ACT Fidelity in Ontario: Measuring Adherence to the Model

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ABSTRACT

The province of Ontario, Canada, with a population of 13 million people, has a large Assertive Community Treatment (ACT) program. Despite the large uptake of ACT in Ontario, to date there has been no comprehensive evaluation of the degree to which the model has been successfully implemented. This project assessed the fidelity of 67 ACT teams (85%) in the province using the Dartmouth Assertive Community Treatment Scale. Scores fell in the high fidelity range in the human resources and organizational boundaries domains, and in the medium fidelity range for the nature of services domain. Areas requiring more attention include achievement of higher caseloads; recruitment and retention of staff (specifically vocational, substance abuse, and psychiatry staff); and key areas of recovery, specifically employment and substance abuse.

Assertive Community Treatment (ACT) is considered an evidence-based practice in the care of people with serious mental illnesses such as schizophrenia. It has been widely studied and found to be effective in reducing hospitalizations, improving housing and community tenure, and reducing substance abuse, all with high rates of consumer and family satisfaction (Bond, Drake, Mueser, & Latimer, 2001; Mueser, Bond, Drake, & Resnick, 1998). ACT is a well-described model of care delivery. It is intended to provide for all of the treatment and rehabilitation needs of clients on an intensive, frequent, and time-unlimited basis. In order

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to provide this level of care, ACT teams require a full interdisciplinary team whose members function in an integrated manner to meet the complex needs of clients. Fidelity to the ACT model is typically assessed in terms of standards regarding human resources (e.g., small caseload ratios, multiple disciplines); organizational boundaries (e.g., intake criteria, responsibilities in treatment planning and provision); and the services provided (e.g., means of engagement, peer providers; Salyers & Tsemberis, 2007). The clear characterization of ACT through these fidelity domains has facilitated trials examining effectiveness and consistency of implementation. Several studies have documented the correlation between fidelity to the ACT model and outcomes across a range of indicators (Latimer, 1999; McGrew, Bond, Dietzen, & Salyers, 1994; McHugo, Drake, Teague, & Xie, 1999), including hospitalization (Burns et al., 2007). With respect to the latter finding, a meta-analysis has indicated that the structural and organizational aspects of ACT fidelity are more important to hospitalization outcomes than staffing (Burns et al., 2007). Finally, there has been some suggestion that the primary benefit of ACT might lie in its ability to effectively engage clients in long-term treatment (Bond & Salyers, 2004; Killaspy et al., 2009; Sytema, Wunderlink, Bloemers, Roordan, & Wiersma, 2008).

The province of Ontario, Canada, with a population of approximately 13 million people, has a large ACT program. The Ontario Ministry of Health and Long-Term Care (the Ministry) began systematically implementing ACT in 1998 as part of mental health reform and the shift to community-based care. The Ministry used several strategies to support implementation of ACT teams, including (a) the development of provincial standards (developed in 1998 and revised in 2004, see the Ontario Ministry of Health and Long-Term Care, 2004); (b) creation of a Technical Advisory Panel, with representation from a variety of stakeholders and ACT providers, to provide advice on implementation; (c) initiation of a biannual provincial ACT conference and a biannual meeting of ACT coordinators, psychiatrists, and stakeholders, convened by the Ministry to discuss ACT issues and, more recently, (d) technical assistance provided by the Ministry through on-site visits and training (George, Durbin, & Koegl, 2009).

Currently there are 79 teams across the province, sponsored either by hospitals or by community mental health providers. Seventy-six teams are large, funded to provide services for up to 100 clients per team. The three remaining teams serve rural areas and have smaller numbers of clients and lower staffing levels. Despite the large uptake and associated expense in the provision of ACT in Ontario, there has been to date no comprehensive examination of the degree to which implementation has been successful. In this context an examination of fidelity to the ACT model is critical to both accountability and identification of areas that need further development. Additionally, the large number of teams in Ontario provides an opportunity to examine implementation trends that might inform the development of ACT in other jurisdictions.

In the present study, we surveyed all ACT teams in Ontario with the goals of creating a provincial snapshot of fidelity, developing individual team profiles so that teams could compare their performance with the provincial average, and highlighting areas that might need to be addressed to monitor performance and guide implementation of the program.

METHODS

While several ACT fidelity measures have been developed, the most widely used is the Dartmouth Assertive Community Treatment Scale (DACTS; Teague, Bond, & Drake, 1998). The DACTS is a 28-item

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scale focused on three domains: human resources (e.g., continuity of staffing-program maintains the same staffing over time), organizational boundaries (e.g., responsibility for crisis services-program has 24-hour responsibility for covering psychiatric crises), and nature of services (e.g., role of consumers on treatment team—consumers are involved as members of the team providing direct services). Each item is rated on a 5-point scale ranging from not implemented to fully implemented. The DACTS was chosen both because of its potential to compare fidelity with other jurisdictions and because it is consistent with the Ontario ACT standards. The DACTS was originally developed as a continuous measure; however, cut-off scores have been established to compare high, medium, and low fidelity teams (Salyers et al., 2003). Consistent with the cut-off scores established previously, in our study high fidelity is a score of 4.0 and above, medium fidelity 3.0–3.9, and low fidelity below 3.0.

Finally, in the present study 4 human resources items from the DACTS were modified to reflect the Ontario standards. For example, in Ontario, teams are required to have three nurses while the DACTS criterion is two nurses per team (see Table 1 for a listing of item adjustments). While the DACTS was initially

Modified DACTS Items for 100 Client Teams			
DACTS item	Original anchors	Ontario standards	
H7: Psychiatrist on staff	1. Less than 0.1 FTE	1. Less than 0.1 FTE	
	2. 0.1–0.39	2. 0.1-0.39	
	3. 0.4–0.69	3. 0.4–0.59	
	4. 0.7–0.99	4. 0.6–0.79	
	5. At least 1 FTE	5. At least 0.8 FTE	
H8: Nurse on staff	1. Less than 0.2 FTE	1. Less than 1 FTE	
	2. 0.2-0.79	2. 1.0–1.4	
	3. 0.8–1.39	3. 1.5–1.9	
	4. 1.4–1.99	4. 2.0–2.9	
	5. At least 2 FTE	5. At least 3 FTE	
H9: Substance abuse specialist on staff	1. Less than 0.2 FTE	1. Less than 0.2 FTE	
	2. 0.2-0.79	2. 0.20-0.40	
	3. 0.8–1.39	3. 0.41-0.69	
	4. 1.4–1.99	4. 0.70–0.99	
	5. 2 FTE with 1 year S/A	5. 1 FTE with 1 year S/A	
	training or experience	training or experience	
H10: Vocational specialist on staff	1. Less than 0.2 FTE	1. Less than 0.2 FTE	
	2. 0.2–0.79	2. 0.20-0.40	
	3. 0.8–1.39	3. 0.41-0.69	
	4. 1.4–1.99	4. 0.70–0.99	
	5. 2 FTE with 1 year VR	5. 1 FTE with 1 year VR	
	training or experience	training or experience	

Table 1

Note. DACTS = Dartmouth Assertive Community Treatment Scale; VR = vocational rehabilitation; S/A = substance abuse and addictions treatment.

created as an interviewer-administered measure, it was employed as a self-report measure in the present study as we did not have adequate resources to visit teams across Ontario. The coordinator and senior nurse on each team were asked to complete the DACTS independently, with the results averaged for each item. We integrated these two perspectives to increase the likelihood of a reliable and balanced measure of service delivery in the given setting. The intraclass correlation between senior nurse and coordinator ratings was .78 with a mean difference of .04/5 (SD = 0.24), suggesting good interrater reliability. This study was reviewed and approved by an institutional research ethics board.

RESULTS

Sixty-seven of 79 teams (85%) participated in the study, which took place over 2007 and 2008. Reasons provided for non-participation revolved primarily around staff/coordinator turnover and the recentness of start-up. One of the 12 non-participating teams was funded as a small rural team. With respect to sponsor-ship, 45 of the 67 participating teams were hospital sponsored and 22 were sponsored by community organizations. The results are presented for the three domains: human resources, organizational boundaries, and nature of services. The mean, median, minimum, and maximum values are presented. Overall fidelity to the ACT model was high with a mean score of 4.22/5 (Table 2). Organizational boundaries had the highest domain score—significantly higher than scores in the area of human resources (t = 7.28, p < .001). Scores for human resources were, in turn, significantly higher than scores for the nature of services domain (t = 5.39, p < .001). Independent samples *t*-test analysis revealed no significant differences in total or subscale fidelity scores as a function of teams being hospital or community-service based.

Table 2 Overall Fidelity Scores for Ontario ACT Teams		
DACTS domain	Mean scores/5	
Total fidelity score	4.22	
Human resources: structure and composition	4.25	
Organizational boundaries	4.61	
Nature of services	3.92	

Human Resources

Overall fidelity for the human resource items fell in the high range at 4.25/5 (Table 3). Specific areas of high fidelity in this domain include having small caseloads, a team approach, regular meetings to review client needs, the required number of nurses, and the required number of full-time equivalent staff. The high score for small caseload, however, does not capture staff-to-client ratios that are too low. The caseload requirement for Ontario teams is 1:10 for large teams, with provision to drop to 1:8 for extenuating reasons such

as client acuity. Small teams should be at 1:8 with provision to drop to 1:6. In the present study, the average caseload for large teams was 1:6 and for small teams was 1:4, falling substantially below both general ACT criteria and Ontario standards.

Furthermore, while teams had the required total number of positions, 22% were functioning with less than 80% of the positions filled, suggesting that in some areas it is difficult to recruit and retain staff. Medium fidelity areas included having a practicing team leader (part of whose time is devoted to client care), psychiatrist, substance abuse specialist, and vocational specialist on staff. Only 40% of teams had the required 0.8 FTE psychiatrist, 56% had a full-time substance abuse specialist, and 63% had a full-time vocational specialist. These staffing limitations are particularly of note in the context of this study, given that Ontario ACT standards are less stringent than those set in the original version of the DACTS (see Table 1).

Table 3 ACT Fidelity Scores for Human Resources				
	Mean	Median	Min	Max
Small caseload—no more than 10:1 client/provider ratio (average 1:6)	4.87 H	5	3	5
Program meeting—meet to plan and review each client	4.84 H	5	3.5	5
Nurse on staff—number of FTEs based on Ontario standards	4.77 H	5	3	5
Team approach—function as a team	4.70 H	5	2.5	5
Program size—number FTEs based on Ontario standards	4.52 H	5	2	5
Continuity of staffing—program maintains staffing over time	3.99 M	4	1	5
Staff capacity—program operates at full staffing (22% of teams operate at less than 80% staffing)	3.95 M	4	1.5	5
Psychiatrist on staff—percentage FTE based on Ontario standards (40% have FTE)	3.94 M	4.5	1	5
Substance abuse specialist on staff—based on Ontario standards (56% have 1 FTE)	3.84 M	5	1	5
Vocational specialist on staff—based on Ontario standards (63% have 1 FTE)	3.63 M	5	1	5
Practicing team leader—team leader provides direct client services (18.5% of teams have leader providing 50% clinical)	3.55 M	4	1	5

Table 2

Note. H = high fidelity; M = medium fidelity.

Organizational Boundaries

Organizational boundaries define the types of clients appropriate for ACT, rate of admission, responsibility for client care, and length of time clients are served (Table 4). Average fidelity is high in all areas at 4.61/5; however, the minimum scores suggest that a smaller number of teams are not able to provide for all of the treatment needs of clients, do not provide 24/7 coverage, and are minimally involved during hospitalizations.

Table 4 ACT Fidelity Scores for Organizational Boundaries

	Mean	Median	Min	Max
Intake rate no greater than per provincial standards	4.96 H	5	4	5
Time-unlimited services	4.95 H	5	4	5
Full responsibility for treatment services	4.68 H	5	3	5
Responsibility for hospital admissions	4.59 H	5	1	5
Explicit admission criteria/inappropriate admissions	4.50 H	4.5	3	5
Responsibility for hospital discharge planning	4.37 H	4.75	2	5
Responsibility for crisis services (60% provide 24/7 coverage)	4.22 H	5	1.5	5

Note. H = high fidelity.

Nature of Services

This area of ACT performance, with a mean score in the medium fidelity range at 3.92/5, is related to specific types of services provided to ACT clients (Table 5). Areas of strength for teams included providing community-based or in-vivo service, retaining clients in care, being assertive in finding and working with clients (for example, those who are homeless or incarcerated), providing a high intensity of services, and working with informal supports (for example, family, housing provider, probation officer). Some teams indicated that they were not providing the frequency of contacts that clients might need, although teams are providing a high total amount of service time. Overall, teams were weaker in providing services to clients with comorbid substance abuse problems. Few teams have implemented substance abuse group programming, and only 15% of teams have implemented best practice guidelines for the treatment of people with serious mental illness and substance abuse problems. The Ontario standards require all teams to have one FTE peer support worker; however, 26% of teams have no peer support worker and many have part-time positions.

ACT FIGHTLY Scores for Nature of Services				
	Mean	Median	Min	Max
Community-based services outside the office	4.88 H	5	3.5	5
No drop-out policy—high client retention	4.88 H	5	4	5
Assertive engagement mechanisms—outreach	4.56 H	5	2	5
Intensity of service—high total amount of service	4.43 H	4.5	3	5
Work with informal support system	4.04 H	4	2	5
Frequency of contact—high number of contacts as needed	3.84 M	4	2	5
Individualized substance abuse treatment	3.67 M	4	1	5
Concurrent disorders (psychiatric and substance use disorders) model—staged/non-confrontational/harm reduction/client understands interactions of illness and substance use (15% have fully implemented concurrent disorders model)	3.60 M	3.5	2	5
Role of consumers on treatment team (26% no peer worker)	3.23 M	3	1	5
Concurrent disorders groups—provided by the team team	1.96 L	1.5	1	5

Table 5ACT Fidelity Scores for Nature of Services

Note. H = high fidelity; M = medium fidelity; L = low fidelity.

DISCUSSION

As has been the case in other jurisdictions where attention has been paid to implementation (Moser, DeLuca, Bond, & Rollins, 2004), Ontario is achieving high fidelity ratings overall. While use of the DACTS as a self-report measure may bias the results toward higher overall ratings, our findings show significant variation across teams and consistency of findings in areas that require attention. Of particular concern are shortcomings in areas that are recognized to have a substantial impact upon client recovery. As noted recently by Drake and Deegan (2008), greater attention needs to be paid to adopting evidence-based practices such as supported employment and integrated substance abuse treatment—two areas of particular concern in our results.

One third of Ontario teams do not have a full-time vocational specialist. A lack of recruitment of vocational staff may compromise the ability to implement the supported employment model, thus limiting potential gains in vocational outcomes for ACT clients. There is evidence that the effectiveness of supported employment interventions is related to the degree to which services align with the critical components of the supported employment model (Becker, Haiyi, McHugo, Halliday, & Martinez, 2006). It would be worthwhile assessing the degree to which Ontario's teams are achieving fidelity to the supported employment model as well as fidelity to the ACT model. Three studies have linked fidelity factors with substance abuse outcomes (Henskens, Garretsen, Mulder, Bongers, & Kroon, 2005; McHugo et al., 1999; Teague, Drake, & Ackerson, 1995), yet this is one of the weakest areas for Ontario ACT teams. This may be understood from a system development perspective. Attention to providing integrated treatment is relatively recent in Ontario, and this knowledge has yet to be substantively translated into front-line care.

Many teams have either part-time or no peer workers. Although the evidence is limited, there is some indication that consumers change the way in which teams work; consumers can promote the development of a "culture" of recovery-oriented service provision and improve the quality of service provision (Felton et al., 1995; Solomon & Draine, 1998). Recently, attention has been paid to the inherent tension between some aspects of fidelity to ACT and recovery principles (Drake & Deegan, 2008; Salyers & Tsemberis, 2007). Salyers and Tsemberis (2007) have pointed out that "the inclusion of consumer providers on ACT teams is a natural way to enhance recovery-orientation" (p. 637). This provides a challenge to Ontario providers to examine in more detail the role of peer support in ACT. It would also be useful to identify whether these results represent recruitment challenges (finding consumers with training and aptitude to work on a clinical team) or some element of stigma and failure to value the role of peer support.

Recruitment and retention of psychiatrists remains a significant challenge for some teams. This may be a reflection of the lack of standard remuneration for ACT psychiatrists across the province and the challenge of recruitment in underserviced areas. The challenges of recruitment and high rates of staff turnover on some teams may compromise the stability of teams and their ability to provide the frequency as well as the intensity of service most ACT clients require.

Two other findings in the present study deserve comment. It is noteworthy that fidelity findings did not vary as a function of team sponsorship. This suggests that linkages to hospitals versus community organizations do not have a substantial impact on profiles of team strengths and limitations in fidelity domains despite what are presumably different relationships within service systems. Additionally, the low caseloads of teams across the province (1:6 for large teams) are problematic. While the economic benefit of ACT versus standard care is unclear (Latimer, 1999; McCrone et al., 2009), if caseloads are substantially below ACT standards any fiscal benefit will cease to be a rationale for this approach to care.

Though the DACTS is limited in those aspects of the ACT program that it captures (Bond & Salyers, 2004), it nonetheless has provided useful feedback in the Ontario context. These results suggest that the DACTS may be helpful in ongoing provincial implementation monitoring and in providing individual teams with data to assist in their continuous quality improvement. Attention should be paid to evaluating the degree to which teams are implementing evidence-based interventions such as supported employment and integrated substance abuse treatment. In addition, the importance of the structural and organizational aspects should be emphasized. These domains have emerged in previous work as being of key importance in reducing the hospital use of ACT clients (Burns et al., 2007).

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A limitation in the present study was the use of the DACTS in a self-report format, as this may have led to reporting bias and inconsistency in the application of criteria. This limitation is arguably ameliorated to some degree by the finding of consistent trends in the variability of the findings. As such, our findings may provide some support for the usefulness of the DACTS as a self-report measure. Additionally, changes to item anchors to align the DACTS with Ontario standards may affect the generalizability of the findings of this study to some degree. Finally, while the DACTS is a useful measure in assessing the implementation of standards, more work is needed to unpack the critical ingredients that make the ACT model successful. A recent advancement in this area is the development of the Tool for Measurement of Assertive Community Treatment (TMACT; Teague, Monroe-DeVita, & Moser, 2009), which builds upon the DACTS to include the measurement of factors such as person-centred, strengths-based treatment planning. It would also be beneficial if future studies examined in more depth the barriers that arise to successful implementation of ACT across fidelity domains and different service contexts.

RÉSUMÉ

La province de l'Ontario, au Canada, avec une population de 13 millions d'habitants, possède un vaste programme de traitement communautaire actif. Toutefois, à ce jour, aucune évaluation globale n'avait été faite des résultats de ce programme. Dans cette étude, nous évaluons 67 équipes communautaires de traitement actif (85 %) de la province qui utilisent l'échelle de traitement communautaire actif de Dartmouth (Dartmouth Assertive Community Treatment Scale, DACT) pour voir jusqu'où elles sont fidèles au modèle de base. En ce qui a trait aux ressources humaines et aux frontières organisationnelles, les scores obtenus correspondent à une fidélité élevée ; pour ce qui est de la nature des services, les scores correspondent à une fidélité moyenne. Les secteurs qui requièrent plus d'attention sont l'augmentation des nombres de cas traités, le recrutement et la rétention du personnel (plus particulièrement : professionnels, intervenants en abus d'alcool ou de drogues, psychiatrie), et les domaines qui ont un impact important sur le rétablissement, et en particulier l'emploi et l'abus d'alcool ou de drogues.

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