



Using Evidence on Acute Services to Support Recovery through Comprehensive Community Services

A goal of [Comprehensive Community Services \(CCS\)](#) is to reduce costly, acute services such as inpatient, crisis, and emergency services for its participants. An individual's timing of acute services in relation to their participation in CCS may paint a picture of their ongoing needs and the program's impact on their recovery. This document features the results of an analysis of statewide Medicaid data on crisis events and CCS participation as well as data from the public mental health system on psychiatric hospitalizations for a recent group of CCS participants. This information was presented by Department of Health Services staff at a recent conference attended by mental health and substance use services professionals. Relevant excerpts from the PowerPoint presentation are included with this data brief.

Key findings:

- CCS reduced the likelihood of experiencing acute services after enrollment by 28%.
- Forty-seven percent of individuals experienced acute services before CCS enrollment, 30% during, and 34% after leaving CCS.
- Participants' likelihood of experiencing acute services increased after leaving the program, but remained lower than before enrollment.
- CCS participants were more likely to experience acute services if they:
 - Were older youth (aged 15-18).
 - Identified as a non-white racial or ethnic group.
 - Had ever had an involuntary commitment.
 - Had ever been involved in the criminal justice system.
- There were a number of CCS participants who experienced multiple acute services events, while there were several others who experienced few or none.
- The 58% of CCS participants who experienced crisis events before or during CCS were less likely to experience another crisis event after CCS, but, for those who did experience another crisis event, CCS had almost no effect on the number of events experienced.
- Among the 28% of participants who experienced a hospitalization, CCS reduced the overall likelihood of experiencing a hospitalization.

Research Questions

- How does a Comprehensive Community Services (CCS) participant's acute service history prior to enrollment paint a picture of participant needs upon program enrollment?
- To what extent does CCS reduce participant use of acute services?

Method

- Link CCS participation period data to public hospitalization, crisis intervention, and crisis stabilization events data.
- Describe the presence and frequency of acute service events before, during, and after each person's enrollment in CCS.
- Describe how this varies across participants with different characteristics.

Key Definitions for Acute Services

- **Psychiatric hospitalizations** are overnight services in a psychiatric facility for the purpose of stabilizing symptoms so that an individual may live in a less restrictive or natural setting.
- **Initial crisis intervention services** are initial services for individuals to address a psychiatric emergency.

Key Definitions for Acute Services

Crisis stabilization are services provided in a psychiatric crisis residence or stabilization center to stabilize an individual's symptoms so that they do not need hospitalization. These services may assist in the transition to a less restrictive placement or living arrangement.

Data Sources

- Medicaid fee-for-service claims
- Program Participation System mental health and substance use modules
- Insight, the patient information system for the state mental health institutes

Time Periods

1. Two years prior to CCS entry
 - “Before”
 - Range: 1/2/2011 to 12/29/2013
2. Complete CCS participation
 - “During”
 - Range: 1/2/2013 to 12/31/2015
 - Mean: 0.76 years, median: 0.59 years
3. Two years following CCS exit
 - “After”
 - Range: 1/3/2015 to 12/31/2017

Complete CCS Participation

From 2013-2015, 1,325 people started and ended participation in CCS, with over half (51%) having multiple enrollments.

- 15% participated in CCS in the two years before
- 34% participated in CCS in the two years after

Characteristics of Complete CCS Participants

- Age 17 or younger: 39%
- Female: 47%
- Non-white race or ethnicity: 14%
- Ever under an involuntary commitment: 15%
- Criminal justice involvement: 24%

Crisis Events

From 2011-2017, crisis events occurred for 58% of CCS participants, with the average crisis occurrence being 6 ½ events and the median being 4 events.

Inpatient Hospitalizations

- From 2011-2017, inpatient hospitalizations occurred for 28% of participants.
- The average number of inpatient hospitalizations for this group was 2.6, the median was 2.

Crisis Events Before CCS Participation

- Many participants (41%) had a crisis event within the two years prior to CCS enrollment.
- Of those experiencing a crisis event before CCS:
 - The average number of crisis events was 4.3.
 - The median was 2.

Inpatient Hospitalization Before CCS Participation

- Some participants (17%) were hospitalized prior to CCS enrollment.
- Of those hospitalized before CCS:
 - Many (51%) were hospitalized more than once.
 - Most (62%) of the hospitalizations were emergency detentions.

Crisis Events During CCS Participation

- Some participants (26%) had a crisis event during CCS participation.
- Of those experiencing a crisis event during CCS:
 - The average number of crisis events was 2.8.
 - The median number of crisis events was 2.

Crisis Events After CCS Participation

- Some participants (32%) had a crisis event after CCS participation.
- Of those experiencing a crisis event after CCS:
 - The average number of crisis events was 4.2.
 - The median number of crisis events was 2.

Inpatient Hospitalization During CCS Participation

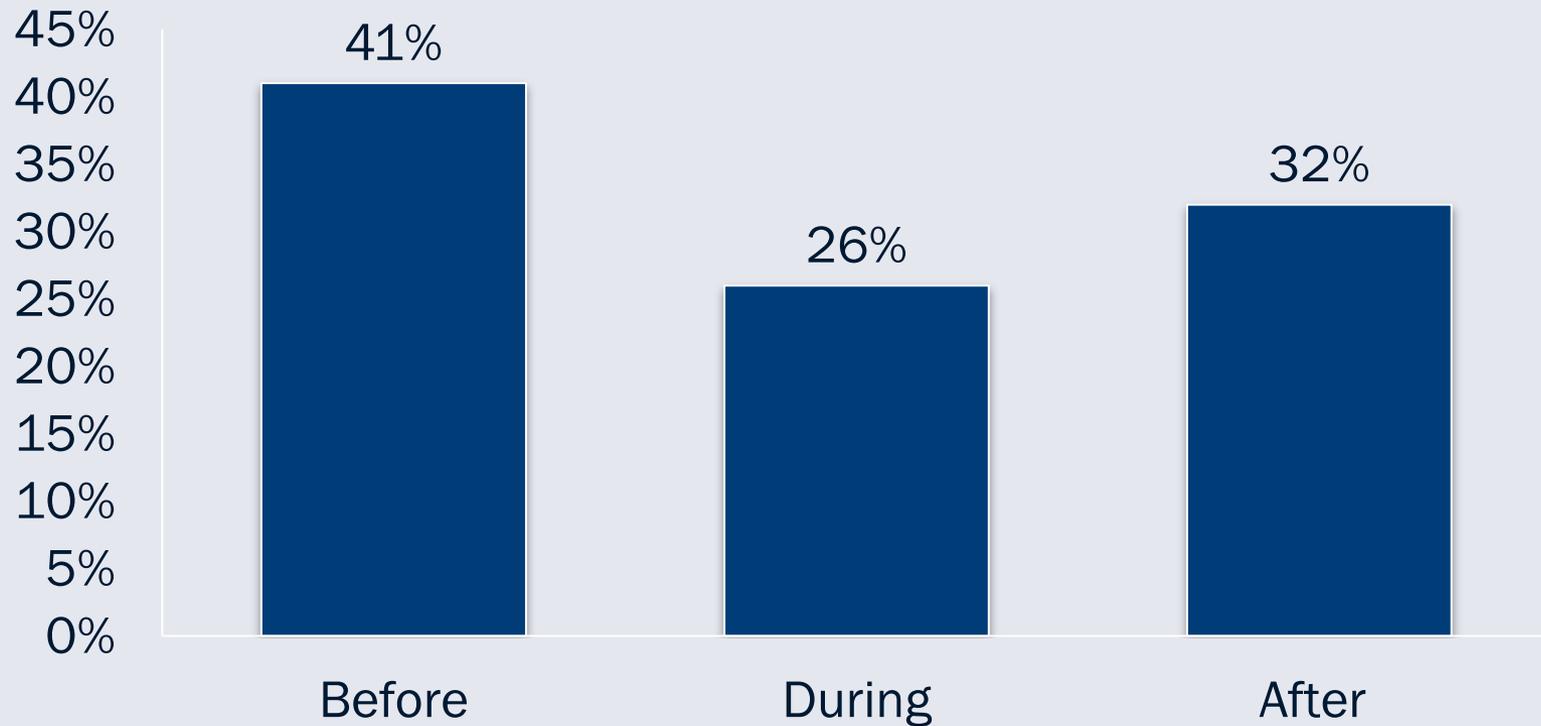
- Few participants (11%) were hospitalized while participating in CCS.
- Of those hospitalized during CCS:
 - Most (62%) were hospitalized just once.
 - Many (40%) were also hospitalized before their participation.
 - Most (58%) of the hospitalizations occurred within the first 90 days of participation.

Inpatient Hospitalization After CCS Participation

- Few participants (12%) were hospitalized after CCS.
- Of those hospitalized after CCS:
 - Many (47%) were hospitalized before participation, with fewer (32%) hospitalized during participation in CCS.
 - Some (25%) of the hospitalizations occurred within first 90 days after participation.

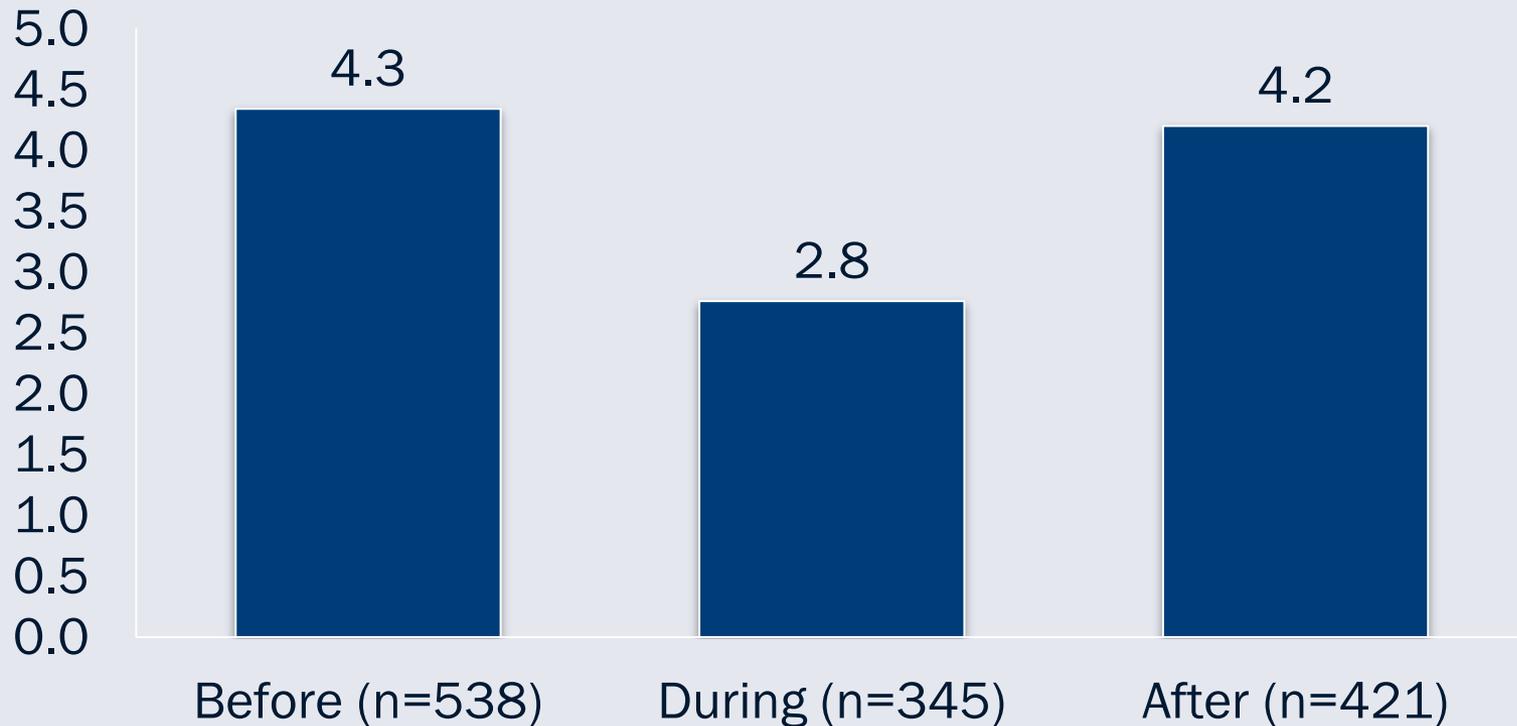
Changes in Crisis Experiences

Percent Receiving Crisis Services at all in Relation to
CCS Participation (n=1325)



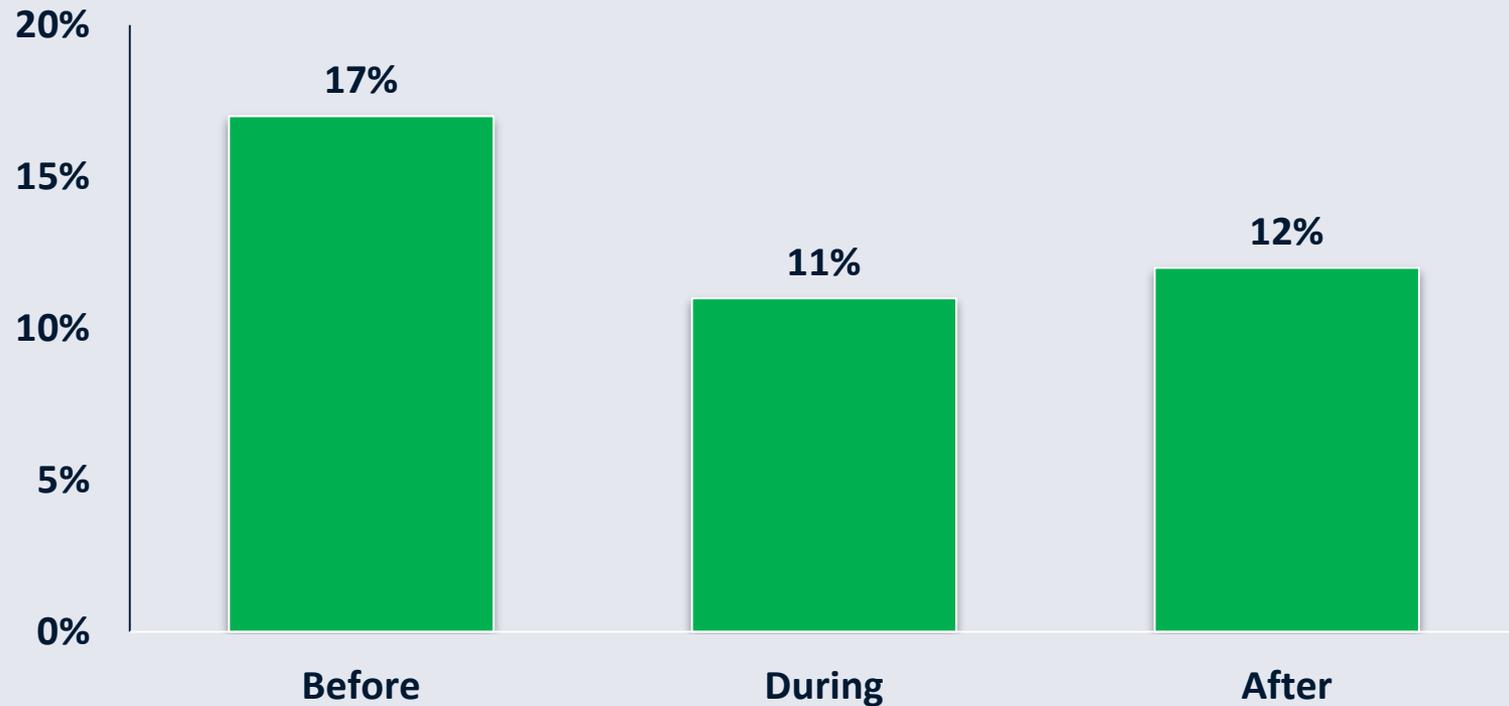
Changes in Count of Crisis Events

Average Count of Crisis Events among All Participants Experiencing Crisis Events by CCS Enrollment Period



Changes in Psychiatric Hospitalizations

Percent Experiencing Psychiatric Hospitalizations in Relation to CCS Participation (n=1325)



Characteristics of Crisis Events - Race and Ethnicity Status

Occurred during study (2011-2017)?

- Non-white participants: 76% ($p < .01$)
- White participants: 56% ($p < .01$)

Of those experiencing, number of crisis events?

- Non-white: Average, 7.9; median, 5
- White: Average, 6.1; median, 3

Percent Receiving Crisis Services at All in Relation to CCS Participation, by Race and Ethnicity Status

(n=1190)	Non-White	White
Before	58%	38%
During	36%	25%
After	44%	31%

All differences across white and non-white are significant at the $p \leq .01$ level

Average Count of Crisis Events Among All Participants Experiencing Crisis Events by CCS Enrollment Period, by Race and Ethnicity Status

	Non-White	White
Before (n=487)	5	4.2
During (n=314)	2.5	2.8
After (n=386)	5.2	3.8

Changes in Inpatient Hospitalizations by Race

(n=1190)	Non-White	White
Before CCS	18%	18%
During CCS	13%	11%
After CCS*	20%	11%

Differences after CCS discharge are significant at the $p < .001$ level.

Characteristics of Crisis Events - Sex

Occurred during study (2011-2017)?

- Female: 63%
- Male: 56%

Average number of events among those experiencing one?

- Female: Average, 7.1; median, 4
- Male: Average, 5.8; median, 3

Percent Receiving Crisis Services at All in Relation to CCS Participation

(n=1205)	Female	Male
Before	43%	39%
During	29%	24%
After*	36%	30%

*Only differences across males and females after enrollment were significant ($p \leq .05$)

Average Count of Crisis Events Among All Participants Experiencing Crisis Events by CCS Enrollment Period, by Identified Sex

	Female	Male
Before (n=492)	4.9	3.8
During (n=318)	2.8	2.7
After (n=392)	4.3	3.8

Characteristics of Crisis Events - Involuntary Commitment Ever

- Occurred during study period?
 - Yes: 77%
 - No: 56%
- Average number crisis events among those experiencing one?
 - Yes: Average, 7.4; median, 5
 - No: Average, 6.2; median, 3

Percent Receiving Crisis Services at all in Relation to CCS Participation

Ever had an Involuntary Commitment?		
n=1205	No	Yes
Before	38%	54%
During	24%	38%
After*	29%	50%

*All differences across ever having a voluntary commitment and not are significant ($p \leq .001$)

Characteristics of Crisis Events - Criminal Justice Involvement

- Crisis event in study period?
 - Yes: 70%
 - No: 55%
- Average number of crisis events among those experiencing one?
 - Yes: Average, 6.3; median, 4
 - No: Average, 6.5; median, 3

Percent Receiving Crisis Services at All in Relation to CCS Participation

Criminal justice involvement (past six months)		
(n=1162)	No	Yes
Before**	37%	50%
During*	25%	31%
After**	30%	39%

All differences across involvement are significant (** $p \leq .001$; * $p \leq .05$)

Percent Receiving Inpatient in Relation to CCS Participation

Criminal justice involvement (past six months)		
(n=1162)	No	Yes
Before*	16%	23%
During*	10%	16%
After**	11%	18%

All differences across involvement are significant (** $p \leq .001$; * $p \leq .01$)

Crisis Events – Age Groups

	Age Group*				
Crisis Events	Younger Youth	Older Youth	Young Adult	Middle-Age Adult	Older Adult
Count	187	122	227	184	55
Percent	57%	66%	61%	58%	46%

*Differences across at least one age group is significant ($p \leq .05$)

Crisis Events – Age Groups – Before CCS

Crisis Events by Study Period	Age Group*				
	Younger Youth	Older Youth	Young Adult	Middle-Age Adult	Older Adult
Count	116	93	159	132	38
Percent	35%	50%	42%	42%	32%

*Only differences across age groups for those experiencing a crisis event before ($p \leq .001$).

Inpatient Hospitalization– Age Groups – Before CCS

	Age Group*				
	Younger Youth	Older Youth	Young Adult	Middle-Age Adult	Older Adult
Count	41	36	81	58	13
Percent	13%	20%	22%	18%	11%

*Only differences across at least one age group is significant ($p \leq .01$)

Who needs acute services?

- Youth (15-18) compared to adults.
- Non-white racial and ethnic groups.
- Participants who ever had an involuntary commitment.
- Participants involved in the criminal justice system

Who needs acute services?

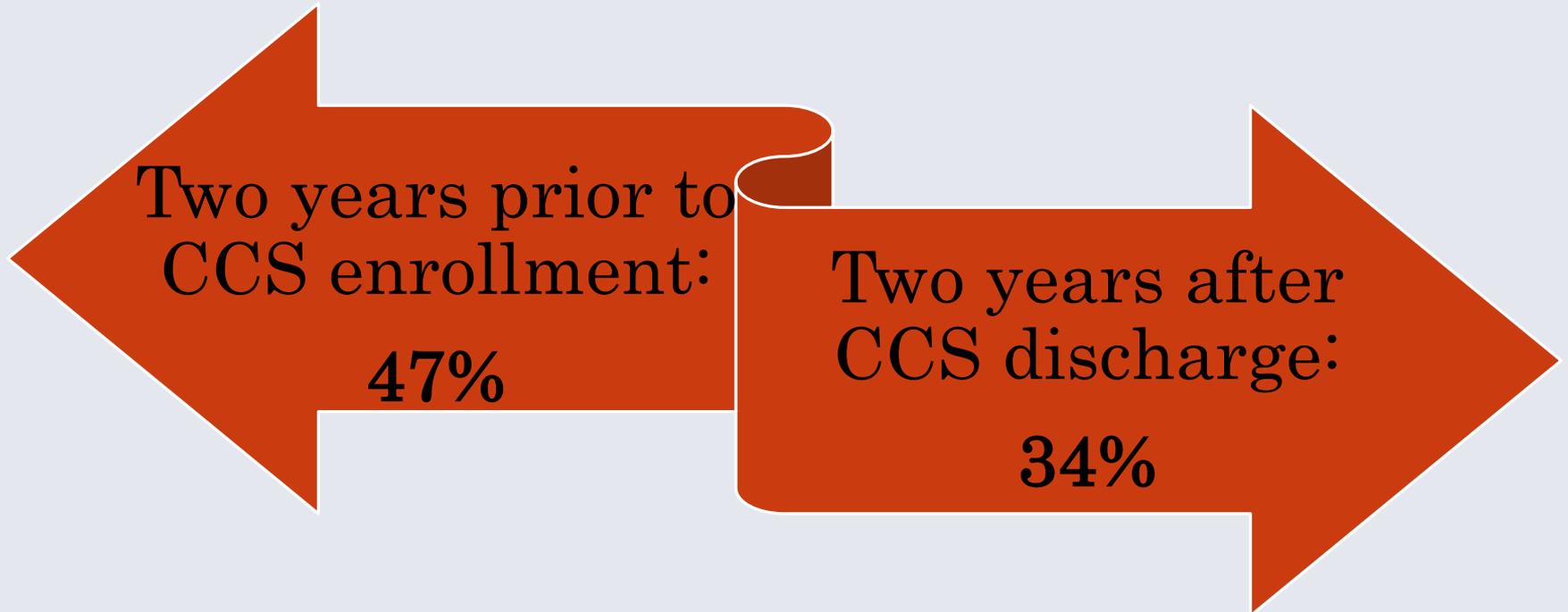
Issues and Questions

- “Need” has been measured by service utilization, which doesn’t account for those who do not access services.
- Does relatively high acute service utilization indicate a lack of alternatives?

Reducing the Need for Acute Services

- CCS reduced acute service needs for 28% of participants following participation.
- Participant likelihood of need for acute services increases after program exit, but is lower than before program entry.

Before and After Overall Acute Services Rates



30% received acute services while enrolled in CCS

Reducing the Need for Acute Services

- Non-white participants are more likely to have a crisis event and to benefit from CCS during participation than after.
- Reductions in hospitalizations for non-white participants are lost after discharge.
- Females are more likely to have a crisis event, but are more likely to benefit from CCS overall

Reducing the Need for Acute Services – Issues and Questions

- What's the expectation for acute service use during (30%) and after CCS (34%)?
- How can we use what we know about participants with reduced and ongoing acute service use to better support all CCS participants?
- How can we improve the lasting benefits of CCS for non-white racial and ethnic groups?

Appropriateness of CCS

- For participants receiving prior acute services, was CCS an appropriate placement for them?
- For participants with ongoing acute services after CCS, was CCS an appropriate placement for them?
- What needs would indicate CCS was not intensive enough for a consumer?

Interaction of Acute Services with Fluctuations in CCS Participation

- Is CCS participation “interrupted” by acute events?
- Are those with multiple participation periods in CCS more or less likely to receive acute services?