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Assertive community treatment for patients with severe mental illness

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INTRODUCTION

Assertive community treatment (ACT) is a team-based approach to the organization and provision of mental health services specifically designed to meet the needs of community dwelling persons with severe mental illness at high risk for relapse, rehospitalization, and housing instability. The term severe mental illness most commonly applies to the mental disorders: schizophrenia, schizoaffective disorder, severe depression, bipolar disorder, and posttraumatic stress disorder.

While the usual locus of treatment for outpatients with severe mental illness is the community mental health center, ACT programs provide the vast majority of services in the patient's setting in the community (eg, home, shelter, neighborhood). Multidisciplinary teams of individuals who work closely together typically have at least weekly contacts with clients.

This topic reviews the conceptual foundations, patient assessment, components, and efficacy of assertive community treatment. Other psychosocial interventions for patients with severe mental illness, including supported employment and lifestyle interventions for weight control, are reviewed separately. (See "Supported employment for patients with severe mental illness" and "Lifestyle interventions for obesity and overweight patients with severe mental illness".)

SEVERE MENTAL ILLNESS

Assertive community treatment (ACT) and some other psychosocial interventions have been developed and tested in patients with a “severe mental illness” [1], ie, a mental disorder that has each of the following characteristics:

- Severe symptoms and behavioral impairment
- Pronounced disability in basic life skills
- Prolonged course of illness

Mental disorders most commonly associated with this term include schizophrenia, schizoaffective disorder, recurrent bipolar disorder, and chronic or recurrent psychotic depression [2,3]. Certain personality disorders, posttraumatic stress disorder, and other mental disorders are sometimes included within the category. Variation in the disorders included is seen among the US states when the designation is used to determine eligibility for mental health care and other social services [1]. Definitions of severe mental illness typically exclude substance use disorders (as primary disorders), dementia, and intellectual developmental disorder [4]. (See "Schizophrenia in adults: Clinical features, assessment, and diagnosis" and "Bipolar disorder in adults: Clinical features" and "Unipolar major depression with psychotic features: Epidemiology, clinical features, assessment, and diagnosis".)

CONCEPTUAL FOUNDATIONS

The roots of the assertive community treatment (ACT) model were in the deinstitutionalization movement in the United States in 1970s. Following the establishment of community mental health centers in the United States, and the shift of most treatment from the hospital to the community, a significant subgroup of persons with severe mental illness failed to effectively transition. They did not access community mental health programs, often did not take prescribed medications, and were prone to misuse of alcohol and drugs, leading to increased vulnerability to relapses and hospitalizations [5].

Objectives — The ACT program focuses on achieving two broadly related goals:

- To stabilize community living of persons with severe mental illness who are living independently or semi-independently, but who are at high risk for psychiatric rehospitalization, incarceration, or homelessness.

- To facilitate psychosocial functioning in this population, including capacity for self-care and independent living skills, quality of social relationships, and role functioning such as work or school.

Characteristics — The underlying philosophy guiding the ACT model is that if you cannot get the client to the mental health center for treatment, bring the treatment to the client, wherever they are in the community (eg, in their apartment, the home of a family member, a coffee shop, or a public park).

To ensure that most services are provided in the community rather than at the mental health center, and to address the need for more intensive services and more frequent contacts to stabilize community living, specifically dedicated ACT teams are used to provide these services. Characteristics of these teams include:

- **Direct provision of community-based services** – ACT was developed with the intention of providing most services in the community, in contrast to most other psychiatric services. The vast majority of services are directly provided by ACT team members and are not brokered to other, non-ACT mental health providers.
- **Collaborative teams** – Because of the frequent acute needs of these individuals, ACT team members work closely and intensively together, typically conducting daily team meetings to plan visits and provide updates about the progress of clients.
- **Low staff:patient ratio** – ACT teams are usually comprised of 8 to 12 mental health professionals who serve 80 to 120 clients per team. The recommended on ACT teams of 1:10 allows for more intensive services than the usual case management ratio of 1:30 or higher [6].
- **Shared caseloads** – In contrast to outpatient models of care, in which a clinician typically has an individual caseload of patient, ACT team members share caseloads across the team.

Services — In order to achieve these objectives, ACT team members focus on providing a combination of services related to:

- Treatment of the psychiatric disorder (and any comorbid physical illnesses)
- Ensuring that individuals' practical living needs are addressed (eg, paying rent and utility bills, shopping, meal preparation)
- Facilitating access to community resources (eg, a YMCA, food bank)
- Providing rehabilitative services in order to improve functioning

Stabilization of the psychiatric disorder frequently includes regular home visits to monitor and prompt use of medications. This has been shown to improve medication adherence [7]. The frequent contracts with clients in the community allows for the close monitoring of early warning signs of relapse and rapid intervention by the ACT team in order to prevent full-blown relapses and rehospitalizations [8].

Daily living needs are addressed by providing practical help to address an immediate need or prevent a problem from occurring in the future, such as paying bills with the client, shopping together, or cleaning and organizing the client's apartment. Independent living is also facilitated by ACT teams working closely with natural supports such as family members or landlords, who are often in a good position to help clients address basic living needs and who can alert the team if clinical or other problems occur or concerns arise. The practical nature of many of the supports provided by ACT teams is often complimented by direct provision of rehabilitative services in the community, such as teaching illness self-management [9,10], social skills training [11,12], or supported employment [13].

Indications — ACT is most strongly indicated for persons with schizophrenia or other severe mental disorders (eg, bipolar disorder) who have a history of frequent or prolonged psychiatric hospitalization.

In the United States, where the provision of ACT has often been primarily aimed at reducing the high cost of inpatient treatment, eligibility for ACT is often limited to persons with either a pattern of multiple recent hospitalizations (eg, two or more hospitalizations within the past year), or who are being discharged following an extended inpatient stay (eg, more than six months in a state hospital). Frequency and duration of psychiatric hospitalization contribute to increased vulnerability to rehospitalization, and hence focusing on this subgroup of clients is associated with the greatest potential cost-benefit [14].

Persons with severe mental illness who are homeless or who have severely impaired psychosocial functioning in the community can also benefit from ACT. Such individuals, however, may or may not be eligible for ACT services, depending on the specific criteria employed by regional administrators of mental health services. Clients without a recent history of inpatient service utilization but who have unstable housing in the community may be eligible for ACT services, whereas similar clients in the community with stable housing but severe psychosocial impairment alone are frequently not eligible, despite evidence that both groups of clients can benefit from ACT.

ACT is often provided to persons with severe mental illness who have been involved in the criminal justice system, with the expectation that closer monitoring of the psychiatric illness and

assistance in meeting daily living needs will reduce their likelihood of offending and reincarceration. There is a general consensus regarding the need to modify ACT services to accommodate the special needs of this population, including close coordination and collaboration between mental health and criminal justice professionals [15,16].

In Europe, it is relatively common practice to provide specialized ACT services (eg, forensic assertive community treatment) to this population, with a trend towards growth of these programs in the United States.

There are no well-established contraindications for the ACT model. ACT was not designed for all persons with severe mental illness, but rather the subgroup of individuals who function poorly despite access to community mental health centers. A randomized clinical trial conducted in a setting that routinely provided ACT to frequent users of acute care psychiatric services failed to find any beneficial effects of ACT compared with usual case management when offered to clients who were low service utilizers [17].

The use of ACT has gradually broadened beyond patients with schizophrenia to include a broader range of severe psychiatric disorders. There is ongoing discussion among ACT practitioners regarding the use of ACT with patients with borderline personality disorder [18]. Patients with co-occurring substance use and severe mental illness are treated with integrated treatment, an evidence-based model, in which both disorders are treated simultaneously by the same group of clinicians [19,20], has been provided efficaciously by ACT teams [21-23].

ASSESSMENT

A comprehensive assessment of psychiatric and psychosocial functioning is required at enrollment in an assertive community treatment (ACT) program. The components of the assessment are discussed below and listed on the associated table (table 1).

- Basic living needs and issues related to self-care and housing. These critical factors could jeopardize the person's ability to live in the community.
- Current level of symptoms including depression, suicidal ideation, history of prior suicide attempts, auditory hallucinations, substance use disorder, or symptoms of posttraumatic stress disorder.
- History of aggression or threat to others. History of circumstances that led to aggression towards others. A past history of aggression is the most important predictor of the

potential for future violence. The most common risk factors for aggression in people with severe mental illness include:

- Violence in response to psychotic symptoms, such as command hallucinations that instruct to person to hurt someone else or delusions in which the person believes they are threatened by other people [24].
- Aggression during disinhibited periods (eg, secondary to substance use such as alcohol) [25].
- Interpersonal aggression as part of a long-standing behavior pattern (ie due to childhood conduct disorder or antisocial personality disorder) in individuals with severe mental illness [26,27]. In such cases, aggression may be due to impulsivity, used instrumentally to achieve desired ends, reflect a lack of empathy, or a combination of factors.

- Evaluation of medication adherence – For patients with poor adherence to a daily regimen, ACT teams develop a schedule for daily visits to the person's home to foster strategies to improve adherence and provide information about medication and its role in treatment [28].
- Self-care skills, socially appropriate behaviors - Assessment of functioning in these areas includes evaluation of self-care behaviors (eg, personal hygiene), potentially dangerous behavior (eg, improper use of kitchen appliances, smoking in bed), socially objectionable behaviors (eg, indecent exposure, accosting strangers, disruptive behaviors such as screaming at voices or blaring the stereo late at night), and illegal behavior (eg, use of illegal drugs).

PRACTICE

The goals of assertive community treatment (ACT) teams are determining and providing the services most critical to enabling a person with severe mental illness to continue to live their best quality of life within the community.

Specific components — ACT programs are multidisciplinary, typically include a psychiatrist or other licensed prescriber, at least one nurse with specialty experience in psychiatry, several clinicians (eg, masters level social workers or psychologists), and several bachelors level members. Although most ACT teams endorse a generalist philosophy whereby team members other than the prescriber are expected to provide a range of services, some teams have

included members with specific areas of expertise including supported employment, co-occurring substance use disorders, and peer support [29]. (See "Supported employment for patients with severe mental illness" and "Co-occurring schizophrenia and substance use disorder: Epidemiology, pathogenesis, clinical manifestations, course, assessment and diagnosis".)

Rather than offices, ACT team members typically have access to individual meeting rooms when needed for providing occasional clinic-based services. In order to provide needs in the patient's community, ACT teams are highly pragmatic in their delivery of services, including when, where, and with whom they meet, as well as providing transportation as needed to accomplish critical tasks.

The principal foci of ACT teams attention include:

- Practical living needs (eg, paying rent, shopping, cleaning one's apartment).
- Treatment of the psychiatric illness (eg, medication).
- Any comorbid physical conditions (eg, management of diabetes).
- Provision of rehabilitation and psychosocial interventions aimed at improving functioning (eg, social skills training, teaching illness self-management).

As caseloads on ACT teams are shared across team members, a high level of coordination by the team is necessary, facilitated by conducting a daily team meeting at least once daily at beginning of the day that:

- Provides updates on individual patients' progress and challenges
- Identifies their immediate needs
- Assigns tasks among members including who will see which clients, and when

ACT teams that have 24-hour per day responsibility typically hold brief team meetings at the end shifts to alert members as to any ongoing issues that may require attention. ACT teams that do not provide 24-hour coverage work closely with emergency and crisis service providers to develop and update individualized plans for responding to patients' needs.

Variations among programs — Implementation of the ACT model varies along a number of dimensions. Significant variations and differences include:

Forensic ACT teams — Services and team structure have been tailored to meet the unique needs of persons with severe mental illness who are also involved in the criminal justice system.

Individuals with a forensic history who are served on ACT teams are more likely to be arrested and incarcerated, to become homeless, and to be discharged early from ACT than are similar persons with no forensic history, suggesting the need for adaptations [30]. While most ACT teams serve some clients who have had criminal justice involvement, other ACT teams have been specifically configured to serve only this population [31].

Forensic ACT teams frequently incorporate other adaptations, such as establishing collaborative relationships with persons from the criminal justice system (eg, judges, local district attorneys), inclusion of other stakeholders on the forensic ACT team (eg, parole or probation offers), increased attention to supported housing initiatives, and using legal pressure (eg, court sanctions) to increase adherence to treatment recommendations [32,33].

Flexible ACT model — The flexible ACT model is a significant deviation from traditional ACT in that it was not designed to serve the unique subgroup of persons with frequent hospitalizations, incarcerations, or homelessness, who are the target population of ACT [34]. Rather, it was developed to serve the broad population of persons with severe mental illness, including but not limited to those traditionally served by ACT.

Developed in the Netherlands, the flexible ACT model evolved out of an interest in improving the cost-effectiveness of traditional ACT model. Flexible ACT also avoids the challenge of transitioning ACT clients who have achieved significant clinical stabilization and sufficient independent living skills off ACT teams to less intensive teams by not requiring transfers between teams [35].

Flexible ACT differs from usual brokered or clinical case management approaches [6] in that it incorporates features of ACT, most critically assertive community outreach, into the model for those clients who need it, and provides these higher intensity services as long as they are needed. In flexible ACT, clients in need of these higher intensity services are formally identified by the team, and their special status is indicated on the team's whiteboard and guides service provision.

When the person's clinical or psychosocial functioning have been stabilized, instead of the client being transferred to another treatment team, they remain with the same team, and the intensity of services and outreach are reduced. This facilitates continuity of care and potentially reduces costs associated with delays in transferring stabilized clients off ACT teams due to team members' concerns about the adequacy of alternative, less intensive services for meeting clients' needs [36].

Recovery orientation — ACT teams vary in the extent to which they explicitly endorse and espouse the recovery model from mental illness [37-39]. The recovery model of mental illness

challenges the traditional notion that people do not recover from mental illness and shifts the focus from psychopathology and symptom reduction to more functional outcomes related to developing meaning and sense of purpose in one's life. Treatment based on the recovery model is more collaborative, person-centered, and hopeful than traditional approaches [40]. Features of the model that can be seen to varying extents in ACT programs include [41]:

- **Taking control over one's life** – Some patients are able to transition from ACT to less intensive services which can be viewed as part of the larger recovery process of taking control over one's own life [42].

- **Emphasis on consumer-valued outcomes** – There is a relative paucity of outcomes measuring psychosocial functioning [6,43]. Recovery movement advocates seek a stronger focus on rehabilitation and consumer-valued outcomes such as work and social relationships [29,44,45].

- **Shared decision-making** – Recovery oriented ACT teams endorse a shared decision-making approach, with consumer engagement in their own treatment planning and follow-up, and a greater sensitivity to the use of coercion and the collaborative development of relapse prevention plans [9] (also referred to as wellness recovery and action plans [46]).

- **Consumers on ACT teams** – On some recovery oriented ACT teams, consumers have been incorporated onto the team, either a member providing similar services to other members, or as a peer support specialist [47-49].

Expertise in co-occurring conditions — ACT teams vary in their emphasis and level of expertise in treating comorbid physical illnesses in their clients, such as diabetes and cardiovascular disease, which contribute to the premature mortality in this population [50-52]. (See "Metabolic syndrome in patients with severe mental illness: Epidemiology, contributing factors, pathogenesis, and clinical implications".)

Nurses' roles on ACT teams vary but optimally they participate in screening patients for different health conditions and monitoring, counseling, and coordinating with primary care to address comorbid diseases varies considerably across teams [53,54]. A qualitative study indicated that nurses on ACT teams often felt that their expertise in caring for people with complex comorbidities was often not recognized and overlooked [55]. Efforts to improve the standardization and quality of the management of chronic medical conditions on ACT teams are expanding [56], including the role of nurses in care [57]. (See "Approach to managing increased risk for cardiovascular disease in patients with severe mental illness".)

Engagement of persons with co-occurring severe mental disorders and substance use disorders can be difficult [58], and ACT teams vary in their level of expertise in their treatment. More recent standards have been developed that recommend that at least one team member have such expertise [29]. In some cases, the ACT model has been modified for the entire team to focus on the unique needs of the population [21-23]. (See "Pharmacotherapy for co-occurring schizophrenia and substance use disorder" and "Co-occurring schizophrenia and substance use disorder: Psychosocial interventions".)

Other specialized programs — Other ACT programs have been developed specifically to assist patients with severe mental illness and housing instability or homelessness [59,60], and to focus on the needs of original ACT population, long-term inpatients who are being discharged after having spent many years in a state hospital [57].

Critical Time Intervention, a program to provide intensive, team-based supports in the community to homeless persons (not limited to people with mental disorders), is similar to ACT, for a time-limited period of six months [61-64]. (See 'Frequency, intensity, and duration' below.)

ACT has been adapted for use with patients with a history of suicide attempts [65-67].

Intensive case management programs are similar to ACT programs in most ways, except that case managers work with individual patients rather than as a team that shares responsibility for their patients [68-70].

Frequency, intensity, and duration — ACT teams typically have a high frequency of contacts with patients in the community, from at least weekly to daily. When the ACT team is facilitating medication adherence, daily visits may be needed until the patient is able to manage taking medication on their own.

The length of ACT visits is also based on client need, and may vary from just a few minutes, to an hour or more to accomplish a major task, such as cleaning the person's apartment, taking the person for an appointment to a primary care physician, or resolving a problem with the landlord.

The duration of time that people remain on an ACT team varies across patients. The primary criteria for discharge from ACT is the person's ability to sustain community living and independently access mental health treatment, principally outpatient care. For some patients, the need for ACT is lifelong, but most remain on an ACT team for several years before they are able to transfer to less intensive services.

EFFICACY

Assertive community treatment (ACT) has been found to be more efficacious compared with standard community-based care for individuals with severe mental illness. A meta-analysis of 14 randomized clinical trials with 1047 patients with severe mental illness found that patients assigned to receive ACT were more likely to remain in contact with services than people receiving standard community care (odds ratio 0.51, 99% CI 0.37-0.70) and less likely to be admitted to hospital than those receiving standard community care (odds ratio 0.59, 99% CI 0.41-0.85), and spent less time in hospital [71]. Patients receiving ACT were more likely to have a stable living situation and to be employed, but no differences were seen in mental state or social functioning.

At least 10 randomized trials have been published since 2001 on ACT's efficacy, with findings similar to the earlier trials. Participants in both periods generally met basic ACT criteria for enrollment; participants in the pre-2001 trials were primarily persons with schizophrenia, while the later studies included patients with other severe mental illnesses (eg, schizoaffective disorder, bipolar disorder, major depression).

As an example, 120 patients with a schizophrenia-spectrum disorder (either first episode psychosis or multi-episode patients with a history of relapse due to medication nonadherence) were randomly assigned to receive either ACT or usual services, and followed for a 12-month period [72]. Patients assigned to ACT remained in treatment significantly longer than those who received usual care (50.7 versus 44.1 weeks) and had greater improvements in symptoms and global functioning compared with those who received usual care; patients assigned to ACT were more likely to be employed, to live independently, and to be adherent to medication.

ACT has been found to be effective in youth with a severe mental illness [73], as well as older adult persons with severe mental illness [74].

Clinical research has been insufficient to determine the efficacy of specialized forms of ACT (forensic, recovery-oriented, or flexible models) or ACT programs supplemented with specific psychosocial interventions:

- **ACT for co-occurring substance use disorders** – The effects of providing integrated treatment for co-occurring substance use disorders in people with severe mental illness on ACT teams compared to similar treatment provided by usual case management teams has been evaluated in five randomized trials. The most consistent effects of ACT in this population have been on improving engagement in treatment, with some but less consistent benefits in reducing hospitalizations and substance use. The authors of a

systematic review of this research suggested that patients with co-occurring disorders who have a history of high inpatient service utilization might benefit most from the ACT program [75].

- **Forensic ACT** – A randomized clinical trial of forensic ACT model compared with usual services in 134 jail inmates with severe mental illness awaiting release found that persons receiving forensic ACT had significantly fewer jail bookings, more outpatient contacts, and spent fewer days in the hospital [76].

- **Recovery-oriented and flexible ACT** – There have been no randomized clinical trials comparing recovery-oriented ACT or flexible ACT with usual care. A retrospective analysis of administrative data on 900 patients who naturalistically attended either ACT or recovery-oriented ACT used propensity scoring to control for patient differences, finding that clients who attended recovery-oriented ACT had greater reductions in state hospital days over the next two years compared with those who received usual care.

  Several studies of the flexible ACT model, none of which a randomized clinical trial, did not find a difference in efficacy compared with usual services [77-80].

- **ACT with supported employment** – The addition of supported employment to ACT teams improved two-year competitive work outcomes compared with usual vocational rehabilitation services on ACT [81].

- **ACT with illness management and a recovery orientation** – The addition of illness management and recovery programs to ACT teams improved the effectiveness of ACT at reducing psychiatric hospitalizations compared with ACT without the additions [82].

Disparate results from clinical trials on the efficacy of ACT between the United Kingdom and the United States have raised questions of whether ACT's efficacy varies in different health care systems. Results of a large randomized clinical trial [83,84] and a large quasi-experimental study [85-94] in the United Kingdom did not find benefits for ACT (or an ACT-like community based, intensively staffed program) compared with usual care or less intensively staffed program, respectively. The addition of ACT to the United Kingdom health care system may not fill the same gap as it does in United States health care system [95], in that assertive outreach was already a standard part of usual care in the United Kingdom prior to these studies [96,97].

SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "Society guideline links: Medical care for homeless persons".)

SUMMARY

- **Assertive community treatment (ACT)** – ACT is a team-based approach to the organization and provision of mental health services specifically designed to meet the needs of community dwelling persons with severe mental illness at high risk for relapse, rehospitalization, and housing instability. (See 'Introduction' above.)

- **Conceptual foundations** – ACT's roots were in the deinstitutionalization era of psychiatric care in the United States in 1970s for the subgroup with severe mental illness that were unable to effectively transition to outpatient community-based care. They did not access community mental health programs, often did not take prescribed medications, and were prone to abusing alcohol and drugs, leading to increased vulnerability to relapses and hospitalizations. (See 'Conceptual foundations' above.)

- **Objectives** – The objectives for ACT are to stabilize community living and facilitate psychosocial functioning of persons with severe mental illness. (See 'Objectives' above.)

- **Characteristics** – Characteristics of ACT teams include direct provision of services in the patient's community (as opposed to in the outpatient clinic), low staff:patient ratio and, collaborative care with shared caseloads. (See 'Characteristics' above.)

- **Services** – ACT team members focus on providing a combination of services including treatment for psychiatric disorders and medical comorbidities, addressing practical living needs, facilitating access to community resources, and providing rehabilitative services to improve functioning. (See 'Services' above.)

- **Indications** – ACT is most strongly indicated for persons with schizophrenia or other severe mental disorders who have a history of frequent or prolonged psychiatric hospitalization. Persons with severe mental illness who are homeless or who have severely impaired psychosocial functioning in the community and those with severe mental illness who have been involved in the criminal justice system can also benefit from ACT. (See 'Indications' above.)

- **Assessment** – A comprehensive assessment for ACT patients upon enrollment includes assessment of symptom severity, and change over time, risk of harm to self and others

including through violence and aggression, medication adherence, housing status, and self-care skills (table 1). (See 'Assessment' above.)

- **Variations among programs** – Implementation of the ACT model varies along a number of dimensions including forensic ACT teams, flexible ACT models, and recovery orientation models. Recovery models are more collaborative and focus on taking control over one's life, work and social relationships, consumer-valued outcomes, and shared decision-making. (See 'Variations among programs' above.)

- **Frequency, intensity, and duration** – ACT teams contact patients at a range of frequency from daily to weekly. Visit length ranges from a few minutes to an hour or more. The duration of ACT services can be as short as a few years or lifelong, until the patient is able to sustain community living and independently access and effectively use outpatient mental health services. (See 'Frequency, intensity, and duration' above.)

- **Benefits of ACT** – In patients with severe mental illness and a history of frequent or prolonged psychiatric hospitalizations, ACT has been shown to be efficacious in reducing psychiatric hospitalizations, improving housing stability, and improving clients' subjective quality of life compared with case management. Clinical research has been insufficient to determine the efficacy of specialized forms of ACT (forensic, recovery-oriented, or flexible models) or ACT programs supplemented with specific psychosocial interventions. (See 'Efficacy' above.)

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