

TEXAS

**CRISIS ALTERNATIVES
PROJECT:**

**Cost-Effectiveness of 9
Crisis Residential Modalities**

**Final Report – Executive Summary
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I. EXECUTIVE SUMMARY

There is no question that the community mental health movement has resulted in a dramatic reduction in the census of state hospitals over the past thirty years. There is now acceptance of the once radical concept that individuals with serious mental illnesses can, with access to appropriate community resources, live within the community. While this movement from hospital to community has occurred for “chronic” or “maintenance” care, the scenario for “acute” care is quite different. Individuals who experience an acute exacerbation of symptoms (a “crisis”) are still more likely than not to be hospitalized. In fact, the mental health field has lagged behind physical medicine in reducing the use of hospital beds through the provision of acute care in alternative settings (e.g. day surgery, infusion therapy at home, hospice care).

This reliance on hospital care for psychiatric crisis has persisted despite the fact that there has been a growing literature which suggests that people with severe mental illnesses can avoid hospitalization during acute crises, without adverse effects, often at a cost savings, and without imposing additional burdens on families and others (reviews by Kiesler, 1982; Stroul, 1987; and Anthony & Blanch, 1989). The research demonstration project described in this report, the Crisis Alternatives Project (CAP), was undertaken both to expand knowledge about crisis care alternatives by addressing some unanswered questions and untested assumptions, as well as to reduce some critical service deficits in the Harris County (Houston), Texas, catchment area. Specifically, the study was designed to demonstrate and test the feasibility of treating individuals experiencing severe psychiatric crises, who meet Texas criteria for involuntary hospitalization, in alternative settings. The study was also designed to compare different types of alternative crisis care in order to determine characteristics of these services which are associated with enhanced outcomes and cost savings.

The CAP research demonstration was a collaborative endeavor involving several organizational entities. The Texas Department of Mental Health and Mental Retardation (TXMHMR) was the grant recipient and lead agency responsible for overall project management and coordination of the program and research components of the demonstration. The Mental Health and Mental Retardation Authority of Harris County (MHMRA), the community mental health center for the Houston area, was the program site. TXMHMR contracted with the University of Texas Medical Branch - Galveston (UTMB) Department of Psychiatry to implement the research component of the project. Faculty from the University of Texas Health Science Center - Houston (UTHSC) Department of Psychiatry provided medical oversight to the program and also served as co-investigators on the research. A project steering committee, which included representatives from each of these organizations, was the decision making body for the project. Agency consumer representatives and family representatives from the local Alliances for the Mentally Ill were also active members of the steering committee. The committee was involved in making all major program and research policy and procedure decisions, as well as in monitoring the project implementation.

Project Aims

The demonstration project was designed to show:

1. The feasibility of providing voluntary alternatives to hospital care for persons with serious and persistent mental illness meeting statutory criteria for involuntary civil commitment.
2. The short-term and long-term cost-effectiveness of using alternatives relative to standard hospitalization for this population of consumers.
3. The beneficial effects of employing consumers to provide the forms of alternative, round-the-clock care.
4. The feasibility and relative effectiveness of providing the acute care alternatives in the consumer's home versus other non-congregate types of care.
5. Whether a brief hospitalization prior to serving the consumer in non-hospital alternatives was more or less cost-effective than providing the alternatives without any hospitalization.

Target Population

All individuals included in the study met the criteria for Texas Department of Mental Health and Mental Retardation's (TXMHMR'S) priority population, which was defined as: adults who have severe and persistent mental illnesses such as schizophrenia, major depression, bipolar disorder, or other severely disabling mental disorders which require ongoing long-term support and treatment (operationalized by a DSMIII-R Axis V GAF of 50 or below). All consumers in the study also had to meet TXMHMR criteria for eligibility for case management services, which in Texas is directed towards the "most-in-need" population of consumers. The eligibility criteria for case management services included serious functional disability, as well as lack of sufficient resources and supports for community living. This requirement for eligibility for case management served two purposes. First, it insured that the project would involve consumers who were considered the most difficult to treat. Second, it insured that appropriately trained clinical staff would be available to supervise the crisis intervention on a daily basis, and be available to monitor the consumers closely following discharge from the 24-hour crisis care.

There were a small subset of the persons meeting the inclusion criteria stated above who were excluded from participation. The exclusion criteria were: regular, weekly use of crack/cocaine; substance abuse at a level requiring detoxification in the last 90 days; recent history of rape, attempted rape, or arson; history of homicidal attempts or homicide; a physical condition requiring medical management; severe dementia; or recent threats or acts of violence to any household member.

Program Description

The two major program components of the alternative care interventions demonstrated in this project were "brief hospitalization" and "respite care". The alternative care conditions were compared to "standard hospitalization".

Brief hospitalization: Brief hospitalization was intended to provide a period of up to 72 hours of inpatient care to consumers prior to the community-based alternative, “respite care”. Brief hospitalization was never used as an independent treatment component; it was designed to always be followed by respite care. The brief hospitalization was delivered at the Harris County Psychiatric Center (HCPC). This facility is jointly funded by the state and county and is operated by the UTHSC Department of Psychiatry. The brief hospitalization interventions were initiated rapidly, even during weekends. Length of stay in hospital could be extended on a day-to-day basis if approved by the MHMRA medical director, who was a co-investigator on this project.

Respite care: The term “respite care” is used here to refer to round-the-clock, one-on-one care provided by a trained paraprofessional, either in the consumer’s usual residence or in a crisis apartment. The term is used throughout this document to refer to all the community-based alternatives to hospital care demonstrated in this study. The trained paraprofessionals (respite care workers) were either consumers or ex-consumers themselves or were non-consumers of mental health services.

When a study participant was assigned to a respite condition, the case manager or crisis unit staff would transport the client to the respite care setting where they would be met by the designated respite workers. Respite care workers were gender matched to the consumer. Respite care always began with a check-in procedure which included conducting an inventory of the setting for items posing a safety risk and implementing appropriate precautions in that regard. When designated as necessary by the Crisis Unit’s physician, appropriate suicide precautions were initiated, such as having a second respite worker present and/or maintaining constant visual contact.

The course of respite care usually included the respite care workers assisting or coaching the consumer through normal activities of daily living such as food preparation, doing laundry, etc. The respite staff did not perform these activities for the consumer. They were also responsible for ensuring that the consumer followed their prescribed medication regimens. The respite workers worked twelve-hour shifts. Case managers were responsible for seeing the consumer at least daily. The Crisis Unit’s psychiatrist remained in charge of the consumer’s treatment during respite care, and was required to evaluate the individual’s condition on a daily basis. Most of these evaluations were conducted by telephone exchanges between the psychiatrist and case manager. The crisis psychiatrist could extend respite care, in consultation with the MHMRA’s medical director. Respite care was terminated on orders from the Crisis Unit’s psychiatrist, with discharge of the consumer to their usual residence. On average, respite care lasted for approximately 3 days.

Standard Hospitalization: The “standard hospitalization” control condition was intended to reflect the usual course of hospitalization available to MHMRA consumers in crisis prior to the introduction of the CAP program. Standard hospitalization was primarily provided at the same location as the brief hospitalization, HCPC. Typical length of stay was about 26 days at the start of the study, but decreased to about 20 days by the end of the study.

Study Design

Treatment groups: The CAP project was designed as a prospective factorial experiment with random assignment of persons in crisis to nine interventions, eight of which were the experimental alternative conditions and the ninth being the control condition, standard hospitalization. The eight experimental conditions were created by varying three characteristics of the care (in a 2x2x2 factorial design): 1) whether or not the consumer received a brief hospitalization prior to the respite care, 2) whether the respite care was provided in the consumer's own residence or in a crisis apartment, and 3) whether the respite care service provider was a consumer or non-consumer.

Non-randomized group: During the course of the study it was discovered that a number of CAP consumers were being hospitalized, either through the involuntary court-mediated commitment process or by voluntarily admitting themselves to the hospital. These consumers had crises which were either not reported to the crisis unit or were not judged by the Crisis Unit's physician as meeting the CAP criteria for randomization. A decision was made to include these consumers in the study as a tenth, non-randomized comparison group. These consumers received the equivalent of the CAP standard hospitalization intervention.

Hypotheses: The basic hypotheses which guided the study were:

- (1) Consumers assigned to one of the eight crisis care alternatives will decompensate less and recompensate quicker, as measured by changes in symptomatology and functioning, than will those assigned to standard hospitalization.
- (2) The eight crisis care alternatives will be less costly and more cost-effective in the short and long term than will standard hospitalization.
- (3) Consumers assigned to the eight crisis care alternatives will be more satisfied with services than will those assigned to standard hospitalization. Secondary consumers (family members, significant others) will be equally satisfied with alternative care and standard hospitalization.
- (4) The crisis care alternatives which involve less change from the consumers' usual living situations will result in better outcomes and less cost than will those which involve more change. In other words, the in-residence alternatives will be the most cost-effective, followed by the crisis apartment alternatives, and finally by those which involve a brief hospitalization.
- (5) Consumers assigned to consumer respite care workers will have as good or better outcomes than will those assigned to non-consumer workers.
- (6) The nine crisis care interventions will vary in effectiveness for different demographic and diagnostic subgroups of consumers.

The hypotheses stated above were influenced by some of the concepts underlying the supported housing and the peer support/self-support movements. First, proponents of supported housing (Carling, et al, 1987) argue that continuously relocating consumers results in iatrogenic effects. A crisis episode is a poor time to expect a consumer to cope with the additional burden of adjusting to new surroundings, people and rules that would normally be experienced when moved to a hospital or treatment facility. The second underlying concept, related to the peer support movement (e.g. Alcoholics Anonymous or other twelve step programs), is that individuals coping with a particular disability, disease or problem can be particularly helpful to others facing the same problem.

Measures: The consumer assessment package included an interview composed of questions related to consumer role functioning, quality of life, life satisfaction and service satisfaction; symptom measures (the consumer-rated Brief Symptom Inventory and the assessor-rated Brief Psychiatric Rating Scale); and functioning measures (the Global Assessment of Functioning and the Colorado Client Assessment Record - both assessor-rated). The assessment package also included service satisfaction questionnaires to be completed by consumers and family members. In addition, services and cost data were obtained from existing MHMRA and TXMHMR databases.

Procedures: The design was prospective in that eligible consumers from MHMRA were recruited into the study at a time when they were not in crisis. Baseline assessments occurred following consent to participate and at three month intervals thereafter throughout the pre-crisis period.

When a study participant experienced a crisis, a staff psychiatrist determined whether the crisis met the study definition of a crisis, and whether other eligibility and exclusion criteria were met. The study definition of a crisis was based on Texas Mental Health Code criteria for involuntary commitment. To be eligible for random assignment the person had to be: a) imminently dangerous to self, b) imminently dangerous to others, or c) suffering severe and abnormal mental, emotional or physical distress with imminent deterioration and unable to make a rational and informed decision regarding treatment.

If the crisis definition criteria were met, the research staff were contacted and randomization procedures initiated. Based on a computer-generated random assignment card (with potential assignments listed in priority order), the research staff determined the highest priority assignment available and initiated its implementation. Availability of an intervention depended on having an open bed in the hospital or respite setting, or if an in-home intervention was assigned, the approval of the appropriate family member. Actual implementation of interventions was done by MHMRA clinical staff members under orders written by the crisis unit psychiatrist.

Once an individual was designated as being “in crisis”, a research assessment was scheduled within the first 12 hours and then every two weeks for the following 10 weeks. The regular quarterly assessments then resumed at three month intervals and continued for the remainder of the study period.

Results

Over the course of the demonstration, 1099 eligible consumers of MHMRA services consented to participate in the study. The demographics and diagnoses of consumers who consented were as follows: 47% were female; 31.4% were Black, 32.4% were White, 34.8% were Hispanic and 1.5% were of other racial groups. The average age was approximately 35 years. The largest diagnostic grouping was schizophrenias (45.4%), followed by affective disorders (29.3%); 12% had other diagnoses of other psychoses, and the remaining 10.3% had a variety of diagnoses other than the three groupings above.

Of those consenting to participate, 148 were randomized to one of the nine treatment interventions when they experienced a crisis which met criteria for involuntary hospitalization. An additional 68 individuals comprised the “non-random” comparison group who were hospitalized after having bypassed randomization procedures.

Despite randomization, there were some significant pre-crisis differences between the intervention groups. For example, the standard hospitalization group had a higher proportion of individuals with schizophrenia than did the alternative care groups. This and other differences between the groups were controlled for or otherwise considered in subsequent analyses of results.

The results of the CAP study are summarized below with reference to the specific research question addressed.

1. Do the crisis residential alternatives differ from standard hospitalization in terms of their effects on the severity of decompensation and/or rate of post-crisis recompensation when measured in terms of consumer functioning and symptomatology?

It was hypothesized that those assigned to the crisis alternatives would decompensate less and recompensate quicker than those assigned to standard hospitalization. Decompensation and recompensation were analyzed using data from a number of different symptom and functioning scales. The specific amount of decompensation seen depended upon the degree of pre-crisis symptoms and functioning and on the particular measure being considered. Each of the groups studied experienced substantial decompensation at the time of the first crisis assessment. However, overall there were few significant or otherwise notable differences between the experimental alternative care groups and the control standard hospitalization group in terms of degree of decompensation.

Recompensation is shown by the improvement from the 12-hour crisis assessment scores, which generally indicate the worst functioning and most symptomatology, through the subsequent assessments at two week intervals. Complete recompensation is seen as returning to pre-crisis baseline. By the two week post-crisis interview, most consumers reported or were rated as having greatly improved in symptoms and functioning, typically more than halfway back to baseline. By the four week post-crisis assessment, recovery was nearly back to baseline on most measures. Once again, there were few significant differences between the experimental and control groups at the various post-crisis time points, indicating that there were no notable significant differences in recompensation. However, there was a trend on some measures (e.g. role functioning, self-care) suggesting somewhat slower recompensation in the standard hospitalization group.

2. Do the crisis residential care alternatives differ from standard hospitalization in terms of costs and cost-effectiveness for all mental health services provided during the acute care and post-crisis periods?

It was hypothesized that the alternatives would be less costly and more cost-effective both during the acute care and post-crisis periods compared to standard hospitalization. As

hypothesized, the cost analyses indicated that during the crisis period, up through three months after initiation of crisis treatment, the total cost of all mental health services (hospital and community) was significantly higher for those who were assigned to standard hospitalization than for those who received respite care alone. Though not significantly different, the total costs for those in the brief hospitalization plus respite care groups also tended to be less for this time period than for the standard hospitalization group.

Cost-effectiveness can be defined as the ratio of effectiveness to cost. For one intervention to be more cost-effective than another, the intervention must either perform better, cost less, or do both. Since there were no significant differences between the groups in effectiveness, the differences between the interventions in cost suggest that respite care is more cost-effective than standard hospitalization. The data also suggest that brief hospitalization plus respite care may also be more cost-effective than standard hospitalization.

3. Do the crisis residential care alternatives differ from standard hospitalization in terms of consumer and family satisfaction?

It was hypothesized that consumers assigned to the alternative crisis care conditions would be more satisfied with services than those assigned to standard hospitalization. Consumers were asked about their satisfaction with mental health services at each assessment time point. Differences between the groups at baseline and throughout the crisis assessments on this measure were small and non-significant. However, there was a non-significant trend suggesting that the standard hospitalization group was less satisfied with their services than the alternative care groups up through four weeks post-crisis, particularly at the time of the crisis assessment.

It was also hypothesized that family members (and other secondary consumers) would be equally satisfied with the care received in the alternative interventions and standard hospitalization. An instrument was developed to assess the satisfaction of secondary consumers with the program. Secondary consumers included family members who do and do not live with the consumer, as well as significant others, and occasionally board and care operators. The instrument was developed to be distributed by assessors, self-administered and returned directly by mail. However due to the small number of co-resident secondary consumers, as well as to the low return rate when secondary consumers could be identified, the results on the small number of returns were not included in this report.

4. Does the provision of a brief hospitalization prior to the crisis residential alternative make a difference in terms of outcomes and costs?

The hypothesis related to this question was that the respite only conditions would be more cost-effective than the brief hospitalization plus respite conditions. On almost all of the measures of outcome (and satisfaction), there were no significant differences between those who received respite care alone and those who received respite care preceded by a brief hospitalization. The cost for brief hospitalization plus respite care, though moderately higher, was not significantly different than that for respite care provided alone. While the hypothesis was not confirmed due to lack of significance, the equivalent outcomes and possibly higher costs suggest that the brief hospitalization plus respite intervention may be slightly less cost-effective than the provision of respite care alone.

5. Does the type of setting in which the crisis residential care took place - a crisis apartment or the consumer's own home - make a difference in terms of outcomes and costs?

It was hypothesized that the crisis care interventions which took place in the consumer's home would be more cost-effective than those which occurred in the crisis apartment. Differences between the in-home and crisis apartment groups were compared using a general linear model regression in which the main effect of "setting" was tested. This analysis revealed no significant differences in outcomes by setting (meaning that the outcomes for the in-home group were not significantly different from those of the crisis apartment group). The power to detect differences between the setting groups was limited, however, by the small number of individuals assigned to the in-home conditions. The small number assigned to the in-home conditions was indicative of the difficulty of implementing these conditions. Some of the problems encountered in implementing the in-home modality included difficulty in obtaining family or board and care consent to carry out the treatment in the home, as well as difficulty in obtaining medical clearance in cases in which the home situation was perceived to be the source of the crisis.

When costs of the alternatives are considered, the in-home alternatives appear to be slightly less costly than crisis apartment conditions. The savings, however, are limited to the rent for the apartment, which is a minor expense compared to the fixed and variable staff costs, which are essentially the same for the two setting types. Thus, the minimal cost savings for the in-home alternatives are probably offset by the lower feasibility of implementing the alternatives in these settings.

6. Does the type of service provider - consumer or non-consumer - make a difference in the effectiveness of the intervention?

It was hypothesized that individuals assigned to consumer respite workers would have as good or better outcomes than those assigned to non-consumer workers. The effects of type of provider were tested through a general linear regression model in the same way in which the effects of type of setting were tested. Generally, this analysis uncovered no significant differences in effectiveness on any of the major outcome variables by type of respite worker. These results support the hypothesis and suggest that consumers can be effective in carrying out this type of role. While there were no differences in effectiveness for consumer and non-consumer respite workers, there was some evidence that consumer workers were more effective in the crisis apartment setting than in the in-home settings.

7. Are the different types of crisis care (including standard hospitalization) more or less effective for some demographic and clinical subgroups of consumers than for others?

We hypothesized that there would be differential effects for different subgroups of consumers. We examined treatment outcome effects on several outcome measures, controlling for selected demographic variables and diagnosis. The specific general linear regression models examined the level of hospitalization variable with a main effect for each of the demographic and diagnostic variables, along with an interaction term. The interaction term would indicate modification of the outcomes by demographic or diagnostic variations. In this analysis we found

few significant effects and no consistent evidence that the demographic differences in age, sex or ethnicity, or diagnosis, had any effect on the outcomes at any stage in the crisis process. Although it is possible that other untested consumer variables may result in differences in effectiveness of the interventions, our immediate conclusion is that demographic and diagnostic differences do not mediate the effectiveness of the crisis residential interventions.

Non-random hospitalization group

One of the reasons that the non-random hospitalization group was added to the design was due to a concern that those bypassing randomization procedures, often as a result of involuntary commitment, might be more seriously ill than those who were being randomly assigned. Since we were attempting to test the feasibility of the alternatives for very serious crises, we had a particular interest in determining whether we were inadvertently excluding the more severely ill cases. The results indicate that this group of individuals was significantly different from the randomized groups. However, contrary to expectations, this group proved to be significantly less ill, on almost all measures of symptomatology and functioning, than the randomized groups. This was true at baseline, at the time of crisis, and at almost all post-crisis assessment periods. This finding calls to question both the mechanisms for and necessity of involuntary commitment for many for whom the procedures are applied.

Effects on Local and State Service Systems

After grant funds terminated, MHMRA chose not to continue the crisis care alternatives which were tested by this project. There were a number of reasons for this decision, including: the high cost of the research demonstration; competition with a planned 40 bed crisis unit for funds; ongoing concerns about consumer safety and agency liability (despite the absence of any major incidents during the demonstration); and concern about acceptance of the tested alternatives by medical professionals and the community. While the CAP services did not continue, MHMRA did expand services of its non-crisis respite house to include crisis respite as an alternative to hospitalization. This program differs from the one tested in that it is a professionally staffed, congregate facility (6 beds), as contrasted with CAP's one-on-one, paraprofessional approach.

Though the CAP services did not continue, the project did have a significant impact on the awareness and acceptance of crisis alternatives among service providers, consumers and family members. Many people who had direct and indirect experience with CAP came to see non-hospital crisis alternatives as feasible and desirable. This was not only true at MHMRA, but at the Department of Psychiatry at UTHSC, as well. Changes in attitudes of the faculty of UTHSC is reflected in increased openness to new treatment/service approaches, as well as in shifts in the research interests of some of the faculty.

CAP staff and investigators also took several steps to disseminate information about the project in Texas and other states. These steps included state and national conference presentations, consultations with various program sites in Texas and elsewhere, and publication of three articles about the project in a TXMHMR magazine which is widely distributed across the state.

Recommendations

A number of recommendations for implementing and improving crisis alternative care services can be made based on the results of and experience with the CAP demonstration. These include:

- The combination of brief hospitalization with respite care would not be recommended as a primary modality in most communities. Respite care alone was equally effective and somewhat less costly (though not significantly so). A brief hospitalization preceding respite care might, however, be useful in specific cases.
- In-home crisis respite care is also not recommended as a primary crisis care alternative. The crisis apartment modality proved to be more feasible to implement. In situations in which the majority of consumers live in independent circumstances, this modality may prove more feasible. The in-home intervention may also work very well as an adjunct service connected to other crisis residential services.
- Consumers can be effective and reliable providers of crisis alternative services. We therefore recommend inclusion of consumer service providers in the development of such services. Additional supervision may sometimes be necessary, however, to ensure that consumer workers are up to the task when called upon to staff a crisis.
- Comprehensive medical screenings are advised prior to treatment in crisis alternative services.
- Case management services are an important adjunct to implementation of crisis care alternatives in order to assure linkages with necessary treatment and support services both during and after the crisis.

Several strategies were discussed for incorporating results of the CAP study into the existing service system. These strategies included:

- Wide dissemination of the results of the study to consumer/family and professional groups through formal and informal presentations and publications.
- Pre-service and in-service education of service providers, particularly psychiatric residents, about the uses and advantages of crisis alternative care interventions.
- Establishment of “single portals of entry” or “gatekeepers” that can redirect more crisis cases toward non-hospital alternatives.
- Involvement of consumers, families and service providers in the selection and development of alternatives crisis care services which will meet the needs of their communities.