

# Modern Community Care – What do we know that is effective?

Burns, T. \*

## Abstract:

Community care has been seen a remarkable expansion in research in the last thirty years. Such research is beset with difficulties including fixing models long enough to get clear comparisons, the absence of consistency in description (particularly of comparator services) and the inevitable contamination from the ‘Pioneer’ effect of highly motivated teams. Assertive Community Treatment (ACT) teams are the most intensively researched but the evidence is contradictory.

ACT is a complex intervention and a meta-regression analysis is reported here that distinguished between the studies in terms of their component parts to identify effective and redundant ingredients. This analysis clarified the overwhelming impact of variation in comparator services. It also confirmed that the core ingredients in traditional generic CMHTs (multidisciplinary working, home-based care and combined health and social care) ensured an equally effective outcome to the more intensively staffed and carefully prescribed ACT teams.

Community mental health services need not follow one prescriptive model. Developing local services should be guided by the research into how effective aspects of care can be incorporated into locally meaningful structures rather than importing complex systems from other health care cultures.

**Key-Words:** Community Psychiatry; Mental Health Services; Assertive Community Treatment.

## INTRODUCTION

Modern Community care in mental health has evolved steadily since the second world war. It is traditional to date deinstitutionalisation from the introduction of the antipsychotic, chlorpromazine, in 1952. In truth, moves had been afoot for at least a decade. Querido had introduced an out-patient service in the 1930s in Amsterdam<sup>1</sup>; the open-door movement had been initiated in the UK in the mid 1940s culminating in Dingleton Hospital becoming a fully open-door service by 1948<sup>2</sup>; Russia had seen a rich development of day centres and dispensaries.

As deinstitutionalization gathered pace with downsizing and closing of mental hospitals, sector community mental health teams began to develop. These were predominantly in response to the complex needs of increasingly disabled patients who began to live outside hospitals. Inevitably they were multi-disciplinary because patients needs were varied. In the pioneer countries (France<sup>3</sup> and the UK<sup>4</sup>) in the 1960s they not only recognised the need for breadth of input but continuity of input.

Sector teams were consolidated in the UK by the 1959 Mental Health Act<sup>5</sup>. This act required all hospitals which admitted compulsory patients to provide them with outpatient care after discharge. It also required collaboration between health and social services in the management of severe mental illness, in particular, involuntary care. These two conditions drove a sectorization of care. It was not possible to provide out-patient care to all their discharged patients if hospitals did not sub-divide responsibilities to smaller units. Similarly, it wasn't possible to establish and maintain professional working relationships with social services across a broad canvas – local arrangements had to be made.

The multi-disciplinary sector team which evolved in France and the UK has persisted in the UK since that time and has spread. By the late 1980s nearly all inhabitants in Britain were served by such teams<sup>4</sup> and they were introduced to considerable international interest in northern Italy after Law 180<sup>6,8</sup>.

## **MENTAL HEALTH SERVICES RESEARCH**

Whilst clinical services were evolving rapidly and with increasing sophistication there was initially very little research into community mental health care. Partly this was cultural (the rise of evidence based medicine<sup>9</sup> and health services research is a recent phenom-

enon). Partly it reflected the problems facing clinicians. They need to respond to pressing needs and can rarely afford the luxury of hypothesis driven service configuration. In addition services continued to improve gradually with few obvious “break-points” that promote evaluation. Research in this area is further complicated by the rapidity of change. Mental health services researchers are invariably aiming at a moving target as there are a number of external drivers to change which go beyond therapeutic developments (e.g. politics, the media, social attitudes).

There have been a number of criticisms of the quality of early mental health services research<sup>10</sup>. These criticisms reflect several inherent problems. Two affect mental health services research more than other health services research. One is the bias introduced by personal commitment. Studies are very long, the interventions are complex and are based on relationships and consequently researchers are often highly committed to the service they are evaluating. A second is that research findings are high contextualised and dependent on local service configurations and policy issues. They translate poorly internationally<sup>11</sup> and this has often been compounded by patriotism. Notwithstanding these barriers, mental health services research into community care has now become a major international exercise<sup>12,13</sup>.

## PHASES OF COMMUNITY CARE DEVELOPMENT

The development of community mental health care can be helpfully conceptualised as having three major phases. The first phase was that of deinstitutionalisation and the establishment of community mental health teams by clinicians without a reflective academic framework. This phase can be considered one of ‘evolution’ and runs from the mid 1950s through to the end of the 1970s. With the publication of Stein and Test’s landmark study<sup>14</sup> in 1980, mental health services research established itself as a major endeavour, and with it the establishment of evidence-based mental health teams. The most highly researched model for these teams was Assertive Community Treatment<sup>14,15</sup>. This period which ran from 1980 to 2000 can be considered the period of ‘revolution’. The third period arose when the steady stream of convincing results about evidence-based teams was first confounded by contradictory results. In particular, two large UK studies (UK700<sup>16,17</sup> and PRiSM<sup>17</sup>) failed to find the advantages which had been increasingly taken for granted.

This “counter-revolution” period which takes us into the present has introduced a much more rigorous and scientific evaluation of the components of care. This paper will preoccupy itself with this final phase, in particular exploring how a careful examination of contra-

dictions in the evidence can lead us to better understand what is effective in modern community care.

Assertive Community Treatment was first presented in a series of papers in Archives of Psychiatry in 1980<sup>14,18,19</sup>. This was a serendipitous study stimulated by the closure of a ward. Stein & Test deployed the ward staff to be intensive case managers of their patients at a ratio of 10:1. They took their care out of the clinic and into patient’s homes. They were remarkably tenacious, following up patients one, two or three times a week and insisting that they took their antipsychotic medication. Their study was enormously influential. With only 126 patients randomised between the two services they demonstrated a remarkable reduction in hospitalisation (over two thirds) with significant improvements in social functioning and probably some in clinical functioning. Depending on how the study is interpreted, their service was either cost neutral or actually cost-saving. A striking finding of the study was that when the service was withdrawn (a consequence of financial constraints) all the advantages rapidly evaporated. ACT was therefore reconceptualised as an intensive multi-disciplinary case management team providing assertive in-vivo care for severely ill psychotic patients. It was not, as originally intended, a time limited training programme in community living but one that had to be provided continuously.

The Stein & Test Study has had an overwhelming international impact. The services have been replicated and the studies have been replicated although predominantly in the US. It quickly became mandated by federal funding bodies in the US that ACT should be provided as an evidence-based service. This spread to Australia<sup>20</sup> and in 1999 became mandated in the UK<sup>21</sup> with the establishment of over 300 new teams. The policy change in the UK was stimulated predominantly by the two influential meta-analyses produced by Marshall and Lockwood<sup>15,22</sup>. Their conclusions from the evidence at time was that ACT reduced hospitalisation overall and that standard case management increased it.

### **THE UK700 TRIAL**

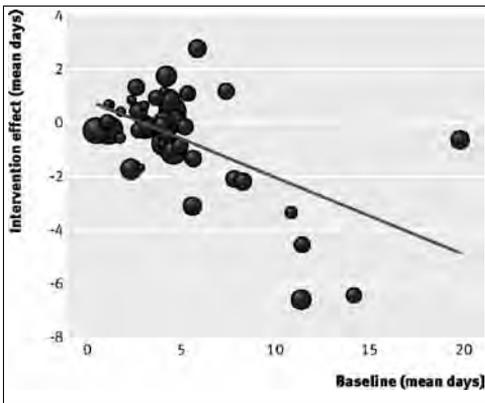
A note of caution however was founded by the UK700 Trial. This very rigorous multi-centre trial carefully compared the care provided with intensive case- management (caseload sizes of 1:15) against standard case-management (caseload size 1:30). Despite this major difference in approach (including high fidelity ACT provision in London<sup>23</sup>) no reduction in hospitalisation was found at all. The PRISM study had similar results, indeed no European trial has ever demonstrated a significant reduction in hospitalisation from ACT. It is the exploration of these contradictory findings which helped clarify what is and isn't effective.

### **UNDERSTANDING THE VARIATION ACT OUTCOMES**

The initial response to the UK700 and PRISM studies was one of polemic and debate<sup>24,25</sup>. This could not advance the subject and therefore a scientific exploration of these differences was undertaken. This exploration<sup>26</sup> used meta-regression analysis. Meta-regression analysis goes beyond routine meta-analysis in a number of important ways. It allows skewed data to be included; missing standard deviations can be imputed from the data; multi-site trials can be disaggregated and patient level data can be sought and included. In addition to a powerful meta analysis we established the model fidelity of all the reported services either from data in the paper or by extra information from researchers. This was calculated using the established scale, IFACT<sup>27</sup>.

The meta-regression analysis was used to test the variation in outcome against four hypothesised contributory factors. These were the date of the study (do earlier studies demonstrate more reduction?) This tests of the impact of increasing sophistication of research methodology (which has undoubtedly improved over time). Secondly, the size of the study (do smaller studies report a greater effect size?) This tests for publication bias with filtering out of negative studies by journals. Thirdly, the effect of baseline hospitalisation rates (do higher rates of routine hospitalisa-

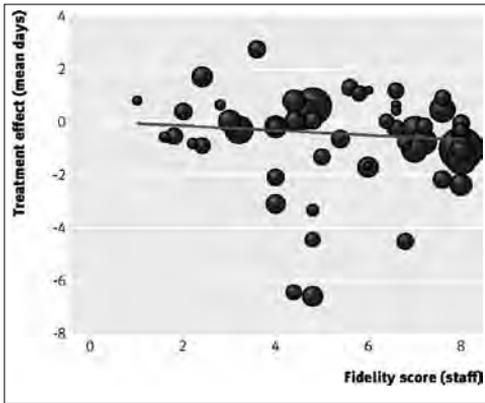
tion permit greater reduction by ACT?) This is to test the hypothesis that it is the quality of the control services in the UK which had resulted in no improvement from ACT. And lastly, the effect of model fidelity (do teams with greater model fidelity result in greater reduction?). The meta-regression analysis demonstrated that neither the date nor the size of the study was significantly associated with reduction hospitalisation. However, baseline hospitalisation rates and model fidelity both did have clear and statistically significant association with reduction hospitalisation.



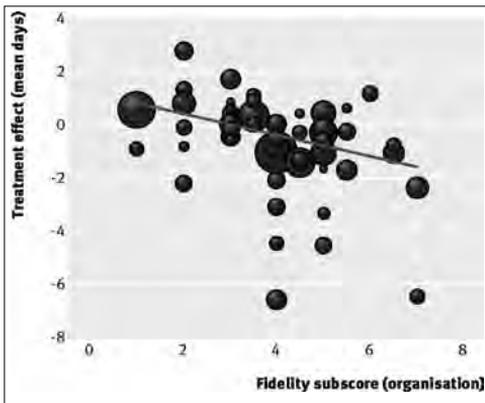
**Figure 1:** Meta-regression of baseline hospitalisation against reduction in inpatient days. Burns, T. et al. *BMJ* 2007; 335:336.

Copyright ©2007 BMJ Publishing Group Ltd.

The association with baseline hospitalisation rates (figure 1) does not help to distinguish effective ingredients from redundant ones. It confirms that there is something about the effective component in the control group that makes the difference but it does not help understand which these are. However the model fidelity measurements of the experimental teams and their relationship to differences of outcome do. The IFACT scale is particularly helpful in that it contains three separate domains which are independently measured. These domains are resources, practices and treatments. It is not possible to assess treatment retrospectively but it is possible to accurately measure practices and resources. When these two domains are separated in the meta-regression analysis it becomes clear that resources (i.e. staffing levels – the most expensive part of the innovation) have absolutely no effect on hospitalisation rates (figure 2). This is a second confirmation of the finding of the UK700 study which had focused particularly on staffing levels. However, team organisation (practices) is responsible for all the variation (figure 3). What this demonstrates is that it is the nature of multi-disciplinary work rather than staffing levels which was effective when ACT was introduced in the US and Australia. In the UK effective multidisciplinary ('ACT-like') working was already present in the CMHT controls so there was no benefit obtained by increasing the resources by reducing the caseload.



**Figure 2:** Metaregression of IFACT staff scores against inpatient days.



**Figure 3:** Metaregression of IFACT practice scores against inpatient days.

Burns, T. et al. *BMJ* 2007;335:336  
Copyright ©2007 BMJ Publishing Group Ltd.

## WHICH INGREDIENTS MAKE A DIFFERENCE?

In a previous study we tested for effective ingredients of home based care using cluster analysis and regression analysis<sup>28</sup>. This is a scientifically less rigorous study than the meta-regression analysis but does give some important clues to the clinical variables that make a difference. In this systematic review of home based care<sup>12</sup> we actively included ACT and all other forms of case management providing their aim was to deliver home based care and help severely mentally ill people remain out of hospital. In this study we did not use an established model fidelity scale but convened an expert consensus to identify important components of practice. In this expert consensus we used a modified three stage Delphi process<sup>29</sup> with ten experts to agree essential components of care that could be operationalised and sent to researchers. The service questionnaire contained 20 items most of which could be identified as 'absent' or 'present' with a handful requiring a simple categorical measurement. The questionnaire was sent to the 90 Principal Investigators of the research studies included in the systematic review and we obtained results from 60.



**Figure 4:** Components of care in Home based services. Social Psychiatry and Psychiatric Epidemiology (2004) 39: 789-796. Wright, C, Catty, J, Watt, H, Burns, T.

## CLUSTER AND REGRESSION ANALYSIS

A simple count of these 20 characteristics found six frequently reported in experimental services (figure 4). These were: smaller caseloads (1:20 or below), regularly visiting at home (a team policy for home visits beyond emergencies), high percentage of contact at home (over 60% of all contact conducted in patients homes), multi-disciplinary team (at least three different trained professional disciplines), integrated psychiatrists (psychiatrists attended all regular reviews not just those which required a medical input), responsibility for health and social care (able to access both social care – housing, structured activity,

finance – and medical care – psychotherapy, medication – within the team without formal referral). Some key features such as 24 hour working and a high level of medical input did not feature in this list.

We also regressed the 20 characteristics against reduction in hospitalisation to see if any of them demonstrated a significant association. The two that did were: regularly visiting at home and responsibility for health and social care.

## CONCLUSIONS

Most knowledge about what is effective in community mental health care has been derived from the steady accumulation of clinical wisdom. It is important not to ignore this, despite our emphasis on evidence-based medicine. Evidence in this area, as has been pointed out earlier, is extremely hard to obtain. The absence of experimental evidence does not mean the absence of knowledge. Research in this area is enormously time consuming and expensive. It is also complicated by the fact that most of the interventions being researched are complex ones where it is hard to distinguish between a number of potentially confounding and effective factors.

Luckily the variation in outcome has helped us get below the surface. Had the research into Assertive Community Treatment been

consistent in all its findings we would hardly be any further forward than we were in 1980. However the variations have forced us to deconstruct this complex intervention indirectly. By using the natural variation in outcomes and provision within these studies (both in the experimental and in the control service) we have been able to tease out a candidate list of those components which appear to make a difference (the six factors in figure 4). This process has been remarkable in that it has also enabled us to dismiss the importance of a number of extremely expensive features (e.g. 24 hour availability and very small caseloads) which have long been held to be essential and whose prohibitive cost has prevented the implementation of services. Further refining of these ingredients by a regression against the variation in reduction of hospitalisation has indicated that two of them (home visiting and combined health and social care) are probably the most important of the six.

We are now in a position to say with a degree of confidence what effective home based care of people with severe mental illness needs to look like. It needs a multi-disciplinary team which respects and includes both health and social care perspectives. It needs doctors who work actively within that team and are not seen as remote experts. It needs agreed case loads. The evidence does not seem to be that these case loads need to be very small. However there needs to be

a cap on case loads so that case managers can predict their workload and vary it.

It is worth bearing in mind those things which are so taken for granted such that they can't be measured because they are ubiquitous. Continuity of care, effective professional training and a respectful non-discriminating attitude between professionals and towards patients appear to be uniform characteristics of good community mental health teams. The fact that they cannot be separated out and experimentally tested should not blind us to their core importance to effective community mental health care.

## References

1. Querido A. The development of socio-medical care in the Netherlands. London: Routledge & Kegan Paul; 1968.
2. Jones D. The Borders Mental Health Service. *British Journal of Clinical & Social Psychiatry* 1982;2:8-12.
3. Kovess V, Boisguerin B, Antoine D, Reynaud M. Has the sectorization of psychiatric services in France really been effective? *Soc Psychiatry Psychiatr Epidemiol* 1995;30:132-8.
4. Johnson S, Thornicroft G. The sectorisation of psychiatric services in England and Wales. *Social Psychiatry & Psychiatric Epidemiology* 1993 Feb;28(1):45-47.

5. Department of Health. The Mental Health Act: England and Wales. London: Department of Health; 1959.
6. Fioritti A, Lo RL, Melega V. Reform said or done? The case of Emilia-Romagna within the Italian psychiatric context. *American Journal of Psychiatry* 1997 Jan;154(1):94-8.
7. Jones K, Poletti A. Understanding the Italian Experience. *British Journal of Psychiatry* 1985 Apr;146:341-7.
8. Basaglia F. Breaking the circuit of control. In: Ingleby D, editor. *Psychiatry and Anti-psychiatry*. Harmondsworth: Penguin; 1981.
9. Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. *Evidence Based Medicine - How to practice and teach EBM*. London: Churchill Livingstone, Harcourt Publishers Ltd; 1997.
10. Coid J. Failure in community care: psychiatry's dilemma. *BMJ* 1994 Mar 26;308(6932):805-6.
11. Burns T. Models of community treatments in schizophrenia: do they travel? *Acta Psychiatr Scand* 2000;102:11-4.
12. Catty J, Burns T, Knapp M, Watt H, Wright C, Henderson J, et al. Home treatment for mental health problems: A systematic review. *Psychological Medicine* 2002;32:383-401.
13. Mueser KT, Bond GR, Drake RE, Resnick SG. Models of community care for severe mental illness: a review of research on case management. *Schizophrenia Bulletin* 1998;24(1):37-74.
14. Stein LI, Test MA. Alternative to mental hospital treatment. I. Conceptual model, treatment program, and clinical evaluation. *Archives of General Psychiatry* 1980 Apr;37(4):392-7.
15. Marshall M, Lockwood A. Assertive Community Treatment for people with severe mental disorders (Cochrane Review). *The Cochrane Library* [3]. 25-2-1998. Ref Type: Journal (Full)
16. Burns T, Creed F, Fahy T, Thompson S, Tyrer P, White I. Intensive versus standard case management for severe psychotic illness: a randomised trial. *The Lancet* 1999;353:2185-9.
17. Thornicroft G, Wykes T, Holloway F, Johnson S, Szmukler G. From efficacy to effectiveness in community mental health services. PRiSM Psychosis Study 10. *British Journal of Psychiatry* 1998;173:423-7.
18. Test MA, Stein LI. Alternative to mental hospital treatment. III. Social cost. *Archives of General Psychiatry* 1980 Apr;37(4):409-12.
19. Weisbrod BA, Test MA, Stein LI. Alternative to mental hospital treatment. II. Economic benefit-cost analysis. *Archives of General Psychiatry* 1980 Apr;37(4):400-5.
20. Hoult J. Community care of the acutely mentally ill. *British Journal of Psychiatry* 1986 Aug;149:137-44.
21. Department of Health. *Modern Standards and Service Models: National Service Framework for Mental Health*. London: Department of Health; 1999.

22. Marshall M, Gray A, Lockwood A, Green R. Case management for severe mental disorders (Cochrane Review). The Cochrane Library [1]. 2001. Ref Type: Journal (Full)
23. Fiander M, Burns T, McHugo GJ, Drake RE. Assertive community treatment across the Atlantic: comparison of model fidelity in the UK and USA. *British Journal of Psychiatry* 2003 Mar;182:248-54.
24. Marshall M, Bond G, Stein LI, Shepherd G, McGrew J, Houlst J, et al. PRiSM Psychosis Study: Design limitations, questionable conclusions. *British Journal of Psychiatry* 1999;175:501-3.
25. Gournay K, Thornicroft G. Comments on the UK700 case management trial. *British Journal of Psychiatry* 2000;370:370-2.
26. Burns T, Catty J, Dash M, Roberts C, Lockwood A, Marshall M. Use of intensive case management to reduce time in hospital in people with severe mental illness: systematic review and meta-regression. *BMJ* 2007 Aug 18;335(7615):336.
27. McGrew JH, Bond GR, Dietzen L, Salyers M. Measuring the fidelity of implementation of a mental health program model. *Journal of Consulting & Clinical Psychology* 1994 Aug;62(4):670-8.
28. Wright C, Catty J, Watt H, Burns T. A systematic review of home treatment services. Classification and sustainability. *Soc Psychiatry Psychiatr Epidemiol* 2004;39:789-96.
29. Linstone HA, Turoff M. *The Delphi Method: Techniques and Applications*. Reading, Massachusetts: Addison-Wesley Publishing Company; 1975.