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Exploring Primary Care Activities in ACT Teams

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Abstract

Background—People with serious mental illness often receive inadequate primary and preventive care services. Federal healthcare reform endorses team-based care that provides high quality primary and preventive care to at risk populations. Assertive Community Treatment (ACT) teams offer a proven, standardized treatment approach effective in improving mental health outcomes for the seriously mentally ill. Much is known about the effectiveness of ACT teams in improving mental health outcomes, but the degree to which medical care needs are addressed is not established.

Purpose—The purpose of this study was to explore the extent to which ACT teams address the physical health of the population they serve.

Methods—ACT team leaders were invited to complete an anonymous, web-based survey to explore attitudes and activities involving the primary care needs of their clients. Information was collected regarding the use of health screening tools, physical health assessments, provision of medical care and collaboration with primary care systems.

Results—Data was analyzed from 127 team leaders across the country, of which 55 completed the entire survey. Nearly every ACT team leader believed ACT teams have a role in identifying and managing the medical co-morbidities of their clientele. ACT teams report participation in many primary care activities.

Conclusions—ACT teams are providing a substantial amount of primary and preventive services to their population. The survey suggests standardization of physical health identification, management or referral processes within ACT teams may result in improved quality of medical care. ACT teams are in a unique position to improve physical health care by virtue of having medically trained staff and frequent, close contact with their clients.

Introduction

People suffering from serious mental illness receive poor primary and preventive healthcare, (1, 2) and face marked disparities in physical health outcomes, dying 12–19 years earlier than the general population (3). This so-called “mortality gap” appears to be worsening over

time (4). People with serious mental illness face a multitude of barriers to achieving good health. Many have adverse health behaviors that are difficult to overcome such as smoking, sedentary lifestyle, poor dietary habits and obesity placing them at risk for cardiovascular disease (5). Medications necessary to control psychosis and mania may have the deleterious effect of increasing risk for obesity, insulin resistance and dyslipidemia. In a busy primary care clinic, people with serious mental illness are likely to have acute complaints addressed and chronic conditions overlooked. Further, efforts to integrate mental health and primary care have largely excluded those with severe mental illness, and fragmentation of care makes access to services limited and challenging (6, 7, 8). Cascades of factors such as these make it difficult for persons with serious mental illness to achieve good health outcomes (9).

Since the early 1980's, Assertive Community Treatment (ACT) teams have provided intensive psychosocial rehabilitation support to persons suffering with persistent mental illness who also demonstrate difficulty engaging in care (10). ACT teams combine the services of a psychiatrist, psychiatric nursing and supportive community living aids in community-based settings. They are charged with medication management and in assisting with vocational, substance abuse and housing services. ACT teams have proven, when applied to the appropriate demographic and held to certain standards of care, that they are cost effective (11) and significantly improve behavioral outcomes, such as reduction in psychiatric hospitalizations, housing stability and engagement in services (12, 13). ACT can support the dissemination of new evidence-based practices such as integrated dual-diagnosis treatment and wellness and recovery planning (14). Although attention to the physical health needs of people receiving care in ACT is a stated goal of the model (15), there are no reports on the degree to which ACT engages in medical care.

Some attempts have been shared identifying the physical health of ACT clients. Reports indicate a high prevalence of hepatitis, hypertension and osteoarthritis (16). Interventions targeted at improving the physical health of clients have improved mental health, (17) but have not reported physical health outcomes. Other teams have broadened the responsibilities of ACT nurses to include medical care, but note deficiencies in training of team members that limit their capabilities (18, 19). Recent studies have demonstrated improvement of medical care when nurse care managers act as liaisons to primary care for persons with serious mental illness (20), and some argue that ACT does not take full advantage of its staff in addressing medical care (21).

Finally, ACT has many commonalities with evolving models of medical care delivery, most notably the medical home concept. The Patient-Centered Medical Home (PCMH) has roots in primary care. Key components of the medical home overlap with ACT requirements, such as enhanced access and continuity, patient education and empowerment, and comprehensive evidence-based treatment (22, 23). ACT teams are designed to function as "mental health homes", and have evolved in parallel to the growing PCMH movement (24).

This paper is the first attempt at a national survey of ACT teams to enhance understanding regarding the extent to which teams participate in the primary care needs of the people receiving care in the program. Specifically, the study examined the identification, management and referral of primary care activities of ACT teams across the United States.

Methods

The data for this study were collected using a cross-sectional survey with purposive sampling targeting ACT team leaders across the United States. Surveys were distributed between July 5th and October 26th, 2011 through postings on two popular community psychiatry list-serves commonly accessed by ACT clinicians. In addition, the authors

contacted persons involved in ACT implementation in various states asking them to forward the survey to team leaders. The survey explored how teams identify, monitor, treat and/or refer medical conditions. It was web-based, anonymous, and approved by the Institutional Review Board at the University of Iowa. Respondents did not receive any compensation for their participation. The initial posting resulted in 40 completed surveys from 11 states. After three months a second request was sent through the list-serves identifying 20 states that had not yet responded but were known to have ACT teams. An additional 15 completed surveys were received from 9 states. Because of the nature of the data collection process, a total response ratio could not be calculated.

Survey

The survey comprised 100 items divided into eight sections developed by two authors (ERV, NAW) based on their clinical experience in ACT (Table 1). It was piloted amongst ACT teams in Iowa prior to national distribution. A supplemental section inquired about how the team may function as a medical home for people in the program (section 8). Demographic information such as state of practice, practice setting (rural, population < 50,000; urban, population ≥ 50,000), team leader training and experience, team composition, and client payer mix was also collected for teams completing the survey. Question format included ordinal scales and free-text later coded separately by one of the authors (ERV) for qualitative data analysis.

Data Analysis procedures

Study data were collected and managed using REDCap, a secure, web-based application (Research Electronic Data Capture) hosted at the University of Iowa Institute for Clinical and Translational Science (25). Data were analyzed using SAS version 9.3 (SAS Institute Inc., Cary, NC). Of 127 surveys that were started, fifty-five surveys were completed in their entirety from 20 states. Of non-completers, 27 logged into the survey but did not populate data, and 28 respondents withdrew from the survey prior to completion of section 2. Demographic data from teams not completing the survey was non-existent, preventing comparisons of survey completers and non-completers or partial responders. Because of the exploratory nature of the survey, data from surveys not completed in their entirety were used in analysis. Percentages presented in results represent a combination of partial and completed surveys where possible. Our primary outcome of interest was the team leader's impression of client's health after one year of enrollment. Categorical variables were assessed using the Wilcoxon signed-rank test. Ordinal variables were contrasted using the non-parametric Wilcoxon Rank Sum Test. Team leaders were asked two 5-point scales of client's general health at intake and after one year. The difference in these two questions (general health change) was a primary outcome of correlates in further exploratory analysis. The general health change (N=98) was dichotomized into team leaders who reported improvement in client's overall health (≥ 1 , N=56) versus report of no-change or worsening health (≤ 0 , N=42). Chi-squared analysis identified variables that were significantly associated with this dichotomous outcome ($p < 0.05$). Those variables (3) were then entered into a logistic regression model to test for independent effects on health improvement.

Results

Demographics

Of the 55 teams that completed surveys, 11 (20%) reported they were from rural locations (population <50,000), and 56% (N=31) of teams reported Medicaid was the primary source of funding for over 75% of their clients (Table 2). Most teams reported that ACT was a publicly supported program within their state.

General Impression of the ACT team role in their physical health and ACT clients' health

Using Wilcoxon Signed Rank (N=98), health was rated as significantly improved relative to intake for most people receiving care in ACT programs ($S=808.5$, $p<0.0001$). Over 90% (94 of 100) of team leaders reported a belief that the ACT team has a role in identifying and treating the physical health needs of clients, while almost 80% (56 of 71) indicated that the ACT team was responsible for assessing the physical health of clients (Table 3).

Identification of physical health problems

Only 50% of ACT teams completing the survey use a tool to assess the physical health status of their patients, with only 30% of those teams using the Health Assessment Screening Tool found in the ACT manual (15). Notably, 27% of the 55 team leaders completing the survey were not aware of this measure. For teams aware of the ACT manual screening tool, reasons for not completing it most often included not having access to appropriate medical records. Sixteen programs (30% of 55) had developed their own screening tool to use upon intake to the program.

Thirty-seven teams reported that more than half of clients received a general physical exam within one year of enrollment. A dedicated person performed physical health assessment for 78% of 55 teams, with the majority performed by registered nurses. A majority (60%, N=33 of 55) of teams routinely screen vital signs.

Nearly all the teams assess exercise habits, nutrition, diet, smoking cessation, and alcohol cessation. The majority of teams “almost always or always” identify cardiovascular risk factors with obesity (43/55, 78%), hypertension (39/55, 71%), diabetes (38/55, 69%) and cholesterol (27/55, 49%) screens (Table 3). In contrast, only a fraction of teams report routinely assessing for infectious diseases, including HIV (n=3), hepatitis B or C (N=1), syphilis (N=2), or tuberculosis (N=5). Though not required, between 58% (32 of 55) and 65% (36 of 55) of teams reported assessment of cancer screening (colon, cervical, breast or prostate) sometimes, always or if medically indicated.

Eighty-one percent of team leaders felt additional information about recommended preventive health screening would change the way their team assesses physical health, and roughly a third of teams requested a better intake instrument to aid in that process.

Management of physical health problems, high risk medications, and preventive care services

When asked about management of physical health problems, the majority (82%, 45 of 55) of teams oversee the administration of all medications. The remaining teams (N=10) reported they held responsibility only for mental health medication oversight.

Around 80% of teams report that greater than half of clients were treated with a second generation antipsychotic (SGA), while only 62% (34/55) of team leaders were familiar with the ADA/APA guidelines (APA/ADA 2004) on monitoring second-generation antipsychotics. Forty-percent of team leaders (22) felt that at least half their clients were up to date on all screenings for SGA's. One-hundred percent of teams (55/55) identified a licensed independent practitioner (physician, physician assistant or advanced registered nurse practitioner) or a nurse as carrying the responsibility for ensuring their clients were up to date on their screenings. The majority of teams (31/55, 56%) felt that having systematic reminders and educating staff (34/55, 62%) would be the most helpful interventions to improve metabolic monitoring rates on SGA's.

The top 5 illnesses encountered by ACT teams were hypertension, diabetes, hypercholesterolemia, obesity, and asthma. Eighty-nine percent (49/55) of ACT teams report they discussed physical illness symptoms of their clients at least weekly during team meetings, and almost 60% (33/55) report they discuss symptoms daily. Ninety-six percent (53/55) of teams report checking vital signs as part of medical management of disease or side-effects. Eighty percent (44/55) of teams include physical health assessments in their quarterly treatment planning (Table 3).

ACT as intermediary between the client and primary care

ACT was often described as playing a significant role in primary care collaboration, information exchange and advocacy. Fifty-six percent of teams (31/55) report that the majority of their clients have a PCP at intake, and it is usually a licensed independent practitioner (MD or DO). They communicate with the PCP primarily through fax or personal contact. Nearly all (96%, 53/55) provide transportation to medical appointments for their clients (Table 3). Eleven of 55 (20%) teams identify a single common provider they usually prefer to collaborate with. Only three teams reported that a primary care physician attended team meetings. Funding for that position was provided by fee-for-service (N=2) or through a grant (N=1).

ACT Team leaders identified the most frequent barriers to adequate primary care services, including clients' refusal to schedule and make appointments, insurance issues, access to primary care, unwillingness of primary care doctors to treat these patients, and client lack of awareness of health problems (Figure 1).

Exploratory analysis

Three variables were found to be associated with higher team ratings of health improvement at one year. Teams that collaborated closely with an identified primary care physician (N=16) were significantly more likely to report some improvement in client's health after one year (N=48) ($\chi^2=6.1$, $df=1$, $p=0.01$). Teams where a team-member (non-PCP) was involved in diagnosis, management or screenings of physical conditions (N=35) were also more likely to report improved health (N=26) ($\chi^2=6.9$, $df=1$, $p=0.009$). Rural practices (N=11) were more likely to report improvement when compared to urban practice settings (N=45) ($\chi^2=8.4$, $df=1$, $p=0.004$). When these three variables were combined in logistic regression, the collaboration with a PCP no longer independently predicted reported health outcomes (OR 5.1, 95% C.I. 0.80–31.9, $p=0.08$). However, rural practice (OR 17.1, 95% C.I. 1.7–174, $p=0.02$) and use of a team member for screening remained predictive of improved health at one year (OR 5.5, 95% C.I. 1.4–21.6, $p=0.01$).

Discussion

The purpose of this study was to explore the extent to which ACT teams address the physical health of their clients. We found that ACT team leaders overwhelmingly believed it was within the role of the ACT team to address physical and preventive health needs of their clients. This is in agreement with similar findings, but is a more diverse national sample (14, 17, 18, 19). This survey supports a commonly held notion that many ACT teams attempt to manage illnesses such as hypertension, asthma and diabetes in the absence of medical support. They also often participate in health prevention efforts for their patients. These activities may have a significant impact on overall health outcomes of persons served by ACT, but have never been systematically evaluated. Additionally, teams are not reimbursed for this care.

Although a variety of activities to identify and address medical care were described, the survey showed a lack of consistency of services provided across teams. Many reports have recognized a lack of training for mental health staff in the implementation of metabolic screening standards for patients on atypical antipsychotics (29–31). Our findings, while consistent with prior reports, also highlight a desire amongst ACT clinicians for further education about recommended preventive health screening and standardization of an intake process to identify physical health needs. Although the original ACT manual has a section for physical health assessment at enrollment, common measures of program fidelity (26, 27) do not require the inclusion of physical health assessments or collaboration.

Interestingly, teams from a rural location were more likely to report improvement in people's health at one year when compared to urban teams. Multiple factors may influence this perception, and warrant further study. Teams with identified PCP collaborators, or with a team member who has designated responsibility for the medical care of the patients also reported improved health. The specific process of assigning medical care responsibility to a team member, or developing organized primary care collaboration may improve health outcomes. As mentioned previously, interventions such as physical health nurse care management have proven effective in this population (20).

ACT teams may be uniquely positioned to address the challenges to primary care integration. Patients with serious mental illness often have multiple barriers to achieving good general health outcomes. By virtue of the frequent contact and interdisciplinary team, ACT staff are well poised to overcome obstacles at the individual and systems level. Individually, staff may work with clients to help motivate behavior change. At a systems level, ACT staff can help negotiate the complex healthcare system to secure funding for services. As such, ACT teams may serve as an important advocate on multiple fronts pertaining to medical care. Additionally, ACT is already recognized as cost-effective, and many states are looking towards large-scale implementation of ACT as a means to address the needs of persons within the least-restrictive environment possible (28).

To our knowledge, no systematic effort has been undertaken to examine the physical health outcomes of people after enrollment in ACT. Such study would be useful to determine the effectiveness of ACT teams in addressing general medical health needs of people receiving care in these programs.

Study limitations

There are several limitations of this survey. The use of purposive sampling reduces the generalizability of the study because it is unknown whether the responses of these ACT teams are representative of all ACT teams. Although the total number of ACT teams nationally is unknown, data collected from 31 states in 2010 to 2011, demonstrated 738 ACT or ACT-type programs (Personal communication, New York State Psychiatric Institute/Office of Mental Health, 6/13/2012). Additionally, the inability to analyze patterns of response that may have differed in survey completers and partial-responders may skew results from data inclusive of partial-responders. However, because this was an exploratory survey, all attempts were made to gather the most available data for hypothesis generation. There is wide variability in ACT model fidelity, making generalizable surveying challenging. Including a measurement of ACT fidelity with these results may have allowed for easier program comparison, and should be included in future attempts at ACT surveying. The results may be subject to recall and social desirability bias. Our survey represents the opinion of team leaders and may not truly be reflective of physical health monitoring and outcomes of people on ACT teams without the inclusion of verifiable objective health outcomes amongst ACT clients such as lab values or anthropomorphic measurements. The majority of team leaders in our sample came from social work background and training

(Table 2). A lack of formal medical training for team leaders may lead to errors in reporting on physical health of people receiving care in the program, or medical activities in which their ACT team engages.

Conclusion

People with serious mental illnesses disproportionately receive poor quality medical care (1, 2). Many ACT providers report a substantial amount of primary and preventive services without formal obligation, training or support. Efforts to improve the medical care of persons in the public mental health sector should strongly consider evaluating the role of physical health identification, management and referral within ACT as a pre-existing evidence-based practice. ACT teams face a potential opportunity to address factors relevant to both mental and physical health outcomes. Future research into primary care activities amongst ACT should consider more targeted sampling and outreach, the addition of objective measures to mitigate recall bias and study design allowing for better control of potentially confounding factors.

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Figure 1.
Perceived Barriers to Primary Care

Table 1

Survey	Section Sample Item
Attitudes and impressions on the general health of ACT clients and the role of the team in managing medical problems	"Do you believe that ACT teams have a role in identifying and/or treating the physical health of their clients?"
Identification of physical health problems	"What methods do you routinely use for physical health assessment of clients upon intake to your ACT team?" and "Estimate what percentage of clients have received a general physical exam within one year of admission to ACT"
Involvement in health prevention activities	"How often do you estimate the ACT team collects information about whether influenza vaccines have been provided to your clients"
Management of medical problems	"Is the ACT team responsible for overseeing the administration of all medications a client takes or solely medications taken for mental health?"
Management of high-risk medications	"Of clients taking atypical antipsychotics, estimate what percentage are currently up to date in their monitoring of metabolic side effects."
Monitoring of medical problems	"Estimate how often physical symptoms are discussed and/or reported during the daily team meeting."
Liaison with primary care	"Do ACT team members provide transportation to general medical appointments, lab tests/studies or the emergency room?"

Table 2

Demographics of Survey Completers

Ratio of Clients to Staff:	9.6
Percentage Publicly Funded:	85%
Average LIP FTE:	0.5
Average Nursing FTE:	1.9
Average Years in Operation:	8.2
Average Years of Experience with ACT for Survey Respondent:	6.7
Percentage Rural:	11%
Respondent Training Background:	Social Worker 43%
	Psychologist 18%
	Physician/Psychiatrist: 20%
Respondent Level of Training:	Master's Degree: 69%
	Doctorate: 21%

Table 3

Survey Item	Number of Positive Responses	Denominator	Percentage
General			
ACT has a role in the identification and treatment of physical health conditions	94	100	94%
ACT has a role in physical health assessment of clients	56	71	79%
Identification of Physical Health Problems			
ACT identifies the following CVD risk factors:			
Obesity	43	55	78%
Hypertension	39	55	71%
Diabetes	38	55	69%
Cholesterol	27	55	49%
Management or Monitoring of Physical Health Problems			
ACT manages all medications always or if medically indicated	45	55	82%
The frequency by which Physical Health Signs or Symptoms are discussed amongst ACT staff			
Daily	33	55	60%
Weekly	49	55	89%
During quarterly treatment planning	44	55	80%
Vital Signs, routinely or if indicated			
Blood pressure	53	55	96%
Weight	53	55	96%
ACT as Intermediary Between Medical Care and Mental Health			
ACT team transports patients to medical appointments	53	55	96%