Economic considerations associated with assertive community treatment and supported employment for people with severe mental illness

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This article discusses economic considerations associated with evidence-based practices for people with severe mental illness that involve grouping treatment and rehabilitation staff into a single team. The article includes a brief review of the evidence and arguments that both assertive community treatment and supported employment are effective in promoting recovery, as well as having other favourable outcomes. In terms of cost, assertive community treatment appears to allow flexible deployment of resources such that the number of days in hospital is reduced, which means that in many cases this form of treatment pays for itself. Evidence for a similar cost offset with supported employment is much more limited. Even when such practices increase overall costs, they appear to be more cost-effective than the alternatives with which they have been compared. Consideration of these findings together suggests that improved synthesis and use of individual-level clinical information, which are more easily achieved by a team, are key to more cost-effective service delivery for people who need the expertise of different kinds of professionals.

Dans cet article, on discute des facteurs économiques associés aux pratiques factuelles dans le cas des personnes atteintes d'une maladie mentale sévère qui oblige à regrouper en une seule équipe les préposés au traitement et à la réadaptation. L'article inclut une brève revue des données probantes et des arguments selon lesquels un traitement ferme dans la communauté et un emploi subventionné aident efficacement à promouvoir le rétablissement, ainsi que d'autres résultats favorables. Sur le plan des coûts, le traitement ferme dans la communauté semble permettre de déployer les ressources avec une flexibilité telle que le nombre de jours d'hospitalisation diminue, ce qui signifie que dans beaucoup de cas, ce mode de traitement se paie par lui-même. Les preuves d'une compensation semblable des coûts par emploi subventionné sont beaucoup plus limitées. Même lorsque de tels moyens augmentent les coûts globalement, ils semblent être plus rentables que les solutions de rechange auxquelles on les a comparés. La prise en considération de ces constatations globalement indique que la synthèse et l'utilisation améliorées de l'information clinique au niveau de la personne, ce qui est plus facile à réaliser par une équipe, jouent un rôle clé dans la prestation plus rentable de services aux personnes qui ont besoin de l'expertise de différents types de professionnels.

Introduction

Over the past 2 decades, 3 major studies carried out in the United States have led to the conclusion that top–down attempts to enhance integration of services through systems-level interventions (such as interagency coalitions, pooled or joint funding, colocation of services and interagency management information systems) are almost completely ineffective at improving outcomes for people with severe mental illness.[1–3] In contrast, numerous quasi-experimental and controlled studies carried out since the 1970s have led to the identification of several client-level interventions that are demonstrably effective at helping people with severe mental illness. In the United States, the Substance Abuse and Mental

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Health Services Administration (SAMHSA) has sponsored the development of toolkits to facilitate adoption, implementation and maintenance of 6 such evidence-based practices: assertive community treatment (ACT), supported employment, medication management, illness management and recovery, family psychoeducation and integrated treatment for dual disorders (i.e., co-occurring severe mental illness and substance abuse).[4] Implementing these practices appears, at present, to be the most reliable route for improving outcomes. Among the 6 practices selected by SAMHSA, 3 (ACT, supported employment and integrated treatment for dual disorders) have especially significant organizational implications, because they involve grouping together, within a single clinical team, providers who have traditionally worked out of separate organizations. This review summarizes some of the key empirical results and insights currently available concerning the economic impacts and cost-effectiveness of 2 of these practices (ACT and supported employment). The only economic study identified here that concerns integrated treatment for dual disorders is also a study of ACT, adapted for clients with a dual diagnosis.[5]

Effectiveness of ACT and supported employment

An ACT team includes a psychiatrist, nurses and other mental health professionals who assume overall responsibility for the provision of treatment, rehabilitation and support services to a defined group of clients. The intervention is intensive, with staff–client ratios usually described as about 1:10, although the ratio may vary somewhat from this level, depending on caseload characteristics.[6] Because of its cost and intensity, ACT is normally offered to only a fraction of people with severe mental illness, about 0.7 to 1 person per 1000 population,[7] or about 20% of regular service users — people who do not respond well to less intensive services and who, in many cases, are admitted to hospital repeatedly.[6] Supported employment is both narrower and broader than ACT: narrower in the sense that it has a primary aim of helping people with severe mental illness to find and maintain competitive employment, broader in the sense that it is offered to more people, essentially all those with severe mental illness who want help in obtaining competitive employment.[8]

An intervention can be judged favourably, from an economic point of view, under 3 sets of circumstances: if it is associated with both improved outcomes and reduced (or similar) costs (or similar outcomes but lower costs), measured from a societal perspective; if it is associated with increased costs, but also improved outcomes, to such an extent that the improvement in outcomes justifies the increase in costs; or if it leads to worse outcomes but also significantly reduced costs, to such an extent that the cost savings justify the worse outcomes. In all cases, economic evaluation of an intervention involves evaluation of its outcomes.[9]

Numerous controlled studies have shown that ACT is associated with fewer admissions to hospital than other, less intensive forms of care. It also tends to improve symptoms and subjective quality of life.[6] Supported employment has been shown to help clients obtain competitive jobs sooner and to accumulate more hours and wages in competitive employment than is the case with other approaches to vocational rehabilitation, in both the United States and Canada.[10–13] Furthermore, evidence suggests that, for both interventions, fidelity to program standards tends to lead to better outcomes.[6,14–20]

In recent years, however, recovery has come to be seen as the most important goal of psychosocial interventions. Anthony et al[21] have argued that well-established evidence-based practices, including ACT, were designed and evaluated well before the current emphasis on recovery, and that the extent to which they actually promote this outcome remains to be established. More recently, Bond et al[22] have countered that these interventions, among others, help clients become more integrated into the community, and that in so doing they do in fact promote clients' recovery. In this article, I follow Bond et al[22] in taking as a premise that both ACT and supported employment support client recovery to a greater extent than other practices with which they have been compared. Criticisms that ACT is unduly coercive[23,24] have not to date received significant empirical support.[6,25]

Furthermore, while dissemination of both ACT and supported employment has become more widespread in recent years, access to both types of services (especially supported employment) remains very limited in most US states[26] and Canadian provinces.[27] Given the paucity of resources available to fund mental health services, economic considerations with regard to these interventions assume considerable importance.

Impacts of ACT and supported employment on costs

The most obvious cost impacts of ACT and supported employment relate to the costs of the interventions themselves. The direct costs of ACT in the United States — not counting the costs of other services such as housing or stays in hospital — are about US$9000 to US$12 000 per client per year.[28] In contrast, a recent survey of 7 supported employment programs in the United States reported an average of US$2295 in direct costs for each 12-month period of service to a client.[29] (The large difference in per-client costs arises largely from 2 factors, the difference in intensity of services — 1:10 v. 1:19[29] staff–client ratio — and the difference in salary levels. ACT staff typically include a part-time psychiatrist as well as several nurses, whereas the staff of supported employment programs have less specialized qualifications and are less highly paid on average; in the above-mentioned survey of several sites across the United States, the amount in 2001 was less than US$32 000 per staff person per year, including benefits,[29] compared with, for example, US$53 000 per person per year in the ACT program in Madison, Wisc., in 1995.[30] In addition ACT teams may cover expenses such as medications.[30])

ACT services, however, can be expected to generate a considerable cost offset, as long as the people served would otherwise spend a substantial number of days in hospital. In an earlier review[16] I estimated that, compared with just giving

patients appointments at an outpatient clinic, a relatively high-fidelity ACT program reduces the number of hospital days by about 78%; compared with providing lower-intensity case management services, the reduction is smaller, about 58%. The same review found that hospital admission was the only type of resource for which reductions occurred in virtually every study.[16]

The resulting cost offset can be important. Data that I collected at the Douglas Hospital in Montréal indicated direct costs of ACT services of about Can$9116 per client per year in 1999/2000, whereas direct costs for an inpatient day in the adult psychiatry ward were $215. Under such circumstances, for a patient spending on average 60 days in hospital per year, a 58% reduction would yield a saving of 34.8 days × $215 = $7482, and a 78% reduction would yield a saving of 46.8 × $215 = $10 062, slightly more than the cost of the ACT team itself. These calculations assume that there would be no reduction in the costs of other outpatient services or of the emergency department.[16]

Thus, under these fairly conservative assumptions, ACT services approximately pay for themselves. Indeed, in nearly all studies where the net costs of ACT have been evaluated, ACT has been reported as a cost-saving intervention, although the differences are typically not statistically significant.[16] Given the benefits that ACT generates for clients and the absence of evidence as to even better alternatives, it is clear that ACT teams should be introduced into service systems as long as they pay for themselves.

One way of understanding why ACT teams can increase the efficiency of a mental health system is to contrast the relatively inflexible manner in which hospital resources are deployed when a patient is admitted to hospital with the much more adjustable deployment of the resources of an ACT team. Severe mental illnesses such as schizophrenia and bipolar disorder tend to be episodic. A client's need and desire for help wax and wane, and the kind of help that he or she needs and wants also changes over time. Furthermore, different clients have very different average levels of need or demand for help. Through their daily team meetings and individualized treatment plans, ACT teams are designed to respond flexibly to temporal and inter-individual variations in client needs. Conversely, for each patient admitted to hospital, considerable resources are expended in a fairly uniform and fixed way: housekeeping, cooking, cleaning, general nursing supervision, periodic visits from the doctor. The adjustability of these resources is severely limited. It is therefore not surprising to find some evidence that teams that adhere more closely to the ACT model are more effective at reducing hospital admissions.[16,18,19]

In many countries, however, systems of care are evolving to reduce reliance on hospital stays, such that it is becoming increasingly difficult for ACT teams to cover their own costs through reduced admissions. In the United States, incarceration has become a common form of confinement for people with severe mental illness: one review estimated the prevalence of severe mental illness in city and county jail populations at 6%–15% and the prevalence in state prison populations at between 10% and 15%.[31] Given a current US prison population of about 2.1 million people[32] (the highest prison population per capita in the world[33]), there would appear to be about 200 000 prisoners with severe mental illness. The ACT model is now being adapted to serve people at risk of reincarceration, but little is known about the extent to which these adaptations, which have been labelled FACT (forensic ACT), reduce legal involvement, time incarcerated and costs.[34]

If ACT programs do not pay for themselves, research to date suggests that they are at least somewhat more cost-effective — generating more benefit per dollar expended — than other forms of care with which they have been compared for general populations with severe mental illness,[35–37] homeless populations[38,39] and, when providing integrated treatment, people with concurrent substance use disorder.[5] Admittedly, however, these studies did not directly evaluate the cost-effectiveness of ACT in terms of actual measures of recovery, but rather used measures expected to be related to recovery — days of stable housing, subjective quality of life, reductions in substance use and so on.

With regard to supported employment, evidence from studies with relatively short follow-up periods has not suggested any material cost offset.[40–42] Controlled studies have indicated that many people who express an interest in competitive employment and enrol in a supported employment program have limited on-again, off-again competitive employment experiences over the follow-up of 1–2 years typical of most studies (see for example, Mueser et al[43]). Anecdotal reports have long suggested, however, that resource use is considerably reduced for *some* clients, presumably those who have more sustained employment experiences. One recent study that used an ecological approach (i.e., observing associations among aggregate variables in a system), which followed almost 3000 clients over 4 years, suggested that during the time they were receiving supported employment services and even more afterward, when they were working stably, clients spent less time receiving mental health services, and the associated costs were lower overall.[44] That study did not report the overall magnitude of the cost offset from supported employment. Further research is required to determine to what extent earlier findings may have underestimated a possible cost offset because of insufficient sample size or short follow-up periods. Even if there are in fact no significant cost offsets, studies to date indicate that supported employment is a more cost-effective means of achieving competitive employment than traditional alternatives.[5,41,45]

In circumstances where the receipt of supported employment services does not in and of itself lead to a reduction in the use of other resources (unlike what happens with ACT and hospital admissions), there have been instances where existing programs thought to be less effective, in particular day treatment, have been ended and replaced with supported employment. In such cases supported employment can be approximately cost-neutral.[40]

Conclusions

Evidence-based practices for people with severe mental illness identified to date involve, where relevant, the creation of

unified teams of treatment and rehabilitation staff who have traditionally been divided among separate organizations. Although 1 recent, nonexperimental study reported an instance where separate agencies linked by interagency agreements appeared to produce better results than an ACT team,[46] the evidence cited here strongly suggests that the single-team approach of ACT is more cost-effective than brokered approaches. In the case of supported employment, economic analyses to date have not directly compared single-team with interagency agreement strategies, holding other elements of supported employment fixed. Evidence of a mostly indirect nature, however, has been accumulating that the single-team approach is more effective in achieving higher competitive employment rates,[47] a result that has been attributed to more effective engagement and retention of clients, better communication between mental health clinicians and vocational specialists, willingness of clinicians to understand and focus on employment outcomes and incorporation of clinical information into vocational plans.[48] Most of these factors depend on a better flow of information, which is facilitated by location in a shared space. Thus, interagency-agreement approaches may inherently tend to be less cost-effective than integration within a single clinical team.

Consideration of these findings together thus leads to the hypothesis that improved synthesis and use of individual-level clinical information, which are more easily achieved by a team, is key to more cost-effective service delivery for people who need the expertise of different kinds of professionals. Given the considerable time required for individuals to learn to effectively use, as a team, significant amounts of complementary information, a corollary of that hypothesis is that the cost-effectiveness of team-based approaches will tend to rise with time, over a period that remains to be established; this corollary has almost never been tested directly, but one careful study does provide some support.[5] If this is true, the evidence underlying the practices considered here, much of which rests on studies of clients of newly established programs, with short follow-up periods, may actually understate their cost-effectiveness.

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