

State of Alaska

Department of Health & Human Services

**Division of Behavioral Health/ Policy & Planning:
Research Unit**

Bring the Kids Home Initiative



**A Comparison of Acute Care Recipients: RPTC
Admissions vs. Non-Admissions**

July 2010

Introduction

The Department of Health and Social Services initiated the “Bring the Kids Home” (BTKH) initiative to return children being served in out-of state facilities back to in-state residential or community-based care. The following long-term goals have been developed to guide the direction of the BTKH project:

1. Build/develop and sustain the community-based and residential capacity to serve children with all intensities of need within the service delivery system in Alaska.
2. Develop an integrated, seamless service system in Alaska that will allow children and youth to be served in the most culturally competent, least restrictive setting, as close as possible to home as determined to be safe and appropriate.
3. Significantly reduce the existing numbers of children and youth in out-of-state care and ensure that the future use of out-of-state facilities is kept to a minimum.

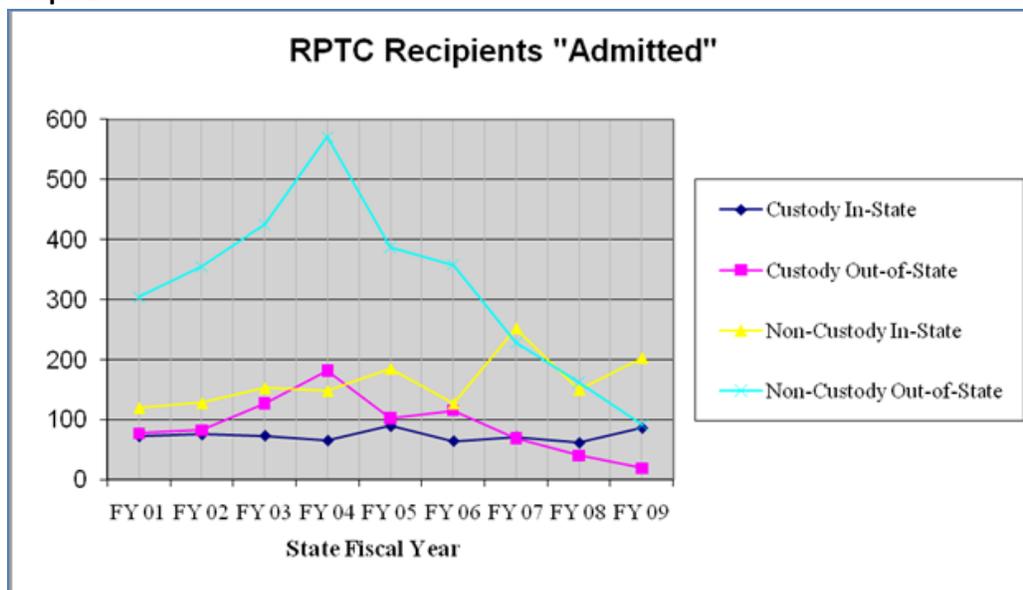
Over the course of the BTKH initiative, out-of-state admissions for residential psychiatric treatment centers (RPTC’s) have been significantly reduced (Graph 1). Additional progress in the development of service capacity has also contributed to this decline in out of state admissions.

The Division of Behavioral Health (DBH) Policy & Planning / Research Unit continue to engage the BTKH initiative through ongoing data collection, management, and research to measure the progress of the initiative, as well as, data analysis to inform future planning.

The focus of this report was, in part, defined by the ongoing recognition that the primary referral source continues to be in-state acute care settings. For example, the first and second quarters of SFY’09, 78% of all RPTC referrals originated from acute care facilities.

This report reviews and analyzes the differences among those acute care recipients who admitted into RPTCs with those acute care recipients who did **not** admit into an RPTC during SFY09. It is postulated that by identifying characteristics or variables associated with a subsequent RPTC referral and admission, future admissions could be diverted with targeted interventions delivered earlier in a treatment episode.

Graph 1



Source: BTKH: Indicators for SFY09

Methodology

This is a retrospective cohort study analyzing historical acute care Qualis Health admission and Medicaid data. This report describes the difference among acute care recipients who have admitted to an RPTC and acute care recipients who have not admitted to an RPTC.

There were 2,075 unique recipients admitted to acute care from 12/1/2007 thru 6/2/2010. During SFY09 there were 419 recipients admitted to in-state and out-of-state RPTCs. Of the 419 RPTC recipients there were 316 RPTC recipients that we had access to acute care admission data ($2075 - 316 = 1,759$). A random sample from the 1,759 acute care recipients, who did not admit to an RPTC during SFY09, was created to serve as a comparison group. This produced a sample size of $n = 632$ recipients.

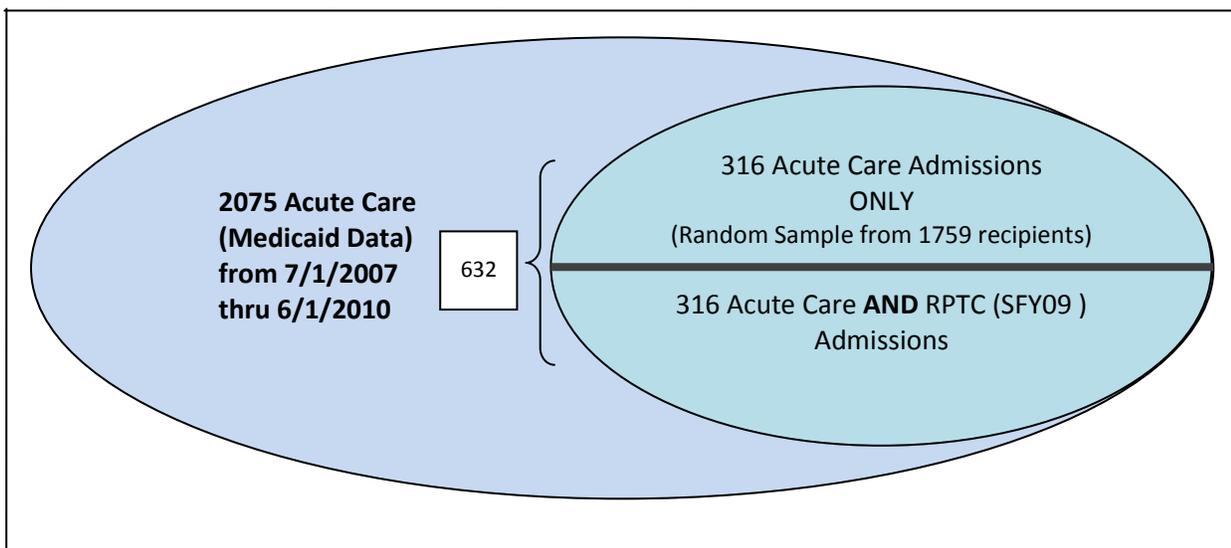
The two groups who make up the study Acute Care Admissions ONLY (316) and Acute Care & RPTC Admissions (316) were compared on the number of admissions to acute care facilities; length of stay in acute care facilities overtime; and risk, co-morbid, environmental, and trauma factors.

More than half of the recipients had two or more acute care admissions. An aggregate file was created to capture risk, co-morbid, environmental, and trauma factors ever present during any subsequent acute care admission. If a factor was present for one admission, but not another, then the factor is present in the dataset for that individual. For example if a recipient had three admissions to acute care facilities and a specific characteristic such as aggression was present for one admission but not the other two, the aggregate dataset will capture the aggression characteristic for the individual.

The measure for analysis in this study to compare two groups in a retrospective cohort study is relative risk (RR). The RR is the risk of an event (RPTC admission) relative to an exposure present (i.e. risk factors). In this analysis RR is used to analyze the exposure of a factor present: risk, co-morbid, environmental, and trauma factor(s) with the admission to an RPTC. Also in this analysis t-test for a 95% confidence interval is used to compare the length of stay (LOS) in acute care facilities between these two groups.

In addition to relative risk analysis, descriptive statistics of the random sample ($n=316$) is reviewed alongside the RPTC recipients ($n=316$) to ensure that the two populations are similar.

Figure 2. Data to be Analyzed and Compared (632 Recipients).



Findings

This report suggests the acuity of acute care recipients from 12/1/2007 to 6/2/2009 who admitted to an RPTC during SFY09 is higher than acute care recipients who did not admit to an RPTC during SFY09. The analysis of length of stay in acute care facilities over time, number of admissions to acute care facilities is greater for those who admitted to acute care and an RPTC than those who admitted to acute care ONLY.

Population

- There were approximately 10.2 per 1000 youth statewide admitted to an acute care with Medicaid services during the period covered in this study.
- Alaska Native/American Indian recipients admitted to acute care overrepresented (approximately 21.0 per 1000 recipients) compared to Caucasian (6.1 per 1000) and other ethnicities (10.9 per 1000).

Acute Care Admissions

- Acute care recipients who had RPTC admissions had twice as many acute care admissions compared to the acute care recipients who did **not** admit to an RPTC during SFY09.
- Acute care recipients who had RPTC admissions average Length of stay (LOS) in an acute care facility had twice the LOS as acute care recipients who did **not** admit to an RPTC during SFY09.

Risk Factors

- Acute care recipients admitted to an RPTC are at least 2.0 as likely to have risk factors 'treatment non compliance,' 'flight risk,' and 'family history of mental health.'
- Acute care recipients admitted to RPTCs are 1.8 times as likely to have 'suicide' risk factor as those who did not admit to an RPTC.

Co-Morbidities Factors

- Recipients with eating disorders are 6.0 times more likely to admit to an RPTC as acute care recipients who do not have an eating disorder.
- Acute care recipients who have a mood disorder are 2.5 times as likely to admit to an RPTC as those who do not.
- Acute care recipients with a complicated medical condition on the other hand are 0.5 as likely to admit to an RPTC.

Environmental Factors

- Acute care recipients who have problems with the social environment are almost 4.0 times as likely to admit to an RPTC.
- Acute care recipients that have problems with support groups are more than 2.5 times as likely to admit to an RPTC.

Trauma Factors

- Acute care recipients who have been adopted, or have had multiple placements are more than 2.0 times as likely to admit to an RPTC.

Results

Table 1 – 3b include statewide prevalence rates (per 1000) calculated based on the acute care admission population of 2,075 (SFY07 to June 2009) and the 2009 Alaska statewide estimates (age \geq 4 years old and \leq 22 years old population est. 202,964).

Table 1. Acute Care Age Rates (per 1000)

	Acute Care	Statewide Est. 2009	Rate per 1000
4 – 9 year olds	139	66,906	2.1
10 – 14 year olds	596	52,991	11.2
15 – 19 year olds	1214	54,941	22.1
20 – 22 year olds	126	28,126	4.5
Total	2075	202,964	10.2

There are about 33 per 1000 youth ages 10 – 19 year olds in Alaska admitted to acute care facilities between 12/30/2007 and 6/2/2010.

Table 2. Acute Care Gender Rates (per 1000)

	Acute Care	Statewide Est. 2009	Rate per 1000
Male	1101	103,857	10.6
Female	974	99,213	9.8

There were about 11 per 1000 male youth and 10 per 1000 female youth admitted to acute care facilities between 12/30/2007 and 6/2/2010.

Table 3a. Acute Care Ethnicity Rates (per 1000)

	Acute Care	Statewide Est. 2009	Rate per 1000
Alaska Native/American Indian	825	39,353	21.0
Caucasian	793	130,741	6.1
Other	318	29,285	10.9
Missing	139		

There were about 21 per 1000 Alaska Native and American Indian youth admitted to acute care facilities compared to 6.1 per 1000 Caucasian and 10.9 per 1000 other ethnicities to include African American, Asian, and Hispanic youth during this timeframe.

Table 3b. Acute Care Ethnicity Rates (per 1000)

	Acute Care	Statewide Est. 2009	Rate per 1000
Alaska Native/American Indian	825	39,353	21.0
Non-Native	1111	160,026	6.9
Missing	139		

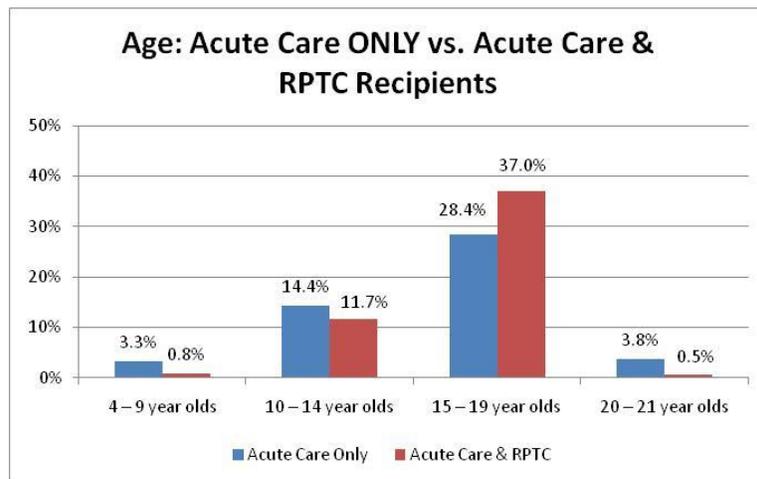
There were about 21 per 1000 Alaska Native and American Indian youth admitted to acute care facilities compared to 6.9 per 1000 non-Native youth during this timeframe.

Tables 4 – 6 shows the likeness in dispersion of the sample population Acute Care ONLY compared with the population that admitted to Acute Care & RPTC.

Table 4. Age: Acute Care ONLY & Acute Care and RPTC

	Acute Care Only	Acute Care & RPTC
4 – 9 year olds	21 (3.3%)	5 (0.8%)
10 – 14 year olds	91 (14.4%)	74 (11.7%)
15 – 19 year olds	180 (28.4%)	234 (37.0%)
20 – 21 year olds	24 (3.8%)	3 (0.5%)

Note: Percents are calculated with 632 as the denominator.

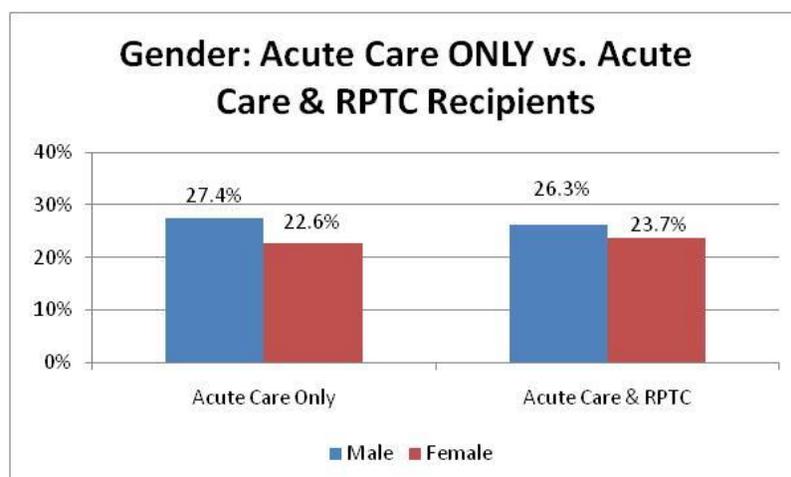


The age distribution for this study of Acute Care Admissions ONLY and Acute Care and RPTC Admissions is similarly distributed among both groups.

Table 5. Gender: Acute Care ONLY & Acute Care and RPTC

	Acute Care Only	Acute Care & RPTC
Male	173 (27.4%)	166 (26.3%)
Female	143 (22.6%)	150 (23.7%)

Note: Percents are calculated with 632 as the denominator.

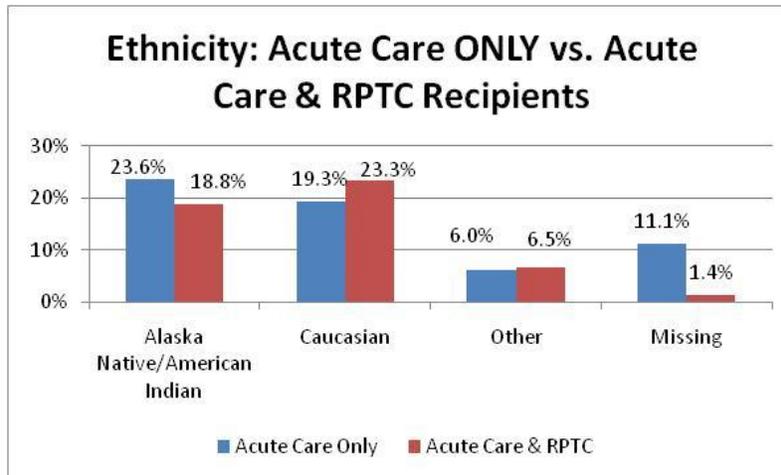


Likewise the gender distribution for this study of Acute Care Admissions ONLY and Acute Care and RPTC Admissions is similarly distributed among both groups.

Table 6. Ethnicity: Acute Care ONLY & Acute Care and RPTC

	Acute Care Only	Acute Care & RPTC
Alaska Native/American Indian	149 (23.6%)	119 (18.8%)
Caucasian	122 (19.3%)	147 (23.3%)
Other	38 (6.0%)	41 (6.5%)
Missing	7 (11.1%)	9 (1.4%)

Note: Percents are calculated with 632 as the denominator.



Also the race/ethnicity distribution for this study of Acute Care Admissions ONLY and Acute Care and RPTC Admissions is similarly distributed among both groups.

Table 7 & 8 describe the admission counts and length-of-stay for acute care facilities and compares the group of youth that admitted to RPTCs and those who did NOT admit to an RPTC.

Table 7. Acute Care Admit Count Comparison Between Acute Care ONLY & Acute Care and RPTC

	Acute Care Only	Acute Care & RPTC
Only One Admit	225 (35.6%)	138 (21.8%)
Two Admits	60 (9.5%)	94 (14.9%)
Three or More Admits	31 (4.9%)	84 (13.3%)

Twice as many recipients who admitted to acute care facilities & RPTC (28%) admitted to acute care two or more times during this study period whereas 14% of the recipients who admitted to acute care ONLY admitted to acute care two or more times. Acute care ONLY had 13% greater number of recipients admit only once to an acute care facility than Acute Care & RPTC.

Table 8a. Difference in LOS of Acute Care ONLY and Acute Care and RPTC

	N	Mean	Std. Deviation	Std. Error Mean
Acute Care Only	314	25.22	21.890	1.235
Acute Care & RPTC	317	67.40	55.331	3.108

The LOS for acute care & RPTC recipients (67 days) is more than twice as much as the acute care ONLY recipients (25 days).

Table 9. Relative Risk of Having a Risk Factor Present and Admitting to an RPTC

	% Acute Care Only	% Acute Care & RPTC	Relative Risk
Treatment Non Compliance	42.3%	57.7%	2.685
Flight Risk	42.2%	57.8%	2.356
Family History of Mental Health	44.7%	55.3%	2.002
Property Destruction	41.2%	58.8%	1.950
Aggression	44.9%	55.1%	1.926
Legal Problems	38.5%	61.5%	1.869
School Suspension	42.0%	58.0%	1.770
History of Self Mutilation	41.7%	58.3%	1.731
Family History of Substance Abuse	46.1%	53.9%	1.728
Problems with Activities of Daily Living	40.5%	59.5%	1.728
Sexual Acting Out	40.2%	59.8%	1.703
Homicide	43.3%	56.7%	1.475
Suicide	48.6%	51.4%	1.183
Risk Factors: 7 or more	37.0%	63.0%	2.685

Acute care recipients who admit to an RPTC are more than 2.5 times as likely to have seven or more risk factors as those individuals who do not admit to an RPTC. Likewise they are at least 2.0 as likely to have risk factors ‘treatment non compliance,’ ‘flight risk,’ and ‘family history of mental health’ than those who do not admit to an RPTC. While the same group are 1.2 times as likely to have suicide as a risk factor than those who do not admit to an RPTC.

Table 10. Relative Risk of Having a Co-Morbidity Present and Admitting to an RPTC (n=632)

	% Acute Care Only	% Acute Care & RPTC	Relative Risk
Eating	14.8%	85.2%	6.123
Mood	44.1%	55.9%	2.534
Developmental	37.0%	63.0%	1.784
Brain Injury History	39.3%	60.7%	1.576
Thought	44.1%	55.9%	1.530
Substance Abuse	43.1%	56.9%	1.492
FASD	41.4%	58.6%	1.467
Prenatal Exposure	41.8%	58.2%	1.435
Medical Disability	46.2%	53.8%	1.170
Complicated Medical	62.9%	37.1%	0.573
Co-morbidity: 3 or More	39.9%	60.1%	1.812

Acute care recipients who admitted to an RPTC were more than 6.0 as likely to have an eating disorder as those who did not admit to an RPTC. Similarly the same population was 2.5 times as likely to have a

mood disorder. Alternatively, acute care recipients who admitted to an RPTC were half as likely to have a complicated medical condition as those who did not admit to an RPTC.

Table 11. Relative Risk of Having an Environmental Present and Admitting to an RPTC

	% Acute Care Only	% Acute Care & RPTC	Relative Risk
Problems with Social Environment	48.4%	51.6%	3.958
Problems with Support Groups	48.7%	51.3%	2.629
Educational	47.0%	53.0%	2.367
Legal System	39.8%	60.2%	1.843
Housing	42.0%	58.0%	1.571
Access to Health Care	43.2%	56.8%	1.468
Economic	47.5%	52.5%	1.115
Occupational	57.9%	42.1%	0.713
Environmental: 4 or More	40.6%	59.4%	2.286

Acute care recipients who admitted to an RPTC were almost 4.0 more likely to have problems with the social environment than those who did not admit to an RPTC. In addition, acute care recipients that admitted to an RPTC were more than 2.5 times as likely to have problems with support groups as those who did not admit to an RPTC.

Table 12. Relative Risk of Having a Reported Trauma and Admitting to an RPTC (n=632)

	% Acute Care Only	% Acute Care & RPTC	Relative Risk
Adopted	33.3%	66.7%	2.244
Multiple Placements	38.5%	61.5%	2.118
Neglect	41.7%	58.3%	2.053
Multiple Loses	41.0%	59.0%	1.681
Emotional Abuse	44.6%	55.4%	1.606
Sexual Abuse	43.1%	56.9%	1.537
Physical Abuse	45.0%	55.0%	1.483
Domestic Violence	45.1%	54.9%	1.482
Death/Suicide	48.4%	51.6%	1.080
Natural Disaster	50.0%	50.0%	1.000
Trauma: 4 or More	41.0%	59.0%	1.975

Acute care recipients admitted to an RPTC were more than 2.0 times as likely to have been adopted, have had multiple placements, or reported neglect than those who did not admit to an RPTC.

In Brief

This is a retrospective study and we can say with certainty the relative risk of an individual admitted to an RPTC with a specific factor is some statistical value; however, relative risk statistics are a good measure for individual factors only. Exercise of caution is a must as each of these factors does have an effect on each other, and each individual have multiple risk, co-morbid, environmental, and trauma

factors that lend to their necessity for acute level care and RPTC level care. That being said additional analysis using logistic regression methods is necessary to observe how each of these factors correlates with one another and with individuals needing residential care.

References

Daniel, W.W. (2005). Biostatistics: A foundation for analysis in the health sciences. Confidence interval for the difference between two population means (pp. 173 – 181). Hoboken, NJ: John Wiley & Sons, Inc.

Friis, R.H., Sellers, T.A. (2004). Epidemiology for public health practice. Study designs: Cohort studies (pp. 253 – 293). Boston, MA: Jones and Bartlett Publishers.

Source: US Census Bureau & Alaska Department of Labor, Research & Analysis, Demographics Unit. July 1, 2009. Accessed July 1, 2010 from <http://laborstats.alaska.gov/?PAGEID=67&SUBID=115>.

Cohort study

Exposure non exposure

People admitted to an RPTC were 2.5 times more likely to have risk than those not admitted to an RPTC