

# Emergency Room Enhancement

**Status Report as of March 31, 2015**

**EMERGENCY ROOM**

**ENHANCEMENT**

*Improving Access to Behavioral Health Care*



**UMSL | MIMH**  
Missouri Institute of Mental Health

## Highlights of ERE Status as of March 31, 2015

As of March 31, 2015, 1,913 citizens of Missouri have been engaged with Emergency Room Enhancement (ERE) services at the seven sites across the state. Demographic data were collected for these individuals, along with information on number of ER visits in the past 90 days, number of hospitalizations in the past 90 days, employment status, residential status, treatment program referrals and enrollment and law enforcement involvement (i.e., arrests in past 30 days). The Missouri Institute of Mental Health is evaluating the ERE program to assess the degree to which the initiative is achieving the goals of reducing emergency room and hospitalization usage by comparing ER and hospitalization utilization 3 months pre-intake to use 3 months post-intake. A total of 838 individuals completed a 3 month follow-up interview, allowing for the comparison of their status at baseline to that reported 3 months later. Highlights from the comparisons of the 838 individuals' self-reported status, as well as the 393 covered under Medicaid include:

- **ER Utilization:** At baseline, the average number of ER visits in the prior 90 days was **3.5 ER visits**. At 3 months post engagement with ERE services, those same individuals averaged **1.4 ER visits** in the previous 90 days. This is a **decrease of 60%**.
  - For the participants with Medicaid from that group, the average prior 90 day ER visits at baseline was **4 ER visits**, with an average of 1.6 ER visits in the prior 90 day at the 3-month follow-up. This is a **60% decrease**.
- **Hospitalizations:** At baseline, ERE participants averaged **1.6 hospitalizations** in the prior 90 days, and at the 3-month follow-up averaged **.6 hospitalizations** in the prior 90 days. This is a decrease of **63%**.
  - For the participants with Medicaid from that group, baseline prior 90 day hospitalizations averaged **2.4 hospitalizations**, with **.8 prior 90 day hospitalizations** at the 3-month follow-up. This is a **68% decrease**.
- **Homelessness:** **25%** (N=208) of the follow-up group reported being homeless at baseline, with **7%** (N=55) reporting homelessness at the 3-month follow-up (**72% decrease**)
- **Unemployment:** **21%** (N=175) reported being unemployed at baseline, with **15%** of that group (N=127) reporting being unemployed at the follow-up (**29% decrease**).
- **Prior 30 day arrests:** At baseline, **8%** of follow-up participants (N=70, total arrests=94) reported having an arrest in the prior 30 days, with **3%** (N=26, totals arrests=32) reporting an arrest in the previous 30 days at follow-up. This is a **decrease of 66%** in the number of prior 30 day arrests.
- **Treatment programs:** At baseline, **25%** of 828 individuals from the follow-up group were enrolled in treatment programs. At the 3-month follow-up, **52%** were enrolled in a treatment program, including CPR, CPRC, substance treatment, and other state or local programs. This is an increase of **112%**.
- **Participant Satisfaction:** When asked how satisfied participants were with the treatment and services received, 98% of those responding rated they were Satisfied or Very Satisfied.

# The Emergency Room Enhancement Program

## *Status as of March 31, 2015*

The Emergency Room Enhancement Initiative was implemented in 7 sites across the state in September, 2013, and is one component of Governor Jay Nixon’s Strengthening Missouri’s Mental Health System initiative, designed to increase access to behavioral health care.

Missouri health care professionals have seen an increase in patients seeking help for behavioral health conditions. Many times these individuals are uninsured or underinsured and end up in hospital emergency rooms where they are stabilized and released without being referred for needed follow-up care. As a result, they often end up returning to the ER for additional treatment. To improve access to needed services and reduce recurring ER visits, each of the 7 sites have partnered with hospitals, community mental health centers, law enforcement, substance abuse providers, and other community services to coordinate care for the whole person by addressing behavioral, physical and basic needs. Outreach workers meet with these high utilizers to determine needs, and make an appointment for the individual with one of the participating community mental health centers for the needed follow-up care.

As of March 31, 2015, 1,913 Missourians have been engaged in services in the following Missouri locations:

Location	KC Metro, West	STL, Eastern	Columbia, North Central	Rolla, South Central	Springfield, Southwest	Poplar Bluff, Southeast	Kirksville/Hannibal, Northeast	Total:
Administrative Agent	KC AAs	Behavioral Health Network	Burrell	Pathways	Burrell	Family Counseling Center	Mark Twain Behavioral Health	
# Engaged as of 3/31/2015	316	395	169	133	420	170	310	1,913

The Missouri Institute of Mental Health (MIMH) is conducting the outcome evaluation of the ER Enhancement Project to assess the degree to which the project improves outcomes for those patients needing care for behavioral health conditions. The primary outcomes measured by MIMH include the following:

- ◆ Number of ER visits (past 90 days)
- ◆ Number of hospitalizations (past 90 days)
- ◆ Employment
- ◆ Residential status and stability of housing
- ◆ Treatment program referrals and enrollment
- ◆ Law enforcement involvement (i.e., arrests in past 30 days)

Case Managers at the CMHCs collect data from participants at ERE program entry and at 3-months post-intake. All data is self-reported and participants receive a \$10 incentive for completing the 3-month follow-up

questionnaire. MIMH also collects process data, including demographic data, presenting concerns, law enforcement involvement with the ER visit, program satisfaction, etc.

## Demographics of the ERE Participants

As of March 31, 2015, 1,913 individuals have been engaged, and 838 have completed a follow-up interview 90 days post their baseline intake into the program. The demographics of those engaged and those that completed a 3 month follow-up are displayed in Table 1.

**Table 1. Demographics of the ERE Participants at Baseline and Follow-up.**

	All Sites	
	BL	FUP Status at Baseline
	N=1,913	N=838
% Male	52%	50%
% Black	22%	20%
% White	75%	77%
% Other Race	3%	3%
% Homeless	24%	25%
Average Age:	37	38
% Medicaid	39%	45%
% Medicare	7%	7%
% Private Insurance	8%	7%
% Uninsured	53%	49%
<b>Presenting Concerns: Asked at baseline only</b>	<b>FUP Participants status at Baseline</b>	
Psych Disorder	75%	72%
Substance Use	29%	32%
Co-Occurring	26%	27%
Violent Behavior	9%	11%
Pain	14%	14%
Suicidal Ideation	21%	20%
Physical Health	18%	20%
Law Involved	13%	13%

The data in Table 1 indicates that the demographics of the follow-up group are very similar to those of the baseline group, showing that the 838 individuals in the follow-up group are a good representation of all participants.

## Age of Participants

Figure 1 shows the number of participants by age cohort, with the average age of 37 for all participants. Almost two thirds of participants are under the age of 45.

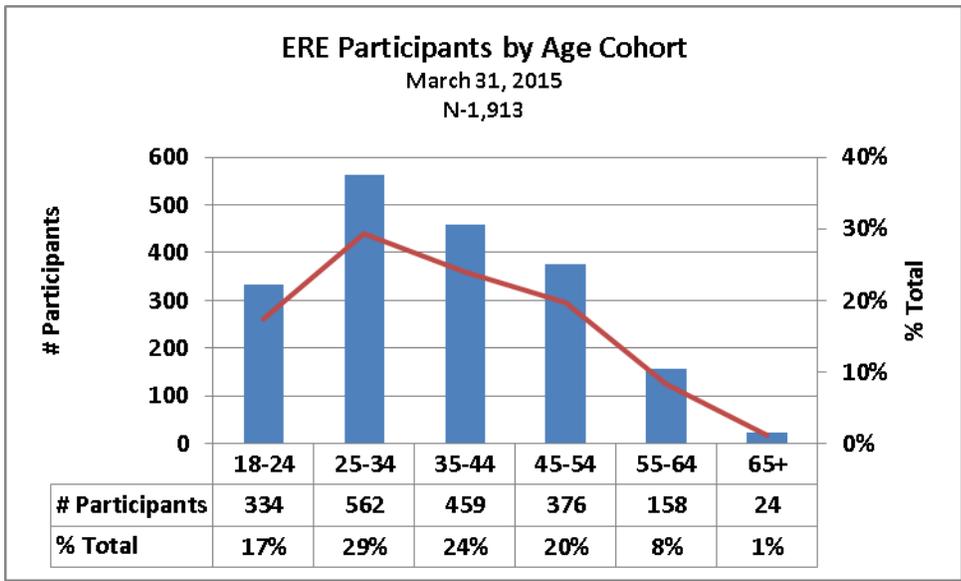


Figure 1. Age Cohort of 1,913 ERE Participants.

### Presenting Concerns

Seventy-five percent of participants have a psychiatric disorder, 29% have a substance use disorder, and 26% present with co-occurring psychiatric and substance use disorders. More than 20% present with suicidal ideation behaviors (see Figure 2).

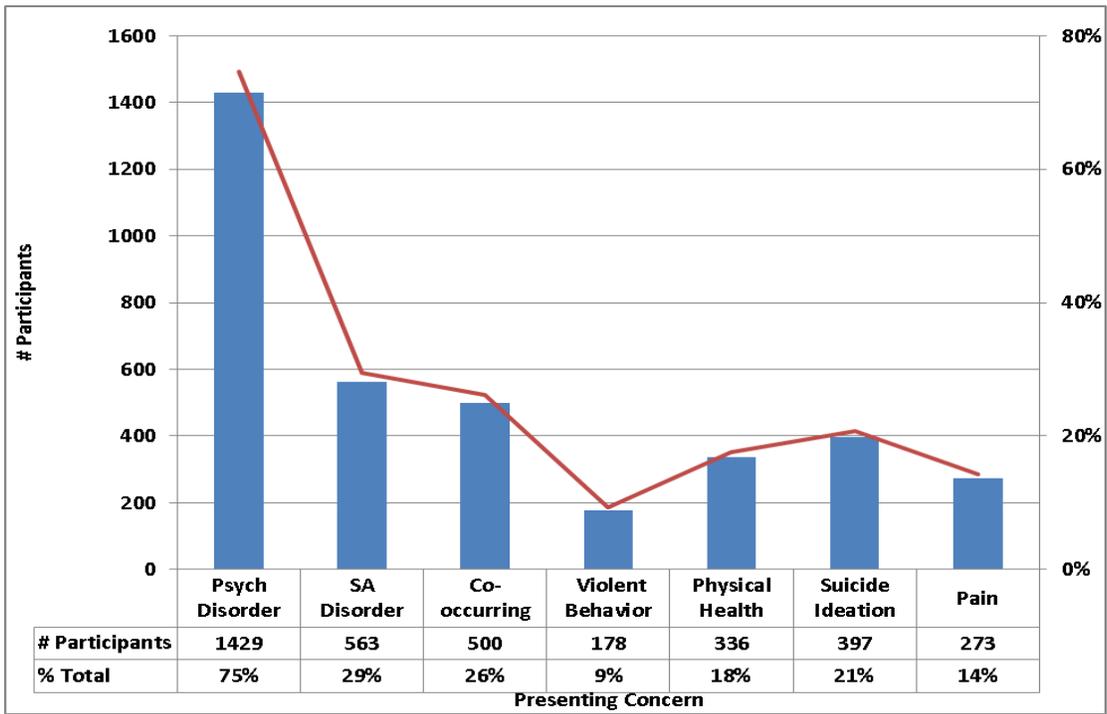


Figure 2. Presenting Concerns of 1,913 ERE Participants.

## Social Indicators of ERE Follow-Up Participants

Table 2 also details insurance status and social indicators for all 1,913 engaged in the ERE program, along with the 838 individuals that completed the 3-month follow-up. For those with a follow-up, their reported status at *baseline* and their status at the interview conducted *3-months post their baseline* is listed.

**Table 2. Demographics of the 838 ERE Participants at Baseline and Follow-up.**

Insurance Status:	All Participants N=1,913	Those Completing 90 Day Follow-Up:	
		Status at Baseline N=838	Status 90 Day Post-Baseline N=838
% Medicaid	39%	45%	47%
% Medicare	7%	7%	8%
% Private	8%	7%	7%
% Uninsured	53%	49%	35%
<b>Social Indicators:</b>			
% Homeless	24%	25%	7%
Unemployed	25%	21%	15%
Arrests Past 30 Days	9%	8%	3%

Changes in insurance and social indicators include:

- **25%** of the follow-up participants reported being homeless at baseline (N=208), with **7%** of that same group (N=55) reporting being homeless at follow-up. **This is a 72% decrease** in homelessness.
- **25%** of the follow-up participants reported being unemployed (N=165) at baseline, with **15%** reporting the same status at follow-up (N=127). This is a **decrease of 25%** for unemployment.
- At baseline, **8%** of follow-up participants (N=70, total arrests=94) reported having an arrest in the prior 30 days, with **3%** (N=26, totals arrests=32) reporting an arrest in the previous 30 days at follow-up. This is a **decrease of 66%** in the number of prior 30 day arrests.
- Medicaid status increased slightly from **45%** (N=379) to **47%** (N=393), a **4% increase**. Those that were uninsured decreased from **44%** (N=322) to **35%** (N=296), a **20% decrease**. The case managers at each site assist the ERE participants in applying for insurance coverage through MoHealthNet and SSI. These changes indicate their assistance is having a positive effect on insurance status.

## Changes in ER Usage

The DMH gave the sites latitude to design a program that best fits the needs of their community, and there are differing referral sources by site. For instance, some sites have had hospital closures that have left the people in their area seeking help in unusual ways, such as turning themselves in at police stations, rather than through the hospitals, as originally envisioned. Therefore, of the 1,913 participants engaged in the ERE

program, 334 (17%) have no previous history of ER use in the past 90 days, and 169 (9%) have missing data (Figure 3). The remaining 74% had at least 1 visit in the 90 days prior to engagement with the ERE program, with ranges from 1-60 ER Visits reported.

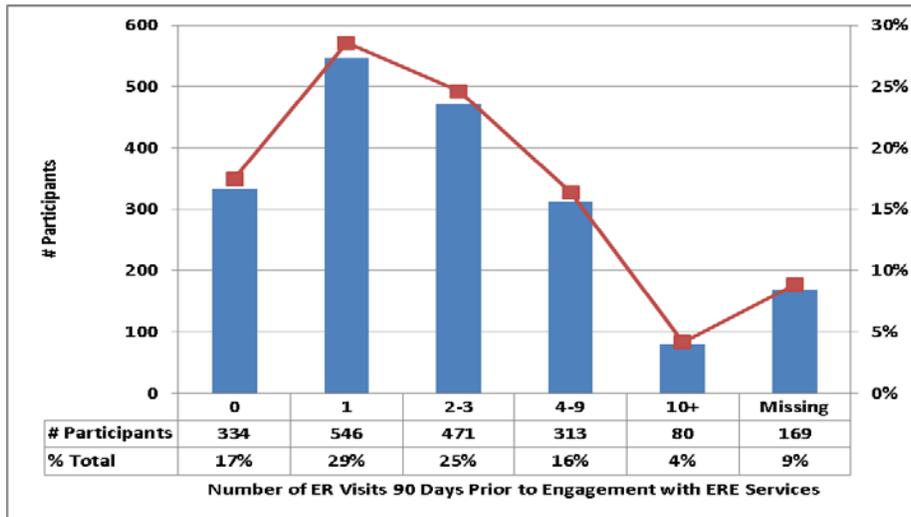


Figure 3. Number of Prior 90 Day ED Visits for the 1,913 ERE Participants.

### Pre- and Post-ER Visits for Behavioral Health Concerns

The number of ER visits for behavioral health concerns in the prior 90 days is collected at baseline and then again at a 3 month follow-up. A Paired t-test analysis was used to determine differences in ER visits for behavioral health concerns 90 days prior to engagement with the number of visits 90 days after engagement with ERE services. A paired t-test is an extremely powerful test for detecting differences used in “Before vs. After” type evaluations. The same individuals are measured before and after the introduction of some sort of treatment, in this case, engagement with the ERE program. The data that are collected at intake, or baseline, are compared with data collected 90 days post-intake. Figure 4 shows the average number of prior ER visits for the 661 participants with at least one visit at baseline was **3.5 visits** in the 90 days prior to engagements, with the average of **1.4 visits** after engaging with ERE services.

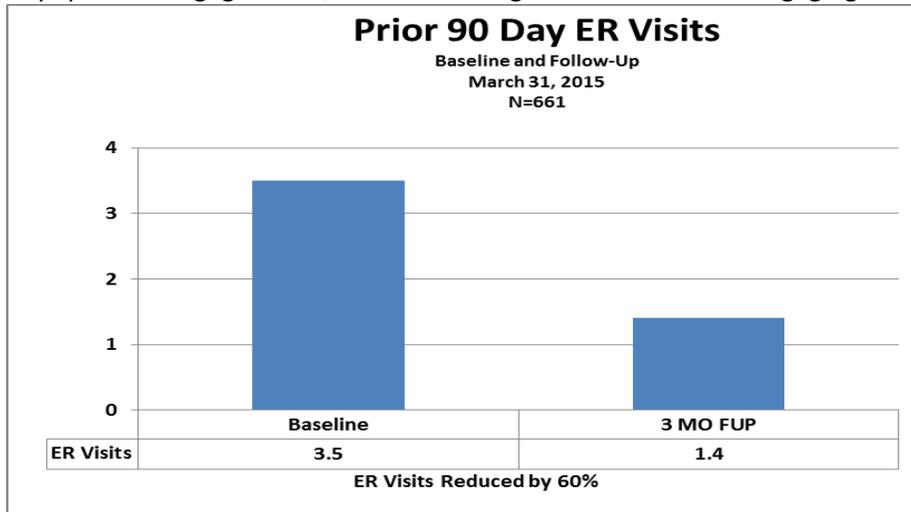


Figure 4. Of the 838 ERE Participants, 661 had Prior 90 Day ED Visits at Baseline. The average ER visits at baseline and follow-up were reduced by 60%.

There was a statistically significant difference in ER visits at baseline (M=3.5, SD=5.5) and ER visits at 3 months (M=1.4, SD=2.5),  $t(660)=29.8$ ,  $p<.001$ . The p value indicates these differences are reliable, with a less than 1 in a thousand chance of being random results. The paired t-test results suggest the ERE services have an effect on the number of ER visits. Those engaged in ERE services at the Community Mental Health Center learn coping skills and know to contact their case manager rather than go to the hospital when they experience behavioral health distress.

### Medicaid Participants

A paired t-test was also conducted for those participants on Medicaid (N=393). There was a statistically significant difference in ER visits at baseline (M=3.97, SD=4.9) and ER visits at 3 months (M=1.6, SD=2.5),  $t(313)=8.26$ ,  $p<.001$ . Figure 5 shows the average number of prior ER visits for the 314 participants with Medicaid coverage at the 3 month follow-up with at least one visit at baseline was **4 visits** in the 90 days prior to engagements, with the average of **1.6 visits** after engaging with ERE services. While there were higher numbers of visits at baseline and follow-up for the Medicaid only group than all 838 Participants, the percentage of change was the same at **60%**.

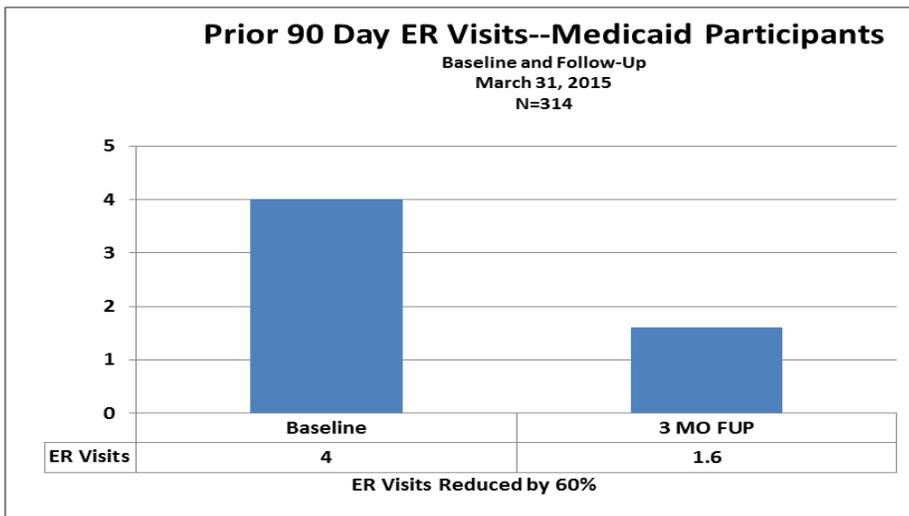


Figure 5. Of the 393 ERE Participants on Medicaid at the 3-month follow-up, 314 had Prior 90 Day ED Visits at Baseline. The baseline and follow-up averages were reduced by 60%.

### Changes in Hospitalization Usage

Almost half of the ERE participants (48%) reported at least one hospitalization in the previous 90 days for behavioral health concerns when they engaged with the ERE program (see Figure 6), ranging from 1-49 hospitalizations. Thirty-four percent had no prior hospitalizations in the prior 90 days, with 18% having missing data.

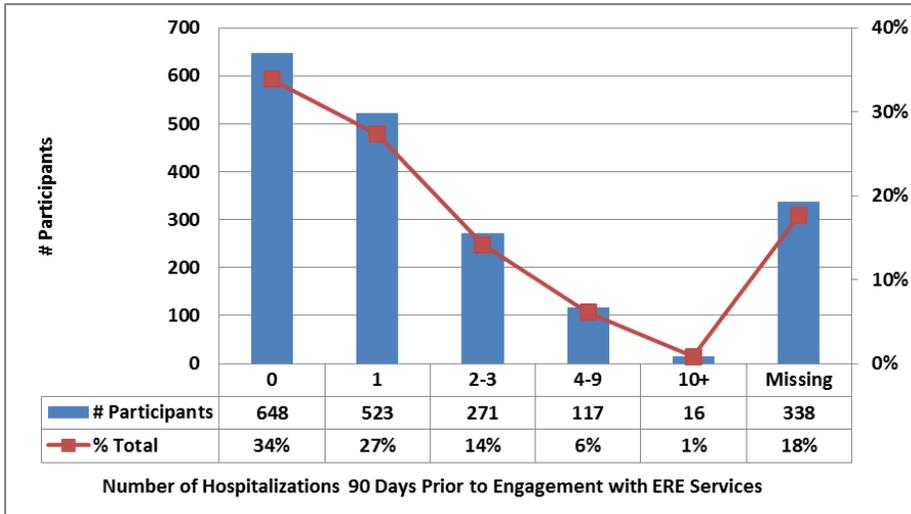


Figure 6. Number of ERE participants reporting prior 90 Day Hospitalizations at baseline (N=1,913).

### Pre- and Post-Hospitalizations for Behavioral Health Concerns

The paired t-test was used again to determine statistical significant differences in hospitalizations for behavioral health concerns before and after engagement with ERE services. The same individuals are measured before and after the introduction of some sort of treatment, in this case, engagement with the ERE program. The data that are collected at intake, or baseline, are compared with data collected 90 days post-intake. The **63% decrease** in hospitalizations, as shown in Figure 7, is a statistically significant difference in hospitalizations at baseline (M=1.6, SD=3.0) and hospitalizations at 3 months (M=.6, SD=1.5),  $t(621)=7.8$ ,  $p<.001$ . The p value indicates these differences are reliable, with a less than 1 in a thousand chance of being random results. The paired t-test results suggest the ERE services have an effect on the number of hospitalizations. Those engaged in ERE services learn coping skills and how to contact their case manager at the Community Mental Health Center rather than go to the hospital when they experience behavioral health distress.

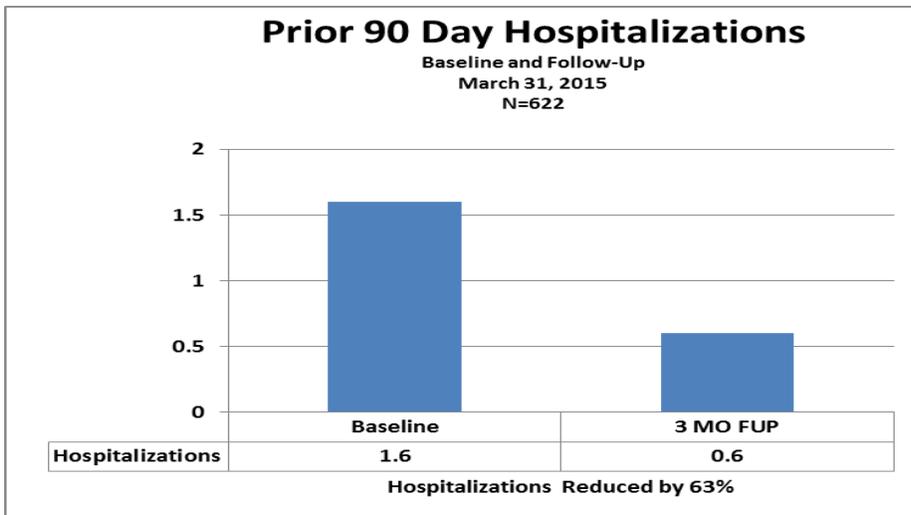


Figure 7. Of the 838 ERE Participants, 622 had Prior 90 Day Hospitalizations at Baseline. The baseline and follow-up averages were reduced by 63%.

## Medicaid Participants

A paired t-test was also conducted for those participants on Medicaid (N=393). There was a statistically significant difference in hospitalizations at baseline (M=2.4, SD=2.7) and hospitalizations at 3 months (M=.77, SD=1.4),  $t(236)=8.99$ ,  $p<.001$ . Figure 8 shows the average number of prior hospitalizations for the 237 participants with Medicaid coverage at the 3 month follow-up with at least one hospitalization at baseline was **2.4 hospitalizations** in the 90 days prior to engagements, with the average of **.8 hospitalizations** after engaging with ERE services. There was a **68% reduction** in hospitalizations for the Medicaid participants.

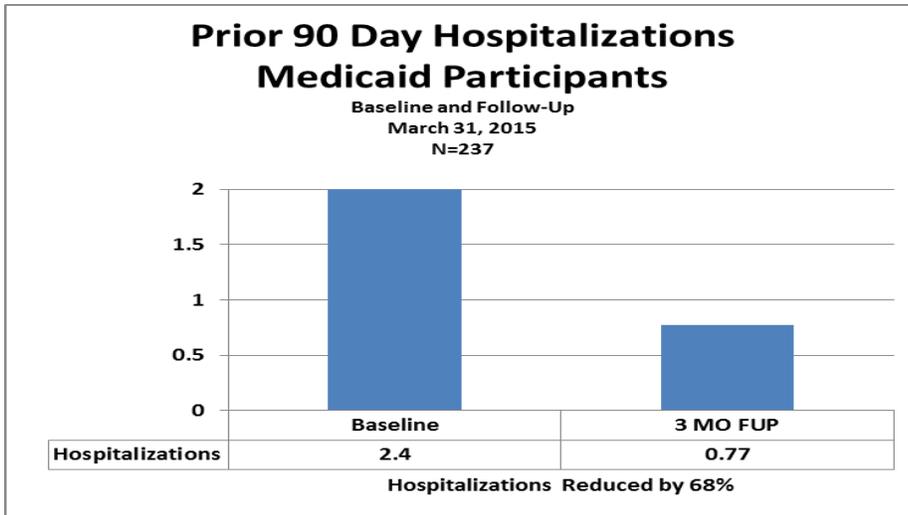


Figure 8. Of the 393 ERE Participants on Medicaid, 237 had Prior 90 Day Hospitalizations at Baseline. The baseline and follow-up averages were reduced by 68%.

## Treatment Program Enrollment

At baseline, **25%** (N=204) of participants were enrolled in treatment programs, ranging from alcohol and drug treatment, CPR, CSTAR, and other programs, including site specific therapy, counseling, health clinics and drug courts. At the 3-month follow-up, enrollment had risen to **52%** (N=433) of the individuals, for an increase of **112%**. Figure 9 details the types of programs included in this category. There were 85 individuals enrolled in more than one program. Figure 10 shows the treatment program enrollment for those in the follow-up group with Medicaid, showing greater increases in CPR/CSTAR programs and overall treatment program enrollments.

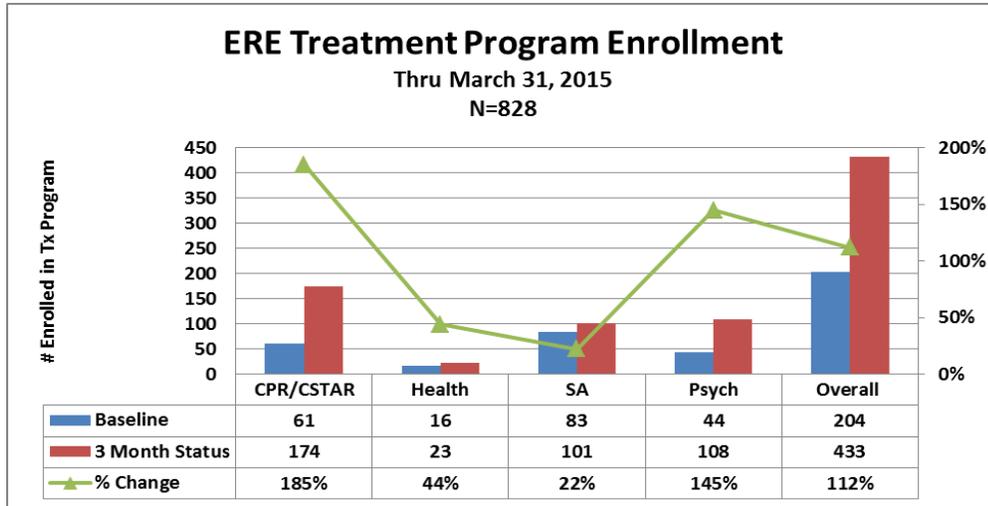


Figure 9. Program Enrollment by type for those in the follow-up group.

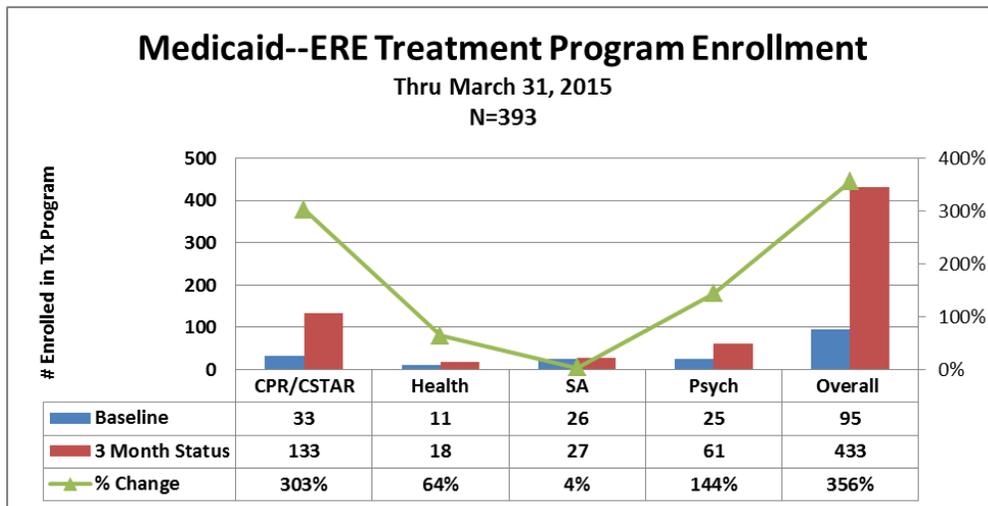


Figure 10. Types of programs included in Program Enrollment, with 275 individuals with Medicaid at Follow-up.

## Social Indicator Changes for All Participants vs. Those with Medicaid

Overall, the changes in status for all participants and those with Medicaid coverage are similar. The pattern continues in the social indicators, as follows:

### Residential Status

While the homeless rates are similar, there are greater increases in independent/dependent housing for those with Medicaid.

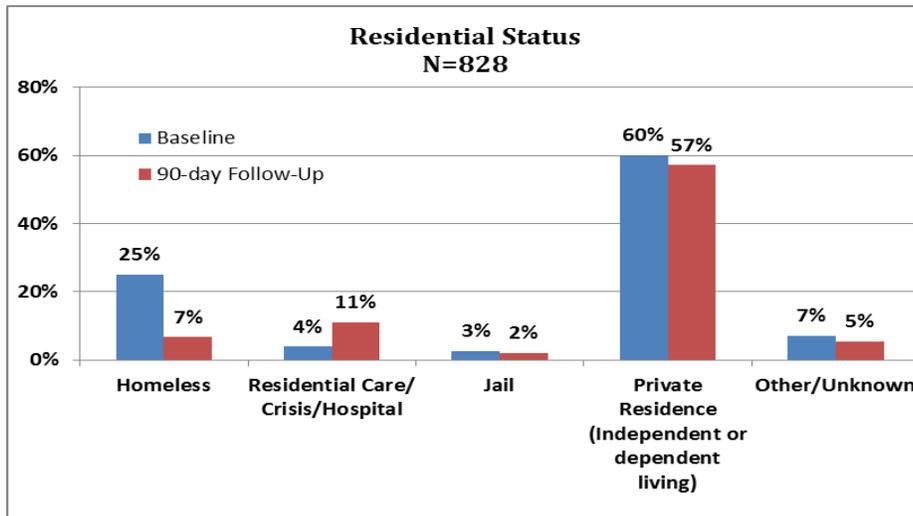


Figure 11. Residential status of all participants with a 90 day Follow-up (N=828).

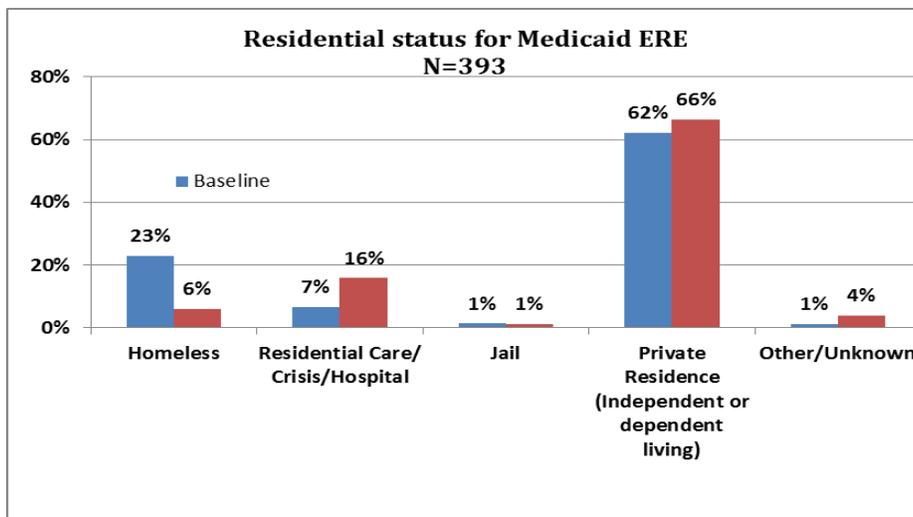


Figure 12. Residential status of all Medicaid participants with a 90 day Follow-up (N=393).

## Employment:

There are greater decreases in unemployment rates for the overall follow-up group than for those from that group with Medicaid. More from the Medicaid group were not in the work force, with most from that group being on disability.

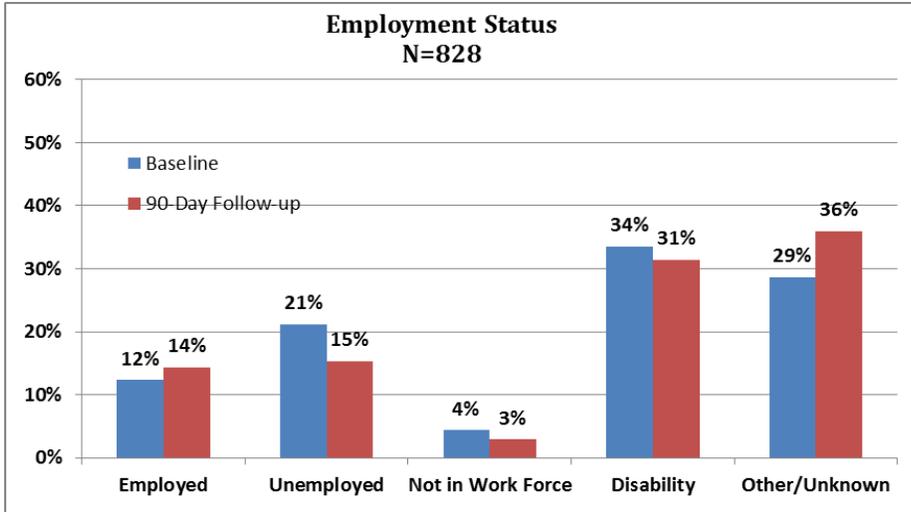


Figure 13. Employment status of all participants with a 90 day Follow-up (N=828).

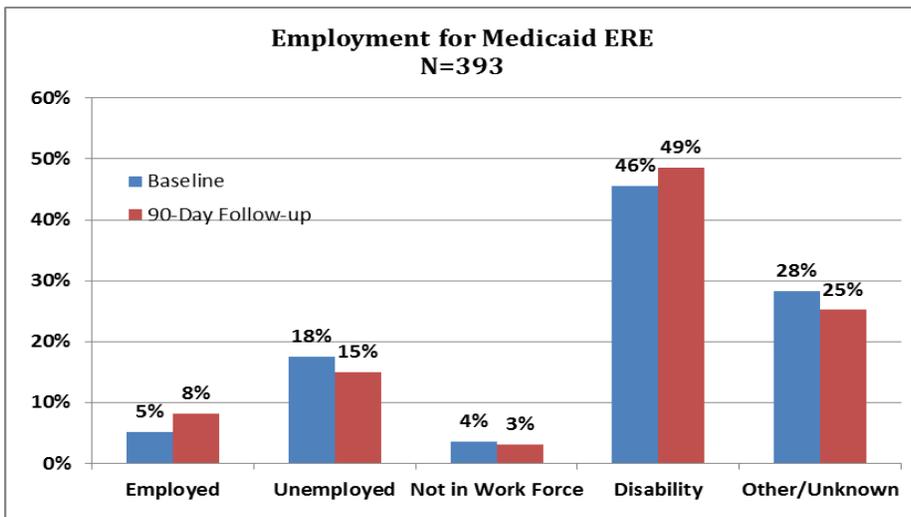


Figure 14. Employment status of all participants with a 90 day Follow-up (N=828).

## Prior 30 Day Arrest

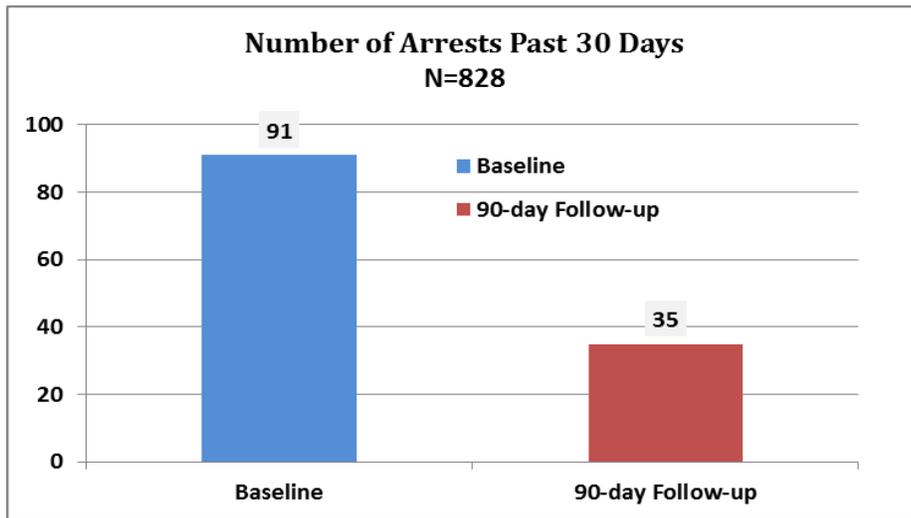


Figure 15. Number of arrests at baseline and follow-up (N=69 individuals with arrests at baseline).

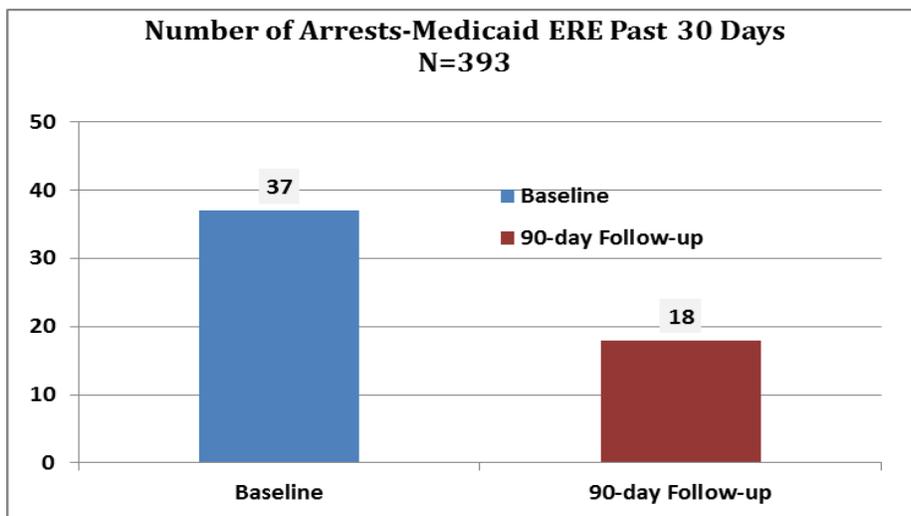


Figure 16. Number of arrests at baseline and follow-up (N=27 individuals with arrests at baseline).

## Participant Satisfaction with ERE Program

A program may show good results, but if the service recipients are not happy, there will not be continued success. The ERE participants are asked at the 3 month follow-up, “How satisfied are you with the treatment and services you received?” Of the 606 individuals that responded to the question, 97% were either satisfied or very satisfied with the program.

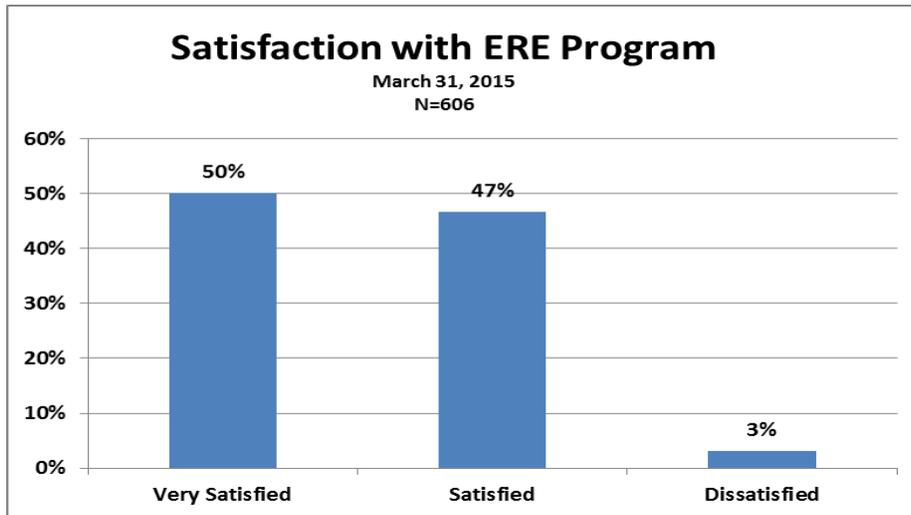


Figure 17. Satisfaction with services at 90 day Follow-up (N=606).

The program satisfaction expressed, along with the results of the focus groups, indicates the program has positively impacted the lives of many Missourians. From an economic standpoint, the cost savings in ER and hospitalization usage, along with the improvements in societal costs of reductions in homelessness and arrests, is evidence for continued funding.