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THE IMPACT OF AGGRESSIVE CASE MANAGEMENT SERVICE
IN REDUCING THE FREQUENCIES OF ACUTE EPISODES
OF THE CHRONICALLY MENTALLY ILL

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Social Work

by
Daniel Morton Cunningham

June 1996

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ABSTRACT

The study measured the effects of Aggressive Case Management (ACM) services in reducing frequent acute contacts of clients who used Emergency Services and acute psychiatric hospitalization instead of outpatient services. The study measured acute episodes and hospital days both 180 days prior and after the clients received either ACM services or public or private mental health outpatient services. Data was collected on clients reviewed or treated in a six month period. T-Tests and Analysis of Variance of pre and post contacts found significant differences. Significant differences were found overall and when each group were analyzed separately. The clients receiving ACM services showed a 60.8% decrease in acute episodes.

ABSTRACT..... 111

LIST OF TABLES..... v

INTRODUCTION..... 1

Problem Statement..... 3

LITERATURE REVIEW..... 6

RESEARCH DESIGN AND METHODS..... 11

Data Collection and Instruments..... 13

Sample..... 15

RESULTS..... 19

DISCUSSION..... 23

Recommendations for Further Research..... 27

SUMMARY..... 28

APPENDIX I MHS909 Sample..... 36

APPENDIX II MHS140 Sample..... 37

APPENDIX III Data Collection Sample..... 39

REFERENCES..... 41

TABLE OF CONTENTS

LIST OF TABLES

Table 1	Disposition Of Cases Not Used For This Study	29
Table 2	Comparison of Demographical Data Of Study Groups	30
Table 3	Living Situations	31
Table 4	T-Test/Pair Data	32
Table 5	Frequencies of Changes AES of Pre-Test & Post-Test/Histogram	33
Table 6	Frequencies of Pre-Test & Post-Test of Hospital Admissions/Histogram	34
Table 7	Frequencies of Days Change Pre-Test & Post-Test/Histogram	35

INTRODUCTION

With the advent of Managed Care, public supported Mental Health Programs are beginning to consider how they can reduce both the frequency of patient visits to Emergency Services (AES) and the number of acute hospitalizations. The old system was based on a fee for service type of payment where Medicaid was billed each time a specific client received a service. In California, Medi-Cal set the payment rates for specific services, but there was no limit as to how much Medi-Cal could be billed per client. County programs generated most of their revenue this way. The more services for which they could bill, the more revenue they received which led to more programs e.g..

Managed Care has changed the whole revenue generating procedures. What has evolved is a HMO Medi-Cal Insurance type program to deal with a new type of funding by the Federal Government which is basically "block grant" funding. In the old system, the more services and the more clients that were seen the more money was received. In Managed Care, a lump sum is given at the beginning of the fiscal year to provide all needed Mental Health services. The lump sum (block grant) that the Counties receive is determined by the number of Medi-Cal recipients in the County, essentially a capitation system. With these dollars, the County is mandated to provide all needed Mental Health services to San

Bernardino County residents who are Medi-Cal eligible. These services include both Inpatient and Outpatient Mental Health care. If the County does over spend, the Federal government will not provide additional monies. These services will then have to be paid out of the County's General fund. In order to stay within the limits of this lump sum of money, San Bernardino County's goal is to reduce the use of the most expensive services (Emergency Services and Inpatient care). To reach this goal, the County hopes to decrease the frequency of the use of the most expensive services by connecting those individuals who make the most use of them for non-emergency conditions with less expensive Outpatient services.

Historically, a small group of chronically mentally ill people have been responsible for the highest use of the Inpatient services including Emergency Services. Starting in 1992, the County, in which this study was conducted, began addressing the needs of frequent users of acute care by instituting three programs to resolve the consistently high census on its Inpatient Unit. These included the Institute for the Mentally Disordered Program (IMD), the Augmented Board and Care Program (ABC) and the Intensive Case Management Program (ICM). These programs included both enhanced (an increase in both the numbers of and educational levels of staff) County and private staff. The enhanced

staff and programs have been effective in: reducing the Mental Health Inpatient census (licensed for 54 clients) from the high 60's to the low 40's; decreasing both the census and lengths of stays in long term psychiatric hospitals (IMD's); increasing the number of clients in ABC's (least expensive program); and decreasing the frequencies of contacts and lengths of stay for a select number of chronic clients.

Problem Statement

There remains, however, a group of clients who still make frequent use of both Emergency Services and acute Inpatient programs. These clients are often resistive to Outpatient Programs. The approaches that the Department have taken to effectively deal with the chronically mentally ill population's use of high treatment systems has not proven effective. We know little about this population. However, we do know from a study of their patient records that they rarely follow-up on Outpatient recommendations and, when they do keep their appointment, they frequently drop out after one or two sessions. Secondly, most live independently, with families or are homeless for periods of times. They are higher functioning than those individuals classified as "chronics" based on the fact that they can normally provide themselves with food, clothing and shelter without needing to be placed in a licensed facility (IMD or

Board and Care). Initial investigations have revealed that many of these individuals abuse substances. It is unknown at this point if these individuals are "Dual Diagnosed" (i.e., are both mentally ill as well as addicted to alcohol and/or drugs) or are just self medicating. We don't know if homelessness is an issue, or how transportation, mental illness, or the denial of illness factors in?

Aggressive Case Management (ACM) is a new program instituted February 6, 1995 by a Southern California County Department of Mental Health and is the focus of this study. This new program hopes to capture those individuals not served by the programs now in existence. This is a one year pilot program with the stated goal of decreasing the frequency of contacts with Emergency Services (AES), the frequency of admissions to acute Inpatient Psychiatric programs and Inpatient hospital days of care. The individuals selected for this program are those clients who have had three or more contacts with Emergency Services and/or admissions to an Inpatient Psychiatric Unit within 180 days. Attempts were to be made to reach all clients who met the above criteria. The structure of the program was (Ortiz, 1995):

1. A single point of responsibility. The case managers would offer services and would stay in

contact with the individual clients until he or she was linked to community services.

2. Individualized treatment.
3. No cases will be closed for any reason except when linkages to community services are completed.
4. All contacts would be either by phone or by field visits.

The ACM team consisted of a female and male case manager who used their clinical expertise to address both the needs stated by the client as well as those client needs identified through professional assessment and diagnostic processes. After completing this assessment, the Team would determine the appropriate community services to which the client should be linked. The services to which the team connected the clients were not limited to Mental Health Outpatient services. The Team was also not limited to the time spent with or the number of visits with a specific client. The primary goal was linkage with the hope that outpatient services would decrease the need of more expensive acute and inpatient services.

Initially, the County's thought was that the program would be a success if the frequency of acute contacts (AES-seen and released and acute hospital admissions) of those clients served by the ACM team decreased. As initial data was collected, it was found that comparable numbers of

clients in outpatient programs, in both the County and private sectors, also met the criteria of three or more acute contacts in a period of 180 days. Because of the apparent similarity of the clients' admission rates of the two outpatient groups, it was decided to compare them to the ACM group (not linked to outpatient services).

LITERATURE REVIEW

The conceptual framework for the ACM Program is based on a program of aggressive case management called "The Bridge", based on PACT, The Program of Assertive Community Treatment, in Madison, WI.. A study of the Bridge Program was conducted in 1982 (Wetheridge, 1982) where the study group were fifty of the most frequently hospitalized clients in an inner city catchment area. The investigators measured the number of hospital days and pre and post hospitalizations following treatment by the Assertive Community Treatment Team. They found a decrease in mean number of hospital days from 87.1 to 36.6 days and the mean number of hospitalizations from 3.3 to 1.9. The decrease in costs for care for the sample used was from \$734,428 to \$491,739.

There are several differences between the Bridge Program and the ACM Program. First, the Bridge Program was an inner city program where as the ACM Team covered a valley some 60 miles by 20 miles with several cities with wide

spread services. Secondly, the Bridge Program had four full-time staff members and several part-time students where as the ACM Team consisted of two full time staff members. Thirdly, the Bridge Program provided for all of the treatment needs of the clients and continued treatment with clients for a year or more. The ACM Team's primary goal was to link clients to existing mental health services. In order to make this linkage, the Team had to, in some cases, resolve other problems first, such as: housing; food; finances; negative impressions of mental health services; and compliance with medication. The staff of the Bridge Program wore beepers and were on call 24 hours per day. The ACM Team work assignment was basically 8:00 am to 5:00 p.m., although they often worked nine and ten hour days. The Bridge Program saw their clients up to twice a week for one year. The ACM Team visits were determined by need, with some clients seen as often as twice daily and others only once while their case was open. The average length of an open ACM case was 1.9 months, but the Team kept a watchful eye on all acute contacts for recidivism of closed cases. The criteria listed above in the Problem Section was derived from similar criteria used by the Bridge Program. Also in common with the Bridge Program was that the ACM Team met clients "on their own turf" which brought the Team into

areas and situations that most staff members would not attempt.

Curtis (1994) states that the helping process has to be less prescriptive and more collaborative when dealing with the type of population included in this study. The client's needs and wishes are to be taken more into consideration than they are with more traditional approaches. Increasing contacts with available systems and to improve the clients' community functioning is also emphasized. This includes working with families, friends, and community agencies as well as increasing the range of community supports. The use of frequent and aggressive field visits are also used to deal with problems "on the spot". The case manager became a "partner" with the client. This approach is strongly client directed, and with this approach, the door is open to more creative problem solving and community involvement.

The ACM approach to case management also blends the Pennsylvania and the District of Columbia's Community Connections approaches (Bachrach, 1989). The Pennsylvania approach looks both at the clients' strengths and disabilities, including the use of community support, such as family and friends, aggressive outreach and services tailored to fit the clients' needs. The Community Connections approach is more clinical in nature where the tasks of the case manager is to form a relationship with the

client, to be a model for the client, and to provide active intervention into the client's daily life, which might mean crisis intervention, as needed. The ACM Team mandate, to do whatever it takes to connect the clients with needed services, approximates both programs.

The steps the ACM Team took to complete linkage for a specific client is best stated by Levine (1987). He states that in the early stages of contact, linkage of a client to a clinic may be providing for transportation or the actual transportation of the client by the case manager. Getting through the waiting process at a clinic and explaining to the client the "whys" of each step in the process of "becoming" a client may be necessary. Linkage includes follow-up to see if a client makes it to future appointments on her/his own. Linkage also includes educating outpatient staff who tend to view non-compliant clients as not motivated rather than viewing non-compliance as part of the larger Psycho-Social picture.

Mosher (1992) talks about some of the characteristics of the population served by this study. He says they tend to be people who are highly demoralized and have lost both their faith that anything will be better or that professionals are a source of help for their problems. He sees the focal point of remoralizing the client being the responsibility of the case manager. The case manager's

approach should fit the client's wishes, if reality based. The case manager has to be flexible in regards to client responses and approaches. The case manager has to be positive and use a problem solving approach.

Surber(1994) says that mental health professionals need to view clients as individuals with different symptoms, the meanings of symptoms differ and the reactions of clients to similar symptoms differ. Therefore, although the clients lives may initially look the same, they are different when one looks closely. To add to this heterogeneity are support systems or the absence there of. Culture is also an aspect that has to be considered. He goes on to say that the old models of what is considered therapeutic have to be thrown out, that we need to address the client's total needs. He says that the relationship between the case manager and the client is of primary importance. That case managers need to use themselves as tools to help the client learn how to relate meaningfully with others. Specifically, the services provided by the case manager need to be comprehensive, continuous, individualized, flexible, meaningful, culturally competent.

In the opening statements of this paper, it was stated that it was thought that the ACM Team would be dealing with a large population of Dually Diagnosed individuals. Teague (1989) reviews a New Hampshire case management model dealing

with Dually Diagnosed individuals. The New Hampshire Model is a comprehensive approach comprised of specially trained teams who provide a continuity of care approach. The ACM Team used some of their methods, but did not come close to nearing the complexity of the New Hampshire Model approach. What was used by the ACM Team was to educate the client of the interaction between mental illness and addiction; to encourage the client to seek the available services; and to be there for the client no matter how many times the client relapsed.

RESEARCH DESIGN AND METHODS

This study was a one group pre and post comparison of the effects of Aggressive Case Management services on a select group of clients in Southern California County. The initial group of 172 clients were divided into three sub-groups after the elimination of those clients who did not meet the study criteria. The main group, which was the focus of the study, was "ACM referred" (group 1). Those connected to OPD services in the public sector (DMH, group 2), and those clients receiving services from the private sector (Private, group 3) were used as comparison groups. Outcome data was collected for each of the three groups, both six months prior to each case being opened and six months after the each case was closed. The outcome collected were: 1. "seen and released" in emergency

services (AES); 2. acute psychiatric hospitalizations and; 3. hospital patient days plus demographic data.

To assess this program, a positive paradigm was used, with the Aggressive Case Management services being the independent variable. Emergency Services contacts, Inpatient admissions and Inpatient hospital days were the dependent variables. As a comparison measure, a second independent variable was the effect of Outpatient treatment in groups Two (receiving County outpatient services, [DMH]) and Three (receiving services from the Private sector, [Private]). The outcome of the two outpatient groups were compared with the ACM clients to determine if there were any similarities. Other variables assessed across the three groups were diagnosis, age, marital status, sex, education, ethnic background, living situation, and numbers and types of ACM contacts to determine their influence on acute episode rates.

The Social Work practice roles that this study looked at were both Direct Practice and Administrative/Policy Planning because the success of the program was determined by both. Direct Practice is defined in this study as both ACM and Outpatient services the clients received. The significance of this problem for Social Work is that the current national trend is for less government services, especially those services that are the most costly. The

Private Health Care industry has been moving towards HMO's for a number of years realizing that community services are more cost effective than Inpatient services. The ACM Program is a County's experiment into moving those clients who over use Acute services to more traditional outpatient services. If the expansion of outpatient services continues, the future challenge for social workers will be to empower clients to meet their needs through other programs than traditional Inpatient Mental Health service programs.

Data Collection and Instruments

There were several sources from which data was collected. They included: 1. The County MHS909 which is a bi-monthly computer listing of all clients in the County Mental Health system who have had three or more acute episodes in the last 180 days; 2. The acute Private Hospital "Frequent Flyer" list that comes out weekly which gives the same data as the MHS909 plus Inpatient hospital days and ages of the clients; 3. The MHS140, a computerized County Mental Health Face Sheet on each client in the County system which gives demographic data; Emergency Services episodes; Inpatient admissions and discharges; Inpatient and Outpatient patient days; diagnoses on specific clients who have been seen in the County system since 1984; and 4. the review of the daily notes of the ACM Team. The daily notes

of the ACM Team included any drug or alcohol involvement, clarification of information provided on MHS140, if the client was receiving outpatient services in the Private or Public sector, linkages to community services, clinical impressions, clients' statements and to why they were not involved in outpatient services, and the type and number of specific ACM services. The types of ACM contacts were: 1. face to face contact with the client; 2. phone contacts with the clients; 3. collateral contacts with other agencies or family members and friends; 4. clients not home as scheduled; 5. all unsuccessful attempts to locate the client either by phone, field visits or collateral contacts. In most cases, it was the responsibility of the ACM Team to generate clients from the MHS140 and Private hospital lists, but referrals occasionally were received from private sources or from the County's Inpatient Unit.

The main focus of this new program was to see if the ACM Team could decrease the frequencies of acute episodes and the number of inpatient hospital days used by this select population. Keeping this in mind, the main focus of data collection was the frequencies of pre and post acute episodes and hospital days. The frequencies were computed from the data provided on the County's MHS140's and the Private Hospital "Frequent Flyer" list. The total hospital days used by a specific client were computed from the MHS140

and the Private Hospital Frequent Flyer list. This data was tabulated on each individual client and the clients were put into several groups. The three groups for which the analysis was computed were selected because they met the admission criteria of the program and received either ACM or outpatient treatment services.

The additional data collected was information on age, sex, marital status, education, ethnic background, living situation and diagnoses, and was tabulated to determine if they had any affect on expected treatment outcome. Means and modes were computed where appropriate on the same data.

Sample

The population (ACM) of this study were those clients who had three or more acute contacts within 180 days and who were not currently receiving outpatient mental health services. The three or more acute contacts included those contacts in both the private and public sectors. The comparison groups met the same pre and post 180 criteria and were receiving outpatient services in either the private or public sector. All clients were residents of San Bernardino County and were eighteen years of age or older. Although the pilot program ran for one year, the clients who were included in the study were only those who were reviewed and received services during the first six months of the ACM Program. This six month time limit was set for the purpose

of securing six month pre and post data in time for the final completion of the study.

There were a total of 172 cases generated and reviewed. Out of the 172 reviewed, eighty-four were included in this study. Table I lists the clients not included in the study and the reasons why they were rejected. Table VII lists the different living situations of clients in the separate groups.

The eighty-four included in the study were divided into three groups. The sample population consisted of twenty-eight clients who were not linked to outpatient services and received ACM services (ACM-group 1). The comparison populations consisted of twenty-six clients who were receiving outpatient services from the County (DMH-group 2), and thirty clients who were receiving services from the private sector (Private-group 3). The main age for all three groups were more or less consistent ranging from group Two (DMH) of 33.7 to group One (ACM) of 34 to group Three (Private) of 37. The modes showed similar ranges: group One (30-39), group Two (30-39), and group Three (40-49). In the overall population, a larger portion of females were served than males by 4.7%. There were an equal percent of females and males in group One and Two. Group Three had 13.4% more females than males. Only 7.1% of all clients were married: group One = 3.6%, group Two = 0%, and group Three = 16.7%.

More than 53% of all clients in all three groups were never married. 59% of the total population had a twelfth grade education or less and 18% had some college. Group Two had only 11.5% that went to college, otherwise the individual group percentages were close to overall percentages. Caucasians were seen most frequently with 69% served, Hispanics with 17.9% and African-Americans with 10.7%. Group Three saw a higher percentage of Caucasians and Hispanics and a lower percentage of African-Americans than the other two groups.

Diagnostic data was collected, even though it was deemed to be unreliable for two reasons. First, there was no standard diagnostic tool used. Diagnoses were formulated through the interpretations of symptoms using the DSM III-R and DSM IV by individual psychiatrists. Secondly, private psychiatrists never listed addiction as a diagnosis and County psychiatrists rarely included addiction in their diagnosis. Dual diagnosis data collected from MHS140's were augmented by client and family reports of drug and/or alcohol use. Using the above data collection process, 46% of the clients were found to be dually diagnosed. It is suspected that this is a low figure considering that there was no formal data collection of this diagnostic category. It is also felt that there would be more of a tendency of

clients to under report addiction than to over report it for fear of legal consequences.

The main focus of this study was to see if there was a relationship between frequencies of pre acute contacts and post acute contacts (seen in Emergencies Services and released, and clients admitted to acute psychiatric hospitals) and ACM services. The independent variable in Group One being the Aggressive Case Management contacts. In the two comparison groups, the independent variable was the treatment effects. The dependent variables being acute contacts. Initially, T-tests were run comparing the mean averages of pre and post AES (Emergency Services visits) and hospital admissions plus hospital patient days on all three groups. Histograms were also computed of AES visits, hospital admissions and patient days to show changes. An Analysis of Variance was computed to determine if there were any significant differences between the groups. Frequencies were computed on the variables of sex, and ethnicity on all three groups to determine if these variables had any significant affect on acute contacts and hospital days. Data was also collected on age, education, living situation and marital status. The hypothesis tested was whether there was a inverse relationship between the provision of ACM services and the frequency of acute contacts.

RESULTS

T-tests comparing mean averages of pre and post AES episodes and hospital admissions plus hospital days on all three groups showed significant differences in the before and after values (at the 0.05 level). Significant differences were also found overall and when each group was analyzed separately. T-values were the highest for AES visits in all three groups with group Two "Receiving Services DMH" having the highest value.

Frequencies were computed for the change in AES visits, hospital admissions and hospital patient days. The histograms show that the distribution of frequencies of AES visits for all three groups is roughly normal. The histograms for hospital admissions and hospital patient days show a less than normal distribution. This is due to three clients in the ACM group who had outcomes that greatly exceeded the norms of the other clients. One client had an increase of 10 hospital admissions and 45 hospital patient days. Two other clients in the ACM group experienced decreases of 63 and 68 hospital patient days respectively.

An Analysis of Variance was done showing that significant differences between groups were found only for changes in AES visits. In looking at the cell means (see Table 3), one can see that group Two, "Receiving DMH Services", had the largest difference, followed by group

One, "ACM Referred", with smallest being group Three, "Receiving Private Services", the smallest in AES visits. There is a noticeable difference between groups in hospital admissions and hospital days with group Two showing the largest decrease. Although all three groups show a significant change in the pre and post test results, the standard deviation of group One is much higher. This may be due to the fact that this group had three clients who had large outliers in hospital admissions and hospital patient days. For the rest of the clients, the variations were not that large.

Percentages of specific client groups and their decreases in acute contacts and hospital days resulted in the following data. ACM (n=28) clients who comprised 33.3% of the total population showed a 61.7% and 59.9% decrease respectively in acute contacts (AES & Hospitalizations) and a 60% decrease in hospital days. Those receiving services from the County (n=26) who comprised 30.9% of the population showed a decrease of 89.7% and 82.5% respectively of acute contacts and a 84.3% in hospital days. Those receiving private outpatient services (n=30) who comprised 35.7% of the population showed a decrease of 67.6% and 79.1% respectively in acute contacts and a 80.5 decrease in hospital days. The total population (n=84) showed a 51.8%

and 63.8% decrease in acute contacts and a 59.3% decrease in hospital days.

Males, who comprised 42.4% of the population (n=84), showed a decrease of 61% and 72.3% in acute contacts (AES & Hospitalizations) with a 68% decrease in hospital days.

Females, who comprised 47.6% of the population, showed a 76.9% and 77.9% decrease in acute contacts and 66.4% decrease in hospital days. Males of color, who comprised 14.3% of the population, showed a decrease of 56.4% and 65.8% decrease in acute contacts and a 72.4% decrease in hospital days. Caucasian males, who comprised 33.3% of the population, showed a 78.6% and 74.2% decrease in acute contacts and a 70.5% decrease in hospital days. Females of color, who comprised 19% of the population, showed a decrease of 82.3% and 68.3% in acute contacts and 73.3% in hospital days. Caucasian females, who comprised 33% of the population, showed a decrease of 62.7% and 85.3% in acute contacts and a 79.4% decrease in hospital days.

Marital status was significant in that only 7% of the clients were married. A total of 57% clients were never married. The remaining clients were either divorced or separated. Few had a college level of education (14.3%) with most having a high school education (25%) or less (33.3%). Age was significant in that the mode for the three groups were: group One (30-39), group Two (30-39), and group

Three (40-49) respectively. Living situations for 12 of the County clients and 12 of the Private clients were unknown. Those living in structured settings (Room & Board, Board & Care, Skilled Nursing Facility, State Hospital, and Jail) were: ACM=6, County=10, and Private=13. Those living with family of origin were: ACM=6, County=3, and Private=3. Seven of the ACM clients lived with a spouse or a significant other as did two of the clients receiving private services with zero of the clients receiving County outpatient services. Three of the ACM clients lived with friends and three ACM clients lived alone. It is unknown if any of the clients of the two comparison groups lived alone or with friends. As stated earlier, 46% of the clients for which data could be gathered had a dual diagnosis (mental health diagnosis and addiction).

Other data collected was specific to the activities of the Aggressive Case Management Team (ACM). Their main focus were the 28 clients in group One. During the course of the ACM Team's involvement with their clients, there was a total of 500 patient related contacts. The Team made 195 individual face to face contacts, 40 phone contacts with clients, and 265 collateral contacts. In addition, there were 64 incidences when the client was not home as expected. During the six month study period, the ACM Team made 46 community referrals to 23 different services.

DISCUSSION

This study suggests and supports the effectiveness of ACM services in linking resistive clients to outpatient services and, therefore, decreasing the frequencies of acute contacts and patient hospital days. The independent variable in this study was the sum total of the activities of the ACM Team. The initial memo that outlined the structure of the program was titled "Operation Catch" (Ortiz, 1995). "Catch" being defined as locating the client, securing a therapeutic relationship, and linking the client to needed community services. The independent variable was the frequency of acute contacts and hospital patient days following ACM services. Government services have to be made available to everyone so there was not a control group in this study. To give the study more validity, the ACM group was statistically compared with clients in outpatient programs in both the Private and Public sectors.

Frequency distributions of the available data of the demographics indicated some possible trends relating to sex, age, ethnic background, marital status, and living situation. More females than males were seen in the private sector as far as hospital admissions and lengths of hospital stays was concerned. There were also more females in the study overall. The data collected in this study does not

explain the reason(s) for this. Private hospitals tended to see more older females. Further studies may explain this. By far, the largest ethnic sub-group of the client population was Caucasian comprising two thirds of the population with the largest number of Caucasians in the private sector. At this point, this cannot be explained without knowing the social-economic and cultural influences in the area in which this study was done. Using the definition as being either legal or common law, eleven clients were married in the total population (n=84), with six of those in the ACM group and five clients in the private sector. The specific reason for the above outcome data is unknown. It might be explained in part by social-economic factors. County Programs traditionally serve those individuals who cannot afford private services.

The living situations of the clients in the total population tends to confuse the picture. One would expect that most of the clients in the private sector group would be living independently or with family or friends. The data shows, however, almost half of the clients in the private sector group lived in a structured living situation (n=13). As a rule, most clients who live in Board and Cares have limited income and, one would think, rely primarily on the public sector for services. There are only two possible explanations for this. First, there were twelve clients in

the private sector whose living situation were unknown, which if known could skew the results in another direction. Also, the clients who seek private services may prefer the individual attention of a private psychiatrist and have the ability to seek one out verses those in the other two groups.

Pre and post test data were similar for all three groups. There were some differences in rates of decrease in the use of acute contacts across groups. The ACM clients had the least decrease in acute contacts. The decreases are for "seen and released" and hospitalizations: ACM=61.7% and 59.9%, DMH=89.7% and 82.5%, and Private=67.6% and 79.1%. Patient days show similar trends: ACM=60%, DMH=84.3%, and Private=80.5%. Although this study did not explain the differences in decreases between these groups, some assumptions can be made. First, by virtue of the ACM client's resistiveness to Outpatient treatment, one might expect lower treatment outcomes. Secondly, the clients in the outpatient groups have the added support of a clinical relationship to deal with crisis when they arise that the ACM clients don't have.

Although this study supports the effectiveness of ACM services, there were issues of validity that were not addressed due to the study lasting only six months and the

lack of data collected because of time constraints and the unavailability of some data.

We don't know, for instance, how long clients have been receiving mental health services. County computer records are available back to 1984, but were not available for the Private sector without a release of information. We, therefore, are lacking a great deal of clinical and demographical information that may give greatly different statistical results.

Out of the eighty-four clients in this study, the ACM Team was only able to make direct contact with forty-nine clients, either by phone or with face to face contact. Direct contact enabled the ACM Team to verify demographic and clinic data which they were unable to do in thirty-five of the cases. If the Team had been able to make direct contacts with all of the clients, the outcome could of been different.

Another factor that had some influence on outcomes was a County Managed Care Team which was formed in the middle of the second month of operation of the ACM Team. It is, however, believed that their influence were negligible as a review of the records indicate that they were only involved with two of the ACM clients. Also formed during the first six months of the program was a Federal Government Program targeting clients receiving government assistance due to

addiction. This program only had contact with one client and that contact was made long after the data for this study was collected.

Recommendations for Further Research

This study only measured the effects of ACM services over a six month period from February through July. This resulted in a small sample size and also did not produce longitudinal data. The first recommendation is that a longer study be done to develop both a larger sample size and more meaningful statistical data. The second recommendation is for a study that would produce more complete data collection on the secondary variables of this study, such as age, sex, diagnoses, e.g.. The County, in which this study was conducted, is already beginning to document addiction as part of their admission criteria which they weren't at the time of this study and which will be a help in further studies. The third recommendation would be a study to clinically assess the clients in all three groups to determine why some did not seek any services and the others either County or Private outpatient services. The last recommendations is to conduct several studies measuring the personal values and treatment styles of case managers and case management approaches of several ACM Teams. This would make the team approach less subjective than it was in this study.

SUMMARY

The effectiveness of ACM services was proven to be statistically significant with decreases in both Emergency Services (seen and released) and acute hospitalizations. There was also a decrease in hospital inpatient days. The importance of the specific study of the ACM group is that it shows that Aggressive Case Management services can connect resistive clients to Outpatient services. The study further shows that once these ACM clients are connected to services they show similar decreases in acute contacts and hospital days as do those clients receiving ongoing Outpatient services. From this study, one can safely assume that if the ACM group (n=28) of clients had not received Aggressive Case Management services, they would continue to overuse acute services.

TABLE 1

Disposition Of Cases Not Used For This Study

Didn't Meet Admission Criteria	1
ACM Services not Completed in Study Period	15
Unable to Locate	48
Receiving Services-Probation Department	1
Receiving Services-Regional Center	5
Receiving Services-Private Sector/ACM	1
Refused Services	12
Moved out of Service Area	4
Died While Receiving ACM Services	<u>1</u>
Total	73

TABLE 2

Comparison Of Demographical Data Of Study Groups

	Final Data		
	ACM n=28	DMH n=26	Private n=30
Diagnoses			
Dual	16	6	12
Drugs			1
Affect.	11	15	13
Schiz.	1	5	4
Other			
Sex			
Female	14	13	17
Male	14	13	13
Marital Status			
Marr.	1	0	5
Div	6	7	2
Sep	4	3	4
Nv Marr	17	14	17
Wid.			1
Unkn.			
Ethnic			
Cauc.	19	17	22
Afr.-Amr.	4	3	2
Hisp	5	4	6
Other		2	
Unkn			
Education			
College	6	3	6
Gr. 12	9	8	4
< Gr. 12	7	8	13
Unkn.	6	7	7
Age Ranges			
18-19		1	2
20-29	8	6	8
30-39	14	14	6
40-49	3	4	10
50-59	3	1	2
60-69			2

TABLE 3

Living Situations

TYPE	ACM	COUNTY	PRIVATE
Structured	7	10	13
Family of origin	6	3	3
Spouse or Sign. other	7	0	2
Friends	3	0	0
Alone	3	0	0
Unstable	2	0	0
Unknown	0	13	12

TABLE 4

T-Test/Pair
Data

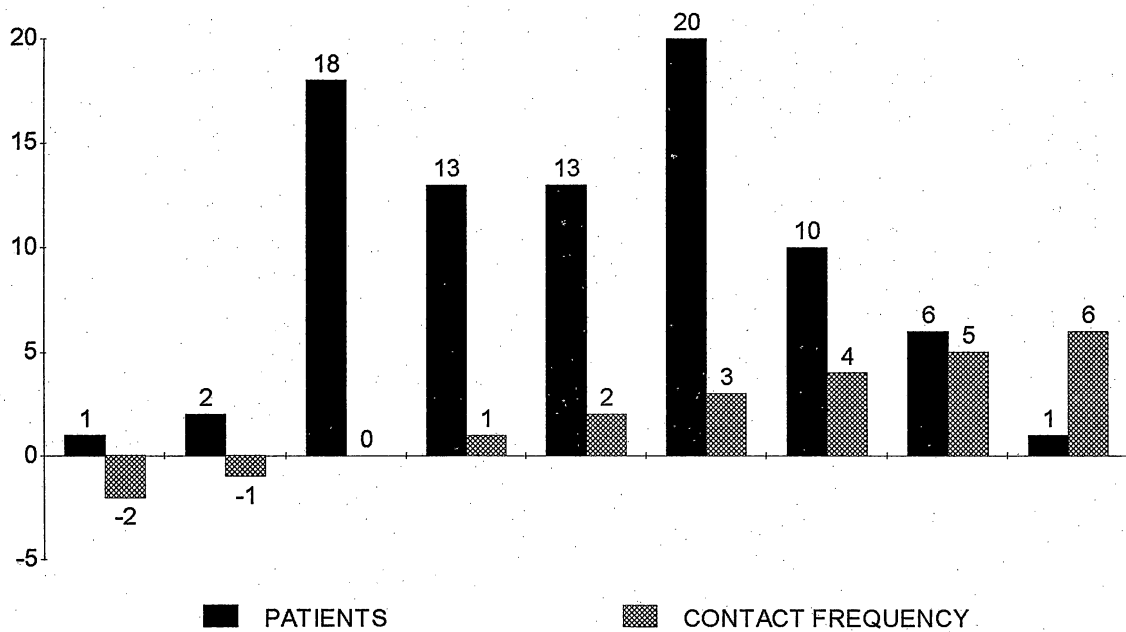
	(Difference) Mean	Standard Deviation	t Value	Degrees of Freedom	2-Tail Prob.
=====					
AESPRE/AESPOST					
Group 1	1.964	1.774	5.86	27	.000
Group 2	2.692	1.543	8.90	25	.000
Group 3	1.533	1.717	4.89	29	.000
Overall	2.035	1.732	10.77	83	.000

HOSPPRE/HOSPOST					
Group 1	1.331	2.932	2.38	27	.024
Group 2	1.807	1.096	8.41	25	.000
Group 3	1.700	1.664	5.60	29	.000
Overall	1.607	2.042	7.21	83	.000

DAYSPRE/DAYSPOST					
Group 1	9.821	21.897	2.37	27	.025
Group 2	15.884	12.647	6.40	25	.000
Group 3	12.400	14.647	4.64	29	.000
Overall	12.619	16.885	6.85	83	.000

TABLE 5

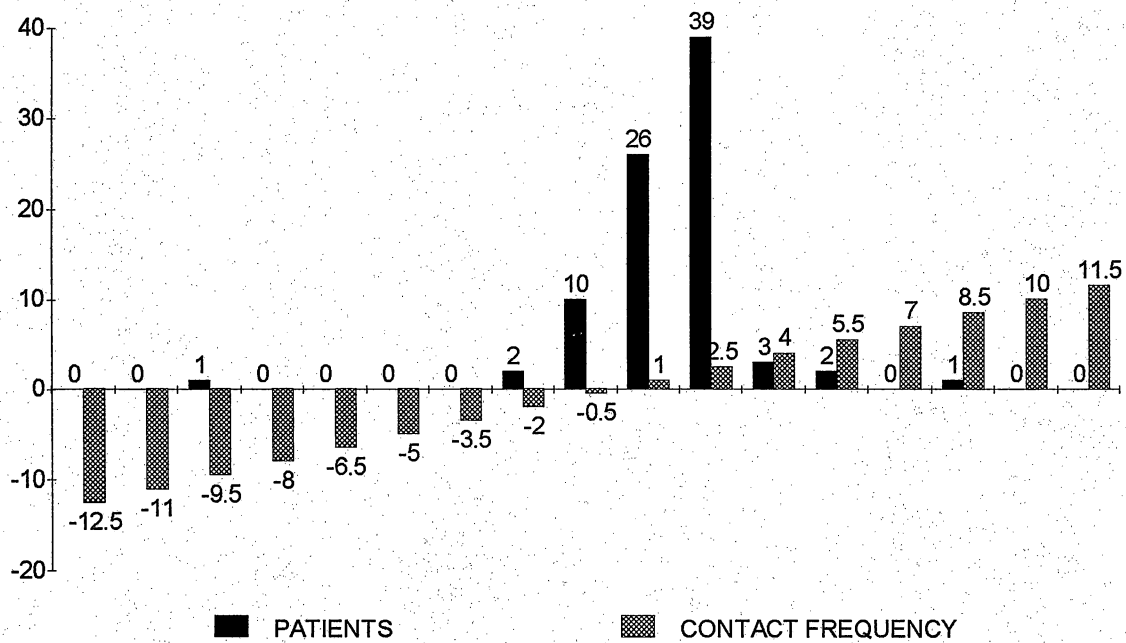
Frequencies Of Changes AES Of
Pre-Test & Post-Test/Histogram



The dark bars are the number of patients in each category. The light bar to the right show the changes in contacts, i.e., one patient had a -2 change in Emergency Services contacts (an increase of 529) during study period.

TABLE 6

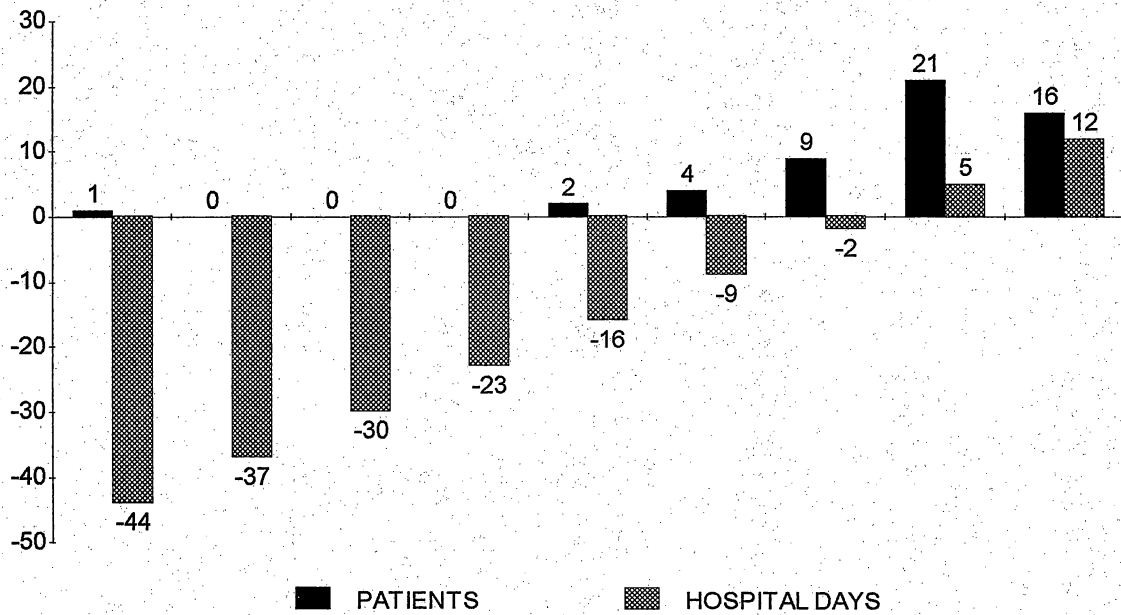
Frequencies of Pre-Test & Post-Test Of
Hospital Admissions/Histogram



The dark bars are the number of patients in each category. The light bar to the right show the changes in contacts, i.e., one client had a 9.5 increase in hospital admission.

TABLE 7

Frequencies of Days Change Pre-Test &
Post-Test/Histogram



The dark bars are the number of patients in each category. The light bar to the right show the changes in contacts, i.e., two clients had a 16 day increase in Hospital Days.

Appendix I

MHS909 Sample

REPORT MHS909 Survey of Acute Episodes 7-July-1995

No Current Open Outpatient Episodes

John Doe 8/23/94-9/1/94 Phoenix Outpatient
D.O.B.-11/11/50 3 Acute Episodes
Dr. A. Emergency Release 4/23/95
Dr. B. Emergency Release 5/01/95
Dr. A. Emergency Admitted 6/17/95

Jane Doe 12/5/93-6/7/94 Westside Outpatient
D.O.B.-2/15/57 4 Acute Episodes
Dr. D. Emergency Admitted 1/2/95
Dr. C. Emergency Admitted 2/1/95
Dr. D. Emergency Release 4/7/95

Appendix II

MHS140 Sample

Client Information Face Sheet

Report MHS 140

Run Date: 9-FEB-1995

Name:	John Doe	Number:	00-00-00
Address:	1223 "S" St.	SSN:	000-00-0000
	Fontana, Ca 92335	Other ID #:	0
Phone:	(909) 356-000	Marital:	Separated
Staff:		Disability:	Other
Aliases:	None		
RP Owes:	\$444.00	Medicaid:	Eligible
Insurance:	None		
		Birthdate:	22-Dec-1955
		Age:	39
		Sex:	Male
		Language:	English
		Education:	Grade 9
		Ethnicity:	White

Person To Notify In Case Of Emergency

Name: _____ Relationship _____

Address _____ Phone: Day ____ - ____ Night ____ - ____

Client Information Face Sheet (Continued)

Clinical History

AES Released	11-Nov-94	11-Nov-94	295.70	Dr. D. SW O.
Inpt	1-Nov-94	5-Nov-94	300.0	Dr. C. SW M.

Total Episode Count:=2

Appendix III

DATA COLLECTION Sample

I.D. NUMBER _____

GENDER: 1.MALE _____ 2.FEMALE _____

AGE: _____

ETHNICITY: 1.CAUC. ___ 2.BLACK ___ 3.HISP. ___ 4.OTHER ___ 5.UNKN. ___

MARITAL STATUS: 1.SINGLE ___ 2.SEPARATED ___ 3.DIVORCED ___
4.WIDOWED ___ 5.MARRIED ___ 6.OTHER ___
7.UNKNOWN _____

EDUCATION: 1.COLLEGE ___ 2.GR.12 ___ 3.< Gr.12 ___ 4.UNKN. ___

LIVING SITUATION: 1.ALONE ___ 2.WITH SPOUSE OF SIGN. OTHER ___
3.BOARD & CARE ___ 4.ROOM & BOARD
5.STATE HOSPITAL ___ 6.SKILLED NURSING ___
7.UNKNOWN _____

SOURCE OF REFERRAL: 1.MHS909 ___ 2.PRIVATE HOSPITAL LIST ___
3.OTHER _____

REFERRED TO: 1.COUNTY OUTPATIENT SERVICES ___
2.NON MENTAL HEALTH COMMUNITY SERVICES ___
3.BOARD & CARE ___ 4.IMD ___ 5.OTHER _____

ACM CONTACTS: 1.FACE to FACE ___ 2.PHONE ___ 3.NOT HOME ___
4.COLLATERAL CONTACTS ___ 5.UNABLE TO LOCATE ___
6.REFUSED SERVICES ___ 7.MOVED OUT OF AREA _____

DIAGNOSES: 1.SCHIZOPHRENIA ___ 2.AFFECTIVE ___
3.DRUG or ALCOHOL (DUAL)
4.DEVELOPMENTLY DISABLED ___ 5.UNKNOWN _____

Data Collection (Continued)

FREQUENCY OF SEEN AND RELEASE CONTACTS IN 180 DAYS PERIOD
PRIOR TO ACM AND 180 DAYS AFTER SERVICES COMPLETED:

- 1.ACM CLIENTS (GROUP 1) _____
- 2.COUNTY CLIENTS (GROUP 2) _____
- 3.PRIVATE CLIENTS (GROUP 3) _____

FREQUENCY OF ADMISSIONS TO ACUTE PSYCHIATRIC HOSPITALS IN
180 DAYS PRIOR TO ACM SERVICES AND 180 AFTER SERVICES
COMPLETED:

- 1.ACM CLIENTS (GROUP 1) _____
- 2.COUNTY CLIENTS (GROUP 2) _____
- 3.PRIVATE CLIENTS (GROUP 3) _____

TOTAL NUMBER OF DAYS HOSPITALIZED IN 180 PRIOR TO ACM
PROGRAM SERVICES AND 180 DAYS AFTER SERVICES COMPLETED:

- 1.ACM CLIENTS (GROUP 1) _____
- 2.COUNTY CLIENTS (GROUP 2) _____
- 3.PRIVATE CLIENTS (GROUP 3) _____

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