

## Community Psychiatry in Singapore: A Pilot Assertive Community Treatment (ACT) Programme

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### Abstract

Severe mental illnesses cause their sufferers dismal functional impairment. The Global Burden of Disease lists schizophrenia among the top 10 contributors to health burden and disability around the world. In the Institute of Mental Health (IMH) of Singapore, 9 out of 10 Class-C beds are occupied by patients whose hospitalisation periods last 300 days on average. Whilst deinstitutionalisation has not seen its expected level of success overseas, the provision of community-based psychiatric care has been shown to be more cost-effective than hospital-based inpatient care. As such, there is a need for increased emphasis on community psychiatric services, both to provide and to effectively utilise available resources to assist patients with severe mental illnesses in living and functioning within the community. In line with several other efforts, a pilot Assertive Community Treatment or ACT Programme was launched by IMH in November 2003. This article details the aims, set-up and services of this pilot project funded by the Health Service Development Programme (HSDP) for 3 years, which receives referrals from IMH psychiatrists. With the services provided by the ACT team including psychosocial rehabilitation, it is hoped that patients will continue to receive adequate psychiatric care as well as maintain sufficient skills for self-care and independent living within the community despite the well-documented deteriorating course of psychotic illnesses like schizophrenia.

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**Key words:** Assertive community treatment, Psychiatric rehabilitation, Schizophrenia

### Introduction

It is well known that serious and persistent mental illness can result in diminished ability to function effectively in many life domains, such as the activities of daily living, and the performance of social, cultural and occupational roles. The Global Burden of Disease lists schizophrenia among the top 10 contributors to health burden and disability around the world.<sup>1</sup> In the past, most of these patients were locked up in asylums, the living conditions of which often left even the most hardhearted aghast. However, since the 1950s, the movement towards the deinstitutionalisation of mental state hospital patients and the abolishment of mental state hospitals began in many developed nations.

The results of deinstitutionalisation are controversial and critics have highlighted the undesirable consequences of neglect, degradation and homelessness. Community services have developed in conjunction with deinstitutionalisation efforts, in order to provide psychiatric care for

these patients and minimise the undesirable social impact. A community-based mental health service is one which provides a full range of effective mental health care to a defined population, and which is dedicated to treating and helping people with mental disorders, in proportion to their suffering or distress, in collaboration with other local agencies.<sup>2</sup> Assertive Community Treatment (ACT) was thus born. Developed from the work led by Arnold Marx, M.D., Leonard Stein, M.D., and Mary Ann Test, Ph.D., on an inpatient research unit of Mendota State Hospital, Madison, Wisconsin, in the late 1960s, it was first launched in the community in 1972.<sup>3</sup>

The move to community care emphasises improving the quality of life for patients, destigmatising mental illness and promoting self-sufficiency. One study has also concluded that community care incurs considerably lower costs compared to hospital care for psychotic patients.<sup>4</sup> Essock et al<sup>5</sup> concluded that ACT intervention was cost-

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effective for patients who had been hospitalised at the time of their entry into the study and therefore recommended that scarce ACT slots be reserved for patients who had been recent and heavy users of hospital services.

### *Community Psychiatry in Singapore*

Although deinstitutionalisation has not caught on in the same way in Singapore, the direction of psychiatric care provision is taking a definite turn toward management within the community. The stigma of a mental institution taunts even the most seriously ill of psychotic patients, and this, coupled with the frequently limited insight and uncomfortable side effects of neuroleptics, has resulted in many patients defaulting treatment.<sup>6</sup> The result is that many of these patients continue to deteriorate and become socially inept. Apart from requiring frequent hospitalisations, they also place a huge burden of care emotionally and financially on their caregivers, and may eventually end up in the chronic wards of the Institute of Mental Health (IMH) when the caregivers can no longer cope.

IMH now runs outpatient Behavioural Medicine Clinics (BMCs) which are conveniently located within Polyclinics. Along with the recent launch of the case management programmes which are run by the respective psychiatric units within IMH, outpatient care has now been sectorised. Patients who stay in the eastern and western parts of Singapore may be followed up in Geylang Polyclinic and Alexandra Psychiatric Outpatient Polyclinic respectively once their psychiatric illness has stabilised. Only patients who stay in the central region of Singapore will continue to be followed up in IMH. In this way, patients will receive follow-up in the Outpatient Clinic nearest to their place of residence.

In addition, an active inpatient rehabilitation programme is also available in IMH. This programme will equip selected patients with the social and survival skills needed to adapt to community life after discharge.

### **Assertive Community Treatment Programme**

The Assertive Community Treatment or ACT Programme is the most recent of the community psychiatric services provided by IMH. It was launched on 1 November 2003. The ACT Programme is based on a service-delivery model and provides community-based treatment to people with severe and persistent psychiatric illnesses, so that they may continue to live in the community while working towards recovery.

The ACT team comprises a psychiatrist, a medical officer (MO), a medical social worker (MSW), 4 community psychiatric nurses (CPNs) and 1 part-time occupational therapist (OT). This multidisciplinary team is mobile and provides its services mostly at each patient's place of residence.

Patients remain in independent living situations while the multidisciplinary team provides treatment monitoring, rehabilitation and support services. In this way, it can be ensured that this group of patients, who may potentially deteriorate and eventually become chronic residents of IMH, will continue to receive treatment and the necessary assistance from various resources to enable them to continue functioning and living within the community.

### *Aims of Assertive Community Treatment (ACT)*

The goals of ACT are:

- To minimise or prevent recurrent relapses of the illness.
- To reduce hospitalisation readmission rates.
- To improve self-care and skills for independent living such as taking transport and handling financial transactions.
- To enhance the quality of life.
- To improve social and/or occupational functioning.
- To lessen the caregiver or family's burden of providing care.

### *Admission Criteria for the Assertive Community Treatment Programme*

Based on the principles and goals of ACT, the following admission criteria have been drawn up for the ACT programme:

1. Individuals aged 18 to 65 years.
2. Severe and persistent mental illness such as schizophrenia, delusional disorder and manic-depressive psychosis.
3. Presence of severe symptoms and impairment that produce distress and major disability in daily functioning.
4. Significant disability caused by severe mental illnesses and are not helped by the traditional outpatient management model.
5. Three or more admissions a year in the last 1-year period (hospital readmission rate is a key performance indicator, and will be discussed later).

Notably, the presence of co-morbid conditions, e.g., substance abuse, depression, anxiety disorders will not exclude patients from the programme. Patients may be referred by either the principal (outpatient) psychiatrist or the attending (inpatient) psychiatrist. The ACT team will review each referral and decide whether to accept the patient.

### *Exclusion Criteria*

The following criteria will exclude patients from the ACT programme. This ensures that only patients whose major handicaps result from severe mental illnesses and who have the basic resources to remain in the community (i.e., not homeless) are accepted. Patients who are homeless are referred to the hospital Medical Social Worker for assistance.

1. Patients with organic brain disorders.
2. Patients with alcohol or substance abuse problems without psychosis.
3. Patients presently residing in long-stay wards.
4. Patients who are homeless.

#### *Discharge Criteria*

Patients may be discharged after a suitable time period under any of the following circumstances, upon mutual agreement between the patients and the ACT team:

1. Demonstrate an ability to function in all major role areas (including self-care, social, occupational).
2. Patients' request for discharge, despite the team's best efforts to develop an acceptable rehabilitation plan.
3. Enrolment into IMH's inpatient rehabilitation programme upon hospital readmission. Prior to discharge from this programme, the attending psychiatrist will reassess the patient and refer the patient again if it is felt that further intervention by the ACT team is necessary.

#### *Operation Hours*

For this 3-year pilot programme, the ACT team will work within office hours from 8 a.m. to 5 p.m. rather than on a 24-hour basis. The ACT team is contactable during office hours and the office contact number will be given to all patients and families. As the main aim of the ACT team is to provide rehabilitative services, there is no need for the team to function on a 24-hour basis.

Services by the ACT team are individualised, and the intensity will depend on the needs of each patient, including the severity of the psychiatric symptoms and functional capacity, especially of self-care and social support. Daily visits may be scheduled if necessary. These visits may be conducted by a ground team comprising the Medical Officer, Medical Social Worker, Community Psychiatric Nurses and Occupational Therapist. Depending on the services to be provided during the scheduled visit, the full team may not be mobilised for every visit.

#### *Services Provided by ACT*

##### *1. Engaging psychiatric patients who are at risk of relapse*

The ACT staff will be active and persistent in engaging patients in the community. By addressing issues of concern to them, treating individuals with dignity and offering genuine help, the ACT team aims to establish trusting relationships with both patients and their relatives. This is useful for the provision of ongoing care as patients will be more likely to cooperate with the ACT team's rehabilitative programme and follow the advice or instructions of the team members.

##### *2. General rehabilitation and support for patients and caregivers*

A generic rehabilitation and education programme, which is compiled in a manual, has been developed by the ACT team. Broadly, it covers the following areas:

- Rehabilitative approach to daily living skills;
- Family involvement in psycho-education and crisis management;
- Work opportunities, including both volunteer and vocational opportunities;
- Health promotion and medication support;
- Housing assistance;
- Financial management and budgeting skills;
- Counselling.

An initial overall assessment of the patient's illness, abilities and disabilities and social support will be done during the first 2 home visits. Various assessment tools such as the Medical Outcomes Study Short Form 36-Item Health Survey (SF-36)<sup>7</sup> will be used to help the team identify the types of services required by each patient. Information from other service providers, family and patients themselves will also be gathered. Issues such as personal safety, hygiene and self-grooming, self-medication needs, financial management, ability to work and form social networks, and risk behaviour such as aggression, suicide attempts, and disturbing behaviour with significant consequences will be addressed.

The ACT team will draw up a 6-month rehabilitation and education programme after its initial assessment by selecting relevant sections of the generic programme, based on each patient's current needs. This programme is therefore individualised and tailored for each patient. The rehabilitation and education programme will be updated or redrawn on a 6-monthly basis thereafter, based on the reassessment by the team.

##### *3. Assistance with medication*

Medication is the cornerstone of treatment for severe mental disorders. The ACT team will monitor the patient's compliance with medication and assess medication side effects. Side effects to medication are a major contributory factor in non-compliance. Where appropriate, patients will be taught ways of counteracting these side effects either with lifestyle or behavioural modification (e.g., weight gain and postural hypotension) or with medication adjustments (e.g., sedation and anti-cholinergic side effects).<sup>8</sup>

The ACT team will help patients to overcome identifiable barriers to medication compliance. One meta-analysis concluded that interventions employing combinations of

educational, behavioural, and affective strategies result in the greatest improvement in adherence to medication regime.<sup>9</sup> In addition, a working alliance with the patient is a significant and consistent predictor of adherence to medication recommendations.<sup>10</sup>

As each patient will continue follow-up with their psychiatrist who remains the principal therapist, the team, in the outpatient clinic, will encourage the patient to bring these problems to the psychiatrist's attention. The ACT team will also provide feedback to the principal psychiatrist on a regular basis.

#### 4. Health education and screening

Patients with severe mental illnesses such as schizophrenia are less likely to seek medical attention.<sup>11</sup> On the other hand, they are more prone to medical illnesses like diabetes mellitus<sup>12</sup> and cardiovascular diseases,<sup>13</sup> either by virtue of their medication side effects or their lifestyle. Increased prevalence of smoking amongst patients with schizophrenia in our local population<sup>14</sup> presents an added health risk. Through health education and screening, the team will provide both primary and secondary prevention of some of these common medical diseases.

#### 5. Case coordination

The focus of the case coordination work is to help patients continue management of their mental illness through assistance with managing and monitoring medications and occasional assistance with accessing services. The ACT team will initiate and maintain collaborative relationships with other service providers including outpatient therapy and psychiatric services as previously mentioned, Voluntary Welfare Organisations and Community Development Councils, depending on the needs and interests of each patient. By providing well-planned and coordinated services, it is expected that patients will utilise hospital facilities less and begin to learn how to identify and use community services appropriately.

The ACT team aims to provide most of its services within the community, usually in the patient's home. If any patient becomes hospitalised, the focus of the ACT team will be to collaborate with the attending psychiatrist to prevent over-staying and ensure smooth integration into the community. The attending psychiatrist will continue to make decisions regarding treatment and discharge, with the ACT team providing inputs and recommendations to facilitate this process.

#### ACT Team Meetings

The ACT team conducts a meeting at the beginning of every workday to:

- Review the service contacts conducted by the ground

team the previous day and the status of selected patients in the programme;

- Review the service contacts scheduled for the current day;
- Revise rehabilitation, treatment and emergency or crisis management plans for selected patients.

There is also a weekly meeting to address administrative or other major issues concerning the ACT Programme. In this way, improvements can be continuously made ensuring that patients receive maximal benefits from the programme.

#### Outcome Evaluation of the ACT Programme

The main key performance indicator for the programme evaluation is the reduction in the hospital readmission rate. One review of 23 controlled studies of ACT or intensive case management found that 14 (or 61%) of them which used rehospitalisation as an outcome found a significant decrease in the number of readmissions compared with the control group.<sup>15</sup> Another meta-analysis of 9 studies involving the ACT model showed that providing assertive outreach programme for frequent users of hospitals could be expected to reduce inpatient days by about 50%.<sup>16</sup> The impact of ACT on the use of inpatient psychiatric services is even stronger for the number of days of hospital use than for the number of admissions.<sup>17</sup>

McGrew et al<sup>18</sup> concluded in their study that increased fidelity to the "critical ingredients" of ACT of the programme resulted in greater reduction in readmission rates. Some important deviations of note in our programme are listed below but it is expected that they should not significantly reduce the benefits which patients will receive from the programme:

- Limitation of the provision of services to within working hours only rather than on a 24-hour basis.
- The ACT team does not interfere with the medical treatment, although it will provide essential feedback which may impact patient management to the principal psychiatrist, who will make the final decision.
- The admission and discharge of ACT patients from IMH will not be determined by the ACT team, but by the Emergency Room and ward psychiatrists respectively, although again, the ACT team may provide suggestions where appropriate.

Additional outcome measures which assess the patient's clinical status and quality of life, including housing situation, employment status, suicide rates and involvement with the criminal justice system, may be used to evaluate the programme's success. One ACT programme in Sydney reported improved functioning and significantly decreased symptom severity in its patients.<sup>19</sup> However, in other studies, results for outcomes such as psychiatric symptomatology,

reductions in substance use and improvement in social functioning and quality of life have been mixed.<sup>16,20</sup>

### Conclusion

The ACT Programme offers long-standing and consistent support to patients with severe mental disorders within the community. The ACT team builds therapeutic relationships with its patients, enlists community resources and provides rehabilitation, while providing support for caregivers. With the good rapport established, the team will work towards motivating and training these patients to be independent. And through continuing care, even if patients continue to deteriorate with the course of the illness, they will be trained accordingly and supported to maximise their abilities.

Shared decision-making with patients is also an important feature of the programme; research in other medical fields shows that shared decision-making positively influences patients' satisfaction as well as health outcomes. In addition, this helps to protect the basic rights of these patients.<sup>21</sup> It is the hope of the programme that as many patients as possible can be helped to survive within the community, without which they may be destined for an asylum or chronic care facility in time to come.

### REFERENCES

- Murray CJL, Lopez AD, editors. *The Global Burden of Disease*. Boston: Harvard Univ Press, 1996.
- Thornicroft G, Tansella M. *The Mental Health Matrix. A Manual to Improve Services*. Cambridge: Cambridge Univ Press, 1999.
- Thornicroft G, Szukler G, editors. *Textbook of Community Psychiatry*. Oxford: Oxford Univ Press, 2001:253-63.
- Tyrer P, Evans K, Gandhi N, Lamont A, Harrison-Read P, Johnson T. Randomised controlled trial of two models of care for discharged psychiatric patients. *BMJ* 1998;316:106-9.
- Essock SM, Frisman LK, Kontos NJ. Cost-effectiveness of assertive community treatment teams. *Am J Orthopsychiatry* 1998;68:179-90.
- Lim LE, Poo KP, Lein T, Chew SK. Why patients fail to attend psychiatric outpatient follow-up: a pilot study. *Singapore Med J* 1995;36:403-5.
- McHorney CA, Ware JE, Lu JF, Sherbourne CD. The MOS 36-item Short-Form Health Survey (SF-36): III. Tests of data quality, scaling assumptions, and reliability across diverse patient groups. *Med Care* 1994;32:40-66.
- Sin J, Gamble C. Managing side-effects to the optimum: valuing a client's experience. *J Psychiatr Ment Health Nurs* 2003;10:147-53.
- Loffler W, Kilian R, Toumi M, Angermeyer MC. Schizophrenic patients' subjective reasons for compliance and noncompliance with neuroleptic treatment. *Pharmacopsychiatry* 2003;36:105-12.
- Weiss KA, Smith TE, Hull JW, Piper AC, Huppert JD. Predictors of risk of nonadherence in outpatients with schizophrenia and other psychotic disorders. *Schizophr Bull* 2002;28:341-9.
- Cradock-O'Leary J, Young AS, Yano EM, Wang M, Lee ML. Use of general medical services by VA patients with psychiatric disorders. *Psychiatr Serv* 2002;53:874-8.
- Subramaniam M, Chong SA, Pek E. Diabetes mellitus and impaired glucose tolerance in patients with schizophrenia. *Can J Psychiatry* 2003;48:345-7.
- Davidson M. Risk of cardiovascular disease and sudden death in schizophrenia. *J Clin Psychiatry* 2002;63(Suppl 9):5-11. Erratum in: *J Clin Psychiatry* 2002;63:744
- Chong SA, Choo HL. Smoking among Chinese patients with schizophrenia. *Aust N Z J Psychiatry* 1996;30:350-3.
- Mueser KT, Bond GR, Drake RE, Resnick SG. Models of community care for severe mental illness: a review of research on case management. *Schizophr Bull* 1998;24:37-74.
- Bond GR, McGrew JH, Fekete DM. Assertive outreach for frequent users of psychiatric hospitals: a meta-analysis. *J Ment Health Adm* 1995;22:4-16.
- Burns BJ, Santos AB. Assertive community treatment: an update of randomized trials. *Psychiatr Serv* 1995;46:669-75.
- McGrew JH, Bond GR, Dietzen L, Salyers M. Measuring the fidelity of implementation of a mental health program model. *J Consult Clin Psychol* 1994;62:670-8.
- Hambridge JA, Rosen A. Assertive community treatment for the seriously mentally ill in suburban Sydney: a programme description and evaluation. *Aust N Z J Psychiatry* 1994;28:438-45.
- Scott JE, Dixon LB. Assertive community treatment and case management for schizophrenia. *Schizophr Bull* 1995;21:657-68.
- Hamann J, Leucht S, Kissling W. Shared decision making in psychiatry. *Acta Psychiatr Scand* 2003;107:403-9.