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Recovery Coaches and Substance Exposed Births: An Experiment in Child Welfare

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Abstract

Substance exposed infants present a major challenge to child welfare and public health systems. Prenatal substance exposure and continued substance abuse in the home are associated with a wide range of adverse social, emotional, and developmental outcomes. Such outcomes include but are not limited to strained parental attachments, child maltreatment, and extended stays in substitute care settings. The current study focuses on an experimental evaluation of the effectiveness of recovery coaches in child welfare to prevent new substance exposed births. The sample includes 931 substance abusing women enrolled in a Title IV-E Waiver Demonstration, 261 in the control group and 670 in the experimental group. Cox proportional hazards modeling indicates that women in the experimental group were significantly less likely to be associated with a new substance exposed birth.

Introduction

Substance abuse is a major concern for child welfare and public health systems. Although the majority of States do not include prenatal substance exposure in their legal definition of child maltreatment, recent federal legislation is evidence that substance abuse is emerging as one of the most critical issues in child welfare. For example, the Adoption and Safe Families Act (ASFA) and recently amended Child Abuse Prevention and Treatment Act (CAPTA) require states to develop protocols for reporting and responding to substance exposed infants. Section 106(b)(2)(A)(ii) of CAPTA requires health care providers to notify child protection of all infants born and identified as afflicted by substance abuse or withdrawal symptoms resulting from prenatal drug exposure. Child protection is then responsible for assessing the level of risk associated with the exposed child as well as other children in the family. ASFA and CAPTA emerge from the empirical literature and a growing recognition that substance abuse has significant effects on parent – child relationships and developmental outcomes.

Substance abuse compromises appropriate parenting practices and helps to create an environment that is often not responsive to the material and emotional needs of children (Magura & Laudet, 1996). In a recent study of parenting practices, Eiden, Chavez, and Leonard (1999) report that substance abusing parents display lower sensitivity and higher negative affect in their interactions with their infants as compared with non substance abusing parents. Measures of sensitivity included visual contact, flexibility, and the ability to read child cues. Measures of negative affect included hostile voice, hostile mood, aggression, and criticism. Escalating periods of drug use further erode the home environment. In a study of recovering heroin addicts, McKeganey, Barnard, and McIntosh (2002) report that during periods of increased drug use, the needs of children become secondary to the needs of the drug user. Thus, it is not surprising that children in substance abusing families are at an increased risk of physical abuse and neglect even after controlling for a wide range of covariates (Chaffin, Kelleher, & Hollenberg, 1996). The problems associated with substance abuse are not limited to the immediate family environment. Substance abuse has significant effects within the social service setting.

Children with at least one substance abusing caregiver in the home are likely to experience a range of adverse outcomes in the child welfare system. This is especially true with regard to length of stay in foster care and the likelihood of achieving family reunification. Children in substance abusing families remain in substitute care placements for significantly longer periods of time, and experience significantly lower rates of family reunification relative to almost every other subgroup of families in the child welfare system (U.S. Government Accounting Office, 2003). In a recent study of substance exposed infants in Illinois, Budde and Harden (2003) report that only 14% of the substance exposed infants that entered care in 1994 were reunified with their biological parents within seven years. In contrast, approximately 33%

of all children entering their first substitute care placement in Illinois in 1998 achieved reunification within two years (Poertner & Garnier, 2001). The limited access to necessary treatment is often cited as a reason for reunification disparities (Maluccio & Ainsworth, 2003; Bartholet, 1998).

A relatively small proportion of substance abusers access substance abuse treatment. In the United States, approximately one-third of all individuals identified as substance abusers actually receive treatment (Brady & Ashley, 2005). The match between client needs and specific services is especially problematic for woman with children (Price, 1997). The lack of adequate childcare is consistently identified as a primary obstacle to treatment for women (Marsh & Miller, 1985; Blume, 1990). Treatment disparities also emerge beyond the point of access. Substance abusing parents in treatment spend significantly less time in treatment as compared to substance abusing clients that are not parents (Gerstein, Johnson, Larison, Harwood, & Fountain, 1997). More specific to the current study, the retention and completion rates are particularly low for parents involved with the child welfare system (Gregoire & Schultz, 2001), and yet compliance with substance abuse treatment plans are critical to achieving family reunification (Smith, 2003). Thus, any intervention designed to address substance abusing problems with child welfare clients must incorporate treatment activities designed specifically around outreach, engagement, and re-engagement.

There is scant research on the effectiveness of substance abuse treatment within the context of the child welfare system. Yet, a few studies exist. Marsh, D'Aunno & Smith (2000) used a non-equivalent control group design to examine the impact of enhanced services for substance abusing women involved with child protection. The study compared clients who received enhanced services with those who received regular substance abuse treatment. The use

of linkage services (e.g. transportation, child care) increased social service access and decreased subsequent levels of substance use. Smith and Marsh (2002) used the same sample of substance abusing mothers to examine the impact of matching client-identified needs with services. The authors report that matched counseling services (e.g. domestic violence, family counseling) were associated with reports of reduced substance use and matched social services (e.g. housing, job training, legal services) were associated with clients' satisfaction with treatment. Using data from the National Survey of Child and Adolescent Well-being, Barth, Gibbons, and Guo (2004) investigated the association between substance abuse treatment and subsequent reports of child maltreatment for intact family cases (i.e. families receiving in-home services). Using propensity score matching (PSM) to approximate random assignment, the authors report that families in the treatment condition were significantly more likely to experience a new allegation of maltreatment as compared with families in the non-treatment group. The authors present various explanations for this unexpected finding including potential problems associated with self reported measures of addiction severity, the inability of services to meet client needs, and the treatment group's involvement with an additional mandated reporter (i.e. substance abuse treatment provider). These studies have made significant contributions to the literature and have greatly advanced knowledge in the area of substance abuse and child welfare. Yet there are several limitations including the lack of random assignment, and a clear definition of what the "treatment group" received. The current study builds on prior work and makes a significant contribution to the literature by addressing these limitations.

The current study tests the effectiveness of an integrated model for substance abusing caregivers in the child welfare system on preventing new substance exposed births. This integrated model emerges out of an existing service partnership between the Department of

Alcoholism and Substance Abuse (DASA) and the Illinois Department of Children and Family Services (IDCFS), and represents one of three ongoing Title IV-E waiver demonstrations in the State of Illinois. Title IV-E waivers permit States to by-pass federal regulations related to the financing of foster care services in order to develop and test innovative strategies for serving children and families. Waiver demonstrations are approved by the Children's Bureau (part of the U.S. Department of Health and Human Services) and require random assignment and cost neutrality. The effectiveness of this integrated model has been demonstrated to increase the rate of service access and the likelihood of family reunification (Ryan, Marsh, Testa & Louderman, 2006). The current study focuses on the effectiveness of this model with regard to new substantiated reports of maltreatment. We focus specifically on subsequent SEIs because although substance abusing families are at an increased risk of maltreatment in general, the increased risk stems almost entirely from subsequent SEI-related allegations (Smith & Testa, 2002).

The integrated model in Illinois represents intensive case management in the form of a recovery coach. The use of a recovery coach was intended to increase the access to substance abuse services, improve substance abuse treatment outcomes, shorten the length of time in substitute care placement, and affect child welfare outcomes including increasing rates of family reunification and decreasing the risk of subsequent reports of maltreatment. To achieve these stated goals, recovery coaches engage in a variety of activities including comprehensive clinical assessments, advocacy, service planning, outreach, and case management. The clinical assessments focus on a variety of problem areas such as housing, domestic violence, parenting, mental health, and family support needs. Advocacy refers to assisting parents in obtaining benefits and in meeting the responsibilities and mandates associated with the benefits. The

outreach activities ensure that recovery coaches work with substance abusing families in their community and improve communication between child welfare workers and substance abuse treatment providers. Recovery coaches engage in face-to-face contacts in the family home and with treatment provider agencies. Recovery coaches also participate in joint home visits with the child welfare caseworkers and/or AODA agency staff.

The recovery coach model in Illinois attempts to resolve and address competing agendas by ensuring independence. The recovery coaches in Illinois are not employees of child welfare or AODA treatment agencies. This independence helps ensure that recovery coaches' primary concern will be the families they serve. The recovery coaches are employed by a non-affiliated social service agency. The recovery coaches are required to participate in DCFS and DASA trainings that cover a variety of topics including addiction, relapse prevention, DSM IV, ASAM, fundamentals of assessment, ethics, service hours, client tracking systems, service planning, case management and counseling.

The following three research questions guide the analyses: (1) what proportion of substance abusing women in the child welfare system are associated with a new substance exposed birth? (2) what factors help explain the risk of new substance exposed births? and (3) do recovery coaches decrease the risk of new substance exposed births?

Methods

The sample includes all women enrolled in the Illinois Title IV-E AODA Demonstration Waiver as of June 30, 2004. This is the first study to investigate the effectiveness of recovery coaches with regard to the likelihood of substance exposed births.

Eligible families for this demonstration include foster care cases opened on or after April 28, 2000 in Chicago and suburban Cook County. To qualify for the project, parents in substance

involved families were referred to the Juvenile Court Assessment Program (JCAP) at the time of their temporary custody hearing or at any time within 90 days subsequent to the hearing. JCAP provides alcohol and drug assessments for adults 18 years and older. JCAP is located on site at the Juvenile Court Building in order to provide convenience and easy accessibility for parents who have lost custody of their children and who are in need of an assessment to determine if a referral to drug treatment is appropriate and necessary. The assessment and referrals for treatment are based on the criteria established by the American Society of Addiction Medicine (ASAM). These criteria specify the following four levels of care: outpatient, intensive outpatient and partial hospitalization, medically monitored inpatient (residential treatment), and medically managed intensive inpatient treatment (O'Toole, Freyder, Gibbon, Hanusa, Seltzer, & Fine, 2004). The current study was approved by the Institutional Review Boards at the University of Illinois, Urbana – Champaign and the Illinois Department of Alcohol and Substance Abuse.

JCAP conducts approximately 1,000 assessments within the court building each year. Of these 1,000 referrals approximately 61% result in referrals to treatment providers. Of the clients indicated for treatment, approximately 50% were eligible for the IV-E AODA project because they met the following eligibility requirements: (1) Cook County Illinois Case, (2) Temporary Custody of their child(ren) had been granted to DCFS and (3) Parents were assessed at JCAP within 90 days of the Temporary Custody Hearing

As of June 30, 2004 a total of 931 women were enrolled in the Illinois AODA waiver demonstration. Subsequent to the court taking temporary custody of the child(ren) and the completion of the JCAP assessment, parents were randomly assigned to either a control (n=261) or experimental (n=670) condition. Parents in the control group received traditional substance abuse services. Parents in the experimental group received traditional services plus the services

of a recovery coach. The recovery coaches assist parents with obtaining needed treatment services and in negotiating departmental and judicial requirements associated with drug recovery and concurrent permanency planning.

The current study utilizes multiple sources of data: JCAP and DCFS. The JCAP data include a variety of demographic assessment related information including but not limited to race, employment status, living situation, education, receipt of public aid, presence of co-occurring problems, current alcohol and drug use, and prior treatment history. The DCFS data include caregiver demographics, records of substitute care placements, and records of child maltreatment. In the current study we focus on one specific type of maltreatment: substance exposure at birth. We identify all (before and after random assignment) substance exposed births associated with each female caregiver enrolled in the waiver demonstration. We then limit our analyses to include only those allegations that were substantiated by child protection. The DCFS data run through December 31, 2005.

Analytic Plan: We display descriptive statistics and use chi-square analyses to investigate potential differences between the experimental and control groups. We use survival analysis (SPSS Cox Regression v.14) to examine the influence of individual variables on survival rates. This analytic technique is similar to logistic regression in that it enables one to calculate the odds of a particular event occurring. However, survival analysis considers the differential impact between groups on the timing of this event (Land, McCall & Parker, 1994). In the current study, female caregivers enter the observation period (April 2000 – December 2005) at different points in time. For example, a mother may lose custody of her child to DCFS in December 2003. Thus, this mother is at risk of delivering a substance exposed infant for approximately two years. In contrast a mother entering the observation period in April 2000 is at risk for the entire

observation period (approximately 5.5 years). In short, individuals are exposed to the risk of delivering a substance exposed infant for varying lengths of time. The average time at risk in the current study is 1,141 days (3.12 years). All women are at risk for at least 18 months. Survival models adjust for these variations by censoring observations. Observations are censored if the target event (a new substantiated allegation for substance exposure at birth) is not observed during the observation period. The resultant coefficients are interpreted similarly to those from logistic regression.

Life tables are used to describe and display the time to a subsequent substance exposed birth. We focus specifically on the number of days between JCAP assessment and the subsequent SEI. The life tables used in this study were divided into three month intervals. For each interval, we calculated the number and proportion of cases that entered the respective interval (risk set), the number of cases that experienced the event of interest (substantiated SEI), and the number of cases that were censored in the respective interval. Cases were censored if a new substantiated SEI did not occur before the end of the observation period.

Results

As of June 30, 2004, 931 female caregivers were enrolled in the Illinois Title IV-E Waiver Demonstration. The random assignment procedures worked in that there are no significant differences between the experimental group and the control group (see Table 1). The average age of the caregivers in this study was 32 years at the time of referral. Eighty-one percent were African American, 5% were Hispanic, and the remaining 14% were white. Eighty-six percent of the caregivers were unemployed, 36% were high school graduates, and 42% were receiving public aid at the time of random assignment. Fifty-five percent of the families reported

no medical insurance, and 18% reported current legal problems. Sixty-nine percent of the female caregivers were associated with at least one previous substance exposed infant.

Insert Table 1

Table 2 displays the bivariate analyses for caregiver characteristics and subsequent SEI. Several of the caregiver characteristics are associated with an increased risk of a subsequent SEI. African American and Hispanic mothers are more likely to be associated with a subsequent SEI as compared with white mothers. Mothers that have not graduated from high school and cocaine and heroin users are also significantly more likely to be associated with a subsequent SEI. The largest effect is associated with prior maltreatment. Specifically, mothers with a previous SEI are significantly more likely to be associated with a subsequent SEI (22% vs. 4%; $X^2 = 44.95$, $df = 1$, $p < .01$). Regarding the focus of the current study, mothers assigned to the experimental group (recovery coach group) are significantly less likely to be associated with a subsequent SEI (15% vs. 21%; $X^2 = 5.33$, $df = 1$, $p < .05$).

Insert Table 2

Survival Analysis: The results from the Cox regression are displayed in Table 3. The table includes the coefficient and standard error for each independent variable as well as the hazard ratio. A hazard ratio greater than 1 indicates a higher likelihood of reunification. A hazard ratio less than 1 indicates a lower likelihood of reunification. If 1 is subtracted from the hazard ratio and the remainder is multiplied by 100, the resultant is equal to the percentage

change in the hazard of achieving family reunification. Of the 931 female caregivers, 151 (16%) are associated with a subsequent SEI. The Cox regression model includes caregiver demographics, primary drugs of choice, co-occurring family problems, prior SEI history, and random assignment group.

We find that three variables help explain the likelihood of a subsequent SEI. Younger caregivers are more likely to be associated with a subsequent SEI. Each additional year of age decreased the hazard by 4%. Similarly, and as hypothesized, female caregivers associated with a previous SEI are at an increased risk of a subsequent SEI. Regarding the focus of the current study, controlling for other important covariates, female caregivers associated with the recovery coaches were significantly less likely to be associated with a subsequent SEI. Specifically, these women were 28% less likely to be associated with a subsequent SEI.

Insert Table 3

To better understand the subsequent SEI trajectories from a visual perspective, we produced a life table. The survival lines for the experimental and control groups are displayed in **Figure 1**. Note that for approximately six months after the JCAP assessment (represented as 0 days) the two lines follow a similar trajectory. Shortly thereafter however, the difference becomes quite noticeable. Within the control condition, approximately 10% of female caregivers are associated with a new substance exposed infant within 15 months. In contrast, more than two years elapses before the same proportion of female caregivers in the experimental condition are associated with new substance exposed births. The Wilcoxon (Gehan) statistic (4.20, $df = 1$, $p < .05$) indicates that the trajectories of these lines are significantly different.

Insert Figure 1

Discussion

Although debate continues regarding the precise estimates of substance abusing caregivers in the child welfare system, there is generally agreement that the problem itself represents a critical issue for the development of appropriate policies and practices. This is true at the federal level and evidenced by the enactment of ASFA and recent amendments to CAPTA. Recognizing the immediate and long term consequences associated with substance exposure at birth the current study used an experimental design to test the effectiveness of recovery coaches on preventing new substance exposed infants. Working with an extremely high risk and chronic substance abusing population, we focused specifically on the prevention of new reports of substance exposed infants.

The findings indicate that 16% of all mothers enrolled in the Illinois AODA waiver demonstration are associated with at least one new substantiated SEI. This is similar to the estimate reported in a previous study of subsequent maltreatment in substance abusing families (Smith & Testa, 2002). Yet the findings of the current study also indicate that the risk of subsequent SEIs can be significantly reduced with the use of a recovery coach. Fifteen percent of mothers in the experimental group were associated with a subsequent SEI as compared with 21% of mothers in the control group. Previous studies indicate that recovery coaches increase access to substance abuse services and increase the likelihood of achieving family reunification (Ryan, Marsh, Testa & Louderman, 2006; Marsh, Ryan, Choi & Testa, 2006). The current study extends this work and documents the effectiveness of this model with regard to a substance abuse related outcome.

In addition to the effectiveness of recovery coaches reducing SEIs, a secondary finding emerged related to previous substance exposed infants. The overwhelming majority of subsequent SEIs were associated with mothers that had at least one known previous SEI. Of the 151 subsequent SEIs identified within the observation period of the current study, 141 (94%) are associated with mothers who had at least one prior SEI. It is clear that these families represent a difficult challenge to child welfare and substance abuse service systems. Repeated substance exposed births inevitably leads to substitute care placement. Moreover, repeated substance exposed births represent a major obstacle with regard to reunification for the older siblings already in a foster care placement. It seems likely that this high rate of recurrence - and specifically the recurrence of SEIs – is in part responsible for the poor outcomes associated with substance abusing families in the child welfare system and perhaps even a contributing factor in the adverse social and developmental outcomes associated with the individual children in these families. The recovery coach model significantly reduced the likelihood of subsequent SEIs. This is true regardless of prior SEIs. Yet the risk associated with these caregivers is high. It seems this finding leaves policy makers with few options – either develop specific and innovative strategies for caregivers associated with multiple SEIs or move forward with expediting the termination of parental rights. Because it is clear that children in substance abusing homes are lingering in substitute care settings and the probability of achieving reunification is extremely low.

Although the current study makes a unique contribution to the literature, it is not without limitation. The outcome measure in the current study (substantiated report of a substance exposed infant) does not fully capture patterns of substance use throughout pregnancy nor does it represent all substance exposed births. It is likely that mothers associated with non-substance

exposed births used illicit drugs at some point during their pregnancy, just not near the time of delivery. It is also important to note that tests for substances at birth generally do not include alcohol. Finally, it is possible that women in the study did indeed deliver a substance exposed infant, yet this birth was not identified. Although federal legislation requires health care providers to contact child protection in response to a positive test at birth, there are currently no federal or state provisions that inform testing practices within hospitals. The decision of which mothers to test is made almost exclusively by the individual physician.

In a recent national study of testing practices, 89% of participating hospitals indicate that the decision about whether or not to test is based on an assessment (Drescher-Burke & Price, 2005). These assessments however are not standardized and generally vary between individual physicians. For example, 56% of the respondents indicate that “suspicion of drug use” can trigger drug testing at birth. There is a long standing debate with regard to potential bias at the time of delivery (Barth, 2001; Berger & Waldfogel, 2000; Ondersma, Simpson, Brestan & Ward, 2000). The purpose of this discussion is not to resolve this debate, but to recognize the potential biases that may impact the dependent measure used in the current study – although it is not clear that the risk of testing would vary between the control and demonstration groups.

In conclusion, integrated and comprehensive approaches are necessary for addressing the needs of families involved in child protection. The integration of services is not limited to substance abuse but also includes mental health (Bellack & DiClemente, 1999), domestic violence (Bennett, 1995; Bennett & Lawson, 1994), juvenile justice (Ryan, Herz & Hernandez, in press), and housing (Marsh, Ryan, Choi & Testa, 2006). Yet only through rigorous evaluation will child welfare systems fully comprehend the potential benefits associated with each

individual approach. Title IV-E waiver demonstrations are proving to be a great resource in these endeavors.

Table 1

Comparison of Experimental and Control Group: Family Characteristics (n=931)

Family Characteristic	Experimental Group (<i>n</i> = 521)		Control Group (<i>n</i> = 217)	
	<i>n</i>	%	<i>n</i>	%
Age of youngest caregiver(<i>M</i>)		32.3		32.0
African American	541	81	217	83
Hispanic	36	5	10	4
Unemployed	573	86	229	88
High school education	242	36	95	36
Public aid recipient	281	42	103	40
No health insurance	368	55	143	55
Current legal involvement	119	18	48	18
Mental health problems	300	45	108	41
Domestic violence problem	195	29	69	26
Prior substance-exposed infant	465	69	183	70
Average no. children in home		1.90		1.99
Average no. adults in home		1.23		1.21

Table 2

Crosstabs and T-tests: Individual Characteristics and Subsequent SEI (n=931)

Caregiver Characteristic	No SEI	SEI
Race*		
African American	83%	17%
Hispanic	80%	20%
white	91%	9%
Education*		
Less than high school	81%	19%
High school graduate	88%	12%
Marital Status		
Single/divorced	83%	17%
Married	90%	10%
Co-occurring Problems		
Domestic Violence	84%	16%
Housing	83%	17%
Mental Health	85%	15%
Primary drug of choice*		
Cocaine	81%	19%
Heroin	81%	19%
Alcohol	89%	11%
Prior substance exposed infant**		
No	96%	4%
Yes	78%	22%
Random Assignment Groups*		
Control	79%	21%
Experimental (recovery coach)	85%	15%

*p<.05, **p<.01

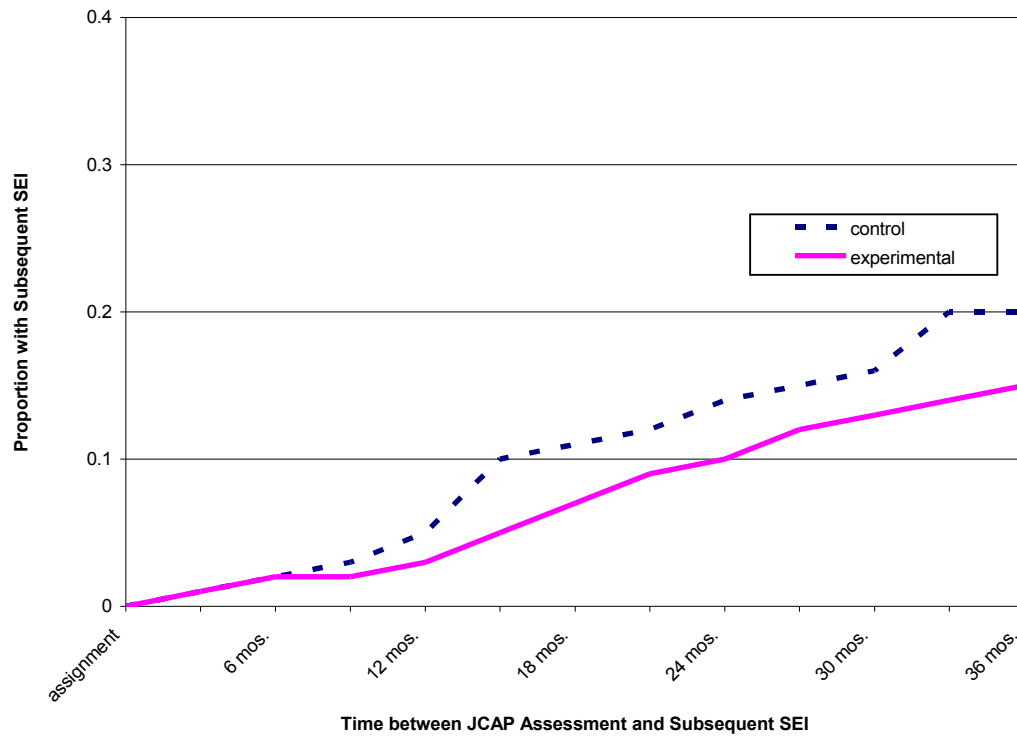
Table 3

Cox regression: Recovery Coaches and Subsequent Substance Exposed Infants (n=931)

Independent Variables	B	S.E.	Exp (B)
Mother's age	-.04**	.01	.96
African American	.48	.30	1.62
Hispanic	.68	.44	1.98
High school education (1=yes)	-.29	.19	.75
Married (1=yes)	-.48	.39	.62
Domestic violence (1=yes)	.11	.20	1.12
Housing problems (1=yes)	-.13	.19	.88
Mental health problems (1=yes)	-.09	.19	.91
Primary drug cocaine (1=yes)	.25	.26	1.28
Primary drug heroin (1=yes)	.12	.28	1.12
Prior substance exposed infant	1.95**	.35	7.02
Recovery coach group (1=yes)	-.34**	.17	.72

*p<.05, **p<.01

Figure 1
Life Table: Time between JCAP Assessment and Subsequent SEI (n=931)



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