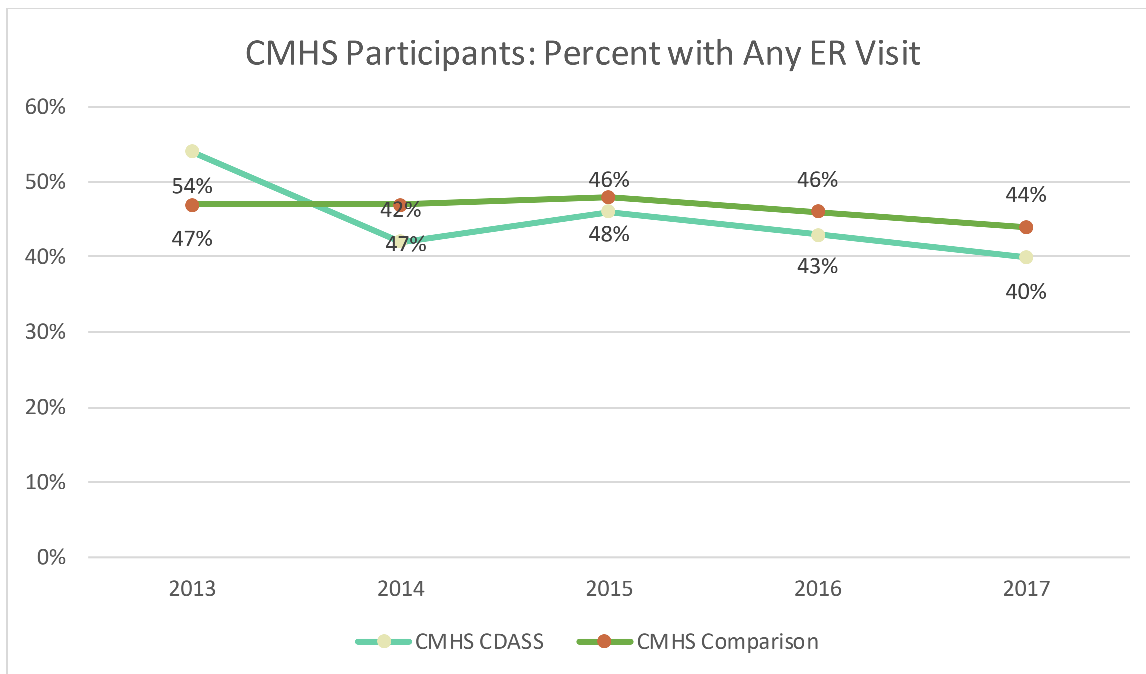

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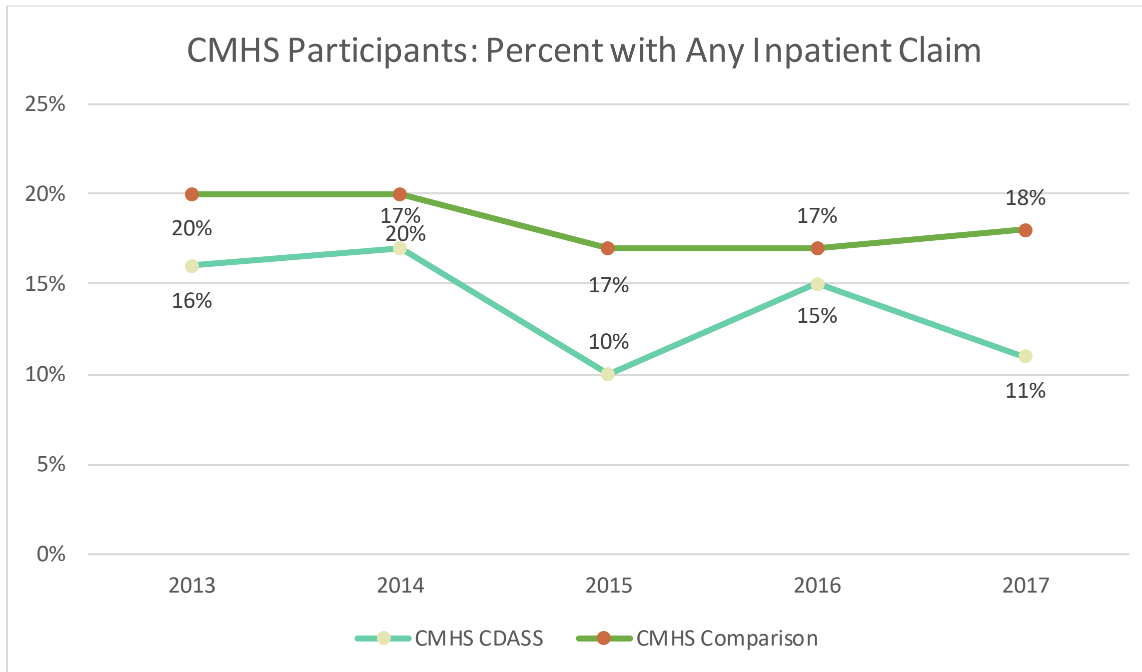


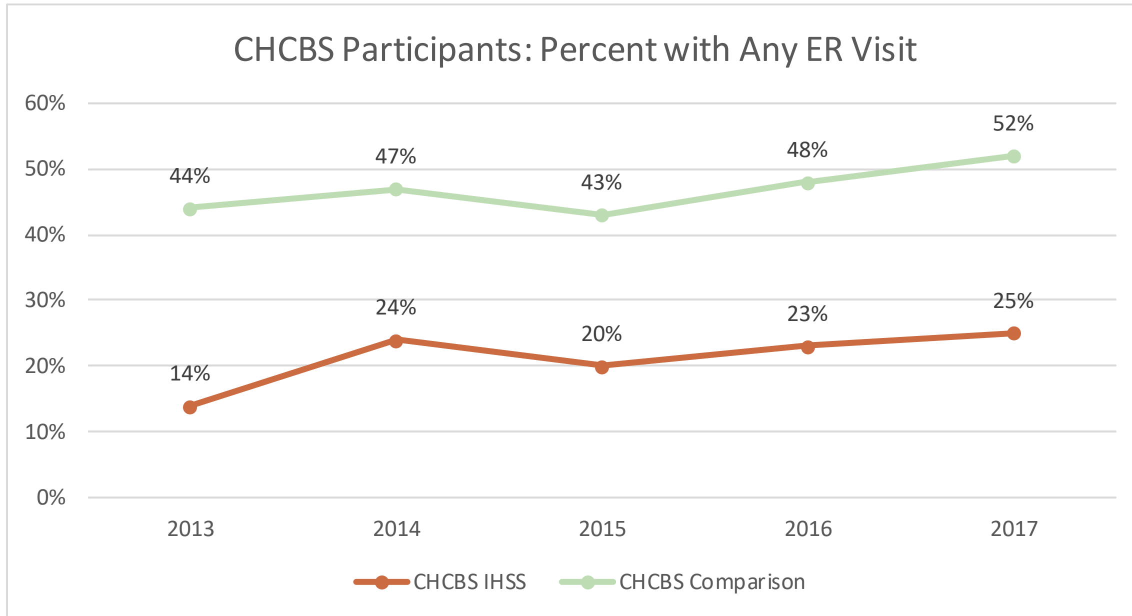
HCBS Comparison Group: Includes all individuals who:

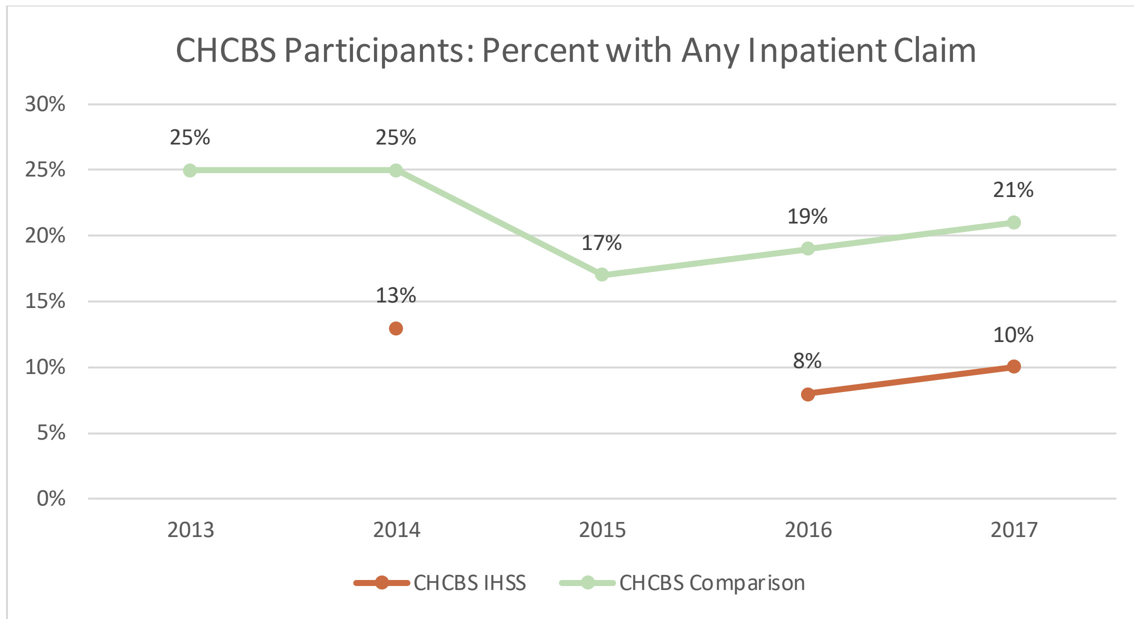
Were under the age of 18 at the start of service delivery participation;

Received home health maintenance services through traditional agency based services, including State Plan and long-term home health for at least 10 months of the year.

Costs to Medicaid: 5 Year Trends in Average: Children's Home and Community Based Services (CHCBS) Waiver							
Group	Emergency Room				Inpatient Hospital		
	Number of Program Participants	Number (Percent) with Any ER Visit	Average Annual ER Cost to Medicaid per Person with a Medicaid Paid ER Claim	Average Medicaid Paid ER Costs per Program Participant	Number (Percent) with Any Inpatient Claim	Average Annual Inpatient Cost to Medicaid per Person with a Medicaid Paid Inpatient Claim	Average Medicaid paid Inpatient Costs per Program Participant
2013							
CHCBS IHSS	87	12 (14%)	$242	$25	--[7]	--	--
CHCBS Comparison	356	157 (44%)	$238	$95	90 (25%)	$215	$21
2014							
CHCBS IHSS	123	30 (24%)	$231	$37	16 (13%)	$369	$33
CHCBS Comparison	209	98 (47%)	$325	$131	53 (25%)	$162	$41
2015							
CHCBS IHSS	179	36 (20%)	$267	$31	--	--	--
CHCBS Comparison	356	154 (43%)	$683	$188	60 (17%)	$462	$78
2016							
CHCBS IHSS	212	49 (23%)	$287	$100	16 (8%)	1,064	$45
CHCBS Comparison	436	208 (48%)	$516	$158	83 (19%)	$271	$41
2017							
CHCBS IHSS	311	78 (25%)	$398	$65	32 (10%)	$618	$50
CHCBS Comparison	447	234 (52%)	$425	$172	92 (21%)	$512	$490

[7] Not reported due to small sample size (fewer than 10 participants).


CHCBS Participants: Percent with Any ER Visit
60%
50%
40%
30%
20%
10%
0%
2013
2014
2015
2016
2017
44%
47%
43%
48%
52%
14%
24%
20%
23%
25%
CHCBS IHSS
CHCBS Comparison



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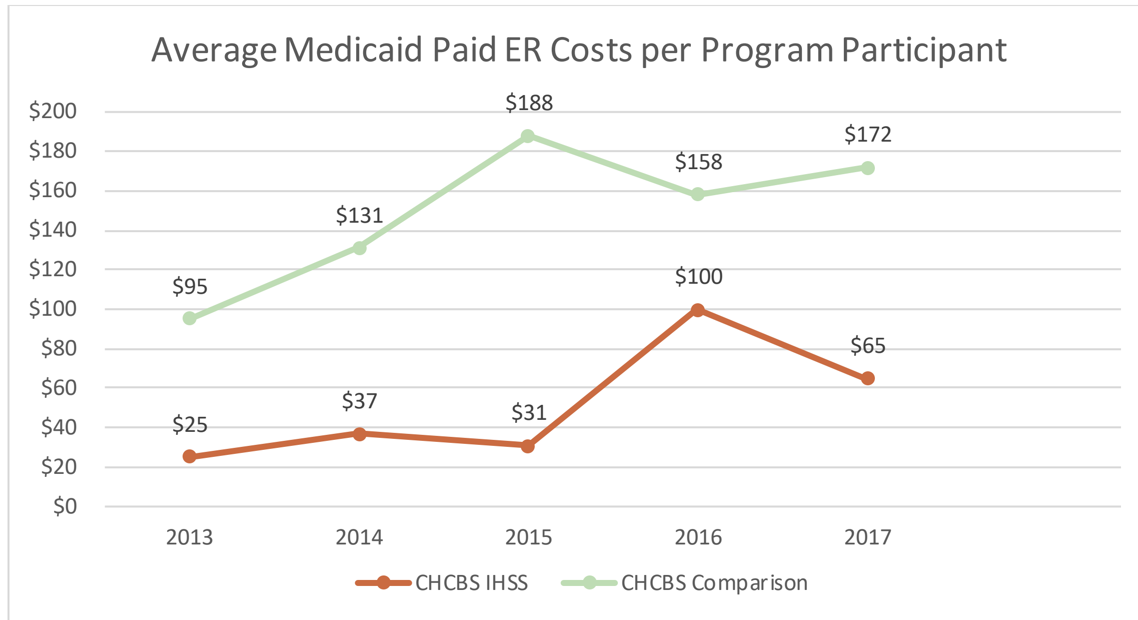

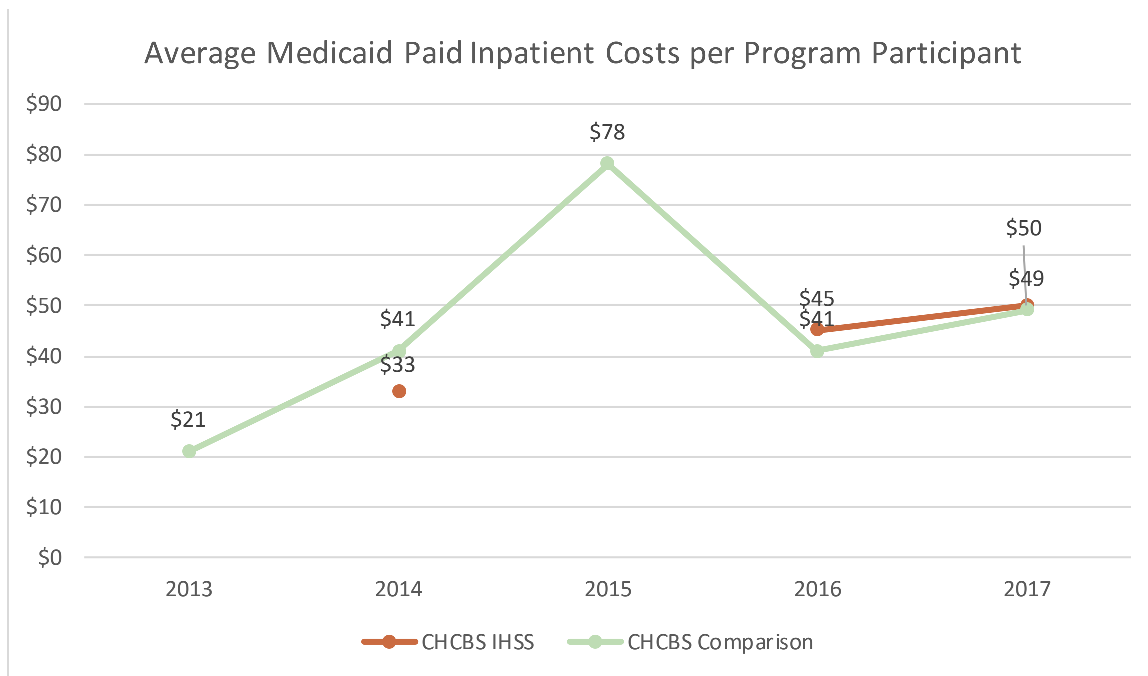

We additionally analyzed claims for a group of participants who switched from agency based services to either the CDASS or IHSS service delivery option.

The analysis has three parts:

1. Agency based care costs for waiver services and Department identified state plan benefits six months before and after client change to CDASS or IHSS:
    a. Health Maintenance (IHSS only)
    b. Homemaker Services
    c. Personal Care (including Relative Personal Care)
    d. LTHH (Home Health and Skilled Nursing)
2. Hospitalization and institutional based care costs six months before and after client change to CDASS or IHSS.
    a. Emergency Room costs
    b. Hospital Inpatient costs
    c. Nursing Facility costs
3. Analysis regarding these costs and trends of expenditures (listed in #1 and #2 above).
4. Analysis regarding cost trends for these expenditures for clients who do not utilize CDASS or IHSS.

The average cost per day per client is presented for clients in the 6 months prior to participation in either CDASS or IHSS. Client "enrollment" in either CDASS or IHSS service delivery is defined as the first date the individual received services during the five year time frame for which data was made available for this report.

As shown in the table below, there were some changes in costs for both CDASS and IHSS participants. However, when interpreting these changes it is important to note that some service types were not available to an individual, depending on service delivery enrollment during either the pre-post time period.

Medicaid Paid Costs for" Home" Services - Change Pre and Post CDASS Enrollment, by Waiver Type

	Average Medicaid Paid Cost per Client per Day			
Pre-Post CDASS or IHSS Participation	**6 Months Pre CDASS or IHSS Enrollment**		**6 Months Post CDASS or IHSS Enrollment**	
Group	**Number (Percent) Receiving Services**	**Average Cost Per Day 6 months Pre CDASS or IHSS**	**Number (Percent) Receiving Services**	**Average Cost Per Day 6 months Post CDASS or IHSS Enrollment**
Consumer Direct Attendant Support Services (CDASS) (n=363)				
All (Home) Services[8] (n=363)	363 (100%)	$36	363 (100%)	$86
Long Term Home Health (n=111)	111 (31%)	$83	NA[9]	NA
In Home Support Services (IHSS) (n=871)				
Health Maintenance	NA[10]	NA	744 (85%)	$96
Homemaker	296 (34%)	$64	250 (29%)	$52
Personal Care	769 (88%)	$50	485 (56%)	$45
Relative Personal Care	664 (48%)	$31	420 (48%)	$49
Long Term Home Health (n=268; n=78)[11]	268 (76%)	$73	78 (9%)	$80

For CDASS clients, costs before program enrollment involved the cost of both "home" services (homemaker and personal care services) at $36 per client per day and for some CDASS clients an addition Long Term Home Health cost of $83 per day. Once individuals enroll in CDASS, they are no longer eligible for Long Term Home Health services and instead receive health maintenance services that are aggregated with homemaker and personal care services for an average cost per day per client of $83.

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[8] Claims for CDASS participants are not broken out by specific service types, since participants are given a single allocation to manage at their discretion. "Home" services include homemaker, health maintenance, and personal care.

[9] LTHH services are not available in the CDASS service delivery option. These are provided as "health maintenance" services for CDASS clients

[10] Health maintenance services are not available to non IHSS or CDASS participants.

[11] There were 268 IHSS participants who had LTHH services in the 6 months before switching to IHSS from agency based services. There were 78 with LTHH services in the 6 month period after switching.

So for CDASS clients not receiving LTHH services, costs did go up because post-CDASS cost include health maintenance services not accounted for in the pre-analysis. Although, it is possible that these CDASS clients received other home medical services not accounted for here. For about one-third of CDASS clients who previously participated in LTHH services, costs declined significantly.

For IHSS clients, there were declines in costs for personal care and homemaker services, but increases for relative personal care and for health maintenances. It is worth noting again, however, that the increase is cost is due to a higher average cost for health maintenance services over the long term home health services (LTHH) received prior to enrolling in the IHSS service delivery option. However, as illustrated in the table on the following page, when comparing these costs specifically to skilled nursing costs (skilled nursing is one type of service offered under LTHH), these are comparable to IHSS costs.

Comparison Group Cost Trends Agency Based Services

	Average Cost Per Client per Day			
	2014	2015	2016	2017
Agency Based Services				
Homemaker	$25	$34	$33	$29
Personal Care	$45	$58	$53	$57
Relative Personal Care	$23	$24	$25	$25
Home Health (LTHH)	$69	$61	$69	$74
Skilled Nursing (LTHH)	$95	$105	$105	$105

As was the case with previous ER and inpatient analysis these costs are reported as the number of service delivery option participants receiving any service. We also report the average cost per individual per person with a Medicaid paid claim.

ER, inpatient, and Facility Costs by Program Type

Pre-Post Cost Changes	Average Medicaid Paid Cost per Client per Day			
	Pre CDASS or IHSS		Post CDASS or IHSS	
Group	N (Percent) with Any Claim in 6 Months Pre Program	Average Annual Cost to Medicaid per Person with a Medicaid Paid Claim	N (Percent) with Any Claim in 6 Months Post Program	Average Annual Cost to Medicaid per Person with a Medicaid Paid Claim
Consumer Direct Attendant Support Services (CDASS) (n=363)				
Emergency Room	128 (35%)	$426	133 (36%)	$338
Inpatient Hospital	71 (20%)	$449	64 (18%)	$330
Nursing Facility	18 (5%)	$249	16 (4%)	$232
In Home Support Services (IHSS) (n=871)				
Emergency Room	375 (43%)	$250	296 (34%)	$434
Inpatient Hospital	200 (23%)	$86	179 (21%)	$83
Nursing Facility	34 (4%)	$259	29 (3%)	$223

As illustrated in the table above, the percentage of CDASS participants with an emergency room visit, stayed stable, increasing by only one percent between the pre and post time periods. However, average costs per visit did decrease significantly. Inpatient hospital claims and nursing

facility claims were also down slightly in the 6 months following enrollment, compared to the 6 months prior.

For IHSS participants, there was a sharp decline in the percent with an ER visit after program enrollment, but the average cost per claim increased over the same period. Like CDASS, IHSS participants saw slight decreases in the percent with an inpatient hospital or nursing facility claim after program enrollment.

Comparison Group Cost Trends: ER and Inpatient Facilities[12]

	Average Cost Per Client per Day			
	2014	2015	2016	2017
Facility Services (Average Medicaid Paid Annual Cost Per Person with Paid Claim)				
Emergency Room	$285	$537	$523	$406
Inpatient Hospital	$294	$345	$344	$600

Trends for the same time period show costs for comparison group clients that are both increasing, and higher overall in later years than for CDASS and IHSS clients. This report provides findings from the Cost Change Analysis component of the larger Consumer Directed Care (CDC) evaluation that we (TriWest Group) are conducting for the Colorado Department of Health Care Policy and Financing (Department).

Consumer/Participant Satisfaction

The following section summarizes findings from surveys with eight (8) groups of service delivery participants: four (4) who had been receiving services from Consumer Directed Support Services (CDASS) and four (4) who had been receiving services from In-Home Support Services (IHSS). Groups were divided according to participation with specific Medicaid waivers (e.g., the Elderly, Blind, Disability Waiver) in CDASS and IHSS. In addition, surveys were sent to randomly selected individuals in four "comparison" groups that were created based on their service utilization profiles within traditional in-home, agency-based care.

[12] There are too few nursing facility claims in the CDASS and IHSS groups to reliably compare to trends in the comparison groups.

Response rates were good, ranging from 21% to 43%, depending on the specific sub-group surveyed. To summarize consumer satisfaction with services, survey questions were grouped into five areas:

- Satisfaction with the Care Plan (Services Authorized)
- Satisfaction with Attendant Quality
- Independence and Ability to Make Choices
- Health and Quality of Life
- Overall Satisfaction with Services

Satisfaction was rated on a scale from 1 to 4, with '1' meaning "Very Unsatisfied" (or similar) and '4' meaning "Very Satisfied" (or similar). We calculated average scores for each of the five areas listed above. As shown in the table below, satisfaction scores were higher for CDASS and IHSS participants than for those receiving traditional agency-based care.

Average Satisfaction Scores by Service Delivery

Average Satisfaction Scores by Service Delivery			
Dimension	**CDASS**	**IHSS**	**Comparison**
Care Plan*	2.94	2.83	2.68
Attendant Quality*	2.73	2.73	2.57
Independence and Choices	2.07	2.06	2.03
Health and Quality of Life	2.90	2.83	2.83
Overall Satisfaction with Services*	3.84	3.76	3.61
**Difference between groups was statistically significant (p<.05).*[13]			

As can be seen in the table above, average scores for the Care Plan and Health and Quality of Life dimensions were high (close to a score of '3,' which translates to "satisfied" on our four-point scale). While CDASS and IHSS participants tended to rate their satisfaction with care planning higher than comparison participants, their ratings of health and quality of life survey items were not significantly different from the comparison group.

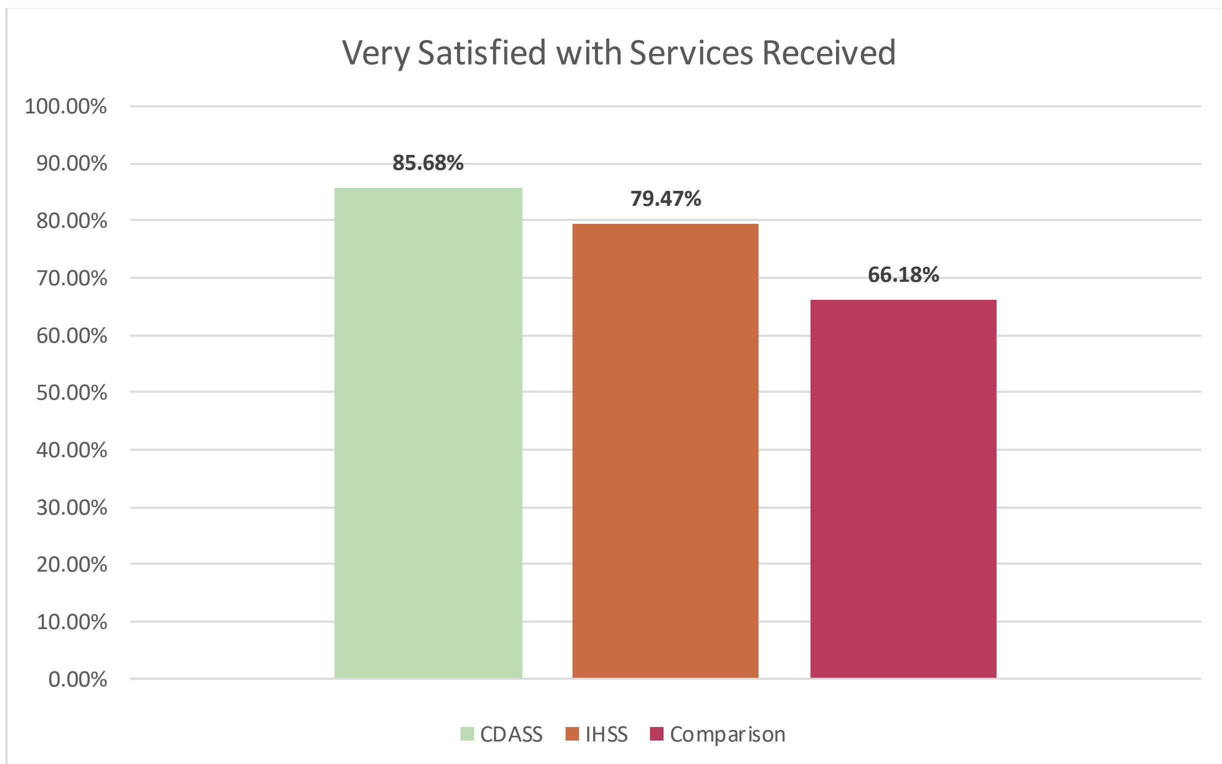
On items related to mental health and happiness, participants in long-term home health consistently had lower ratings than CDASS and IHSS participants. While these differences were not statistically significant, they are consistent with findings in the literature, specifically that

[13] For Independence and Choices, and for Health and Quality of Life, differences were not statistically significant, meaning the differences were so small compared to the number of people surveyed that they are likely due to chance or sampling error.

greater senses of freedom and efficacy are correlated with better emotional health and feelings of well-being. Overall survey response rates were higher for CDASS and IHSS participants (although also not statistically significant). This may suggest that participants in the consumer directed programs were more engaged, which may also be correlated with greater senses of efficacy and independence. This is not surprising since these populations are required to be able to direct their own services or appoint an authorized representative. CDASS also requires participants be in "stable" health, while IHSS allows for “unstable” health if participants are able to direct their care or appoint an Authorized Representative (AR). The State Plan (see Table 1: Survey Sampling Approaches) comparison groups do not have those requirements.

In addition, ratings of satisfaction with choice of attendants were higher among CDASS and IHSS participants than among the comparison group participants. This difference was statistically significant.

Finally, overall satisfaction was very high for all groups, but was highest for CDASS participants, followed by IHSS participants, then comparison group participants.



CDASS and IHSS participants also had higher average scores on several important individual survey items. These are summarized in the below. All of the differences shown in this table were statistically significant. The table lists the specific areas where CDASS and IHSS

participants had statistically significant higher satisfaction scores than comparison group participants.

Significantly Different Mean Satisfaction Scores

Significantly Different Mean Satisfaction Scores (1 indicates lower satisfaction; 4 indicates highest possible score)			
Measure	**CDASS**	**IHSS**	**Comparison**
Ease of Finding Satisfactory Attendants	3.32	3.32	2.91
Able to Hire Attendant of Choice	1.97	1.91	1.73
Services Meet Needs and Goals	3.72	3.68	3.54
Better Able to Choose Activities Due to Services Received	3.78	3.62	3.51
Services Result in a Good Life	3.68	3.58	3.47
Final Say in Care Plan	1.94	1.92	1.87
Ability to Choose/Change Services	1.93	1.84	1.79
Treated with Respect by Attendants	3.98	3.98	3.87
Attendants are Respectful of Family's Culture	3.80	3.77	3.50
Attendant Reliability	2.00	1.96	1.85
Mobility—Non-medical	1.95	1.91	1.85
Choices in Everyday Routines	1.95	1.90	1.85
Freedom in Daily Activities	1.93	1.84	1.81
Freedom in Decisions	1.95	1.92	1.89

We found no relationship between satisfaction and self-reports of hospitalizations in the survey data, meaning that those who were more satisfied with services were neither more nor less likely to report a hospitalization in the past year.

Qualitative Analysis of Key Informant Interviews and Survey Responses

Both key informant interviews and open-ended survey questions asked CDASS and IHSS participants about what is working well and what isn't, if they are satisfied with their care and if there was anything else they would like to share. We have summarized the major themes and some suggestions for improvements, grouped by the consumer's participation in either CDASS or IHSS.

First, we feature some highlights from our qualitative analysis.

Overall, participant satisfaction in the both CDASS and IHSS service was uniformly high.

Choice between two Consumer Based Care services is important to both advocates and participants. More than one interviewee and survey respondent stated Colorado was lucky to have this kind of variety and choice. Colorado's consumer-directed care service delivery options are viewed with high regard in many long-term care circles locally and nationally. Multiple respondents stated they relocated to Colorado for access to these services.

Consumer-directed care allows participants to live a rich and full life of their choosing (when to go to bed, where to shop, the ability to work in the community, etc.). Respondents who had transitioned from traditional agency-based care to CDASS felt the transition was a positive one and that the services they receive now are of greater quality and meet their needs in a way traditional agency-based services did not.

While interviewees generally praised the program administration, several participants noted that case managers sometimes provide inconsistent or inaccurate advice. These respondents stated case managers could benefit from additional training and support in understanding the finer points of these services.

Advocates expressed concern about a lack of inter-agency agreement on rule interpretations and program expectations. Several state entities (i.e., HCPF, HHS, SEPs, and CDPHE) are involved in care and outreach, but they lack common definitions for services, supervision, and regulations. Respondents acknowledged that HCPF is attempting to standardize these items; however, these efforts have not yet yielded a shared understanding or common definition of services.

CDASS Responses

- The majority of CDASS survey participants, 40 out of 58 (69%), and key informant interviews had positive comments about their services. The themes found in these responses were pleasure with the service, the beneficial impact of the service on their life and the lives of their family, the freedom experienced by the flexibility and multiple

options available both in the home and in the community, more reliable and consistent scheduling of personal care attendants, and a feeling of increased quality of life. Several state that they experience more control and ownership of their care and needs. Several stated that being an employer of their own personal care attendant enhances their person-centered care in a way they did not experience in the past.

- CDASS participants with higher needs—such as requiring 24-hour or intensive care—believe the only alternative for them would be facility-based care as agencies will not staff their level of need within the community because of both cost and risks. Participants were concerned that ceding control and losing access to their communities would have a negative impact on their quality of life. Three survey respondents and four informants said that without CDASS, they would be in nursing homes.

Suggestions for CDASS improvements:

Concerns and suggestions included the following:

- **Eliminate administrative barriers.** There were several examples of consumers needing to interface with either the department or an intermediary agency in order to improve or expand services, but running into barriers. Two respondents felt their requests for a re-evaluation of their Supported Living Services (SLS) Waiver was ignored, due to hour wages and new requirements; several felt they needed a greater allocation of services; and navigating Public Partnership's (the financial management system) automated telephone response system is difficult.
- **Allow for more consumer/advocate oversight of allocations.** Participants do not favor the "use it or lose it" nature of allocations. There are gaps in services that could be covered by carryover allocations such as day programs, which may operate only during traditional business hours, making employment difficult for caregivers. Non-Medicaid covered items, such a specific equipment or supplies from vendors Medicaid does not use. One suggestion was to allow participants to use a percentage of "allocation savings" on these items (e.g., tires for accessible vans, house modifications, grab bars, walk-in tubs, private vehicle repairs). Also, allowing for flexibility across months is very good and recognizes that participants can have seasons or episodic changes in their level of need. The focus should be on the annual allocation rather than the month-to-month variance.

IHSS Responses

- The majority of IHSS survey respondents, 25 out of the 46 responses (54%), and key informants had positive comments about their services. The themes found in these responses included the level of excellence in services, gratitude for the caring providers, and the perceived beneficial impacts on their quality of life. One IHSS agency provider states, *the majority of our clients (80%) are on IHSS. Many are supported by family members and friends. Now IHSS can pay these caregivers, and we do unless they ask us to find other staff.* [The IHSS participant] *presents to us the people they want to provide*

support and we hire them because our clients know who they want. One respondent said that without IHSS, her mother would not be able to remain in her home.
- Recent work to redefine the rules of IHSS service, currently in its first reading in front of the medical board, is expected to help remove several system and policy barriers experienced by IHSS participants and their families. The process for participant input to the revised rules is seen as a success and the kind of inclusive process that is appreciated by participants, advocates, and families. Continued collaborative processes like this would be welcomed.

Suggestions for IHSS improvements:

Concerns and suggestions included the following:

- **Resources for respite care.** Family members make up a large portion of care providers and many of them are full time. Several advocates noted the need for respite care.
- **Review criteria and definition of what is considered medical intervention.** IHSS agencies could be allowed to waive the nursing scope requirements because there are several services an agency could provide at a lower level of care. Consideration could also be given to include preventive care in this definition. Services provided by home health nurses are helping participants remain in their home and out of high-cost skilled nursing facilities, yet the agencies feel they are not fully compensated for these services under the current definition. As IHSS continues to expand to meet demands of new enrollees, the Department could consider providing this service to other waiver programs (e.g., brain injury waiver or children's extensive support wavier).
- **Consider more fluid and flexible time tracking.** IHSS time tracking is task-focused and reported in 15-minute increments. This can be difficult to manage as not all tasks fit within the 15-minute time slot. For example, a participant might be scheduled for a health maintenance activity requiring food prep—typically allocated as a skilled task—but in practice this is done in conjunction with the health maintenance task; the 15-minute increment, however, only allows for one task designation. Other examples are doing laundry while also prepping food or bathing. Still another family care provider related her frustration with the rigid time keeping: her husband had 15 minutes taken off his allocation for "washing dishes" because he uses a feeding tube.

Suggestions for improvement across CDASS and IHSS services:

Respondents had concerns about the communication and customer service provided by interfacing agencies and entities involved in their service and care.

- There was considerable feedback about the services provided by case managers (CM). The feedback was mixed, and a general perception was that CMs are overworked, overwhelmed, and undertrained. Recommendations include:
    - A joint training with FMS, home-based agencies, SEPs, and CDASS employers in the same room so there is consistency in expectations, definitions, rules, regulations.

  - Assign CMs based upon participants' geographic locations. One example that was provided involved a participant who lives in Durango, but their CM is in Colorado Springs. The CM has never visited the participant AND is not familiar with the participant's community or what local services are available.
  - Have the Department develop a pro/con crosswalk of all three services (traditional, IHSS, and CDASS) that also has a listing of "skills you will need" so that consumers can choose a service that best fits their skills, needs, and abilities.
  - CMs need to have more contact with the consumer. One participant suggested that when he received services from a Community Care Board (CCB), he met monthly with his case manager. He referred to this a "Cadillac Case Management" and felt that should be the standard for consumer-directed care.
  - More training for CMs is needed. Current training seems optional and does not require competencies or learning objectives. Thus, CMs do not understand the distinctions among the three CDC services.
  - Colorado should consider other models for CM training. For example, CMs in other states are required to have medical backgrounds to approve allocations for high-need, medically-complex cases such as C4/C5 paralysis.
  - Overages are approved over the phone, but this should be confirmed in writing as well. There have been times where a miscommunication occurred and there was no documentation for the Authorized Representative (AR), CM, and participant to refer to in order to resolve the issue.
  - Consider a two-pronged approach for CMs in order to best serve clients: 1) educate CMs about the minutiae of the three available CDC services, then 2) facilitate an appropriate referral based upon needs, skill level, and desire for responsibility.
- There is concern about the responsiveness, timeliness, and knowledge of staff in the SEPs. There is a belief that it is difficult to get through on the phone, and paperwork gets lost whether mailed or dropped off to the drobox. Participants suggested that a "receipt request" be used when dropping off documents. Several participants told stories of relocating and subsequently being left homeless when benefits were erroneously cut because of lost paperwork and administrative errors, resulting in loss of income and disruption in prescription coverage during the appeal process. Participants expressed appreciation for the Department acting as a mediator when a local SEP determines a participant is ineligible or has lost services.

Assessment of Health Outcomes for CDASS and IHSS Clients

We assessed health outcomes using two methods: client surveys and Medicaid claims/encounter data, specifically ER and inpatient hospitalizations.

As shown in in the graphs on pages (15-26), for the three largest waiver programs (EBD, CMHS and CHCBS) the percentage of participants with an emergency room visit is lower for CDASS and IHSS participants than for participants in traditional agency-based care across all time periods. CDASS and IHSS participants also had much lower rates of inpatient hospital visits. Both of these measures are important indicators of better health status for individuals who are participating in CDASS or IHSS service delivery options.

In terms of self-reports of their own health outcomes, CDASS and IHSS participants reported elements of their own health significantly higher than comparison group participants. They reported that services meet their health and personal goals and that the services they receive lead to a better quality of life. They also reported higher levels of mobility and freedom in the daily activities that they can participate in. Again, at higher rates than those participating in traditional agency based services.

Other Participant Benefits

The clearest benefit to CDASS and IHSS participants, based on results of surveys and key information interviews, is participants' satisfaction with the services they receive and their ability to more fully participant in their own health care decisions. Many also discussed that traditional agency based services either cannot or will not meet specific needs and without CDASS or IHSS options, facility-based care would be the only option, leading to a significantly lower quality of life.

Participants in CDASS and IHSS rated their satisfaction with the services provided via their care plan, the quality of their attendants and overall satisfaction as higher than those using traditional agency based service options.