

PREDICTORS OF PSYCHIATRIC HOSPITALIZATION REFERRAL
BY A MOBILE CRISIS TEAM

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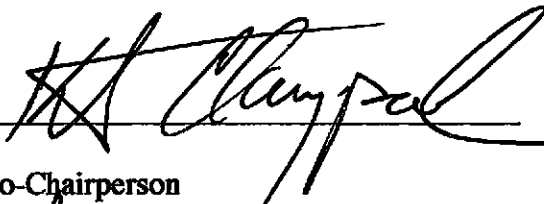
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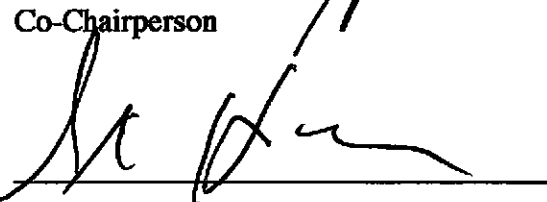
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ABSTRACT

The present investigation examined the relationships between crisis event variables, sociodemographic variables, and mental health service use history variables and the decision to psychiatrically hospitalize adult crisis clients of a mobile crisis team, in order to determine how variables within the three aforementioned domains incrementally contributed to the prediction of hospitalization decisions.

Data for the current study were derived from data collection forms that were completed by mobile crisis workers for each adult crisis event attended over a 9-month period. Stepwise logistic regression analyses were conducted using a 3-block sequential model building approach.

The present study identified crisis event variables that were significantly related to the likelihood of hospitalization referral, and sociodemographic variables that significantly accounted for additional variance in hospitalization decisions over and above crisis event variables. Mental health service use history variables did not significantly account for additional variance in hospitalization decisions over and above crisis event and sociodemographic variables.

TABLE OF CONTENTS

Abstract.....	iii
List of Tables.....	v
Chapter 1: Introduction.....	1
Risk Factors for Hospitalization.....	2
Risk Factors for Hospitalization Among Mobile Crisis Clients.....	7
Summary and Integration.....	10
Goals of the Present Investigation.....	12
Chapter 2: Methods.....	13
Setting.....	13
Data Collection Procedure.....	15
Sample.....	15
Data Collection Instrument.....	15
Data Reduction.....	17
Data Analysis.....	19
Chapter 3: Results.....	22
Chapter 4: Discussion.....	28
References.....	35
Appendix.....	43

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Client Sociodemographic & Mental Health Service Use Characteristics.....	23
2. Crisis Event Characteristics.....	24
3. Summary of Logistic Regression Analyses & Odds Ratios Associated With Psychiatric Hospitalization Referral.....	25

CHAPTER 1

INTRODUCTION

Psychiatric emergency services¹ constitute an important point of entry into the mental health system, and tend to serve a gatekeeper function for inpatient psychiatric services through the provision of triage services (Gerson & Bassuk, 1980; Blitz, Solomon, & Feinberg, 2001). The reduced availability of inpatient services has been associated with an enlarged demand for psychiatric emergency services and a greater emphasis on community-based mental health care (Lamb & Bachrach, 2001; Brown, 2005). Consequently, there has been a rapid expansion in the development and utilization of community-based psychiatric emergency services to minimize the dependence on costly psychiatric emergency room services in responding to crisis episodes (Ligon, 2005; Zealberg, 1999).

Mobile crisis teams² have emerged as one widely implemented community-based psychiatric emergency service approach, and can be broadly defined as organized groups of trained mental health workers who travel to patient locations in the community to

¹ Psychiatric emergency services, also labeled “crisis response services,” refer to a variety of mental health services that provide unscheduled crisis assessment and intervention, and establish referral to inpatient or outpatient treatment as necessary. Such services may be provided by psychiatric emergency rooms, mobile crisis teams, community mental health centers, and other sources.

² Mobile crisis teams are also referred to as “mobile crisis programs,” “mobile assessment teams,” “crisis resolution and home treatment services,” and “community-based mobile psychiatric emergency services.”

deliver in-vivo crisis assessment and intervention services (Zealberg, Santos, & Fisher, 1993; Gillig, 1995; Ligon, 2005). Mobile crisis teams vary in terms of structure, staffing, and service delivery approaches (Alexander & Zealberg, 1999). However, the ultimate objectives of mobile crisis teams are to provide crisis assessment, triage, and intervention in the client's natural environment, to reduce the prevalence of psychiatric emergency room treatment and hospital admission by delivering earlier community-based intervention, and to expedite psychiatric hospitalizations when appropriate (Bengelsdorf & Alden, 1987; Stroul, 1993; Zealberg, Santos, & Fisher, 1993).

Risk Factors for Psychiatric Hospitalization

As the availability and funding of inpatient services has declined, the central role of psychiatric emergency services has increasingly become one of triage, with an emphasis on optimal allocation of limited inpatient resources and utilization of less restrictive treatment alternatives whenever possible (Malone, 1998; Lincoln, 2006). However, despite the growing demand for triage assessments made in psychiatric emergency services, no clear guidelines have been established as to which factors should guide psychiatric hospitalization decisions (Blitz et al., 2001; Way & Banks, 2001). While a growing body of research has examined the factors associated with increased risk for hospitalization among those receiving services in psychiatric emergency rooms, relatively few studies have focused on predictors of hospitalization among adults seen by mobile crisis teams.

Several classes of variables have been examined as they relate to hospitalization decisions made in psychiatric emergency services. Clinical characteristics of clients presenting to psychiatric emergency rooms have often been identified as important

predictors of hospitalization. Consistent with medical and legal criteria for psychiatric hospitalization, a higher likelihood of hospitalization has been reported for those presenting with indications of danger to self, (Segal, Watson, Goldfinger, & Averbuck, 1988; Way, Evans, & Banks, 1992; Feinstein & Plutchik, 1990; Lyons et al., 1997; Way & Banks, 2001; Lincoln, 2006), and danger to others (Hillard, Slomowitz, & Deddens, 1988; Segal et al., 1988; Way et al., 1992; Lyons et al., 1997; Mulder, Koopmans, & Lyons, 2005; Lincoln, 2006). For example, Lincoln (2006) reported that psychiatric emergency room patients demonstrating dangerousness in the form of making attacks, threats, or suicide attempts had approximately 4 times the odds of hospitalization as those who did not exhibit these behaviors.

Suicidality has also been frequently identified as a risk factor for hospitalization (Hillard et al., 1988; Feinstein & Plutchik, 1990; Gillig, Hillard, Deddens, Bell, & Combs, 1990; Rabinowitz, Massad, & Fennig, 1995; Lyons et al., 1997; Sullivan, Young, & Morgenstern, 1997; Lidz, Coontz, & Mulvey, 2000; Lincoln, 2006). For example, Feinstein & Plutchik (1990) found that psychiatric emergency room patients who were hospitalized had significantly higher ratings of overall estimated suicide probability, based on the presence of suicidal thoughts and behaviors, compared to those who were not hospitalized (52% compared to 20%, respectively). A higher likelihood of hospitalization has also been reported for patients who exhibit aggressive or violent behavior or make threats of harm (Hillard et al., 1988; Feinstein & Plutchik, 1990; Way et al., 1992; Sullivan et al., 1997; Lidz et al., 2000). For example, Way and colleagues (1992) reported significantly higher rates of threatened harm (31.5%) and of actual harm (9.7%) to others among individuals referred for hospitalization in a psychiatric

emergency room, as compared to those who were referred for outpatient treatment (rates of 8.6% and 2.3%, respectively).

In addition, active psychotic symptoms have been found in numerous studies to be associated with a higher likelihood of hospitalization among psychiatric emergency room patients (Hillard et al., 1988; Way et al., 1992; Slagg, 1993; Rabinowitz et al., 1995; Sullivan et al., 1997; Way & Banks, 2001; Way, 2005). For example, Way and associates (1992) found that 63.7% of psychiatric emergency room patients who were hospitalized presented with active psychotic symptoms as compared to 23.3% of those referred for outpatient treatment ($p < .0001$). Way (2005) also reported a 61% increase in the odds of hospitalization associated with each incremental increase in psychotic symptom rating.

The relationship between substance abuse and hospitalization decisions in psychiatric emergency rooms has also been frequently examined, but remains uncertain due to conflicting results. While some studies have found that active substance abusers were more likely to be hospitalized (Feinstein & Plutchik, 1990; Sullivan, Wells, Morgenstern, & Leake, 1995; Roy-Byrne et al., 1998), others have reported lower likelihood of hospitalization among substance abusers (McNiel, Myers, Zeiner, Wolfe, & Hatcher, 1992; Breslow, Erickson, & Cavanaugh, 2000) and some have not found any significant relationship between substance abuse and hospitalization (Gillig et al., 1990; Way & Banks, 2001; Hendryx et al., 2003).

Police presence at psychiatric emergency situations is another factor that has been found to increase the likelihood of hospitalization (Sales, 1991; Watson, Segal, & Newhill, 1993; Lidz et al., 2000; Lincoln, 2006). For example, Lincoln (2006) reported

that in a psychiatric emergency room, crisis episodes involving police were 3 times as likely to have a disposition for hospitalization as those in which police were absent. While some studies have reported that crisis events attended by police tend to involve individuals who evidence greater clinical severity and dangerousness (McNiel, Hatcher, Zeiner, Wolfe, & Myers, 1991; Sales, 1991; Watson et al., 1993), Lidz and colleagues (2000) found that police involvement was strongly related to hospitalization but not appreciably associated with other clinical or sociodemographic predictor variables.

Client sociodemographic or psychosocial characteristics may also be associated with the likelihood of hospitalization among clients presenting to psychiatric emergency services (Blitz et al., 2001). For example, the decision to hospitalize might be influenced by the social supports or other resources available to an individual during the crisis (Bengelsdorf, Levy, Emerson, & Barile, 1984; Geller, Fisher, & McDermeit, 1995). In an experimental examination of admission decision-making among psychiatrists, Bagby and colleagues (1991) found that psychiatrists were more inclined to hospitalize patients described in written case vignettes as having limited alternative resources, as determined by being unemployed, single, and without family support.

In addition, a number of studies conducted in psychiatric emergency service settings have found higher rates of hospitalization among psychiatric emergency room patients who were unemployed (McNiel et al., 1992; Slagg, 1993; Schnyder, Valach, & Heim, 1995; Schnyder, Klaghofer, Leuthold, & Buddeberg, 1999). For example, one study reported an employment rate of 50.1% among those who were hospitalized as compared to 65.7% for those referred for outpatient treatment (Schnyder et al., 1995). Furthermore, a significantly higher rate of hospitalization has been found among those

who are single (Rabinowitz et al., 1995) and those who are separated, divorced, or widowed (Schnyder et al., 1995).

Several studies have also reported that the likelihood of hospitalization is higher among those with less available social support (Bengelsdorf et al., 1984; Feinstein & Plutchik, 1990; Gillig et al., 1990; Hendryx et al., 2003). For example, Feinstein & Plutchik (1990) found that patients who were hospitalized had significantly higher ratings on deficient social support to assist with stressors, and Hendryx and colleagues (2003) reported that the odds of hospitalization were 24% higher for individuals described as having unreliable social support compared to those with reliable social support. In addition, some authors have suggested that a patient's health insurance may be related to the likelihood of hospitalization, either as a marker for overall health care access or by influencing treatment decisions (Breslow et al., 2000; Blitz et al., 2001).

The decision to hospitalize might also be associated with an individual's treatment history or level of overall mental health service utilization (Blitz et al., 2001). For example, a number of studies have found that psychiatric emergency room patients with a history of previous psychiatric hospitalization, and multiple hospitalizations in particular, have a significantly higher likelihood of hospitalization (Rabinowitz et al., 1995; Klinkenberg & Calsyn, 1996; Spooren, Jannes, & Vanheeringen, 1997; Klinkenberg & Calsyn, 1998; Schnyder et al., 1995; Schnyder et al., 1999). Schnyder and colleagues (1999) reported that the odds of hospitalization were 48% higher among individuals with one or more previous hospitalizations.

Risk Factors for Hospitalization Among Mobile Crisis Clients

Four published studies have investigated factors associated with psychiatric hospitalization among adults seen in the community by mobile crisis teams. The available literature on factors related to disposition decisions made by mobile crisis teams includes two studies conducted in urban community settings in the Midwestern United States (Guo, Biegel, Johnsen, & Dyches, 2001; Min, Biegel, & Johnsen, 2005), one study conducted in the western metropolitan region of Adelaide, Australia (Hugo, Smout, & Bannister, 2002), and one study conducted in Sheffield, United Kingdom (Brooker, Ricketts, Bennett, & Lemme, 2007).

Consistent with findings reported from other psychiatric emergency treatment settings, the likelihood of psychiatric hospitalization among mobile crisis clients was found to be positively and significantly associated with danger to self or others (Brooker et al., 2007), suicidality (Guo et al., 2001), psychotic symptoms (Guo et al., 2001; Hugo et al., 2002; Brooker et al., 2007), and law enforcement involvement (Guo et al., 2001; Min et al., 2005). For example, Guo and colleagues (2001) reported that mobile crisis clients presenting with suicidal behavior had a 70% higher risk of hospitalization than those who did not present with suicidal behavior, and that those presenting with psychotic symptoms had more than twice the risk of hospitalization as those who did not exhibit psychotic symptoms. The authors also found that individuals who were referred to the mobile crisis team by law enforcement had a 77% greater risk for hospitalization compared to those who were self-referred (Guo et al., 2001).

Two studies found a significant positive relationship between substance abuse and psychiatric hospitalization among mobile crisis clients (Guo et al., 2001; Min et al.,

2005). Min and colleagues (2005) found a significantly higher rate of hospitalization among mobile crisis clients with co-occurring substance abuse problems (35%) compared to those with psychiatric problems only (23%), and Guo and associates (2001) reported that individuals with an indication of substance abuse had a 30% greater risk of hospitalization than those without a substance abuse indication. Other clinical characteristics found to be positively associated with hospitalization among mobile crisis clients include the presence of agitation or anxiety problems (Guo et al., 2001), ratings of aggression and/or agitation, (Hugo et al., 2002), and ratings of deliberate self-injury (Hugo et al., 2002).

Research findings also suggest that disposition decisions made by mobile crisis teams have been associated with sociodemographic characteristics, such as an individual's living circumstances and available resources and supports. Brooker and colleagues (2007) found that mobile crisis clients who were hospitalized had significantly lower ratings of social support and were significantly more likely to live in deprived areas compared to those who were not hospitalized. Another study reported that individuals who were hospitalized by a mobile crisis team had significantly higher ratings on problems with living conditions and on problems with occupation and activities than those who were not hospitalized (Hugo et al., 2002). In addition, mobile crisis clients with no source of income were found to be at a greater risk of hospitalization than those who were employed, an increased risk of 49% reported in one study (Guo et al., 2001) and 84% in another (Min et al., 2005). Min and colleagues (2005) also found that mobile crisis clients with public support as their primary source of income had nearly twice the risk of hospitalization as employed clients. In addition, a higher risk for hospitalization

has been found for homeless clients compared to those with housing (Guo et al., 2001), while a lower risk for hospitalization has been found for clients who were living with family or friends compared to clients who were not (Min et al., 2005).

Two studies have examined the relationship between mental health service use history variables and the likelihood of hospitalization among mobile crisis clients. Min and colleagues (2005) reported that the risk for hospitalization increased by 7.1% with each one-unit increase in an individual's number of previous hospitalizations. Guo and associates (2001) did not find a significant effect for the recency of a client's prior mental health service use, but the study failed to examine specific aspects of service use history, such as type of mental health service. Some authors have suggested that hospitalization decisions made by mobile crisis teams may be associated with the frequency of a client's use of crisis services or overall level of mental health service utilization (Bengelsdorf & Alden, 1987; Hugo et al., 2002), but the available literature remains bereft of empirical examinations of these and other aspects of mental health service use.

As Blitz and colleagues (2001) noted, hospitalization decisions may be related to acute risk factors associated with the severity of the presenting crisis as well as more chronic factors associated with the context of the crisis, such as sociodemographic characteristics or treatment history. Collectively, research on disposition decisions made in psychiatric emergency services has provided some evidence in support of this contention. However, the available literature has predominantly focused on the relationship between hospitalization and clinical or crisis event characteristics, and relatively few studies have incorporated an additional examination of sociodemographic and mental health service use factors. In addition, many studies examining the

association between multiple factors and the decision to hospitalize have been limited by an inappropriate reliance on univariate statistical procedures.

The available literature has suggested multiple ways in which sociodemographic characteristics could be associated with the decision to hospitalize individuals in crisis. For example, sociodemographic characteristics could reflect deficits in available resources or social support that would elevate an individual's vulnerability to crisis and/or diminish the likelihood of crisis resolution in the community (Lincoln, 2006; Brooker et al., 2007). Alternatively, sociodemographic factors could operate solely as confounding variables in the relationship between clinical or legal factors and hospitalization (Klinkenberg & Calsyn, 1998; Blitz et al., 2001; Lincoln, 2006).

In addition, higher utilization of inpatient and/or crisis services could indicate greater clinical severity, and thus be associated with an increased risk of hospitalization. On the other hand, research findings on the characteristics of high mental health service utilizers (e.g., Arfken, Zeman, Yeager, White, et al., 2004; Pasic, Russo, & Roy-Byrne, 2005; Young et al., 2005) raise the possibility that the relationship between mental health service use history and risk for hospitalization may be better explained by virtue of a shared association with chronic clinical risk or psychosocial vulnerability factors.

Summary and Integration

In summary, several gaps in the literature remain to be addressed. First, while previous research examining psychiatric emergency service dispositions has suggested that the likelihood of hospitalization might be related to crisis event characteristics, sociodemographic characteristics, and mental health service use history characteristics, few studies have comprehensively examined the association between hospitalization

decisions and variables within these domains using multivariate statistical procedures. Given the likely levels of covariation among these sets of variables, and the reliance of many studies on univariate analytical procedures, the independent or incremental contribution of each remains to be determined. Furthermore, relatively few studies have examined predictors of hospitalization decisions made by crisis workers in mobile crisis teams, a research gap that is problematic given that treatment decision-making practices tend to vary substantially according to treatment setting (Way et al., 1992; Blitz et al., 2001).

The present study evaluated a conceptual model for mobile crisis worker disposition decisions by examining the degree to which crisis event factors, sociodemographic factors, and mental health service use history factors each incrementally explained variance in the decision to hospitalize. Factors associated with the crisis event, such as a client's presenting symptoms or the presence of police, are immediately ascertained by crisis workers at the crisis scene, and may be taken into account in triage decisions as indicators of crisis severity or dangerousness. Given the presence of certain crisis event factors, the likelihood of hospitalization referral may additionally vary according to sociodemographic characteristics associated with the individual's circumstances, which could reflect aspects of the individual's quality of life and degree of access to services, social support, or other resources to cope with the crisis. Finally, given the presence of certain crisis event factors and sociodemographic characteristics, the likelihood of hospitalization referral may additionally vary with mental health service use history characteristics associated with recent utilization of inpatient and crisis services. A history of higher utilization of inpatient and crisis

services could reflect more chronic and severe clinical problems and impairments in community functioning, and thus could indicate a diminished likelihood of successful crisis resolution in the community.

Goals of the Present Investigation

The present study examined the relationships between a variety of predictor variables and the decision to psychiatrically hospitalize adults in the community who presented as crisis clients of a mobile crisis team. The goals of the present investigation were:

1. To examine the degree to which crisis event characteristics, such as presenting symptoms or police involvement, accounted for variance in hospitalization decisions made by mobile crisis team workers.
2. To examine the degree to which sociodemographic characteristics accounted for variance in hospitalization decisions made by mobile crisis team workers above and beyond that associated with crisis event characteristics.
3. To examine the degree to which mental health service use history characteristics accounted for variance in hospitalization decisions made by mobile crisis team workers above and beyond that associated with crisis event and sociodemographic characteristics.
4. To identify the degree to which variables within the three aforementioned domains were independently associated with the odds of a hospitalization referral.

CHAPTER 2 METHODS

Setting

The current study examined crisis events attended by Crisis Mobile Outreach (CMO), 24-hour, 7-day a week mobile crisis team that responded to psychiatric emergencies in the City and County of Honolulu, Hawai'i. The CMO team consisted of a multidisciplinary staff that included crisis workers, supervising qualified mental health professionals, and consulting on-call psychiatrists. The team responded to calls dispatched through a 24-hour crisis hotline, and crisis workers traveled to crisis scene locations throughout the service area to facilitate crisis resolution and deliver in-vivo crisis assessment and referral services.

Upon arrival at the crisis scene, CMO crisis workers assessed and attempted to de-escalate the individual in crisis. The crisis assessment included an evaluation of the client's presenting problems or symptoms, level of dangerousness, mental status, substance abuse, treatment history, and available supports.³ Crisis workers subsequently decided if psychiatric hospitalization or alternative services were appropriate, and made dispositional arrangements and referrals accordingly. Clients referred for psychiatric

³ Crisis assessments were conducted through semi-structured interview and completion of brief crisis and substance abuse assessment instruments, which included the Crisis Triage Rating Scale (CTRS; Bengelsdorf et al., 1984), the Drake Alcohol Use Scale (AUS; Drake, Mueser, & McHugo, 1996), and the Drake Drug Use Scale (DUS; Drake et al., 1996).

hospitalization were transported to local psychiatric emergency rooms for evaluation and hospital admission.⁴

Upon hire, CMO crisis workers received a minimum of 40 hours of lecture-based training on topics such as crisis prevention and intervention, suicide and risk assessment, mental status examination, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; APA, 2000), psychotropic medications, CPR and first aid, confidentiality protection, services and treatment programs in the community, and civil commitment statutes and procedures. CMO crisis workers also received approximately 20 hours of field training on crisis calls with the CMO team leader and/or other experienced CMO crisis workers. CMO crisis workers were required to attend monthly training sessions on topics relevant to crisis response and target populations, and yearly 8-hour refresher seminars on crisis intervention.

CMO crisis workers received individual and group supervision from the CMO team leader, a licensed clinical social worker. A qualified mental health provider (QMHP) with a master's degree in social work also supervised the CMO team leader and oversaw group supervision meetings with the CMO team. The CMO team leader, QMHP, and staff psychiatrist were on-call and available to provide telephone consultation to CMO crisis workers 24-hours a day.

⁴ Data are unavailable about hospital admissions that occurred upon emergency room assessment of clients referred by the mobile crisis team for hospitalization.

Data Collection Procedure

CMO crisis workers were instructed to complete data collection forms for each attended crisis event involving an adult client. Data collection took place over a 9-month period, from January to September 2005. Completed forms were reviewed by the present author, and data point errors or omissions were identified and, whenever possible, rectified through supplemental CMO records and administrative databases. The author subsequently entered the data recorded on the forms into a password-secured database that identified clients by client reference number, on a password-secured computer reserved specifically for public mental health service data entry. Completed data forms were stored in a locked file cabinet to further preserve confidentiality. In addition, for the purpose of the current investigation, the author created a separate dataset from the original that excluded any direct or indirect identifying information about the CMO clients.

Sample

During the 9-month period of the study, data were collected for 234 CMO-attended crisis events involving adult clients. Excluded from the sample were 9 cases with no disposition due to cancellation, client elopement, or false alarm. Thus, the final sample consisted of 225 crisis events, which involved 203 clients, as some clients had repeat contacts with the CMO team.

Data Collection Instrument

The CMO Crisis Event Record- Teleform Version (CER-TV; see Appendix) is a 40-item data collection instrument developed specifically to gather information about adult clients and crisis events attended by the CMO team. Information about crisis events

recorded on the CER-TV included presenting clinical problems, police involvement, client sociodemographic characteristics, client mental health service use history characteristics, and the disposition and/or referrals made by the attending crisis workers. To record presenting clinical problems, crisis workers selected up to two categories that best described the crisis client's presenting problems from the 18 categories provided. Client mental health service use history characteristics recorded on the CER-TV included the presence of any previous psychiatric hospitalization, CMO team contact, or inpatient substance abuse treatment within the 6 months prior to the crisis event.

The construction of CER-TV items was informed by a review of variables considered in previous literature as relevant to psychiatric emergencies and mobile crisis teams, and by input from CMO staff and program administrators to ensure relevance and representativeness of items for the crisis service setting. The development of the CER-TV involved two pilot examinations of draft versions of the instrument. Prior to each pilot period, the investigators⁵ instructed CMO crisis workers on instrument items and completion. Following each pilot period, the investigators reconvened with the CMO team to solicit feedback from the staff and to address questions or problems regarding instrument completion. Revisions were made for clarity and appropriateness of item content in response to staff feedback and to any systematic inconsistencies or omissions observed in crisis worker completion of data collection forms during pilot examination periods. Subsequently, a final version of the CER-TV was created, and an administration manual for the instrument was developed by the investigators and distributed to the CMO

⁵ C.P. & K.C.

team. The investigators also conducted multiple training sessions with the CMO team on CER-TV completion to ensure reliable recording during the data collection period.

Data Reduction

All variables examined in the present study were derived from items on the CER-TV (see Appendix) data collection forms, which were completed by mobile crisis workers.

Dependent Variable

The dependent variable is the dichotomously coded disposition of the crisis event: a decision to refer or a decision not to refer a crisis client for psychiatric hospitalization.

Crisis Event Variables

Police involvement, active psychotic symptoms, suicidal ideation or behavior, active substance abuse, aggressive or threatening behavior, and agitation or anxiety⁶ were all dichotomously coded to indicate the presence or absence of the particular characteristic at the crisis event.

⁶ Due to relatively low recorded base rates of suicidal attempts or gestures, this presenting problem category was combined with the category for suicidal ideation or plans to create a dichotomous variable indicating the presence or absence of any suicidal ideation or behavior. Similarly, due to relatively low base rates of physically aggressive behavior, this category was combined with verbally threatening behavior to create a dichotomous variable indicating the presence or absence of any aggressive or threatening behavior.

Sociodemographic Variables

Marital status was dichotomously coded as 1) married or living with a partner, or 2) single, separated, widowed, or divorced. Medical insurance coverage was dichotomously coded to indicate whether or not the crisis client was covered by medical insurance. Living situation was dichotomously coded to indicate whether or not the crisis client was living with family members. Primary income source was coded into three categories: 1) those with part-time or full-time employment, 2) those who are unemployed but receiving social service benefits,⁷ and 3) those who are unemployed and without any income from social service benefits. Primary income source was dummy coded so that “unemployed with social service benefits” served as the reference category to which the two other categories were compared in the analysis.

Mental Health Service Use History Variables

Psychiatric hospitalization within the prior 6 months, contact with the mobile crisis team within the prior 6 months, and inpatient substance abuse treatment within the prior 6 months were all dichotomously coded. Overall level of service use among the three aforementioned services within the prior 6 months was coded into three categories: 1) no service use within the prior 6 months, 2) 1 service used within the prior 6 months, and 3) 2 or more services used within the prior 6 months. Overall level of service use was dummy coded so that “no service use within the prior 6 months” served as the reference category to which the other two categories were compared in the analysis.

⁷ Social service benefits refer to income through Supplemental Security Income (SSI), Social Security Disability Income (SSDI), or General Assistance (GA) benefits.

Data Analysis

To address the goals of the current study, stepwise logistic regression analyses were conducted using a 3-block sequential model-building approach with backward elimination of predictor variables. Sequential logistic regression is a model-building approach in which independent variables are entered in consecutive sets or “blocks” of variables to test the effect of each additional block of independent variables once the effect of other predictor variables is taken into account. Categorical predictor variables within the domains of 1) crisis event variables, 2) sociodemographic variables, and 3) mental health service use history variables, were entered in sequential blocks to create three increasingly complex logistic regression models for the prediction of psychiatric hospitalization decisions.

Crisis event variables were entered in the first block to create the basic model. Crisis event variables included police involvement, active psychotic symptoms, suicidal ideation or behavior, active substance abuse, aggressive or threatening behavior, and agitation or anxiety. Sociodemographic variables were added in a second block to the basic model to create an intermediate model. Sociodemographic variables included marital status, medical insurance coverage, living situation, and primary source of income. Finally, mental health service use history variables were added in a third block to the intermediate model to create a full model. Mental health service use history variables included psychiatric hospitalization within the prior 6 months, contact with the mobile crisis team within the prior 6 months, inpatient substance abuse treatment within the prior 6 months, and overall level of service use within the prior 6 months. SPSS 11.0 Mac OS X version statistical software was employed for all statistical analyses.

The incremental predictive value associated with the addition of each sequential block of predictor variables was evaluated by examining the difference in R^2 values between the basic, intermediate, and full models. In the formulae below, X_1 = block 1 predictor variables (crisis event variables), X_2 = block 2 predictor variables (sociodemographic variables), X_3 = block 3 predictor variables (mental health service use history variables), and Y_1 = the criterion variable (psychiatric hospitalization referral).

Formula 1: R_1^2 (Basic model)

$$bX_1 = Y_1$$

Formula 2: R_2^2 (Intermediate Model)

$$bX_1 + bX_2 = Y_1$$

Formula 3: R^2 difference. Basic Model and Intermediate Model

$$R_2^2 - R_1^2 = \Delta R_1^2 \text{ (produced from the addition of Block 2 variables)}$$

Formula 4: R_3^2 (Full Model)

$$bX_1 + bX_2 + bX_3 = Y_1$$

Formula 5: R^2 difference. Intermediate Model and Full Model

$$R_3^2 - R_2^2 = \Delta R_2^2 \text{ (produced from the addition of Block 3 variables)}$$

R_1^2 represents the unique proportion of variance in hospitalization decisions accounted for by crisis event factors. ΔR_1^2 represents the unique proportion of variance in hospitalization decisions accounted for by sociodemographic factors, above and beyond crisis event factors. ΔR_2^2 represents the unique proportion of variance in hospitalization decisions accounted for by mental health service use history factors, above and beyond crisis event and sociodemographic factors. All R^2 differences were subject to a chi-square test for significance. The block chi-square value represents the

change in $-2 \log \text{likelihood}^8$ between successive entry blocks during model building. In addition, odds ratios were calculated in each logistic regression analysis to determine the degree to which the predictor variables were independently related to the odds of a hospitalization referral.

⁸ $-2 \log \text{likelihood}$ - a measure of variance unexplained by a logistic regression model, analogous to the error sum of squares (SSE) in linear regression analysis.

CHAPTER 3 RESULTS

Sample characteristics are displayed in Tables 1 and 2. The sample included 225 crisis events, 53 (23.6%) of which had a disposition for psychiatric hospitalization. Due to missing data for some sociodemographic and mental health service use characteristics (Table 1), percentages for these variables are adjusted to reflect observed proportions among valid (non-missing) cases. There were no missing data for crisis event characteristics (Table 2)

Table 1. Client sociodemographic & mental health service use characteristics

<u>Variable</u> (N=225)*	<u>N</u>	<u>% (S.D.)</u>
<u>Gender</u>		
Male	122	54.2%
Female	103	45.8%
Age, Mean	42.2	(14.4)
<u>Marital status</u>		
Single	133	60.2%
Married/ living with partner	44	19.9%
Separated/divorced/widowed	44	19.9%
<u>Living situation</u>		
Living with family	79	35.4%
Living independently	65	29.1%
Currently homeless	53	23.8%
Specialized/semi-independent housing	22	9.9%
Other	4	1.8%
Employed	31	14.6%
Receiving social service benefits (SSI, SSDI, GA)	109	53.4%
Medical insurance coverage	171	79.2%
<u>Mental health service use- Prior 6 months</u>		
Crisis team contact- prior 6 months	55	25.5%
Psychiatric hospitalization- prior 6 months	53	24.8%
Inpatient substance abuse treatment- prior 6 months	15	7.0%

*Percentages are adjusted in some cells for missing data, ranging from 1-9%.

Table 2. Crisis Event Characteristics

<u>Variable</u> (N=225)	<u>N</u>	<u>%</u>
Psychiatric hospitalization disposition	53	23.6%
Police involvement in crisis event	18	8.0%
<u>Client presenting problems</u>		
Suicidal ideation/ behavior	83	36.9%
Depression	80	35.6%
Substance abuse/ intoxication	67	29.8%
Active psychotic symptoms	34	15.1%
Agitation/ anxiety/ phobias	28	12.4%
Aggressive/ threatening behavior	27	12.0%
Domestic conflict/ abuse	21	9.3%
Medical problems/ needs	12	5.3%
Trauma/ grief	8	3.6%
Mania/ hypomania	7	3.1%
Cognitive impairment (due to dementia/ mental retardation/ developmental disabilities)	6	2.7%

The results of the logistic regression analyses are summarized in Table 3. Due to the elimination of cases with missing data points, 204 cases were included in the logistic regression analysis, 49 (24.0%) of which had a disposition for hospitalization.

Table 3. Summary of logistic regression analyses & odds ratios associated with psychiatric hospitalization referral.

(N=204)	Basic Model*** (R ² = .15)		Intermediate Model*** (R ² = .24)		Full Model*** (R ² = .26)	
Independent Variables	Odds Ratio	95% C.I.	Odds Ratio	95% C.I.	Odds Ratio	95% C.I.
Block 1:***						
Psychotic	2.95*	1.13-7.69	3.55*	1.29-9.74	4.16**	1.43-11.98
Suicidal	2.56*	1.19-5.49	2.49*	1.11-5.54	3.24*	1.37-7.70
Police involved	11.18***	3.03-41.16	9.55**	2.47-36.73	10.80**	2.68-43.51
Block 2:**						
Living with family			.42*	.19-.95	.43*	.19-.98
Covered by medical insurance			2.79*	1.05-7.46	2.90*	1.08-7.80
Income source:						
Social service benefits			Contrast**		Contrast**	
Employment			2.96*	1.06-8.25	3.31*	1.16-9.45
Other/ none			4.10**	1.66-10.10	4.62**	1.83-11.68
Block 3:						
Inpatient substance abuse treatment - prior 6 months					3.78	.99-14.33

*p<.05. **p<.01. ***p<.001.

Basic Model: Crisis event variables

Intermediate Model: Crisis event variables & sociodemographic variables

Full Model: Crisis event variables, sociodemographic variables, & mental health service use history variables

Odds ratios for each predictor variable are the incremental odds for predicting hospitalization referral in a particular model while holding all other variables within that model constant.

First, crisis event variables (block 1) were entered to create a basic model for psychiatric hospitalization decisions, which included active psychotic symptoms, suicidal ideation or behavior, and police involvement (each significant at $p < .05$). The basic model accounted for 15% of the variance in psychiatric hospitalization decisions. Next, variables in the basic model were retained and sociodemographic variables (block 2) were entered to create an intermediate model, which additionally included living situation (with or without family), medical insurance coverage, and primary income source (each significant at $p < .05$). The inclusion of these sociodemographic variables accounted for an additional 9% of the variance in hospitalization decisions over and above the basic model, and this difference was statistically significant, block $\chi^2(4, N = 204) = 14.02, p < .01$. Finally, variables in the intermediate model were retained and mental health service use history variables (block 3) were entered to create a full model. Inpatient substance abuse treatment within the prior 6 months was included in the full model, but the effect for this variable fell just short of significance ($p = .051$). The inclusion of this mental health service use history variable accounted for an additional 2% of variance in hospitalization decisions over and above the intermediate model, and this difference did not reach statistical significance, block $\chi^2(1, N = 204) = 3.47, p = .062$.

The odds ratios (relative odds of a hospitalization referral) presented in Table 3 in the intermediate model indicate that, after controlling for other variables: a) crisis events involving police were nearly 10 times as likely to have a disposition for hospitalization as those without police involvement; b) clients with active psychotic symptoms were more than 3 times as likely to be referred for hospitalization as those without active psychotic symptoms; c) suicidal clients were more than twice as likely to be referred for

hospitalization as those who were not suicidal; d) clients who were living with family members were 58% less likely to be referred for hospitalization than those who were not living with family; e) clients who were covered by medical insurance were nearly 3 times as likely to be referred for hospitalization as uninsured clients; f) employed clients were nearly 3 times as likely to be referred for hospitalization as unemployed clients with social service benefits; and g) clients without employment or social service benefits were more than 4 times as likely to be referred for hospitalization as unemployed clients with social service benefits.

CHAPTER 4 DISCUSSION

The present study examined the degree to which crisis event characteristics predicted the decision to psychiatrically hospitalize mobile crisis clients, and the incremental predictive efficacy of sociodemographic and mental health service use history characteristics of mobile crisis clients. Crisis event characteristics found in the present study to be significantly and positively associated with the likelihood of hospitalization referral included police involvement, active psychotic symptoms, and suicidal ideation or behavior. These findings are consistent with those reported in previous studies on predictors of hospitalization among mobile crisis clients (Guo et al., 2001; Hugo et al., 2002; Min et al., 2005; Brooker et al., 2007), and with the findings of a number of studies conducted in psychiatric emergency room settings (e.g., Hillard et al., 1988; Rabinowitz et al., 1995; Sullivan et al., 1997; Lidz et al., 2000; Lincoln et al., 2006).

Among the crisis event variables found to be associated with hospitalization decisions, police involvement demonstrated the strongest association with the odds of hospitalization referral. Crisis events involving police may involve individuals who demonstrate greater clinical severity and/or dangerousness, as suggested by a number of previous studies (McNiel et al., 1991; Sales, 1991; Watson et al., 1993; Way, Evans, & Banks, 1993; Redondo & Currier, 2003). On the other hand, Way and colleagues (1993) suggested that individuals might be perceived by crisis workers as more dangerous merely due to the presence of police, rather than by objective standards. Other researchers have attributed the higher likelihood of hospitalization among crisis events

involving police to the influence exerted by police on disposition decisions (Lidz et al, 2000). Further research is required to clarify how police presence is related to disposition decisions.

Sociodemographic characteristics found to significantly contribute to the prediction of hospitalization decisions over and above crisis event characteristics included medical insurance coverage, living situation, and primary source of income. Crisis events involving individuals with medical insurance coverage were found to be more likely to have a disposition for hospitalization than those involving uninsured individuals. Some researchers have suggested that insurance status can substantially affect an individual's ability to access hospital-based care (Segal, Akutsu, & Watson, 2002; Lincoln, 2006; White, Bateman, Fisher, & Geller, 1995). For example, White and colleagues (1995) noted that lack of insurance coverage was one commonly cited reason for which individuals were refused hospital admission.

In addition, individuals who lived with family members were found to be significantly less likely to be referred for hospitalization than those who were not living with family, a result that is consistent with the relationship between living situation and hospitalization reported by Min and colleagues (2005). Individuals who live with family members might be perceived by crisis workers as having greater available social support to offset or alleviate the severity of the crisis. In addition, the availability of family members may facilitate recovery in the community and improved access to outpatient treatment, and thus avert the need for hospitalization (Young et al., 2005). Although not addressed in this study, several studies have suggested that the type of interactions among family members (e.g., degree of criticism, anger expression, positive support) might

affect the severity of symptoms and the likelihood of relapse and rehospitalization (Barowclough & Hooley, 2003; Miklowitz, 2007).

Results regarding primary income source diverged from some previous findings (McNeil et al., 1992; Slagg, 1993; Schnyder et al., 1995; Schnyder et al., 1999; Min et al., 2005) in that individuals who were employed were found to be more likely to be referred for hospitalization than those who were unemployed but receiving social service benefits. However, even more dramatic was the increased likelihood of hospitalization referral found among those with neither employment nor social service benefits when compared to those with social service benefits. The current study's findings regarding primary income source might indicate a higher likelihood of hospitalization referral among those with the lowest and the highest levels of financial resources in this population. Alternatively, social service benefits could be a marker for other services that an individual is receiving in the community, such as case management services. Crisis workers may be less likely to refer individuals for hospitalization if alternative services are in place to assist crisis resolution in the community.

Some crisis event and sociodemographic predictor variables identified in the current study overlap with variables found in previous studies to be associated with recidivist use of inpatient and/or crisis services (e.g., Lyons, O'Mahoney, Miller, Neme, Kabat, & Miller, 1997; Segal et al., 2002; Pasic et al., 2005). Accordingly, the current study's failure to identify significant relationships between aspects of prior mental health service use and hospitalization decisions might be attributable to the fact that the current study controlled for crisis event and sociodemographic predictor variables that could be associated with both current disposition and previous mental health service use. In

addition, other aspects of prior mental health service use, not measured in this study, may be associated with hospitalization decisions.

Previous research has primarily focused on identifying clinical and other crisis event characteristics associated with the decision to hospitalize in psychiatric emergency services. While Anderson and Newman's (1973) behavioral model of health service utilization and similar conceptual frameworks highlight the theoretical relevance of sociodemographic characteristics to disposition decisions, the independent relationships between sociodemographic characteristics and hospitalization decisions have not been extensively explored.

In addition, some researchers have suggested that sociodemographic characteristics may not contribute to the prediction of hospitalization decisions, particularly when controlling for clinical and other crisis event variables (Klinkenberg & Calsyn, 1998; Blitz et al., 2001). However, the current study's findings provide support for the incremental predictive validity of sociodemographic characteristics. The identification of sociodemographic characteristics related to hospitalization decisions may provide information about vulnerability or protective factors that affect crisis workers' judgments regarding an individual's clinical need for hospitalization and about factors that affect an individual's ability to access inpatient or outpatient care.

Several limitations of the current study should be noted. First, the clinical characteristics examined in the current study are derived from the primary and secondary presenting clinical problems identified for a crisis event based on the clinical impressions of paraprofessional crisis workers upon on-site contact. Thus, clinical characteristics

ascertained for a crisis event may not include a comprehensive array of potential problems and may not have been identified through standardized assessment methods.

The current study also did not examine clinical symptom severity. The severity of clinical symptoms might be more pertinent than the particular types of presenting symptoms or problems to crisis workers' judgments about functional impairment, level of risk, and corresponding need for psychiatric hospitalization.

In addition, varying levels of missing data for sociodemographic and mental health service use variables limited the sample that could be used for analysis and may have compromised the validity of the results. The presence of repeat clients within the sample of crisis events, while a typical occurrence in psychiatric emergency services, may represent an additional threat to the validity of the results. Furthermore, the use of computer-controlled stepwise procedures, while recommended for predictive research in relatively underdeveloped areas such as the one under study, may have capitalized on random variations in the data that are idiosyncratic to the sample (Menard, 2002).

The current study was further limited by the unavailability of data about hospital admissions that occurred as a result of hospitalization referrals by the mobile crisis team. Thus, the present findings only relate to factors associated with a crisis worker's decision whether or not to refer a client to the psychiatric emergency room for possible psychiatric hospitalization. Factors related to hospital admissions that occur among referrals by mobile crisis teams should be examined in future studies.

One difficulty inherent in the interpretation of research findings in this area is that factors associated with hospitalization decisions can be highly affected by a variety of systemic variables related to the particular policies and practices of the treatment setting.

Only a few empirical examinations of factors related to disposition decisions (e.g., Lidz et al., 2000; Lincoln, 2006) have additionally incorporated qualitative approaches (e.g., observations, interviews, record reviews) designed to investigate organizational norms and practices in psychiatric emergency service settings that affect the triage decision-making process. Similar use of complementary qualitative and quantitative methodology should be employed further to inform the development of hypotheses and the interpretation of findings regarding triage decisions in psychiatric emergency services.

In addition, future studies should incorporate measures from validated instruments used by crisis workers during crisis assessments, particularly since it may improve inter-observer agreement in the identification and rated severity of clinical problems (Way, Allen, Mumpower, Stewart, & Banks, 1998). The relationship between sociodemographic characteristics and hospitalization decisions also warrants further research to determine if the current study's findings are replicable or generalizable across settings, and to explore possible explanations for these relationships. In addition, future studies should examine additional aspects of mental health service use, such as level of outpatient service use, frequency of crisis service use, or number of previous hospitalizations, that may be related to the likelihood of hospitalization referral among mobile crisis clients.

Finally, given that the lack of consensus regarding explicit criteria for hospitalization decisions is likely to contribute to variability in triage decision-making (Way et al., 1992), the reliability of judgments about hospitalization across mobile crisis teams and across individual crisis workers constitutes another important area for future

research. Further research of this nature will help to clarify the characteristics of at-risk populations and inform crisis intervention training and service development.

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Pages Must Be Faxed Top First

Required Fields

Client's Reference No.:

2	0									
---	---	--	--	--	--	--	--	--	--	--

Crisis Event Date:

Month Day Year

				2	0		
--	--	--	--	---	---	--	--

Print Client's Name: _____

USE A BLACK PEN

- Use original form
- Fill in circles completely
- Print clearly
- If an error is made, discard and start over

Yes No

C

1. **ACCESS CONSULT:** ACCESS staff informed CMO staff whether client has prior diagnosis and treatment history with AMHD
2. **KNOWN TO ACCESS:** ACCESS staff reports that client has a positive history of a prior diagnosis and treatment with AMHD
3. **PSYCHIATRIC CONSULT:** CMO staff consulted with on-call psychiatrist for medication, hospitalization, or other issues

3a. If Yes above, Doctor's name:

[illegible]

3b. If Yes above, time of consult.

AM



3c. If Yes above, Doctor's recommendation (specify): (100 character limit)

--

4. PRIMARY PRESENTING PROBLEM (select only one):

- | | | |
|--|---|---|
| ☐ Substance Abuse | ☐ Verbally Threatening Behavior | ☐ Trauma/Loss/Grief |
| ☐ Symptoms of Mental Illness and Substance Abuse (MI/SA) | ☐ Physically Violent Behavior | ☐ Medical Problems/Treatment Needs |
| ☐ Depressed Mood | ☐ Victim of Crime | ☐ Cognitive Impairment/Dementia/DD/MR |
| ☐ Manic/Hypomanic Mood | ☐ Domestic Conflict/Disturbance | ☐ Unspecified/Unknown/None |
| ☐ Hallucinations/Delusions/Active Psychosis | ☐ Domestic Abuse | ☐ Other Presenting Problem - Psychiatric or otherwise (specify 100 character limit)  |
| ☐ Agitation/Anxiety/Fears/Phobias | | |
| ☐ Suicidal Ideation/Threat/Plan | | |
| ☐ Suicide Gesture/Attempt | | |

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Crisis Mobile Outreach - Crisis Event Record



5. SECONDARY PRESENTING PROBLEM (select only one if applicable):

- | | | |
|--|---|---|
| ☐ None | ☐ Verbally Threatening Behavior | ☐ Trauma/Loss/Grief |
| ☐ Substance Abuse | ☐ Physically Violent Behavior | ☐ Medical Problems/Treatment Needs |
| ☐ Symptoms of Mental Illness and Substance Abuse (MI/SA) | ☐ Victim of Crime | ☐ Cognitive Impairment/Dementia/DD/MR |
| ☐ Depressed Mood | ☐ Domestic Conflict/Disturbance | ☐ Unspecified/Unknown/None |
| ☐ Manic/Hypomanic Mood | ☐ Domestic Abuse | ☐ Other Presenting Problem - Psychiatric or otherwise (specify) (100 character limit) → |
| ☐ Hallucinations/Delusions/Active Psychosis | | |
| ☐ Agitation/Anxiety/Fears/Phobias | | |
| ☐ Suicidal Ideation/Threat/Plan | | |
| ☐ Suicide Gesture/Attempt | | |

POLICE CONSULTATION

- | Yes | No | |
|-----------------------|-----------------------|---|
| ☐ | ☐ | 6. Police attended crisis scene |
| ☐ | ☐ | 7. Police dispatched to crisis scene independent of CMO |
| ☐ | ☐ | 8. Police requested to attend crisis scene by CMO staff |
| ☐ | ☐ | 9. Police and CMO dispatched together |
| ☐ | ☐ | 10. CMO staff collaborated with police for resolution of crisis |
| ☐ | ☐ | 11. Person in crisis appears to have engaged in criminal behavior |

NATURE OF CRISIS EVENT

12. Nature of Crisis Event (select only one):

- ☐ FALSE ALARM: CMO team attended crisis scene and no client or crisis evident
- ☐ INFORMAL: Crisis resolved prior to completion of assessment or relapse plan
- ☐ FORMAL: Crisis resolved with standard assessment and relapse plan
- ☐ HOSPITALIZE: Crisis resolution determined by need for client to have ER assessment for possible psychiatric hospitalization
- ☐ POLICE DIVERT: Crisis resolution determined by police discretion to select pre-booking diversion for person in crisis
- ☐ POLICE ARREST: Crisis resolution determined by police decision to arrest client
- ☐ OTHER (specify) → (100 character limit)
- ☐ NO RESOURCES: Crisis not resolved due to unavailability of needed resources (specify unavailable resources below) → (100 character limit)
- ☐ INCOMPLETE: → 12a. Incomplete assessment due to (select only one)
- | | |
|--|--|
| ☐ Intoxication | ☐ Uncooperative attitude or too angry/agitated |
| ☐ Psychiatric symptoms | ☐ Cognitive impairment or limitations from possible MR or DD or dementia |
| ☐ Both | ☐ Other reason for incompleteness or inability (specify) → |
| ☐ Language barrier | |

13.
PRIMARY
DISPOSITION
OR REFERRAL
(select only one):

14.
SECONDARY
DISPOSITION
OR REFERRAL
(select only one if
applicable):

- ☐ None
☐ Assessment Referral: Crisis resolved and client referred to ACCESS for MH &/or SA assessment
☐ CSM Referral: Crisis resolved and client referred to CSM for follow-up services
☐ MH Referral: Crisis resolved and referral to existing outpatient MH provider
 Indicate existing MH provider (select only one):
 ☐ CMHC ☐ Kaiser ☐ V.A. ☐ Private
 ☐ Other (specify): _____

☐ ICM/ACT Client: Crisis resolved and client referred to existing ACT or ICM provider (specify) _____

☐ Voluntary Transport: } Indicate ER hospital: ☐ Queen's ☐ Castle ☐ Tripler
☐ Involuntary MH-1: } Indicate reason for hospitalization: ☐ Psychiatric symptoms ☐ Substance intoxication ☐ Both
☐ Involuntary MH-2: } ☐ Other (specify): _____
☐ Involuntary MH-4: }

☐ LCRS Referral: Crisis resolved and client referred to LCRS housing
☐ IHS Referral: Crisis resolved and client referred to IHS shelter
☐ Safe House Referral: Crisis resolved and client referred to Womens Shelter or safe housing
☐ Other House Referral: Crisis resolved and client referred to other housing (specify) _____

☐ Medical Emergency: Client provided medical treatment by emergency medical services at scene
☐ Medical Referral: Client referred for evaluation/treatment of non-emergency medical condition(s)
☐ Pre-Booking Diversion: Police use their discretion to allow client option of pre-booking Jail Diversion
☐ Arrest: Police arrest client and transport client to Police Cell Block
☐ Clearance Arrest: Police arrest & transport to hospital for clearance before going to cell block
☐ Other Referral or Disposition (specify): _____

ASSESSMENT RESULTS

15. Crisis Triage Rating Scale (CTRS) score

- 1 ○ 4 ○ 7 ○ 10 ○ 13
○ 2 ○ 5 ○ 8 ○ 11 ○ 14
○ 3 ○ 6 ○ 9 ○ 12 ○ 15

16. Drake: Alcohol score

- 1 ○ 4
○ 2 ○ 5
○ 3

17. Drake: Substance Abuse score

- ☐ 1 ☐ 4
☐ 2 ☐ 5
☐ 3



Crisis Mobile Outreach - Crisis Event Record



Yes No

- ☐ ☐ 25. Currently receiving SSI?
- ☐ ☐ 26. Currently receiving SSDI?
- ☐ ☐ 27. Currently receiving General Assistance?
- ☐ ☐ 28. Currently receiving Housing Section 8?
- ☐ ☐ 29. Homelessness at the present time?
- 29a. If Yes (select only one):
- ☐ Homeless - Sheltered
- ☐ Homeless - Not Sheltered
- ☐ ☐ 30. Homelessness in the last 6 months?
- ☐ ☐ 31. Psychiatric hospitalization anywhere in the last 6 months?
- 31a. If Yes, in the last 30 days?
- ☐ ☐ 32. Inpatient Tx for substance abuse in the last 6 months?
- 32a. If Yes, in the last 30 days?
- ☐ ☐ 33. In the past six months, have you been arrested?
- 33a. If Yes, in the last 30 days?
- ☐ ☐ 34. CMO team contact in the last 6 months?
- 34a. If Yes, in the last 30 days?
- ☐ ☐ 35. Calls to ACCESS for help in the last 6 months?
- 35a. If Yes, in the last 30 days?
- ☐ ☐ 36. Currently covered by medical insurance?

37. Employed (select only one):

- ☐ Yes ☐ No, but interested in employment
- ☐ No, not seeking employment

37a. If employed, for how long in the same job?

- ☐ Less than 6 months
- ☐ 6 months to 1 year
- ☐ Greater than 1 year

37b. If employed, hours worked per week

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38. In school (select only one):

- ☐ No ☐ Full time ☐ Part time

39. Highest education level (select only one):

- | | |
|--|---|
| ☐ Pre-Kindergarten | ☐ Grade 10 |
| ☐ Kindergarten | ☐ Grade 11 |
| ☐ Grade 1 | ☐ Grade 12 |
| ☐ Grade 2 | ☐ Vocational, Business or Tech School |
| ☐ Grade 3 | ☐ Professional School |
| ☐ Grade 4 | ☐ College |
| ☐ Grade 5 | ☐ Masters |
| ☐ Grade 6 | ☐ Doctorate |
| ☐ Grade 7 | ☐ Other |
| ☐ Grade 8 | ☐ Unknown |
| ☐ Grade 9 | |

If the crisis client appears stable, please ask the following question:

40. Would you be willing to participate in a survey conducted by consumers about your experience with Crisis Mobile Outreach? ☐ Yes ☐ No

40a. If yes, please indicate the best way to contact you - obtain phone number and/or address (100 character limit) ▼

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CMO STAFF (Signatures of all attending CMO staff; print name to the right)

Signature

Print Name

Signature

Print Name