Published in final edited form as:

Adm Policy Ment Health. 2018 July ; 45(4): 538–549. doi:10.1007/s10488-017-0843-9.

Where do peer providers fit into newly integrated mental health and primary care teams? A mixed method study

Elizabeth Siantz, PhD¹ [Postdoctoral Fellow], Eric Rice, PhD² [Associate Professor], Benjamin Henwood, PhD² [Assistant Professor], and Lawrence Palinkas, PhD² [Professor]

¹Department of Family Medicine and Public Health, University of California, San Diego

²Suzanne Dworak-Peck School of Social Work, University of Southern California

Abstract

Background—Little is known about the involvement of peer providers in integrated behavioral health teams. This study asks where peer providers fit within integrated care teams in Los Angeles County.

Methods—Social network analysis combined with qualitative fieldwork was used to understand the network positions of peer providers in 14 integrated pilot programs.

Results—Four programs' peer providers were highly central, while 3 programs' were on the network's periphery. Positional variation was related to the peers' mental health status.

Discussion—Targeted efforts are needed to support the implementation of peer providers on integrated teams at the program and system levels

Keywords

peer providers; integrated care; mixed methods; health care teams

Interdisciplinary, team-based approaches are effective for delivering integrated care to people with multiple chronic conditions (Mechanic, 2012). To best meet needs of people living with serious mental illness, peer providers have become a standard component of health care teams that provide recovery-oriented services. Peer specialists are individuals with lived experiences recovering from mental illness who are trained to deliver services that promote recovery, resiliency, and wellness (SAMHSA-HRSA Center for Integrated Health Solutions, 2016). When hired as members of mental health services teams, peer providers

Corresponding Author: Elizabeth Siantz: esiantz@ucsd.edu; 9500 Gilman Drive #0622, La Jolla, CA 92093-0901.

Co-author contact information: Eric Rice: ericr@usc.edu; 150 S. Olive Street, 1429; Los Angeles, CA 90015-2211

Benjamin Henwood: bhenwood@usc.edu; 150 S. Olive Street, 1429; Los Angeles, CA 90015-2211

Lawrence Palinkas: palinkas@usc.edu; 150 S. Olive Street, 1429; Los Angeles, CA 90015-2211

Conflict of Interest: The authors declare they have no conflict of interest

Research involving human participants: The Institutional Review Board of University of California, San Diego, Human Research Protection Program, and the Office of Statewide Health Planning and Development approved the social network component of this study, whereas the Institutional Review Board of the University of Southern California approved the study's qualitative component.

Informed Consent: Informed consent was obtained from all individual participants in the study. All data have been de-identified.

Previous presentation: Dr. Siantz presented a version of this paper at the Society for Society for Social Work and Research Annual Meeting in January of 2016.

make major contributions to the recovery of people with serious mental health conditions (Davidson et al., 1999; Cook, Copeland, & Hamilton 2009; Mueser, Corrigan, & Hilton, 2002, Myrick & del Vecchio, 2016).

Because peer providers have also become increasingly recognized for their roles in the delivery of integrated primary and mental health care services (Siantz, Henwood, & Gilmer, 2016), efforts are currently underway to increase and formalize their roles on multidisciplinary health care teams (Allen, Radke, & Parks, 2010). These roles can include wellness coaching (Swarbrick, 2013), and facilitation of chronic disease self-management educational groups (Sajatovic, Dawson & Perzynski, 2011; Goldberg, Dickerson, & Lucksted 2013), and health navigation (Brekke, Siantz, Pahwa, Kelly, Tallon, & Fulginiti, 2013).

Despite the relative successes of the consumer movement in involving peer providers in mental health and social service settings (Gates & Akabas, 2007; Ostrow & Adams, 2012), previous work has reported on challenges health care teams can face when including peer providers (Gates & Akabas, 2007). Persistent stigma from other human service professionals (Fiske, Rowe, Brooks, & Gildersleeve, 2000), poorly defined roles and jobs (Alberta, Ploski, & Carlson, 2012), and a lack of professional support and supervision (Corrigan & Phelan, 2004) can hinder the integration of peer providers in mental health and social services teams. Whether these systems-level challenges to implementing peer providers occur in multidisciplinary health care teams delivering integrated primary and mental health care services has not been studied, and the extent to which peers are meaningfully incorporated into health care teams practicing in integrated settings is also unclear. The Affordable Care Act (ACA) has prioritized the integration of primary and mental health services, and is expanding the roles of peer providers in the delivery of integrated care (Myrick & del Vecchio, 2016). Findings from the present study can help policy makers and health system administrators anticipate opportunities and challenges in involving peer providers in newly integrated health care teams.

Social network analysis combined with qualitative fieldwork is one approach to understanding peer provider involvement in multidisciplinary teams. Sociometric techniques can illustrate communication between providers (Burt, 2004; Meltzer et al., 2010), while allowing researchers to quantitatively assess an individual's level of involvement on a health care team (Damschroeder et al., 2009; Greenhalgh, Macfarlane, Bate, Kryukidou, 2004). Block modeling approaches to social network analysis can provide even more nuanced information related to the composition of social networks, (Valente, 2010) by allowing researchers to compare the positions of actors across networks of different sizes. Measures of structural equivalence can also provide information on the status of network actors relative to other members of their networks. However, social network techniques alone are less useful for understanding the individual experiences of network actors. Qualitative methods are needed to achieve this depth of information. Therefore, using both social network and qualitative data, this study sought to accomplish the following goals: (a) identify the network positions of peer providers on integrated behavioral health using social network analysis (b) understand variation in network positions of peer providers in behavioral health teams using qualitative interviews.

Methods

Setting

The present study analyzed data derived from the Los Angeles County Department of Mental Health (DMH) Innovations evaluation (LA Innovations). From 2012 to 2015, LA Innovations implemented integrated behavioral health pilot programs delivering services in 24 clinics within DMH, with the goal of improving client wellness outcomes by testing novel approaches to integrating physical and mental health care. These pilot programs included eight co-located primary and behavioral health care partnerships, known as the integrated clinic model (ICM); 11 partnerships that coordinated care across different sites, known as the integrated services management model (ISM); and five community-based, mobile behavioral health teams with embedded primary care, known as the Integrated Mobile Health Team (IMHT). Consistent with LACDMH larger efforts to promote peer support, pilot programs of each type were asked to include peer providers on their integrated service teams, but programs were given leeway to tailor the peer provider role and involvement to their own agency contexts.

Study Design

This study followed an exploratory mixed-method design (Palinkas, Aarons, Horwitz, Chamberlin, Hurlburt, & Lansverk, 2011). This expansive process of building on social network data with qualitative key informant interviews achieved three types of data integration: (a) sampling, using network data to identify peer provider informants for qualitative interviews (b) convergence, using social network and qualitative data to answer the same questions through triangulation; (c) expansion, using a qualitative data set to explain the results of social network data (Palinkas, et al., 2011). Studies that employ multiple methods to answer questions raised by other methods are useful for studying implementation of new practices in health settings (Brunette, Brasher, & Whitley, 2008).

Study Sample

The study sample consisted of LA Innovations programs that included peer providers on their behavioral health care teams, and had one or more peer providers listed in the social network survey who also participated in a qualitative interview. Social network rosters were used to determine whether a program included a peer provider. Of the 24 integrated pilot programs, the network rosters of 16 programs included peer providers. Peer providers identified from these 16 rosters were then recruited for a qualitative key-informant interview based on their availability, willingness to participate in an interview, and ability to speak English or Spanish. Three networks were excluded from the present study because the peer provider either declined to participate in the qualitative interview or was not available. Of the 32 peer providers identified through social network rosters, 24 were contacted by phone or email for a semistructured interview. Up to three peer providers were interviewed per pilot program, at which point saturation was achieved. The Institutional Review Board of (blinded for review) approved this study's social network component, whereas the Institutional Review Board of (blinded for review) approved this study's qualitative component.

Data Collection

Sociometric data were collected from the staffs of 24 pilot programs in 2014 at the end of the second year of operations to assess their communication and connectivity and to identify key network actors across programs. The web-based social network survey was created following Burt (2004) and Meltzer et. al.'s (2010) approach. Each integrated program provided the study team with rosters, which included the names of the psychiatrists, nurses, peer providers, non-traditional services providers (such as acupuncturists), and primary care practitioners that comprised their teams. Using an online survey platform, respondents were asked, "With whom do you have regular contact about client care?" In response, providers selected names from their team's roster. Sociodemographic characteristics, professional background, and number of years working in the profession were also collected. Surveys took approximately 12 minutes to complete.

The semistructured interview conducted with peer providers focused on their experiences delivering care on their LA Innovations integrated behavioral health care teams. Respondents were asked to describe their professional backgrounds as a peer provider, their responsibilities related to their LA Innovations programs, and their experiences with their program's integrated health care team. Participants were also probed to describe the challenges and successes they've encountered working in their multidisciplinary team environment. Individual interviews were conducted during spring 2015.

Data analysis

The social network analysis proceeded in four stages: structural analyses of each network, positional analyses of peer providers, convergence of iterated correlations (CONCOR) block modeling analysis, and network visualization. All analyses were conducted using UCINET for Windows, Version 6. Structural analyses included network size, total number of ties, and network density (i.e., the number of connections in a network reported as a fraction of the total links possible). Positional analyses included the indegree centrality of each peer provider. Indegree centrality describes the status of a network actor by assessing how frequently others nominate that individual, or node, in the network. This metric reflects how important others in the network perceive a given node to be. This study measured indegree centrality as the percentage of possible nominations that peer providers received, and the average percentage of nominations received by the total network. This percentage is calculated by dividing the number of nominations received by one less than the network's total. In instances in which two or more peer providers are reported in the network, the average percentage of nominations they receive is reported.

To identify network actors structurally equivalent to each network's peer provider, this study involved conducting the CONCOR procedure for each network. Structural equivalence is the degree to which individuals have similar patterns of ties in a network. Network actors are structurally equivalent when they are linked to the same other people in the network (Valente, 2010). The CONCOR routine provides an unbiased mathematical partition of the network into positions by correlating the columns of a matrix of network nominations, which results in a matrix of correlations that is then used as input to correlate the columns (Valente, 2010). CONCOR is a useful for identifying network positions based on node

similarity (Valente, 2010). Once CONCOR subgroups were identified, each team's CONCOR subgroups were ranked according to the average indegree centrality scores received by each group, such that the CONCOR groups were ranked according to groups that received the largest percentage of possible nominations (i.e., highest status groups) to groups that received lowest percentage possible nominations (i.e., lowest status groups). Because the CONCOR procedure allowed exploration of structural equivalence between the peer provider and other members of the care coordination network, the CONCOR analysis provided additional evidence pertaining to the peer provider's network position.

The network visualizations were created using NetDraw 2.090. The spring embedder routine was used to generate the network visualizations. Spring embedding is based on the idea that two actors may be thought of as pushing or pulling each other; two points located close together represent actors who have a pull on each other, whereas distant actors push one another apart. The algorithm seeks a global optimum where there is the least stress on the springs connecting actors to one another (Rice, Barman-Adhikari, Milburn, & Monro, 2012).

To analyze the semi-structured interviews, a procedure of "coding consensus, co-occurrence, and comparison" (Willms, et al., 1990) was used. This analytic strategy is rooted in grounded theory, which is theory derived from data and then illustrated by characteristic examples (Glaser & Strauss, 1967). Audio-recorded interviews were professionally transcribed, and lists of codes were developed by each investigator and then matched and integrated into a single codebook. The qualitative coding process occurred in three steps. First, a list of codes was constructed through a consensus of team members and trained research assistants which consisted of a numbered list of themes, issues, and opinions that related to factors that influence the network positions of peer providers. Second, the first study author and at least one research assistant independently coded 75% of transcripts. Throughout this process, the study team resolved disagreements in assignment or description of codes through discussion and by enhancing the definitions of codes. Third, the transcripts were then assessed for agreement between research team members regarding the coding, based on a procedure used in other qualitative studies (Boyatzis, 1998; Palinkas et al., 2011). NVivo software (Fraser, 2000) was used to code transcripts and then to generate a series of project codes that connected segments of transcripts grouped into separate project nodes. These nodes were used to further the process of axial and pattern coding to examine the association between different a priori and emergent categories (Strauss & Corbin, 1998).

Integration of Social Network and Qualitative Findings

Using a maximum variation approach (Aarons & Palinkas, 2007), we compared the roles and experiences of peer providers across highest status groups and lowest status groups. Overarching qualitative themes related to the peer providers' experiences working on an integrated health care team and their positions in the networks with the most and least central peer providers identified through the social network analysis were triangulated to develop network subtypes. These network subtypes were based on peer providers' personal experiences working on integrated health care teams.

To better understand the overall networks of providers and the contexts in which peers were situated, we then compared our findings to program reports that were developed by the evaluation team to understand overall program implementation. These reports were created at an earlier time point, and included information related to teams' experiences in including a peer provider. Detailed information regarding these reports has been published previously (blinded for review).

Results

Structural characteristics of care coordination networks

The present study featured 13 programs with 224 network actors, and achieved a response rate of 76.8%. Care coordination network sizes ranged from 11 to 23, with a median network size of 15.5. Network density ranged from 0.34–0.90. Median network density was 63.5. These networks included primary care professionals ($n = 15$) such as medical doctors and nurse practitioners; nurses (registered and licensed vocational: $n = 10$); case managers ($n = 29$); program administrators ($n = 55$); psychiatrists ($n = 14$); therapists/clinicians ($n = 45$); peer providers ($n = 28$); and providers from other specialties ($n = 28$). Characteristics of participating networks are detailed in Table 1. Table 1 also details the numbers of each type of provider in each participating program.

Characteristics of peer providers

Seventeen qualitative interviews with peer providers were conducted in the present study. The average age of these peer providers was 46 ($SD=12$). Approximately half of the sample was female ($n = 9$; 52.9%), and was racially and ethnically diverse. The majority of peer providers were African American ($n = 8$; 47%) or Asian ($n = 6$; 35.3%), and more than half spoke at least one language in addition to English ($n=9$; 52.9%). There was also diversity with respect to educational background, with two participants having completed high school, nine having completed some associates degree training or college, and four having completed a master's degree. Characteristics of the study's sample of peers are described in Table 2.

Positional variation of peer providers in care coordination networks

Table 3 describes the indegree centrality of peer providers. The percentage of nominations received by peer providers ranged from 14%–81% ($M = 30\%$). The indegree centrality, or average number of nominations received by all individuals within these networks ranged from 23% to 78% ($M = 44.6\%$). Peer providers in eight of the 13 care coordination networks received a greater proportion of nominations relative to their network's average.

Table 4 details the results of the CONCOR analysis. The first row of this table can be interpreted as follows: In network A, the peer provider is in the most central of the network's eight possible CONCOR subgroups. Network A's team leader is also in this group, making the peer provider and team leader structurally equivalent. This CONCOR group received, on average, 76 % of possible nominations, which is the highest proportion of nominations received by any CONCOR group in the network. The percentage of possible nominations was determined using the following formula: $(x \div [n-1]) \div y$, in which x = the number of

nominations received by all providers in the CONCOR group; n = the number of people in the network; and y = the number of network actors in the CONCOR group.

CONCOR analysis revealed that some peer providers were in highly central CONCOR groups that received the highest percentage of nominations. Across networks in which peer providers were in these highly central CONCOR subgroups, they were often structurally equivalent to the members of the health care team's leadership, which included the program director, program coordinator, and team leader. These peer providers were generally part of teams that served homeless and formally homeless service populations. Other peer providers who were in medium-status network subgroups (i.e., groups 3 of 8, 4 of 8, or 4 of 7) were often structurally equivalent to clinicians and other peer providers. Some peer providers were also in CONCOR network subgroups that received relatively low percentages of nominations (i.e., groups 6 of 7, or 6 of 8). In these cases, peer providers were either not structurally equivalent to anyone else on their teams (Network L), or structurally equivalent to therapists, clinical supervisors, or directors of external organizations.

Triangulation of social network and qualitative results

Social network analyses revealed that peer providers had varying levels of indegree centrality across health care teams, and were in network subgroups that ranged from high to medium to low status. Using a maximum variation approach (Aarons & Palinkas, 2007), analyses further examined the network positions of peer providers in the highest status and lowest status network subgroups. Qualitative data suggested that this positional variation was related to the peer provider's responsibilities (e.g., outreach vs ongoing engagement or case management), population served (e.g., formerly homeless individuals vs underserved ethnic communities), and background (e.g., in recovery from mental illness vs cultural and linguistic broker for clients). Qualitative analysis also indicated that network positions varied according to peer providers' perceived level of involvement in the social networks, and four network subtypes emerged. In network type 1, peer providers had high centrality, were in a high-status CONCOR group, and reported feeling central to the network. In network type 2 peer providers had high centrality, were in a high-status CONCOR group, but reported not feeling central to the network. In network type 3 peer providers had low centrality and were in a low-status CONCOR group, but reported feeling central to the network. In network type 4 peer providers had low centrality, were in a low-status CONCOR group and reported not feeling central to the network. Each network subtype is depicted in Table 5. The perceptions of central and noncentral peer providers are explained further below using illustrative quotes, as are each of these four network subtypes.

Most Central Peer Providers

In the networks of three pilot programs, peer providers were in CONCOR network subgroups that received the highest percentage of nominations. In general, these highly central peer providers described personal experiences they shared with clients as an asset for educating other members of their mental health team about the realities of being homeless or living on the street:

But until you really come from the street ...when they go oh, we're gonna get them into treatment and we're gonna put them into housing. And I'm the one that says

“no,” you can’t do that right yet. They’re actively in their addiction. They’re not gonna stay. (Network A peer)

This peer provider described using her experience to understand the client’s stage of readiness and then communicate this information to the team. Highly central peer providers identified this mediating role between the client and care team as especially critical, and also described having the ability to engage clients (and potential clients) whom other team members might have difficulty engaging.

I love it when clients come in there (that are) angry, selfish, bad attitude. Everybody’s scared of them. You know what I’m saying? You know, they don’t want to touch them. They’re the ones I run to. (Network B peer)

Although highly central peer providers each described using their personal experience with recovery, or other talents for liaising between the health care team and an underserved client community, they also expressed varying perceptions of their involvement with their networks. In two cases, highly central peer providers reported feeling deeply involved in their care coordination networks, resulting from infrastructure that supported team communication and an environment in which “everyone works as one.” One highly central peer provider described the process of group decision-making:

The psychiatrist might know how to give the guy meds, or the doctor knows how to prescribe the meds, and this is how it’s supposed to happen, but then we have us who know the client. (Network A peer)

This further illustrates the importance of having a connection and rapport with clients among highly central peer providers. This peer provider felt central to the team and had high in-degree centrality, exemplifying network type 1. In contrast, in another network where the peer provider was highly central, he described feeling isolated from his team.

Interviewer: Do you have a lot of interaction with the other providers on the integrated team?

Uh... no. They just turn up their nose to me and everything that I do. ‘Cause the client community is my strength, you know what I’m saying? As a peer advocate I don’t go to the staff meetings. They just let me do my thing, you know what I’m saying? They let me do my thing. (Network B peer)

This peer provider reported that he is uninvolved in team meetings, despite his own admission that his strength lies in having a connection with the client community. This peer provider had high centrality, and was in a highly rated CONCOR group but described feeling marginalized by his team, exemplifying network type 2.

While the peers from Networks A and B were both highly central to their teams according to the social network analysis, their qualitative interviews revealed that they had varying roles and responsibilities. Whereas the peer from Network A was frequently out in the field alongside providers in her mobile health team, the Network B peer ran a drop-in center for the larger organization. Network A peer’s job consisted of outreach, being a housing liaison, and health navigator, while Network B’s peer ran psychoeducational groups and planned

activities at the center. These clear differences in their day-to-day roles and responsibilities likely influenced their perceptions of their network positions.

Least central peer providers

These noncentral peer providers generally did not rely on their personal experience with mental illness to engage clients, and instead described using their familiarity with clients' culture. In these networks, the peer providers were largely responsible for conducting outreach to members of Armenian or Korean communities, and their involvement with a client ended following program enrollment. In both cases, client outreach occurred at locations external to the organization, such as local businesses and churches. One peer described her experience in engaging potential clients by teaching art classes at a local church.

It's very difficult for Koreans to tell [mental health professionals], OK, I have a mental health problem. I need an [integrated services management] program. So what we did was we did a nontraditional way of finding them. We tried art class and usually I taught art classes. ... We tried a lot of different kind of classes that we can engage with potential clients. Koreans needs to build up some relationship before they can speak up because of a lot of stigma. (Network J Peer)

This peer described utilizing her expertise with the Korean culture and highlighted her role as an outreach professional. In doing so, she acknowledged her noncentral network position.

Similar to highly central peer providers, noncentral peer providers expressed varying perceptions of their team involvement. One case contradicted the network findings, in which a noncentral peer provider reported feeling that he was very involved in his team. In this case, the peer provider regarded himself as equal to other professionals on his team. He was tasked with data entry, client follow-up, working directly with clients, and reported feeling central:

Interviewer: "What's been really helpful? What's enabled you to do this?"

Network M peer: I'd say my team that I work with. My team is very supportive.... We all work as a team. We all make sure that we get our things done on time. If I have a question and I go to a therapist or go to [boss] or I go to [other team member] and ask them; they are very helpful with me.

This quote exemplifies the positive experience this peer provider has had with his integrated care team and also demonstrates his feeling of inclusion in working with this team, which contradicts his network position identified by the positional and CONCOR analyses. This peer provider had low indegree centrality but felt central to the team, exemplifying network type 3.

In most networks in which the peer provider had low centrality, their perceptions of their network position aligned with the findings of the network analysis. In these cases, peer providers described their community outreach work or their secondary status as a peer provider resulting from having a mental illness as reasons for being on the network's

periphery. One least-central peer provider did not rely on his shared cultural background and did not view his status as a peer advocate as an asset:

I miss a lot of meetings, and then the peer part bothers me because unless I am talking at you, it's hard for me to get the floor. In other words, I have to be almost angry to jump in. ...I want peer advocate status to get into a group, but I don't want peer advocate status when it comes to levels of participation or accountability.
(Network L Peer)

This peer provider had low centrality and also described not feeling central to the team, exemplifying network type 4.

Discussion

The purpose of this mixed-method study was to understand variation in network positions of peer providers in newly integrated care coordination networks using social network analysis coupled with qualitative interviews with peer providers. Social network analyses revealed that peer providers had varying levels of involvement within LA Innovations integrated health care teams. This positional variation differed according to their roles, backgrounds, service populations, and perceived levels of team involvement.

In many cases, the network positions of peer providers aligned with their perceived levels of involvement with their teams, as reported in qualitative interviews. Highly central peer providers generally adhered to the standard definition of peer provider and had personal experience with mental illness. They also valued having expertise garnered from their own recovery, and tended to be on teams that served homeless and formerly homeless individuals. Many of these peer providers acknowledged how other members of their integrated teams also valued their experience, because it enhanced the whole team's ability to engage clients. This finding contradicts much literature related to the implementation of peer providers, which has reported role confusion and stigma from fellow team members as barriers to their inclusion on health care teams (Gates & Akabas, 2007). Perhaps the organizations in this study that employ peers who reported being highly central recognized the need to include individuals on their teams who were able to engage people with serious mental health needs, which might have facilitated their inclusion. Alternately, organizations with highly central peers might have had a more peer inclusive environment prior to LA Innovations. In either case, it is important to have quality assurance processes in place to ensure that peers fulfil their roles with fidelity and accuracy, and to ensure that "the right" individuals are selected and trained to staff mental health teams. Regardless, lessons learned from these exemplar programs should be shared in DMH, and publicized more widely so that other organizations can implement peer providers using similar strategies.

Peer providers were less central in other networks, and had varying explanations for their periphery involvement. Within ISM networks in particular, individuals in the peer role generally did not occupy a central network position on their teams. Despite DMH's stipulation that integrated pilot programs include peer providers, during the course of our analysis we learned that the ISM programs instead hired individuals that resembled Community Health Workers (CHW) (Centers for Disease Control and Prevention, 2015).

Thus, ISM peers shared a cultural background with clients and were familiar with or members of their clients' communities, but did not openly use experience with recovery when working with clients. That some programs did not distinguish between the peer provider role and CHWs in the present study is consistent with current literature regarding the deployment of CHWs and peer providers on integrated care teams. Recent literature has proposed that CHWs primarily promote outreach, education, and engagement for persons with chronic health conditions, whereas peer providers focus on supporting recovery by using their lived experience with a health condition to build trust and hope, although peer status among both peer providers and CHWs can involve shared cultural similarities; residence in the same communities; and shared health conditions. (Daniels, Bergson, & Myrick, 2017). An ongoing challenge for health systems is understanding when and how to include these professionals in health care teams to optimize consumer activation, engagement with services, activation, and outcomes.

In other care coordination networks, peer providers' experience with working on an integrated team did not align with their actual network positions. In many cases, peer providers in recovery from mental illness had a central role on the team, and at the same time felt excluded from their integrated teams. That some peer providers held this perception is not surprising, given that previous research has documented that mental health agencies can be indifferent or even hostile to the presence of peer providers (Carlson, Rapp, & McDiarmid, 2001), that there is persistent stigma with respect to the capacity for people with mental health conditions to work in general, and the importance of the peer role in particular (Gates & Akabas, 2007). This finding also speaks to the need for mental health authorities to ensure that the right supports are available to agencies where peer providers are incorporated onto teams (Gates, Mandiberg, & Akabas, 2010). Many providers on multidisciplinary teams, and primary care professionals in particular, likely have limited experiences working with peer providers and could benefit from training to alleviate this tension. It is also important for mental health authorities to have open dialogue with peer providers during program implementation to ensure that the necessary organizational supports are in place to help them do their work.

From site visit reports that were collected at the beginning of program implementation, we were able to identify some factors that might have influenced the network positions of peer providers that we were not able to capture using social network data and qualitative interviews. Specifically, while many organizations had long histories of using peer providers and were fully supportive of their inclusion on integrated care teams, leadership at several programs that served underrepresented ethnic minority communities described the high levels of stigma related to mental illness in their communities. These program leaders were less supportive of including peer providers due to the concern that clients might be less inclined to access care from an integrated care team that included peers. This seems to account, in part, for why peers were less central in some programs.

Limitations and Future Directions

Although the social network measures used in the present study provide a quantifiable indicator of "where" peer providers fit into Los Angeles Innovations health care teams, the

findings should be viewed in light of three main study limitations. First, organizations participated in the parent evaluation voluntarily. Thus, these programs might be more open to providing integrated care and to implementing other services innovations, such as peer providers. Second, findings from this study might not generalize to public mental health systems that differ dramatically from LACDMH. Third, these data are cross-sectional and were collected during the second year of program operations. Future studies might collect network data at multiple time points to explore whether and how the network positions of peers and other providers change as a pilot programs progress in their implementation. This study was also limited by the nature of sociometric data, which allowed examination of communication and network ties within one care coordination network at a time. Further, this study was not able to fully take into account each program's organizational context that existed prior to the implementation of pilot programs, which likely influenced the network positions and experiences of peer providers. While we tried to account for the influence of program context by examining descriptive program reports, these reports were based on data collected at an earlier phase of program implementation as compared to when data for this current study was collected.

Future studies should examine participants' network connections to providers from other pilot programs with whom they communicate to understand whether being connected with other organizations that have successfully implemented peer providers facilitates their inclusion with a given team. Future studies might also conduct qualitative interviews with other program staff, including program directors, to understand each organization's culture and climate with respect to peer involvement, and the extent to which the evolving roles of peer providers are contributing to their increased acceptance in the health care community.

Conclusion

The role of peer providers is expanding under the Affordable Care Act (ACA), yet the challenge of including these professionals in medical and integrated settings persists. (Myrick & del Vecchio, 2016). In this study, peer providers occupied a wide range of network positions, job responsibilities, and experiences related to their involvement in these pilot programs. To maximize the funding sources for peer providers under the ACA, the challenges of role clarity, supervision, and training must be addressed. This can be accomplished through enhanced training at the agency level combined with incentives to organizations for supporting the involvement of peer providers on integrated health care teams. Future studies must attempt understand the other factors that promote a more inclusive, consumer oriented, integrated service delivery system.

Acknowledgments

Funding Source: This study was funded by a Ruth L. Kirschstein National Research Service Award (NRSA) TL1 [National Institutes of Health/National Center for Research Resources (NCRR)/National Center for Advancing Translational Sciences (NCATS) (SC CTSI) TL1 for Pre-doctoral Clinical and Translational Training (TL1) Award (TL1R000132)]. The content of this article is solely the responsibility of the authors and does not necessarily represent the official view of the National Institutes of Health.

References

- Aarons GA, Palinkas LA. Implementation of evidence-based practice in child welfare: Service provider perspectives. *Administration and Policy in Mental Health and Mental Health Services Research*. 2007; 34:411–419. <http://dx.doi.org/10.1007/s10488-007-0121-3>. [PubMed: 17410420]
- Addressing Chronic Disease Through Community Health Workers: A Policy and Systems-Level Approach. Atlanta: Centers for Disease Control and Prevention; Apr, 2015. http://www.cdc.gov/dhdsdp/docs/chw_brief.pdf. Accessed July 22, 2016
- Alberta AJ, Ploski RR, Carlson SL. Addressing challenges to providing peer-based recovery support. *The Journal of Behavioral Health Services & Research*. 2012; 39:481–491. <http://dx.doi.org/10.1007/s11414-012-9286-y>. [PubMed: 22828975]
- Allen, J.Radke, AQ., Parks, J., editors. Consumer involvement with state mental health authorities. Alexandria, VA: National Association of Consumer/Survivor Mental Health Administrators and National Association of State Mental Health Program Directors; 2010.
- Boyatzis, R. Transforming qualitative information: Thematic analysis and code development. Thousand Oaks, CA: Sage; 1998.
- Brekke J, Siantz E, Pahwa R, Kelly E, Tallon L, Fulginiti A. Reducing health disparities for people with serious mental illness: Development and feasibility of a peer health navigation intervention. *Best Practices in Mental Health*. 2013; 9:62–82.
- Brunette MF, Asher D, Whitley R, Lutz WJ, Wieder BL, Jones AM, McHugo GJ. Implementation of integrated dual disorders treatment: A qualitative analysis of facilitators and barriers. *Psychiatric Services*. 2008; 59:989–995. <http://dx.doi.org/10.1176/appi.ps.59.9.989>. [PubMed: 18757591]
- Burt RS. Structural holes and good ideas. *American Journal of Sociology*. 2004; 110:349–399. <http://dx.doi.org/10.1086/421787>.
- Carlson LS, Rapp CA, McDiarmid D. Hiring consumer-providers: Barriers and alternative solutions. *Community Mental Health Journal*. 2001; 37:199–213. <http://dx.doi.org/10.1023/A:1017569913118>. [PubMed: 11440422]
- Cook JA, Copeland ME, Hamilton M, Jonikas JA, Razzano LA, Floyd CB, Grey DD. Initial outcomes of a mental illness self-management program based on Wellness Recovery Action Planning. *Psychiatric Services*. 2009; 60:246–249. <http://dx.doi.org/10.1176/ps.2009.60.2.246>. [PubMed: 19176420]
- Corrigan P, Phelan S. Social support and recovery in people with serious mental illnesses. *Community Mental Health Journal*. 2004; 40:513–523. [PubMed: 15672690]
- Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science*. 2009; 4:50. <http://dx.doi.org/10.1186/1748-5908-4-50>. [PubMed: 19664226]
- Daniels AS, Bergeson S, Myrick KJ. Defining Peer Roles and Status Among Community Health Workers and Peer Support Specialists in Integrated Systems of Care. *Psychiatric Services*. 2017; (ahead of print). doi: 10.1176/appi.ps.201600378
- Fisk D, Rowe M, Brooks R, Gildersleeve D. Integrating consumer staff into a homeless outreach project: Critical issues and strategies. *Psychiatric Rehabilitation Journal*. 2000; 23:244–252. <http://dx.doi.org/10.1037/h0095161>.
- Fraser, D. QSR NVivo NUD*IST Vivo reference guide. Melbourne, Australia: QSR International; 2000.
- Gates LB, Akabas SH. Developing strategies to integrate peer providers into the staff of mental health agencies. *Administration and Policy in Mental Health and Mental Health Services Research*. 2007; 34:293–306. <http://dx.doi.org/10.1007/s10488-006-0109-4>. [PubMed: 17340184]
- Gates LB, Mandiberg JM, Akabas SH. Building capacity in social service agencies to employ peer providers. *Psychiatric Rehabilitation Journal*. 2010; 34:145–152. <http://dx.doi.org/10.2975/34.2.2010.145.152>. [PubMed: 20952368]
- Glaser, BG., Strauss, AL. The discovery of grounded theory: Strategies for qualitative research. New York, NY: Aldine de Gruyter; 1967.

- Goldberg RW, Dickerson F, Lucksted A, Brown CH, Weber E, Tenhula WN, Dixon LB. Living Well: An intervention to improve self-management of medical illness for individuals with serious mental illness. *Psychiatric Services*. 2013; 64:51–57. <http://dx.doi.org/10.1176/appi.ps.201200034>. [PubMed: 23070062]
- Greenhalgh T, Robert G, Macfarlane F, Bate P, Kryuakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Quarterly*. 2004; 82:581–629. [PubMed: 15595944]
- Mechanic D. Seizing opportunities under the Affordable Care Act for transforming the mental and behavioral health system. *Health Affairs*. 2012; 31:376–382. <http://dx.doi.org/10.1377/hlthaff.2011.0623>. [PubMed: 22323168]
- Meltzer D, Chung J, Khalili P, Marlow E, Arora V, Schumock G, Burt R. Exploring the use of social network methods in designing healthcare quality improvement teams. *Social Science & Medicine*. 2010; 71:1119–1130. <http://dx.doi.org/10.1016/j.socscimed.2010.05.012>. [PubMed: 20674116]
- Mowbray, C. Benefits and issues created by consumer role innovation in psychiatric rehabilitation. In: Mowbray, CT, Moxley, DP, Japser, CA., Howell, LL., editors. *Consumers as providers in psychiatric rehabilitation*. Columbia, MD: International Association of Psychosocial Rehabilitation Services; 1997. p. 45–63.
- Mueser KT, Corrigan PW, Hilton DW, Tanzman B, Schaub A, Gingerich S, Herz MI. Illness management and recovery: A review of the research. *Psychiatric Services*. 2002; 53:1272–1284. <http://dx.doi.org/10.1176/appi.ps.53.10.1272>. [PubMed: 12364675]
- Myrick K, del Vecchio P. Peer Support Services in Behavioral Healthcare Workforce: State of the Field. *Psychiatric Rehabilitation Journal*. 2016; 39(3):197–203. [PubMed: 27183186]
- Myrick K, del Vecchio P. Peer Support Services in Behavioral Healthcare Workforce: State of the Field. *Psychiatric Rehabilitation Journal*. 2016; 39(3):197–203. [PubMed: 27183186]
- Ostrow L, Adams N. Recovery in the USA: From politics to peer support. *International Review of Psychiatry*. 2012; 24(1):70–78. <http://dx.doi.org/10.3109/09540261.2012.659659>. [PubMed: 22385429]
- Palinkas LA, Aarons GA, Horwitz S, Chamberlain P, Hurlburt M, Landsverk J. Mixed method designs in implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*. 2011; 38:44–53. <http://dx.doi.org/10.1007/s10488-010-0314-z>. [PubMed: 20967495]
- Rice E, Barman-Adhikari A, Milburn NG, Monro W. Position-specific HIV risk in a large network of homeless youths. *American Journal of Public Health*. 2012; 102:141–147. <http://dx.doi.org/10.2105/AJPH.2011.300295>. [PubMed: 22095350]
- Sajatovic M, Dawson NV, Perzynski AT, Blixen CE, Bialko CS, McKibben CL, Fuentes-Casiano E. Optimizing care for people with serious mental illness and comorbid diabetes. *Psychiatric Services*. 2011; 62:1001–1003. http://dx.doi.org/10.1176/ps.62.9.pss6209_1001. [PubMed: 21885575]
- Siantz E, Henwood B, Gilmer T. Implementation of peer providers in integrated care settings. *Journal of the Society for Social Work and Research*. 2016
- Swarbrick MA. Wellness-oriented peer approaches: A key ingredient for integrated care. *Psychiatric Services*. 2013; 64:723–726. <http://dx.doi.org/10.1176/appi.ps.201300144>. [PubMed: 23903603]
- Valente, T. *Social Networks and Health Models, Methods, and Applications*. New York, New York: Oxford; 2010.
- Willms DG, Best JA, Taylor DW, Gilbert JR, Wilson DMC, Lindsay EA, Singer J. A systematic approach for using qualitative methods in primary prevention research. *Medical Anthropology Quarterly*. 1990; 4:391–409. <http://dx.doi.org/10.1525/maq.1990.4.4.02a00020>.
- Fraser, D. *QSR NVivo NUD*IST Vivo reference guide*. Melbourne, Australia: QSR International; 2000.
- Gates LB, Akabas SH. Developing strategies to integrate peer providers into the staff of mental health agencies. *Administration and Policy in Mental Health and Mental Health Services Research*. 2007; 34:293–306. <http://dx.doi.org/10.1007/s10488-006-0109-4>. [PubMed: 17340184]

- Gates LB, Mandiberg JM, Akabas SH. Building capacity in social service agencies to employ peer providers. *Psychiatric Rehabilitation Journal*. 2010; 34:145–152. <http://dx.doi.org/10.2975/34.2.2010.145.152>. [PubMed: 20952368]
- Glaser, BG., Strauss, AL. The discovery of grounded theory: Strategies for qualitative research. New York, NY: Aldine de Gruyter; 1967.
- Goldberg RW, Dickerson F, Lucksted A, Brown CH, Weber E, Tenhula WN, Dixon LB. Living Well: An intervention to improve self-management of medical illness for individuals with serious mental illness. *Psychiatric Services*. 2013; 64:51–57. <http://dx.doi.org/10.1176/appi.ps.201200034>. [PubMed: 23070062]
- Greenhalgh T, Robert G, Macfarlane F, Bate P, Kryukidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Quarterly*. 2004; 82:581–629. [PubMed: 15595944]
- Mechanic D. Seizing opportunities under the Affordable Care Act for transforming the mental and behavioral health system. *Health Affairs*. 2012; 31:376–382. <http://dx.doi.org/10.1377/hlthaff.2011.0623>. [PubMed: 22323168]
- Meltzer D, Chung J, Khalili P, Marlow E, Arora V, Schumock G, Burt R. Exploring the use of social network methods in designing healthcare quality improvement teams. *Social Science & Medicine*. 2010; 71:1119–1130. <http://dx.doi.org/10.1016/j.socscimed.2010.05.012>. [PubMed: 20674116]
- Mowbray, C. Benefits and issues created by consumer role innovation in psychiatric rehabilitation. In: Mowbray, CT, Moxley, DP, Japser, CA., Howell, LL., editors. *Consumers as providers in psychiatric rehabilitation*. Columbia, MD: International Association of Psychosocial Rehabilitation Services; 1997. p. 45–63.
- Mueser KT, Corrigan PW, Hilton DW, Tanzman B, Schaub A, Gingerich S, Herz MI. Illness management and recovery: A review of the research. *Psychiatric Services*. 2002; 53:1272–1284. <http://dx.doi.org/10.1176/appi.ps.53.10.1272>. [PubMed: 12364675]
- Myrick K, del Vecchio P. Peer Support Services in Behavioral Healthcare Workforce: State of the Field. *Psychiatric Rehabilitation Journal*. 2016; 39(3):197–203. [PubMed: 27183186]
- Ostrow L, Adams N. Recovery in the USA: From politics to peer support. *International Review of Psychiatry*. 2012; 24(1):70–78. <http://dx.doi.org/10.3109/09540261.2012.659659>. [PubMed: 22385429]
- Palinkas LA, Aarons GA, Horwitz S, Chamberlain P, Hurlburt M, Landsverk J. Mixed method designs in implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*. 2011; 38:44–53. <http://dx.doi.org/10.1007/s10488-010-0314-z>. [PubMed: 20967495]
- Rice E, Barman-Adhikari A, Milburn NG, Monro W. Position-specific HIV risk in a large network of homeless youths. *American Journal of Public Health*. 2012; 102:141–147. <http://dx.doi.org/10.2105/AJPH.2011.300295>. [PubMed: 22095350]
- Sajatovic M, Dawson NV, Perzynski AT, Blixen CE, Bialko CS, McKibben CL, Fuentes-Casiano E. Optimizing care for people with serious mental illness and comorbid diabetes. *Psychiatric Services*. 2011; 62:1001–1003. http://dx.doi.org/10.1176/ps.62.9.pss6209_1001. [PubMed: 21885575]
- Substance Abuse and Mental Health Services Administration. (n.d). Retrieved 9/25/2017 from: <https://www.integration.samhsa.gov/workforce/team-members/peer-providers>
- Siantz E, Henwood B, Gilmer T. Implementation of peer providers in integrated care settings. *Journal of the Society for Social Work and Research*. 2016
- Swarbrick MA. Wellness-oriented peer approaches: A key ingredient for integrated care. *Psychiatric Services*. 2013; 64:723–726. <http://dx.doi.org/10.1176/appi.ps.201300144>. [PubMed: 23903603]
- Valente, T. *Social Networks and Health Models, Methods, and Applications*. New York, New York: Oxford; 2010.
- Willms DG, Best JA, Taylor DW, Gilbert JR, Wilson DMC, Lindsay EA, Singer J. A systematic approach for using qualitative methods in primary prevention research. *Medical Anthropology Quarterly*. 1990; 4:391–409. <http://dx.doi.org/10.1525/maq.1990.4.4.02a00020>.

Table 1

Composition of Care Coordination Networks (13 Networks, 224 Actors)

Network	Model Type	Peer Provider	Therapist or Clinician	Case Manager	Primary Care Provider	Nurse	Psychiatrist	Admin	Other ^a	Total
A	IMHT	2	4	3	1	1	1	3	0	15
B	IMHT	1	0	3	1	0	1	4	5	15
C	ICM	1	0	1	1	2	0	2	4	11
D	ISM	2	3	1	2	1	1	9	2	22
E	ISM	7	3	0	1	0	0	7	5	23
F	ISM	2	5	3	1	0	1	2	1	15
G	ICM	1	5	2	1	0	4	2	6	21
H	ISM	2	2	1	2	2	2	2	0	13
I	ISM	1	7	2	1	0	1	1	0	13
J	ISM	3	6	2	1	1	0	8	2	22
K	ISM	4	3	1	2	1	1	7	2	21
L	IMHT	1	1	8	1	2	1	3	0	17
M	ICM	1	6	2	0	0	1	5	1	16
Total		28	45	29	15	10	14	55	28	224

^aMedical assistants, physician assistants, trainees, and practitioners of complementary and alternative medicine.

Table 2

Sample Characteristics of Peer Providers Who Completed Both Social Network Survey and Qualitative Interview (n = 17)

Variable	<i>n</i>	%
Age ^a	46	12
Female	9	52.9
Race and ethnicity		
African American	8	47.1
Asian (Cambodian, Chinese, Korean)	6	35.3
American Indian (Lakota)	1	5.9
Armenian or Persian	2	11.8
Speaks Language(s) in addition to English	9	52.9
Educational background		
High school	2	11.8
Some college	6	35.3
Associate's	3	17.6
BA or BS	2	11.8
Master's	3	17.6
MBA	1	5.9

^aFigures reflect mean and standard deviation.

Table 3

Characteristics of Multidisciplinary Provider Networks

Network	Model Type	Network Size <i>n</i>	Network Density ^a %	Network's Average Indegree Centrality ^b %	Possible Nominations Received by Peer ^c %
A	IMHT	15	81	65	73
B	IMHT	15	79	70	78
C	ICM	11	74	52	60
D	ISM	22	47	31	45 [*]
E	ISM	23	47	30	22
F	ISM	15	74	38	42 [*]
G	ICM	21	46	31	40
H	ISM	13	71	52	50 [*]
I	ISM	13	70	56	15
J	ISM	22	34	23	17 [*]
K	ISM	21	37	27	14 [*]
L	IMHT	17	90	78	81
M	ICM	16	57	38	20

^aProportion of possible ties that exist in a network.^bAverage indegree centrality of all providers in a network.^cIndegree centrality of peer providers in each network calculated using the following formula: nominations received by peer ÷ (network size – 1).^{*} Average indegree centrality reported for networks that include more than 1 peer provider.

Table 4

Structural Equivalence through Convergence of Correlated Iterations

Network	Model Type	Peer Provider Group	Peer Provider Structural Equivalent	Nominations Received by Group ^a
A	IMHT	Group 1 of 8	Team leader	76
B	IMHT	Group 1 of 7	Program director, administrative coordinator	78
C	ICM	Group 1 of 6	Health promoter	60
D	ISM			
D Peer 1		Group 2 of 7	Other peer provider, case manager	43
D Peer 2		Group 2 of 7	Other peer provider, case manager	43
E	ISM			
E Peer 1		Group 2 of 8	Clinician at partnering agency, peer 6	31
E Peer 2		Group 3 of 8	Peers 3&5, CSS worker	28
E Peer 5		Group 3 of 8	Peers 2&3, CSS worker	28
F	ISM	Group 3 of 7	Other peer provider	46
G	ICM	Group 4 of 8	Social worker, social worker	33
H	ISM	Group 4 of 7	Other peer provider	50
I	ISM	Group 5 of 7	Case manager	50
J	ISM	Group 5 of 7	All three peer providers, executive director of partnering organization	18
K	ISM	Group 6 of 7	Yoga instructor	5
L	IMHT	Group 6 of 8	–	75
M	ICM	Group 6 of 8	MIS coordinator, therapist, clinical supervisor	18

^a Average percentage.

Table 5

Care Coordination Network Subtypes

Network Type	Network Visualization	Illustrative Quote
Type 1: Peer has high centrality, and felt central to team		<i>"The psychiatrist might know how to give the guy meds, or the doctor knows how to prescribe the meds, and this is how it's supposed to happen, but then we have us who... who know the client."</i> -Network A, IMHT
Type 2: Peer has high centrality, but felt periphery to team		<i>"They just turn up their nose to me and everything that I do. 'Cause the client community is... you know, is my strength, you know what I'm saying? As a peer advocate I don't go to the staff meetings. They just let me do my thing, you know what I'm saying? They let me do my thing."</i> -Network B, IMHT
Type 3: Peer has low centrality, but felt central to team		<i>"My team is very supportive... everyone has, a good positive vibe. We all work as a team. We all make sure that we get our things done on time. If I have a question and I go to a therapist or go to (names boss) or I go to (other name) and ask them, they are very helpful with me."</i> -Network M, ICM
Type 4: Peer has low centrality, and felt periphery to team		<i>I miss a lot of meetings, and then the peer part bothers me because unless I am talking at you, it's hard for me to get the floor... I have to be almost angry to jump in... I want peer advocate status to get into a group, but I don't want peer advocate status when it comes to levels of participation or accountability.</i> -Network L, IMHT

Note. Orange box represents peer provider; blue box represents other providers