The Therapeutic Community Prison Inmate Networks Study (TC-PINS): Evaluating Peer-Based Processes in a Prison Substance Abuse Treatment Unit

Report to the Pennsylvania Department of Corrections

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Executive Summary

This project applied network concepts and methods to investigate treatment processes within a four-month Therapeutic Community (TC) in PA State Correctional Institution Chester (CHS). Of particular interest were the peer influence and role-modeling processes assumed to underlie successful treatment engagement and desistance.

The project was supported by a 2-year grant from the National Institutes of Health (National Institute of Alcohol Abuse and Alcoholism) and was approved by the Pennsylvania State University Institutional Review Board (IRB: see Appendix A) and Pennsylvania Department of Corrections Research Review Committee (RRC: see Appendix B). The sampled TC was recommended by PADOC as a standard TC within the state system.

In Spring, 2016, a multidisciplinary team of researchers designed a self-report survey for administration to all residents of the sampled TC (AC unit), which had a maximum occupancy of 62 inmates. The survey was administered using face-to-face Computer Assisted Personal Interviews (CAPI) in 10 monthly waves between August, 2016, and May, 2017. Of the 210 possible inmate respondents, 177 (84%) completed at least one survey-wave and were available for analyses (see Appendix C).

The primary outcome of interest was a validated 14-item scale of resident treatment engagement: The Client Assessment Summary (CAS; Kressel, De Leon, Palij, and Ruben 2000) for Correctional-Based Programs (see Appendix D). This scale was measured of all respondents at each monthly wave over the course of their four-month treatment. The longitudinal assessment allowed us to understand how within-individual treatment engagement changed through the TC program.

The primary predictors were measures of peer relationships and perceived community role models. Specifically, all respondents were asked which residents they "get along with most" and who they consider role models within the unit. When this network data was aggregated and merged with individual survey and administrative data, we were able to visualize the TC's social structure and analyze how peer relationships and residents' positions within the TC community were associated with treatment engagement over time.

Project results are divided into five distinct domains, each with its own principle "take away" message:

- Community Network Structure: Consistent with TC "community" philosophy, the unit consisted of **a single connected social structure with some degree of group unity and cohesion ("active ingredients" of the TC model).**
- Individual Treatment Engagement Trajectories: TC residents did not vary substantially in their engagement with the treatment over time, but did enter treatment at various levels of engagement at the outset of treatment. Thus, those with high engagement at the outset also tended to have high engagement at the end, and those with low baseline engagement also tended to end with low engagement. **The treatment itself did not appear to substantially increase residents' engagement over time, raising concerns over how well the TC is motivating residents to make the most out of their treatment experience.**

- Characteristics of Community Role Models: Overall, **TC residents who received the most nominations as a community role model were highly engaged in the TC treatment.** This finding is consistent with TC philosophy, in that the unit leaders (who are assumed to positively influence the treatment behaviors of peers) were also those most engaged with the treatment and involved in the community activities.
- Peer Influence on Treatment Engagement: Dynamic network models suggested that **TC residents' treatment engagement was not significantly influenced by the treatment engagement of their friends or from perceived community role models.** Instead, **residents tended to select friends of similar engagement levels** and kept those relationships throughout treatment. This results in the concentration of residents with high treatment engagement at the core of the TC social structure, where like-minded participants engaged in treatment more than others, but without a beneficial spillover effect to the less engaged.
- Fidelity Assessment: A fidelity assessment conducted in October, 2017, found that the TC should be classified as "**a modified correctional TC functioning at low-medium fidelity**" (see Appendix E). Relevant to the network analyses, the TC's peer components (i.e., affirmations and corrections, peer hierarchy, and peer-led meeting environment) were assessed to be inconsistent with TC philosophy and require additional training or program development.

In sum, we applied a network methodology to the TC setting and identified several key patterns related to the program's effectiveness. Although the TC social structure was consistent with the concept of a "community" and perceived role models were the most engaged in TC treatment, positive peer influence and role modelling processes (i.e., "community-as-method") were not found to operate as they should in a TC program. These results remained consistent over an extended assessment period, further suggesting that modifications are required to activate TC peer-based mechanisms, increase resident treatment engagement, and promote post-release desistance.

Policy Considerations

This study found little evidence that residents' treatment engagement was influenced by their peers within the sampled TC unit, suggesting that the TC is not functioning as expected and that the implemented programming is unlikely to significantly reduce residents' relapse or recidivism upon release (although we have not assessed that directly). Program modification appears warranted for the TC to operate as intended. Program changes specifically focused on peer network processes that should increase treatment engagement include (see also Appendix E):

- **Lengthening the program beyond four months. Greater treatment dosage would allow peer influence processes to fully spread through the community network.**
- **Increased Staff and Peer Assistant training and cross training specifically focused on peer influence processes, such as verbal affirmations and corrections.**
- **Whenever possible, consider acoustical and spatial factors that facilitate community and group meetings. For example, community and group circles of reduced radius promote stronger participation, treatment engagement, and peer influence processes.**

Study results suggest that the program length of four months may be too brief to foster the desired levels of peer influence. We were not able to directly test how treatment length affected peer network processes because we did not have an alternative condition (i.e., a TC with a longer program duration). However, there was narrative evidence (see page 13) from TC residents and a fidelity assessment from Dr. De Leon (Appendix E) suggesting that the program should be more rigorous to prevent those who didn't want to engage with the treatment being easily able to "fake it" or "skate by" and complete the program for parole. It would be worthwhile to repeat our network approach in a TC of longer length to compare peer processes and variation in resident treatment engagement over time, particularly as TCs of longer length have generally been shown to reduce post-release recidivism and/or relapse (Mitchell, MacKenzie, & Wilson, 2012).

Finally, this study demonstrated the feasibility and efficacy of a network approach for evaluating prison TC peer processes. With further refinement, the network survey instrument can be applied in other TC settings, and by non-academic assessors, to evaluate program effectiveness.

Background [1]

Prison TCs are direct descendants of self-help organizations that emphasize drug abstinence through individual responsibility and group interaction (De Leon, 2000; Perfas, 2004). The axioms of TC theory, such as "community as method" and "you alone can do it, but you cannot do it alone," highlight the mutual self-aid and social learning principles at the heart of the TC approach (NIDA, 2002). These principles are what distinguish TCs from more individualistic rehabilitation strategies, such as drug replacement or cognitive behavioral therapy (De Leon, 2000). Prison TCs typically segregate drug-addicted inmates into adjoined living and working areas outside the general inmate population for periods of 3 to 12 months. Although there is some variation in the actual structure of prison TCs, they all share the philosophy that mutual aid between residents is the basis for successful treatment. Residents therefore share responsibility for monitoring and providing feedback for one another's behavior (De Leon, 2000). Consistent with operant conditioning principles, peer affirmations and corrections should increase treatment engagement by extinguishing previously learned maladaptive behaviors and promoting behaviors consistent with a drug-free lifestyle (Akers, 2009).

Changes in the number and content of peer relations should also accompany the TC treatment process. TC theory views addicted persons as self-reliant, untrusting, and affiliated with criminal peers (De Leon, 2000). These interrelated personal characteristics are modified in the TC through positive peer interactions, role-modeling, and group activities (Wexler & Prendergrast, 2010). Through TC participation, isolated individuals are expected to progress over time into trusting and respected community members willing to assist new TC residents. By recognizing the interdependence of their behavior and the duty to their peers, TC residents are expected to open themselves to meaningful social relationships and embed themselves into community norms and responsibilities. TC residents are also expected to reinforce within one another the goals of the treatment process and to help one another engage with those goals and that process.

One of the reasons why TCs may be effective in reducing recidivism is that they explicitly address one of the main challenges facing incarceration-based treatment programs – prison itself. Although inmates commonly report that their confinement experience will place them on a positive behavioral trajectory, the structure and environment of prison may not be conducive for lasting change (Soyer, 2014). It is very difficult for offenders to experience a desired non-deviant identity through interactions with supportive pro-social others who can solidify this identity shift (Giordano et al., 2002). Unsurprisingly, ex-prisoners are often ill-equipped to maintain their desistance once they are confronted with inevitable disappointments and temptations post-release.

TCs are structured to enable identity shifts congruent with redemption and desistance. TCs operate as a network of peers, a community that reinforces positive behavioral patterns. What makes TC communities different from the prisons in which they are embedded is that their primary function is to help individuals with severe cognitive and behavioral disorders to change themselves (De Leon, 2000). While prisons offer little opportunity for inmates to have a non-deviant identity verified by supportive others, TCs are explicitly designed to do so. The TC emphasis on residential trust, community accountability, and shared experiences elevate peers as primary change agents.

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[1] This text is adapted from: Kreager, Derek A., Martin Bouchard, George De Leon, David R. Schaefer, Michaela Soyer, Jacob T.N. Young, and Gary Zajac. 2018. "A Life Course and Networks Approach to Prison Therapeutic Communities." Pp. 433-451 in *Social Networks and the Life Course: Linking Human Lives and Social Relational Structures,* edited by D. Alwin, D. Felmlee, and D.A.Kreager. New York: Springer.

TCs' reliance on trust and prosocial interactions may be risky propositions. Their effectiveness rests on active involvement in a positive peer community, but the inmates most in need of this treatment are, by definition, likely to be mistrustful of others and resist prosocial peers. As De Leon (2000: 60) states, "A lack, loss, or violation of trust is a distinctive marker of the substance abuser's personality and lifestyle." Most addicts' lives are littered with eroded or destroyed personal relationships, and coping strategies characterized by lying, exploitation, and denial further diminish the likelihood of establishing meaningful future relationships. Given conditions of past and present mistrust, how do prison TCs gain community members and subsequently foster positive peer engagement among those who agree to participate?

An answer to this question is that decisions to enter prison TCs do not necessitate or indicate inmates' desires for drug abstinence or community membership. Rather, inmates are likely to enter a TC as a condition for parole or to avoid chaotic, monotonous, or unsafe conditions in the general prison population (Maruna, 2001; Stevens, 2013). Recognizing that TC membership primarily stems from such "push" factors is important because these simultaneously explain how high-risk offenders enter a positive peer community and why they may not fully engage with treatment or community activities once they arrive. For example, an inmate who enters a TC only to meet parole board expectations may have little incentive to invest in his treatment and, if he graduates, have a relapse risk as high as when he entered. Alternatively, exposure to a positive community may alter the same inmate's outlook and identity in ways unimaginable if he had stayed in general population, making the TC experience a true life course turning point. For the typical resident, the TC experience may thus represent a "hook" for behavioral change, but grabbing this opportunity remains a highly uncertain affair. It is exactly this uncertainty that makes understanding the mechanisms at the core of TC effectiveness so important.

A Network Approach

An approach explicitly focused on the structure and dynamics of relationships among prison TC residents is necessary for understanding the effectiveness of this treatment modality. Necessary because the treatment philosophy, goals, and their implementation are all inherently relational (i.e., focused on "linked lives") and because the peer-driven mechanisms associated with prison TC effectiveness remain untested (De Leon, 2000; Mitchell, Wilson, & MacKenzie, 2012).

Approaching TC research from a network perspective acknowledges within-individual processes central to life course and desistance literatures, such as human agency and identity transformation, but gives equal emphasis to the social structure (or regular patterns of relationships) that empower and constrain individual behavior in a given context (Wellman & Berkowitz, 1988). Applied to prison TCs, a network approach therefore focuses on the patterns of relationships among inmate residents themselves, and how those relationships co-evolve with treatment outcomes (e.g., engagement, graduation, and desistance) over time (Kreager, Schaefer, Bouchard, Haynie, Wakefield, Young, & Zajac, 2016; Kreager, Young, Haynie, Bouchard, Schaefer, & Zajac, 2017; Schaefer, Bouchard, Young, & Kreager, 2017). Although residents regularly interact with staff, TCs are designed such that key mechanisms of change operate through residents' relationships with one another. Such relationships take many forms, including informal ties of friendship, trust, assistance, and respect. These kinds of ties constitute the informal "peer network" that is our primary focus. Other relational aspects of TCs include formal relationships created through pre-defined roles (e.g., peer leaders), and formalized interactions through the application of affirmations/corrections aimed at reinforcing program goals.

The network mechanisms underlying TC effectiveness are easily extracted directly from TC philosophy. We can thus generate testable hypotheses for how individual residents are expected to interact with the TC structure as they progress through treatment (i.e., inmate-level) and what the TC network should look

like to facilitate resident identity transformation and long-term desistance (i.e., unit-level). Doing so helps to operationalize TC concepts using network measures and allows for analyses of the resulting data using network methods. Below, we first discuss resident-level network processes as they relate to De Leon's (2000) TC program stages (induction, primary treatment, and re-entry) and connect these with life course concepts of turning points and linked lives. We subsequently outline theoretically-driven hypotheses for unit-level network processes.

Unit-Level Network Structure

The ability of individual residents to undergo the identity transformation associated with TC treatment depends on the unit fidelity to TC philosophy. A TC must exhibit several distinctive network features in order to establish and maintain the community norms essential for effective treatment. These include:

Connectedness. The TC is a peer-based (vs. individualized) treatment approach. Thus, everyone in the TC should have relations with other TC residents. In network terms, this interconnectedness translates to a highly dense social structure.

Mutuality. Given the explicit TC goal of helping residents to develop close, trusting peer relationships, unit networks should be characterized by a high degree of mutuality whereby both members of dyads reciprocate perceptions of trust.

Lack of isolated communities. Social networks often divide in subgroups or communities where ties are more concentrated within groups than between groups. Indeed, TCs explicitly foster "encounter groups" during primary treatment to provide a subgroup contexts for constructive peer influence. However, to avoid group solidification, clique formation, and the prioritization of group goals above those of the community, encounter groups should be interchangeable, ephemeral, and evolving in membership. As De Leon (2000: 173) states, "Although the TC fosters peer relating, it explicitly discourages permanent peer groupings because these potentially undermine the influence of the broader family or community." Thus, subgroups based on other shared characteristics, such as race, background, or criminal histories are assumed to be counter to effective treatment outcomes and discouraged. Instead, the TC network should form a single component in which everyone is at least indirectly connected to everyone else.

Hierarchy. American prison TCs rely upon senior residents to mentor and guide newer residents. Thus, some hierarchy is inevitable and encouraged. However, all residents are allowed equal voice in contributing to how the TC is run. Accordingly, the network should be both cohesive (i.e., consist of a single network component with high tie density) and hierarchical, with respected senior residents at the center of the structure (Kreager, Young, Haynie, Bouchard, Schaefer, & Zajac, 2017; Moody & White, 2003).

Global stability and local instability. Social networks are continuously in flux. This should especially be the case for TCs in their aim to discourage subgroups that detract from the TC mission. While members should be developing new, trusted ties throughout their TC tenure, ties should shift in the intensity or frequency with which they're enacted. Thus, while the overall structure and kinds of positions within the TC (e.g., inductee, primary treatment resident, and re-entry resident) should remain fairly consistent over time, the individuals occupying those positions should shift as residents progress through treatment.

Summarizing the above list, we expect the high-fidelity prison TC to exhibit a loose core-periphery network structure. This network would consist of senior residents with social ties to both newer residents and to senior peers forming the core. The periphery would then consist of newer residents with fewer and weaker ties. The ties that newer residents do form should be with senior mentors who instruct, monitor,

and sanction community norms. Late stage residents would also be loosely tied to the unit network, primarily through their relationships with the core members who they themselves mentored.

Individualized Trajectories

Even if TC structure meets theoretical guidelines, individuals may not move through the program as desired. It is possible that mistrust is rooted too deep in some inmates, such that they never develop close, reciprocated relationships. This possibility may be exacerbated in TCs of short program length, as residents would recognize that they can complete the treatment without fully embedding themselves in the community. It may simply take time to build trust, and four months may be insufficient for this process. Indeed, some of the primary motivations for entering the TC, such as the TC being a condition for parole or a strong desire to exit general population, do not require community investment or treatment engagement. Many residents may therefore seek to "skate" through the program. Alternatively, individuals may develop relationships, but prefer to remain in tight-knit groupings that revolve around goals unrelated to TC philosophy. Such individual and group deviations should be associated with low engagement, low likelihood of graduation, and high probability of relapse. They should also be easily discernable as outside the core structure of a TC unit.

Sample and Survey Administration[2]

Data for TC-PINS was collected monthly from August 2016 to May 2017 at State Correctional Institution (SCI) Chester. Computer assisted personal interviews (CAPI) were conducted monthly with participants in one TC unit (n=62). Inmates who chose to participate completed the CAPI in a confidential setting with an interviewer who read all questions and answer choices to the respondents and provided clarification when necessary. All inmates within the TC unit were given the choice to complete the CAPI, answering a variety of open- and closed-ended questions about their familial relationships, future expectations, treatment engagement, various peer network measures, and their evaluation of the TC program and experiences as a resident. The response rates per wave ranged from 73% to 82% of the unit, combining to a total sample response rate of 84% of eligible respondents completing at least one CAPI during their month(s) on the unit.

Any inmates with a score of six or above on their drug screen intake are placed in the TC toward the end of their sentence. In Pennsylvania state prisons, the TC program is currently four months long, shortened from a longer TC program (i.e., twelve months) of the past. Those four months of TC treatment are separated into three phases: Phase 1 or the "induction" phase lasts one month, Phase 2 or "primary treatment" last two months, and Phase 3 or "reentry" compromises the fourth and final month. Inmates enter the unit on a rolling admission system (i.e., inmates do not enter as cohorts) and "phase up" based on their entry date to the TC. However, many treatment groups are conducted within phase, so residents do spend more time with the residents in their phase than those in other phases.

Over ten waves of data collection, a total of 210 inmates were on the TC unit during days the CAPI was administered. Of those 210 potential respondents, 177 inmates completed at least one CAPI. Unit and sample demographics are described in Table 1. Participation in additional treatment waves declined per wave: 144 inmates participated at two treatment waves, 97 participated at three treatment waves, and 52 inmates completed all four possible treatment waves. Much of this decline across waves was due to the timing of their treatment (e.g., inmates were partway through treatment when data collection started or ended), inmates being transferred to other TC units before program completion, or discharge from the unit

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[2] This text is adapted from a manuscript draft authored by Kim Davidson.

by request or for behavioral reasons. As a result of these factors, only 41% of inmates in the sample had all four of their months of treatment overlap with the data collection window.

Average respondent age is 37, which is only slightly lower than the average across Pennsylvania SCIs, which was 39 as of the time of the study (Pennsylvania DOC Planning, Research, and Statistics 2016). The race distribution of the TC unit studied is significantly different than the statewide distribution, with a higher percentage of white inmates in the sample than in all SCIs. This is possibly a product of the drug epidemic, especially widespread use of opioids, affecting rural areas of America in recent years, which is reflected in rates of prison admittances from rural Pennsylvania counties over the past several years (Pennsylvania DOC Planning, Research, and Statistics 2013-2016). Across all Pennsylvania SCIs, 48% of male inmates are black, 41% are white, and 10% are Hispanic. In contrast, the sampled TC is predominantly white, with 58% white residents, 35% black residents, and 7% Hispanic residents (see Table 1).

Table 1. Unit and Sample Descriptive Statistics

		Total Unit (n=210) Mean (SD)		Sample (n=177) Mean (SD)	
Age		36.85	(11.12)	35.58[a]	(10.39)
Race (%)					
	White and Other	58.09%		58.85%	
	Black	35.24%		33.14%	
	Hispanic	6.67%		8.00%	
Grade Completion		11.30	(1.20)	11.33	(1.19)
IQ		92.02	(13.05)	93.14[a]	(13.13)
Offense Gravity Score (OGS)		6.54	(3.07)	6.54	(3.12)
TCU Score		6.72	(1.18)	6.74	(1.21)
Drug of Choice (%)					
	Alcohol	22.38%		18.29%	
	Opiates	31.43%		34.86%	
	Other Stimulants	6.67%		6.86%	
	Hallucinogens	2.38%		2.29%	
	Cocaine or Crack	10.95%		10.86%	
	Tranquilizers or Sedatives	2.86%		2.29%	
	Marijuana	7.62%		9.14%	
	None Specified	15.24%		14.86%	

[a] Sample significantly different than non-sample (p<.05)

Measures

Treatment engagement. The primary outcome of interest for this study is a self-reported measure of treatment engagement using the Client Assessment Summary, a validated TC treatment engagement scale developed by TC experts (CAS; Kressel, De Leon, Palij, and Ruben 2000). Responses are averaged to create a treatment engagement score with a minimum score of 1.0 to maximum score of 5.0 ($\alpha = 0.86$) (see Appendix A). Across all waves and observations, the mean treatment engagement score is 3.85 (standard deviation 0.51) and measured scores range from 2.64 to 4.93.

Peer relationship network. During the CAPI surveys, respondents were asked to nominate other unit residents that they "get along with most." These positive relational ties were unlimited and respondents nominated peers from an alphabetized roster of all unit inmates listed on the computer screen. When aggregated across all respondents, the nominations from each resident create a peer relationship network. Overall, researchers found that residents easily engaged with the nomination procedure, which also bodes well for any future studies that take a similar approach, whether administered by academic or practitioner personnel.

Role model nominations. Also during the resident CAPI surveys, respondents were asked to nominate up to three residents who "people see as the role models in the community." As with the "get along with most" nominations, "community role models" were chosen from an alphabetized roster of all unit inmates listed on the computer screen. To understand which residents are nominated as role models, we aggregated nominations received by each respondent over the waves and used this as the dependent variable for regression analyses.

Analyses and Results

Descriptive Analysis of Peer Network Structure and Unit-Level Network Dynamics

A key component of TC treatment philosophy (i.e., the "community-as-method") is *connectedness*, in that TC residents should form relationships with one another. Analysis of the network resulting from "get along with" nominations reveal that **the vast majority of inmates are forming peer relationships** (Table 2). On average, 95.4% of TC residents on the unit got along with at least one other resident during a given wave. If we focus only on inmates who responded to the survey, we find that 98.5% were connected to at least one other resident. The average TC resident reported they got along with 4.5 peers. Another measure of connectedness, *mutuality* or *reciprocity,* indicates the likelihood that a nomination is returned by the nominee, generally a sign of a stronger relationship. On average, 38.8% of nominations were reciprocated by the person being nominated. This amounts to an average of 1.75 mutual relationships for each survey respondent, a number that is not inconsistent with findings of friendships in other social contexts (e.g., schools).

The aforementioned levels of connectedness and mutuality are associated with TC phase in a manner consistent with TC philosophy: **The number of peer nominations increased by treatment phase**. Phase 1 inmates who recently entered the unit named an average of 2.8 peers in the get along with network (of which .8 were mutual). These numbers rise to 4.8 and 5.5 for Phase 2 and 3 inmates respectively (1.9 and 2.3 of which were mutual). And, the few residents who were isolated by virtue of having no connections to other residents were predominantly Phase 1 inmates (86%). The correlation between phase and number of ties is .27 (p<.001) rising to .35 for mutual ties (p<.001), suggesting that more senior TC residents are more embedded in the informal structure.

Analyses of the overall unit network shed light on the extent to which the unit is a single community (versus subgroups) and if the TC has a distinguishable hierarchy where senior residents occupy central positions. Both of these propositions are core to TC philosophy. Examination of the overall structure reveals that in each wave, all non-isolated residents could reach one another either directly or indirectly. In other words, **the unit network consisted of a single group or community, with no isolated subgroups of inmates**. Figure 1 presents two representative depictions of the networks from waves 3 and 8. In the figure, connectedness is evident in that all residents can reach one another either directly or indirectly through other residents on the unit. The inmates (or nodes) in the network are sized and positioned based upon their number of connections to others, with highly connected inmates closer to the center. Because residents differ in their connectedness largely based upon phase, phase 1 inmates are more often found on the edges of the network, while phase 2 and 3 inmates are positioned closer to the center. Thus, **as expected based on TC philosophy, more senior TC residents are located in the center of the network where they can serve a vital leadership role.**

Table 2. Description of inmate connectedness over waves

Wave	Connected Inmates (Unit)	Mean Number of Connections	Mean Number of Mutual Connections
1	93.5%	4.83	1.67
2	98.3%	5.19	1.91
3	96.8%	4.64	2.00
4	98.4%	2.58	.89
5	98.4%	4.28	1.56
6	95.2%	5.18	2.12
7	93.4%	4.31	1.88
8	95.1%	4.48	1.72
9	98.4%	4.96	1.74
10	86.9%	4.56	2.05
Mean	95.4%	4.50	1.75

Figure 1 also reveals consistency in the structure of the unit network over time. Waves 3 and 8 appear quite similar – in number of ties, position of inmates of different phases, amount of mutuality – even though the population of the unit had completely turned over from wave 3 to 8. Thus, **despite the unit experiencing a turnover of 2-3 inmates per week, with concomitant changes in relationships among inmates, the structure of informal relations among residents remains relatively stable over the observation period.**
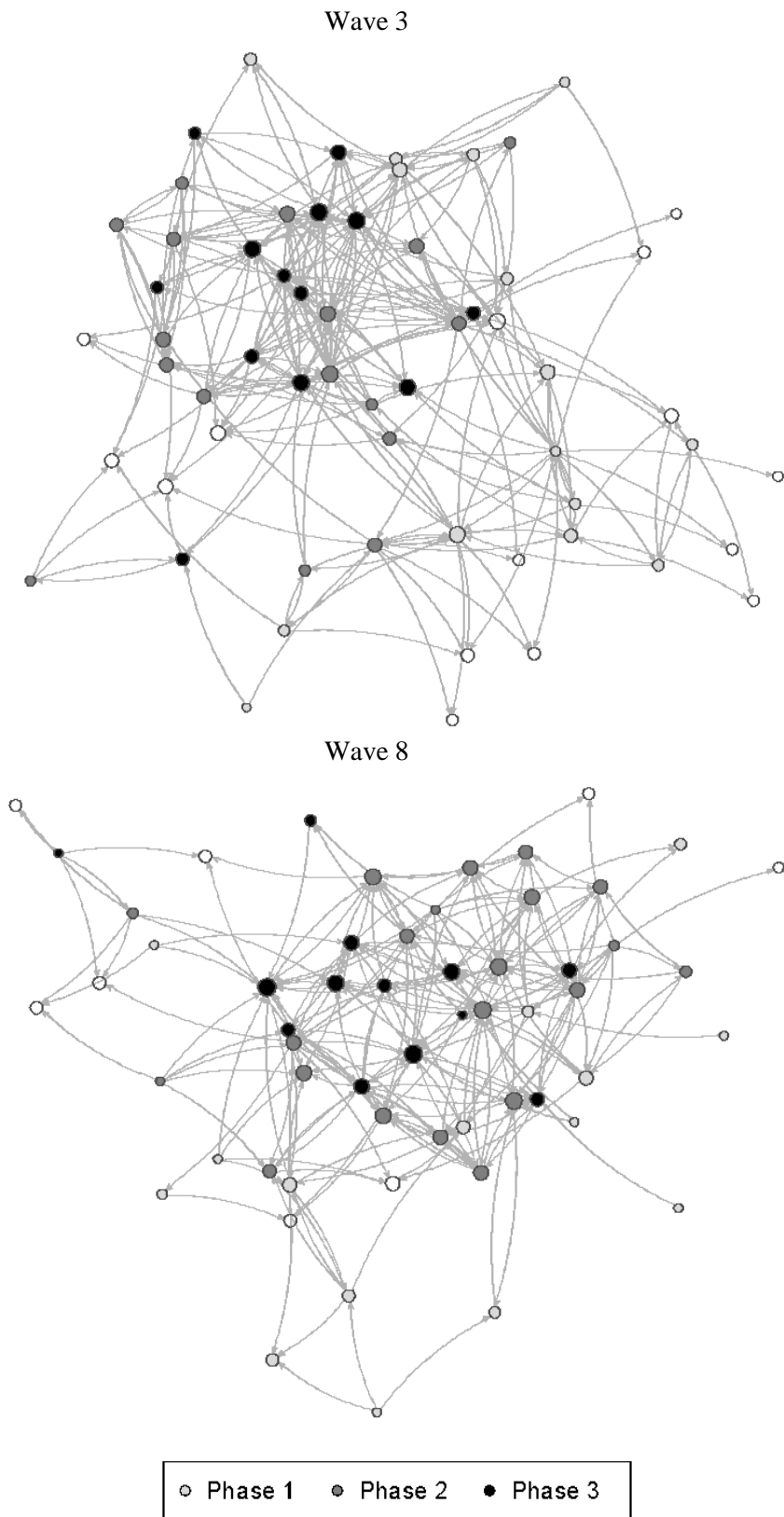
Wave 3

Wave 8

Phase 1   Phase 2   Phase 3

Figure 1. Get along with network (node size corresponds to number of incoming ties)

Within-Person Trajectories of TC Engagement

Table 3 shows the descriptive statistics for the treatment engagement scale over the ten waves. To aid in visualizing the information shown in Table 3, Figure 2 plots the treatment engagement scores for each individual over the waves. In addition, the mean for each wave is plotted with a line connecting the means over the waves. Inspection of Table 3 and Figure 2 show that the average level of treatment engagement is roughly similar over the waves and that the level of variation is similar across the waves. **Overall, there does not appear to be any peculiar periods over the course of data collection with regard to the measurement of treatment engagement.**

Table 3. Description of treatment engagement scale over waves

Wave	Mean	Standard Deviation	Number taking survey	Number on unit	Proportion responding
Wave 1	3.811	0.510	48	62	0.774
Wave 2	3.877	0.558	47	60	0.783
Wave 3	3.908	0.566	45	62	0.726
Wave 4	3.809	0.506	45	62	0.726
Wave 5	3.913	0.479	50	62	0.806
Wave 6	3.904	0.539	49	62	0.790
Wave 7	3.909	0.598	48	61	0.787
Wave 8	3.879	0.568	50	61	0.820
Wave 9	3.924	0.537	47	62	0.758
Wave 10	3.794	0.519	43	61	0.705

Within each wave, it is important to examine variation in the level of treatment engagement over treatment phase. Ideally, individuals who are farther along in the program should show greater treatment engagement, relative to those who are more recent to the program. To make this comparison, we conduct one-way analysis of variance (ANOVA) tests for each wave. Specifically, we are testing the hypothesis that the mean level of treatment engagement is the same for each phase group. If we reject this hypothesis, then we have evidence that there are differences in treatment engagement between the phases. We then examine this hypothesis over the waves. The results for these tests are shown in Table 4 and indicate that in every wave, there is more variation *within* each of the phase groups as opposed to *between* the phase groups. Put differently, **there does not appear to be meaningful differences in treatment engagement within each wave for the different phases. Thus, the TC does not appear to have a meaningful impact on how participants engage in treatment over time.**
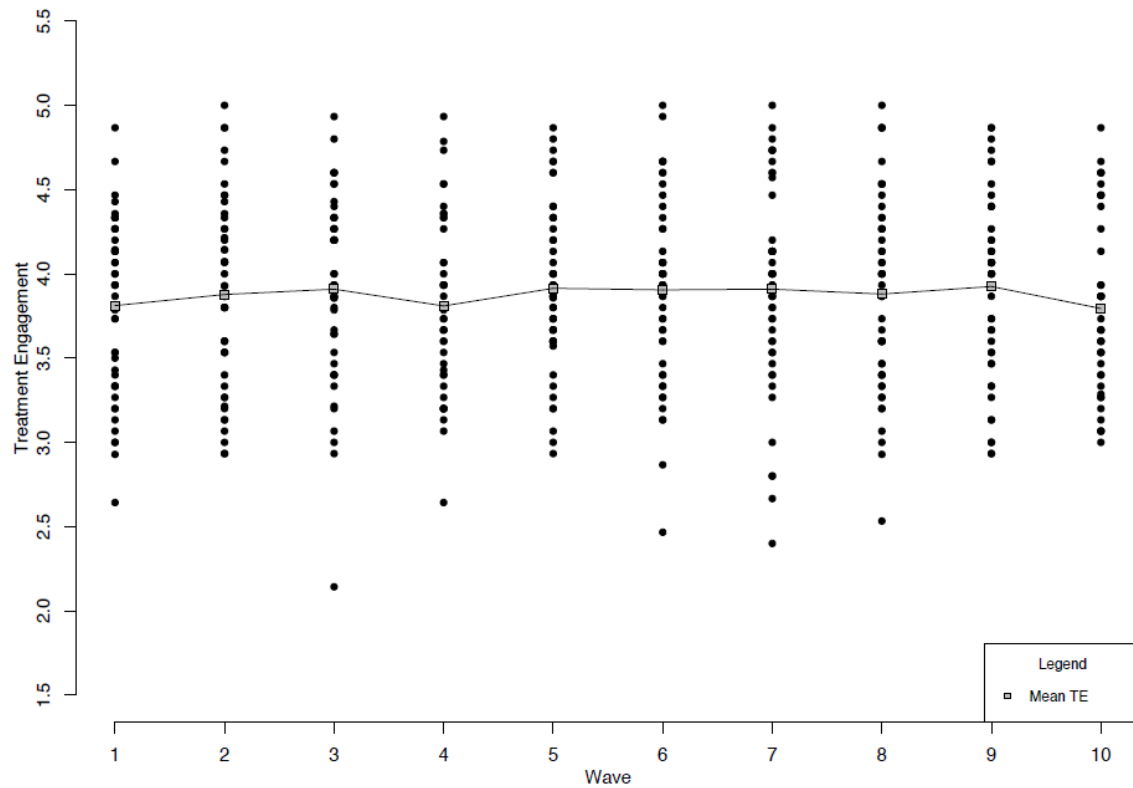
Figure 2. Distribution of Treatment Engagement (TE) by Wave

Table 4: Analysis of Variance for Treatment Engagement by Phase and by Wave

Wave	F	df_1	df_2	P-Value
Wave 1	0.620	2	45	0.541
Wave 2	1.640	2	44	0.206
Wave 3	2.590	2	42	0.087
Wave 4	0.530	2	42	0.591
Wave 5	1.350	2	47	0.268
Wave 6	0.240	2	46	0.788
Wave 7	0.860	2	45	0.428
Wave 8	1.220	2	47	0.305
Wave 9	2.220	2	44	0.121
Wave 10	1.390	2	40	0.260
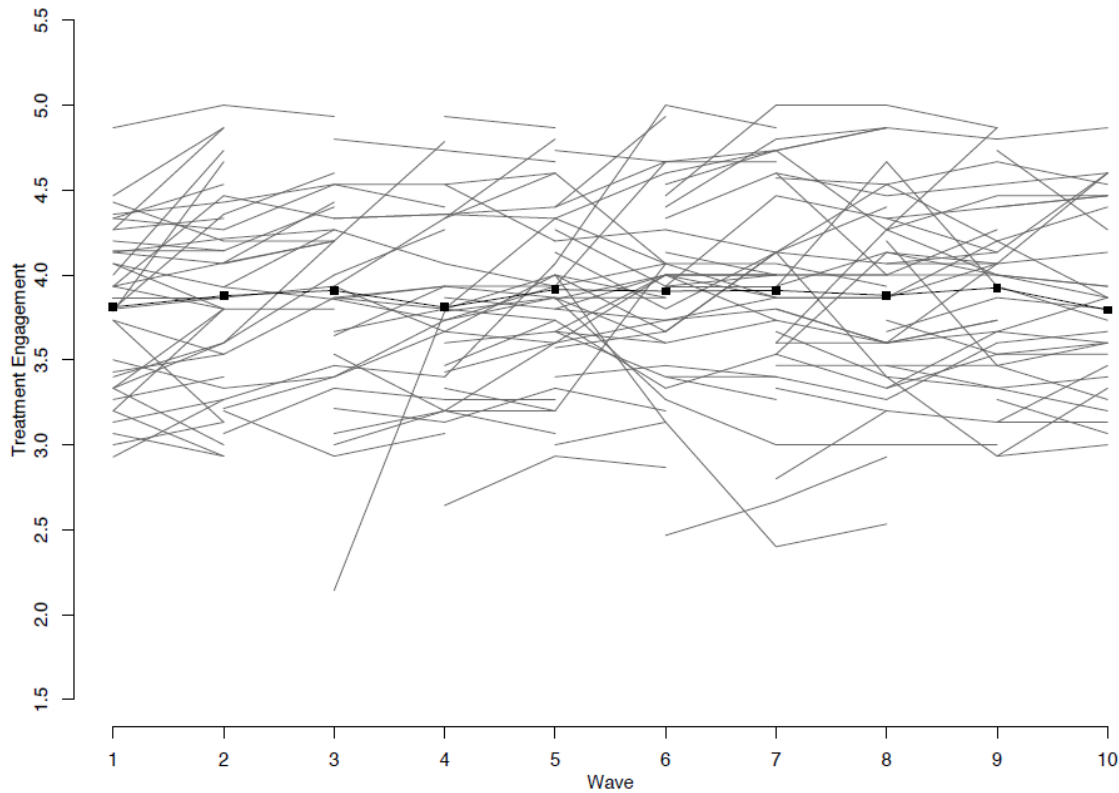
Figure 3. Within-Person Trajectories of Treatment (TE) by Wave

Perhaps the most important analysis relates to within-individual trajectories of treatment engagement by treatment wave, as these patterns will help us understand if TC residents are increasing their engagement with the program over time. Figure 3 plots the trajectories for individuals at each wave with the overall mean at each wave. Each line represents an individual's developmental pattern of treatment engagement. It is difficult to discern any sort of pattern from the aggregate data since individuals have trajectories occurring at different waves. A more illustrative approach is to take person-period observations so that individuals can be placed on the same scale. Figure 3 shows the person-period trajectories for individuals over three person-periods. The overall mean is shown in black. The figure shows that **there is a great deal of variation in the initial level of treatment engagement (leftmost panel) and that there is also considerable variation *between* individuals in their developmental trajectories.**

We use latent growth curve modeling to statistically examine within-person trajectories of treatment engagement. Specifically, unconditional growth curve models estimate the overall mean and covariance structure of the individual treatment engagement trajectories (Nagin 2005: 5). Here, the mean describes the average growth in treatment engagement over wave, and the covariance structure describes the variability in growth around the average trajectory. Table 5 shows the estimates for the latent growth curve model of treatment engagement. The composite mean scores of treatment engagement (i.e. the mean of the 15 indicators of treatment engagement) were used for up to three points in time. The mean estimates show that the average level of treatment engagement at the first time point was 3.790, a value close to "Agree" on the 1-5 Likert scale. Additionally, there was significant between-person variation around the mean (i.e., the intercept variance of .238). Overall, **the average TC resident entered the program with favorable treatment engagement, but there was significant between-person variability in treatment engagement.**

The slope estimate from the growth curve model indicates that the mean trajectory increased over time by 0.077 at each period. The slope variance indicates that some individuals had a higher rate of change, relative to other individuals who had a lower rate of change compared to the mean. For example, the average individual changed from a treatment engagement score of 3.790 when entering the program to a treatment engagement score of 4.021 at the end of the program (i.e. 3.790 + [0.077 x 3]). On average, this is a 0.231 unit within-person change in treatment engagement over the course of the program. In contrast, the average between-person difference at the beginning of treatment is 0.487 (i.e. the standard deviation of the intercept), twice as large as the average change. **In sum, although individuals tended to increase their engagement over time in the program, these changes are modest compared to between-resident differences in treatment engagement at the beginning of treatment. Thus, the treatment engagement that participants "brought with them" into the program was more salient in our data than the engagement imparted to them through program participation.[3]**

Table 5. Unconditional Growth Curve Model of Treatment Engagement

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Means				
Intercept	3.790	0.039	98.239	0.000
Slope	0.077	0.018	4.244	0.000
Variances				
Intercept	0.238	0.034	7.052	0.000
Slope	0.025	0.012	2.118	0.034
Covariance	-0.014	0.016	-0.856	0.392

Qualitative Evidence of TC Functioning and Differential Treatment Engagement

Inmate responses to the question "What do you think of the TC so far?" provide further insight into their subjective perceptions of the TC's program fidelity and how these intersect with their own and other residents' treatment engagement. Although the laborious task of coding all of the qualitative data continues, a dominant theme that emerged from these narratives was that the community elements of the TC were not very demanding and that only those who wanted to engage with the treatment would gain from the program. Consistent with the Fidelity Assessment (Appendix E), the narratives point toward a TC that helps motivated residents, but is too easy and short in duration for those who are relatively disinterested from the start.

The following quotes, each from 17 different residents, provide some context to the quantitative analysis above. The primary themes represented here are: (1) the program is not very demanding and you can complete it with little trouble, (2) benefits of the program are what you make of them, with residents divided between those who take it seriously, those that fake it, and those that are checked out, (3) there is

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[3] Although a relatively high mean treatment engagement value at time 1 (x=3.79) raises a possible ceiling effect for upward change in this variable, the average resident would still be able to increase his treatment engagement by two standard deviations (std = .51) over the length of the program.

limited structure in the treatment program, and (4) the community method is perceived as less valuable than individualized treatment, likely due to the perceived lack of structure in the TC.

"For the first two and a half months, I stayed in my cell and went to yard everyday and did not participate at all, and they just caught on a couple of days ago. And I still phased up every time."

"I think it could be helpful depending on how interested in recovery you are."

"It's kinda what you want to make of it really. It could be more difficult but at the same time it could be just the way it is and you can get stuff out of it if you want to."

"If you slide under the radar and don't act stupid, you can get through. This is good for me because I know enough about recovery, I just don't apply it to my own life. There is some knowledge here, I think, some basic knowledge, but I haven't really learned anything."

"Overall, it's a good program if you actually want to learn something, you're definitely able to."

"I think it's a good idea for people who really want to change because it'll give them structure in how to get it done and how to change…It only works if you want it, they can't force it on someone."

"It's not as structured as the ones I've been through before. In other TCs it was all day every day. This one, it's just shift hours programming when the counselors are here. It's a lot of laid-back, just inmates doing their own thing."

"I think it's a good concept. Too many people treat it like a joke so it's starting to turn into a joke. I tried to take it seriously when I first started. I thought it was going to be strict when I first started, but it's not so I was a little disappointed."

"I think that there's a lot of people that do not take it seriously and there are people like myself that do try to get any and anything out of it. The counselors do try to inform you with as much as possible. In my opinion, there's still room for improvement but you take what you put into the program itself."

"I'm coming to realize that any program you take, that's given to you, you really have to do it on your own. You have to grasp it on your own. You have to want it. It's not something that anyone can give to you. You have to do it on your own and you have to want it."

"I'm a little frustrated, I don't think prison is the best place for recovery, there are a lot of kids in here that want to cut people down and laugh at people. For the ones that are serious I think it just hurts."

"It's a requirement to be here. A one on one situation would be better than the class format it is now. It's pretty much a lot of sittin around, don't get a lot of self help about it."

"Sure, some guys are serious about the program and some guys aren't serious on the program, so I started focusing more on my program and what I can actually get out of it. Helping me remember stuff that I already knew from other programs and it is bringing it back to memory."

"In the beginning I was frustrated that I was placed in the TC. But after a few weeks, I noticed that there were a lot of guys in here for the same reasons as myself. After seeing some other people open up, it helped me open up and get talking."

"When you're on the street and you came from like detox where people really want to get help because their life depends on it. But when you come into these jail programs, some people are doing it for worse reasons like to brown nose the counselor. I'm disappointed. But they say fake it till you make it."

"Completely unorganized. There's not enough individualized counseling. Everybody's needs are different. I don't think they have a person that properly assesses people's needs."

"It's not what I expected. Lack of structure, from the inmates and from staff. Not enough pressure for us to use the TC concept as a whole."

Characteristics of Community Role Models

Table 6 shows descriptive statistics for the role model nominations received by TC residents, by wave. On average, TC residents received approximately one role model nomination per wave. However, the distribution of the nominations received by individual residents was highly skewed, so that the overwhelming majority of nominations went to a relatively few number of unit inmates. On average, only one-third (approximately 20 inmates per wave) received any role model nominations, and less than five inmates per wave received more than 10 nominations. In other words, **there was strong consistency in residents' perceptions of unit role models at each wave, with only a small fraction (<5 residents) of the unit strongly identified as community role models per wave.**

To understand the characteristics associated with being a community role model, we estimated a series of multivariate regression analyses using three definitions of "role model". First, "role model" is defined as a binary variable where '1' identifies TC residents who receive at least one nomination throughout their treatment period (63.2%). Second, "role model" is defined as a binary variable where '1' identifies TC residents who receive 10 or more nominations throughout their treatment period (10.2%). We estimate the likelihood for these two definitions using logistic regression models. Finally, we define "role model" using the total nomination counts that TC residents received throughout treatment. As nomination counts are a discrete variable with a highly skewed distribution (i.e., the majority of residents did not receive any nominations), we analyzed this outcome using a negative binomial regression. For all analyses, the sample consists of 177 inmates with valid survey responses.

Table 6. Description of role model nominations over waves

Wave	Mean (Std Dev) of Received Role Model Nominations	Proportion of Residents with at least one Role Model Nomination
1	.92 (2.84)	29%
2	1.27 (4.08)	32%
3	.93 (2.44)	29%
4	.76 (1.83)	32%
5	1.08 (3.39)	31%
6	1.29 (3.43)	32%
7	1.18 (3.96)	31%
8	1.05 (2.95)	34%
9	.81 (1.77)	32%
10	.89 (2.49)	31%

The first column in Table 7 presents estimates from a logistic regression predicting whether an inmate has ever been nominated as a community role model. Results do not identify a statistically significant difference for any racial group, nor are there significant coefficients for inmates' age, TABE score, offense gravity score, TCU score, or feeling of social belonging. The only significant result is inmates' level of treatment engagement. For instance, a one unit increase in inmates' treatment engagement across waves is associated with a 71% increase in the predicted probability of being nominated as a role model

(exp(.912)/1+exp(.912) = .713). When inmates' treatment engagement is one standard deviation above the mean, the mean predicted probability of being nominated as a role model is roughly three times greater than when inmates' treatment engagement is one standard deviation below the mean. This result indicates that **inmates who are nominated as role models tend to have high average treatment engagements across waves**.

Table 7. Regression Analyses of Three Definitions of Community Role Model

Independent Variables	Ever nominated[a]	Nominated > 10 times[a]	Frequency of nominations[b]
Intercept	-4.89*	-11.15*	-5.59***
	(2.12)	(4.78)	(1.52)
Race (Black is referent)			
White	-.164	-1.63†	-.337
	(.437)	(.934)	(.305)
Latino	-.436	.359	-.378
	(.733)	(.982)	(.520)
Age	.001	-.002	.030*
	(.002)	(.035)	(.012)
TABE	.001	.009	.009*
	(.006)	(.012)	(.004)
Offense Gravity Score	-.075	-.043	.022
	(.060)	(.107)	(.043)
TCU Score	.058	-.238	-.043
	(.144)	(.289)	(.101)
Mean treatment engagement	.912*	2.34*	1.10***
	(.436)	(1.07)	(.316)
Mean social belonging	.150	.253	.121
	(.396)	(.803)	(.290)
AIC	221.55	80.10	625.88
Dispersion	-	-	.555

[a] Logistic Regression, [b] Negative Binomial Regression

The second column of Table 7 presents results from a logistic regression of inmates who have been nominated as a community role model at least 10 times, reflecting consensus in community role model status. In contrast to the prior model, this analysis identifies racial differences between Black and white inmates, such that white inmates are less likely to be nominated at least 10 times as a role model compared to Black inmates. The coefficient for treatment engagement is consistent with the above analyses. In this model, a one unit increase in treatment engagement is associated with a 91% increase in the probability of being nominated more than 10 times as a community role model (exp(2.34)/1+exp(2.34) = .912). The third column in Table 7 estimates a negative binomial regression to evaluate the frequency with which inmates are nominated as community role models. The outcome variable is the number of nominations an inmate has received; a higher value reflects greater consensus that an inmate is a community role model. Two unique effects emerge in this model. First, older inmates

appear to be nominated more often as role models than younger inmates. Second, inmates with higher TABE scores are more often nominated as community role models. Consistent with the above analyses, treatment engagement is again a salient predictor of how frequently an inmate is nominated as a community role model. Thus, **consistent with TC philosophy, inmates with high treatment engagement tend to be frequently nominated as community role models**.

Peer Influence Network Analysis

A central question for our study was, "Do TC residents and leaders positively influence resident's treatment engagement?" Answering this question is not as straightforward as it might first appear. In the past, criminologists pointed toward the strong correlation between an individual's behavior and that of their friends as evidence of peer influence. However, a crucial issue is that such correlations can occur either because individuals *change* their behavior to be consistent with that of their peers (consistent with peer influence) or that individuals *select* friends who have similar behavior to themselves. For example, within the TC context, a new resident with low treatment engagement early in the program who becomes friends with peers high in treatment engagement and then increases his own engagement would be consistent with a peer influence process. By contrast, a new resident with high treatment engagement who becomes friends with peers similarly high in engagement and then maintains his own engagement would be consistent with a peer selection process. Absent a method of disentangling peer influence and selection, typical correlational approaches will *overestimate* peer influence and may arrive at conclusions where a peer-based treatment program appears successful when, in fact, it is not. Distinguishing peer influence from selection necessarily requires longitudinal data of both behaviors and peer relationships.

Within social network approaches, stochastic actor-oriented models (SAOMs) provide a method of discerning peer influence and selection mechanisms. This statistical method models simultaneous changes in network structure and individual behaviors (i.e., treatment engagement) over time. Although mathematically complex and requiring several waves of network data (see Snijders, van de Bunt, and Steglich, 2010, for more information), SAOMs are among a very few methods that can identify if a peer (treatment) process is operating as expected.[4] Below, we present results from models that look at the peer influence on TC residents' treatment engagement emanating from self-reported friends (i.e., "get along most" ties) and perceived community role models.

Our first question was how inmates affected one another's engagement over time (e.g., peer influence) through "get along with most" ties. We estimated models that predict each inmate's change in engagement level over time using inmate's own characteristics and their peers'. We then used score tests for our key predictors of peer influence, which are variations of the average engagement levels of the inmates nominated in each resident's "get along with" network. We tested for four variations of peer influence:

1. Inmate engagement moves toward the average of one's network
2. Inmate engagement moves toward the average of one's network, with influence stronger for inmates with larger networks
3. Inmate engagement moves up or down depending on, respectively, whether one's network has higher or lower engagement compared to the overall unit

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[4] Another approach to measuring peer influence is the random assignment of peers to specific individuals. For example, several authors have examined if (randomly assigned) roommates or cellmates influence behavior (e.g., Harris, Nakamura, and Bucklen 2018). Such approaches are statistically appropriate for identifying peer influence processes, but less applicable for a unit-level peer-influence process such as in the TC.

4. Inmate engagement moves up or down depending on, respectively, whether one's network has higher or lower engagement compared to the overall unit, with influence stronger for inmates with larger networks

The score tests from the SAOM model evaluates whether the fit of the model would improve if each respective effect for peer influence were included and estimated in the model. The null hypothesis is that each effect would not improve fit. Score tests are evaluated with a chi-square test (df=1), with higher chi-square values indicating adding the effect would improve model fit. As shown in Table 8, panel A, tests for each effect were not statistically significant (all p-values > .6). Thus, **these results offer no evidence of peer influence on engagement within the TC.**

Our second question was whether some inmate peers served as role models and were more influential than others in the development of engagement. Although we found no overall effect of peer influence on engagement, it is possible that such an effect would be suppressed and undetectable if, for instance, most peers were not influential and a small number of (perceived community leaders) had significant influence. Thus, additional SAOMs tested whether the strength of each of the four preceding forms of peer influence differed based on the following three specifications of role model:

1. Whether each peer in the get along with network was named a role model on the unit by <u>at least two</u> inmates
2. Whether each peer in the get along with network was named a role model on the unit by <u>at least ten</u> inmates
3. Whether each peer in the get along with network was named as one's own personal role model by the respondent

Results of these additional tests are presented in Table 8, panel B. These score tests also revealed **no evidence of peer influence on engagement, or that engagement was moderated by peers having status as a role model in the eyes of the respondent or others on the unit**.

The estimates from the SAOMs provide additional insight to how engagement changed over time. We tested whether inmates with larger networks had higher levels of engagement. The estimate was suggestive of a positive effect ($b = .06$), but not statistically significant ($p = .10$). These models included controls for the effects of inmate age, race, offense gravity score, TCU score and TABE on engagement. **Results for controls suggested that older inmates tended toward higher levels of engagement** (b=.026, $p < .05$), and were suggestive that **African American inmates had higher engagement than White inmates** (b=.523, $p = .06$).

The SAOMs also provide information on how individual characteristics and other factors affected which inmates nominated one another as someone they get along with. The full set of SAOM estimates for network change are presented in Table 9. Results indicate that inmate engagement had an effect on nominations: more engaged inmates named more peers in their get along with network (b = .141, $p < .001$). That is, **more engaged inmates also tended to be more socially embedded within the unit's informal social structure.** In addition, we observed that **inmates tended to nominate other inmates in the same phase of the TC program as themselves** (b = .522, $p < .001$), with this tendency relatively weaker for phase 1 inmates and growing in strength as inmate tenure increased (based on joint values of engagement similarity, ego engagement (b = -.261, $p < .001$) and alter engagement (b = .267, $p < .001$).

Table 8. Score Tests from SAOMs testing peer influence and peer influence

	χ^2	p
A. Peer Influence Main Effects		
Alter average	.038	.845
Alter average (weighted)	.143	.706
Alter similarity	.116	.734
Alter similarity (weighted)	.297	.586
B. Moderation by Role Model		
Named as Role Model by 2 Inmates		
Alter average	1.713	.191
Alter average (weighted)	1.614	.204
Alter similarity	.199	.656
Alter similarity (weighted)	.850	.357
Named as Role Model by 10 Inmates		
Alter average	.992	.319
Alter average (weighted)	2.281	.131
Alter similarity	1.520	.218
Alter similarity (weighted)	1.653	.199
Named as Personal Role Model		
Alter average	.226	.635
Alter average (weighted)	2.155	.142
Alter similarity	.046	.830
Alter similarity (weighted)	.400	.527

The remaining estimates from the SAOM showing how the get along network changed over time are presented in Table 10. These estimates indicate that **a respondent was more likely to nominate another inmate as someone he got along with if the other inmates was someone he knew prior to joining the unit (b = 1.679, p < .001), a cellmate (b = 1.483, p < .001), a big brother (b = 1.327, p < .001) or little brother (b = .680, p < .001). Inmates were also more likely to say they got along with other inmates who were the same race/ethnicity (b = .384, p < .001) and similar in age (b = .719, p < .001).**

In sum, results do not provide evidence of network-driven assimilation on treatment engagement among inmates within the TC. We do not find evidence of peer influence among inmates who get along, nor do we find greater influence from role models. In fact, we find very little evidence of change in engagement throughout inmates' residency in the TC. That said, more engaged inmates became more integrated into the informal TC network structure. In addition, results suggest that TC program factors were successful in structuring the informal network among residents as intended. Inmates tended to form ties with others in their same phase. Nonetheless, attempts to promote relationships through big brothers/little brothers were successful.

Table 9. SAOM Estimates from Change in Engagement Function

	b	se	
Linear shape	-.270	.745	
Quadratic shape	-.195	.083	**
Outdegree	.062	.038	
Black	.523	.275	†
Hispanic	.853	.522	
Age	.026	.013	*
Offense gravity score	-.001	.038	
TABE	.001	.004	
TCU score	-.101	.108	
Phase	.016	.213	

Note. Estimates of rate of change between waves not shown.

Table 10. SAOM Estimates from Network Change Function

	b	se	
Outdegree	-2.322	.177	***
Reciprocity	2.419	.207	***
Transitive triplets (GWESP)	1.329	.072	***
Reciprocity X transitive triplets (GWESP)	-1.737	.271	***
Indegree - popularity (sqrt)	-.191	.032	***
Outdegree - activity (sqrt)	.075	.029	***
Big brother	1.327	.166	***
Little brother	.680	.213	***
Known prior to TC entry	1.679	.073	***
Cellmate	1.483	.103	***
Race same	.384	.044	***
Age alter	-.007	.002	***
Age ego	.003	.003	
Age similarity	.719	.106	***
Engagement alter	-.006	.034	
Engagement ego	.141	.033	***
Engagement similarity	.192	.189	
Phase alter	.267	.025	***
Phase ego	-.261	.047	***
Phase similarity	.522	.078	***

Note. Estimates of rate of change between waves not shown.

Limitations

Although the network approach outlined in this report provides substantial information on the processes within the sampled TC, it is unknown how well our findings generalize to other TCs, other prisons, or even the same TC measured at another point in time. As we highlight above, the observed TC had a four-month program length at the time of our study, which was constant across PADOC prisons, but not to prison TCs in other states or PADOC TCs of the past. It is also the case that the TC was administered by contracted personnel, potentially making its operations distinct from those operated by DOC personnel. Understanding how processes might differ across TCs of other lengths or in other prisons requires additional data collections and analyses. Toward this end, we hope to develop a simple network instrument that TC personnel could implement in the field and use to quickly visualize the social structure of the unit. This could quickly identify leaders and isolates within the community, as well as subgroups that may require additional supervision to bring into the larger community. Understanding peer influence processes would require longitudinal network data and more sophisticated analyses, so replications of the current design should be implemented in only select units of particular interest, such as exemplary or underperforming TCs.

The sampled TC also underwent a new program implementation at the fifth wave of data collection (i.e., January 2017). This new curriculum may have altered the peer influence and network processes present during the observation window. To address this possibility, we examined if our estimates varied over time and did not find any significant changes in the above patterns before and after the new program. This suggests that program changes did not significantly alter the peer processes within the TC, at least over 10 month period of data collection.

Conclusions

This study examined the peer network and peer influence processes within a prison-based Therapeutic Community (TC). With network data collected over a 10 month period from approximately 80% of the unit residents, we found that the TC did cohere into a single community and that the leaders were highly engaged in the treatment program. These findings are consistent with TC theory. However, we also found that individual residents' treatment engagement trajectories did not significantly increase over time and that peers did not significantly influence one another's engagement with the treatment. Rather, residents congregated within the TC's social space based upon their engagement with the TC when they arrived in the unit. These findings are inconsistent with the intent of the TC and suggest that the TC experience is unlikely to alter post-release relapse or recidivism. We suggest that correctional administrators increase the treatment dosage (i.e., length of TC treatment) and improve program fidelity as outlined in the attached fidelity assessment to increase peer influence effects and resident treatment engagement.

We also suggest replications of this study be conducted in other TCs to understand how generalizable the presented results are across contexts. Of particular interest would be replications in TCs of longer length to understand if a lack of peer influence is primarily due to low treatment dosage in the sampled TC (vs. low program fidelity or other endogenous effects).

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Appendix A

APPROVAL OF SUBMISSION

Date: August 17, 2015

From: Philip Frum, IRB Analyst

To: Derek Kreager

Type of Submission:	Initial Study
Title of Study:	Network Mechanisms in a Prison-Based Therapeutic Community
Principal Investigator:	Derek Kreager
Study ID:	STUDY00002927
Submission ID:	STUDY00002927
Funding:	National Institutes of Health (NIH)
IND,IDE, or HDE:	Not Applicable
Documents Approved:	• NIH/NIAAA Grant Proposal (0.02), Category: Sponsor Attachment • Correspondence_for_STUDY00002927.pdf (0.01), Category: Correspondence • TC Recruitment Sheet 062815.doc (0.01), Category: Recruitment Materials • TC Verbal Script for Recruitment 062915.docx (0.01), Category: Recruitment Materials • TC IRB Protocol (0.04), Category: IRB Protocol • PADOC Approval Letter (0.01), Category: Collaborating Approval Materials • TC Follow-Up Survey (0.02), Category: Data Collection Instrument • TC Informed Consent 070115 HRP 588.pdf (0.03), Category: Consent Form • TC Survey (0.02), Category: Data Collection Instrument • TC Witness form 062915.pdf (0.01), Category: Consent Form
Review Level:	Committee
IRB Board Meeting Date:	8/11/2015

On 8/11/2015, the IRB approved the above-referenced Initial Study. This approval is effective through 8/10/2016 inclusive. You must submit a continuing review form with all required explanations for this study at least 45 days before the study's approval end date. You can submit a continuing review by navigating to the active study and clicking 'Create Modification / CR'.

Appendix B

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF CORRECTIONS
1920 Technology Parkway
Mechanicsburg, PA 17050

October 6, 2014

Derek Kreager, Ph.D.
Associate Professor of Crime, Law, and Justice
604 Oswald Tower
Department of Sociology
The Pennsylvania State University
University Park, PA 16802-6211

Gary Zajac, Ph.D
327 Pond Building
Justice Center for Research
The Pennsylvania State University
University Park, PA 16802

Dear Dr. Kreager and Dr. Zajac;

I am pleased to inform you that the Department's Research Review Committee (RRC) has approved your research study titled "Network Mechanisms in a Prison-Based Therapeutic Community." This approval gives you authorization to conduct inmate surveys and collect information as discussed in your proposal.

Please note that approval of your proposal is contingent upon the following conditions:

- Participation by inmates in the study is purely voluntary. If individuals choose not to participate, they cannot be required to participate and may withdraw from the study at any time.

- All research activities must be scheduled at the convenience of the institution to minimize the disruption of normal operations.

- All participants must receive an informed consent briefing as required by the IRB.

PaDOC/PRS Research Proposal 2013-18

- Participants may not receive any incentives or compensation for their participation in this study.

- While superintendents may agree to participate in a study they retain authority to postpone or terminate their facility's participation at any time without prior notice.

- To ensure confidentiality of the data all identifying information will be removed and a study identification number assigned prior to documents leaving the institution

- Favorable completion of a Centralized Clearance Check is required before you or any assistants can be granted access to any facility. Researchers that will enter facilities must complete the attached Centralized Clearance Check Information Request form and return it by post or fax to the undersigned at (717) 728-4180 at least two weeks prior to your planned visit to the facility. Completed forms contain sensitive personal information and it is recommended they not be transmitted by email.

I wish you the best in your research. Please forward this office a copy of your final report and any interim reports. If you have further questions, you may contact me at (717) 728-4054.

Sincerely,

Joseph V. Tomkiel
Research and Evaluation Manager
Chair, Research Review Committee

cc   Dir. Bucklen   File 2013-18
      Dr. Bell

Appendix C

TC-PINS Monthly Response Rates:

Wave 1, August 2016:
Total: 48 of 62 – 77%
Phase 1: 11 of 19 – 58%
Phase 2: 27 of 32 – 84%
Phase 3: 10 of 11 – 91%

Wave 2, September 2016:
Total: 47 of 60 – 78%
Phase 1: 7 of 12 – 58%
Phase 2: 26 of 34 – 76%
Phase 3: 14 of 14 – 100%

Wave 3, October 2016:
Total: 46 of 62 – 74%
Phase 1: 16 of 23 – 70%
Phase 2: 15 of 22 – 68%
Phase 3: 15 of 17 – 88%

Wave 4, November 2016:
Total: 45 of 62 – 73%
Phase 1: 13 of 17 – 76%
Phase 2: 24 of 34 – 71%
Phase 3: 8 of 11 – 73%

Wave 5, December 2016:
Total: 50 of 62 – 81%
Phase 1: 16 of 20 – 80%
Phase 2: 21 of 26 – 81%
Phase 3: 13 of 16 – 81%

Wave 6, January 2017:
Total: 49 of 62 – 79%
Phase 1: 14 of 18 – 78%
Phase 2: 27 of 32 – 84%
Phase 3: 7 of 12 – 58%

Wave 7, February 2017:
Total: 48 of 61 – 79%
Phase 1: 11 of 16 – 69%
Phase 2: 26 of 27 – 96%
Phase 3: 11 of 18 – 61%

Wave 8, March 2017:
Total: 50 of 61 – 82%
Phase 1: 14 of 18 – 78%
Phase 2: 22 of 25 – 88%
Phase 3: 14 of 18 – 78%

Wave 9, April 2017:
Total: 47 of 62 – 76%
Phase 1: 9 of 18 – 50%
Phase 2: 25 of 29 – 86%
Phase 3: 13 of 15 – 87%

Wave 10, May 2017:
Total: 43 of 61 – 70%
Phase 1: 6 of 12 – 50%
Phase 2: 22 of 28 – 79%
Phase 3: 15 of 21 – 71%

TOTAL: *waves 1-10*
All Possible R's: 210
Total Number R's: 177 **(84% - Total Response Rate over 10 Waves)**
 Wave 1: 48
 Wave 2: +10 = 58
 Wave 3: +22 = 80
 Wave 4: +18 = 98
 Wave 5: +15 = 114
 Wave 6: +15 = 129
 Wave 7: +13 = 142
 Wave 8: +15 = 156
 Wave 9: +11 = 167
 Wave 10: +10 = 177

Appendix D

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Therapeutic Community <u>Client Assessment Summary</u>
For Correctional-Based Programs

</div>

Strongly Disagree	Disagree	Between Disagree/Agree	Agree	Strongly Agree
1	2	3	4	5

1.	My behavior and attitude show that I am a mature person.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (1)
2.	I regularly meet my obligations and responsibilities.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (2)
3.	I strive to live with positive values and principles (honesty).	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (3)
4.	I still have the attitudes and behaviors associated with the drug/criminal lifestyle. (reverse coded)	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (4)
5.	I often present an image rather than my true self. (reverse coded)	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (5)
6.	My job function helps me learn about myself and is a valuable part of treatment.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (6)
7.	I get along with and interact well (mix well socially) with people.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (7)
8.	Overall, I have good awareness, judgment, decision-making and problem solving skills.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (8)
9.	I'm able to identify my feelings and express them in an appropriate way.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (9)
10.	I feel good about who I am (my self-esteem is high).	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (10)
11.	I understand and accept the program rules, philosophy and structure.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (11)
12.	I enthusiastically participate in program activities.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (12)
13.	I feel an investment, attachment and ownership in the program.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (13)
14.	My behavior and attitude set a good example for other members of the program.	1 ------ 2 ------ 3 ------ 4 ------ 5	____ (14)

Appendix E

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Chester Correctional Therapeutic
Community Fidelity Assessment Brief Report

George De Leon
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The following is a brief report of my visit to the Chester TC program on Oct 25, 2017. The primary objective of the visit was to assess the fidelity of the TC program. Broadly, fidelity refers to the adherence of the program to the TC theory (i.e., perspective on the disorder and recovery) and to the TC approach (i.e., community as method). In correctional settings TC programs have been *modified* to successfully adapt to institutional/prison conditions, the profiles of the clients, as well policy requirements (e.g. shorter planned duration of treatment). Nevertheless, research has documented the effectiveness of modified TCs in correctional settings that retain the essential elements of the TC perspective and method (i.e., "high" fidelity modified TCs).

Assessment Approach

Fidelity was assessed in terms of two broad dimensions, model and practice fidelity. The former refers to the presence of absence of essential program components (e.g., a resident hierarchy; therapeutic and educational groups, community meetings, AM and PM, regular resident seminars, peer interactions, particularly verbal corrections). Practice fidelity refers to how well the various activities are implemented. (For example, did the morning meeting achieve its objective of energizing the community?)

The assessment approach included (a) survey of essential elements of the TC (The SEEQ) completed by 4 key program staff, (b) direct observation of planned program activities (c) focused discussion with all staff and peer assistants of the observed activities and their understanding of TC theory in relation to practice i.e." Why we do what we do in the TC"

The assessment was conducted on a single unit, one of several TC programs at Chester that of course moderates conclusions concerning the other TC units. Similarly, the confines of a single day visit restricted the number of planned program activities observed, since these vary on a weekly schedule. Observed activities included the AM and PM meetings, the 3 phase psycho educational groups, one encounter group and an unplanned brief observation of a seminar on the Recovery Unit. No other therapeutic groups were observed. The last activity was wrap up of the day with staff and Peer Assistants.

Overall Impression

Although the program at Chester Correctional Institution is a self-described modified correctional TC, it is more accurately described as *TC oriente*d. The DOC Therapeutic Community manual and program description include some model components and an adherence to the TC concepts; and the program activities do include community meetings, psycho- educational groups, peer encounters, Peer Assistant seminars.

However, key components of "community as method" were not evident e.g. a peer stratified hierarchy trained in community management in addition to Peer Assistants; peers trained in verbal interaction (correctives as well as affirmations); regularly scheduled resident seminars, therapeutic group process, as distinguished from psycho-educational groups. The latter utilize a manually guided discussion format that has less emphasis on individual self-disclosure of problems or interactional group process. The observed encounter is not a bona fide therapeutic group process but resembles another TC format- the peer "talking to"). Moreover, practice fidelity is limited for the program activities that are implemented. It is not clear whether the clinical and/or educational goals of each activity (e.g., the meetings, groups) are understood or are achieved.

Overall, the program appears to be functioning in accordance with the DOC version of the modified TC. However, the following section offers recommendations for improving specific fidelity issues and enhancing the effectiveness the modified TC at Chester.

Recommendations; Program fidelity and Policy considerations

•Training in peer verbal affirmations and corrections: This is a basic ingredient of community as method. Residents learn to communicate in civil terms how behaviors and attitudes affect each other and the community. Properly implemented this provides an essential ongoing learning intervention to change behaviors and attitudes.

•Staff training and cross training (Treatment and Correctional staff) in TC theory and elements TC 101.

•Refinement of the resident hierarchy: In addition to the Peer Assistants include more inmate-resident roles, such as expeditors and coordinators. Properly trained these social roles provide better management of the community, facilitate TC programming, offer goal attainment incentives for behavioral change; as well as opportunity for staff evaluation of resident participation and overall individual clinical progress.

•Improve acoustical environment: This is a critical structural element that contributes to treatment impact. Words are the primary mediators for cognitive and behavioral change. Insufficient volume or distractive noise seriously impedes attention, motivation and participation.

•Reduce the radius of the phase 2 resident circle: Large circles impede hearing which weakens participant engagement and effective group process.

•Assess the efficacy of the psycho educational components that utilize manualized material. Focus should be on practicing change and stimulating individual self-disclosure and peer interactional process in the group-not simply information sharing or dissemination.

•Adjust Program goals to the Planned duration of treatment: Research documents that recovery outcomes are related to longer duration of TC treatment. The goals of the 4-month TC (and/or the 4 + 3 months of the TC combined with Recovery unit) should be explicit, realistic and feasible in terms of expected outcomes.

•Training and design of the Recovery unit: This unit should be continuous with the TC in furthering clinical progress: The recovery unit curriculum should be guided by the practical and clinical realities of a graduated process of re-entry. Moreover, a planned integration of the 2 units in the prison would enhance the efficacy of each.

• Aftercare: Research on Correctional TC programs documents the necessity of post prison aftercare in maintain reductions in recidivism, reincarceration and relapse to drug use. This critical policy issue should be reassessed in terms of the cost benefit of correctional treatment. At Chester, the 4-month TC together with the 3 month recovery unit provides a basis for refining a recovery oriented integrated system of care (ROIS) which includes a post release aftercare component. ROIS would generate the long-term positive outcomes without extending the planned duration of Treatment in the prison TC.

General Conclusion

 The program at Chester Correctional Institution is a modified correctional TC functioning at low-medium fidelity. However, this conclusion recognizes the influence of DOC policy, institutional barriers in

correctional settings, the profiles of the clients, but also the need for training. The key TC staff and Peer Assistants reveal an understanding of the TC approach. This is supported in the staff SEEQ survey results that show consistent agreement in ratings of the importance of TC elements. Moreover, staff enthusiasm appeared elevated in the focused discussions and they are open to training and improvement of the modified TC.

Given the 4 month planned duration of the TC, the modest fidelity of the existing program and the need for a robust aftercare component it is reasonable to moderate expectations concerning post prison outcomes in terms of recidivism and relapse, i.e. treatment efficacy. Moreover, these issues also render unclear interpretations concerning social network hypotheses. As discussed in the recommendations, the efficacy of the program could be enhanced as a modified TC with training along with DOC policy reconsiderations in developing a recovery oriented integrated system of care (ROIS) which links the existing TC and the recovery unit with post release aftercare.

_____End_____