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Field Visit Contact Rate by Mobile Crisis Teams as a Crisis System Performance Metric

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Abstract

Objective: The authors investigated associations between rates of contact with individuals in distress during field visits by mobile crisis teams and client and referral source characteristics.

Methods: In this retrospective observational study of an urban mobile crisis program, call logs (N=2,581) were coded for whether an attempted field visit resulted in a client evaluation. Logistic regression analyses examined potential associations with client age, gender, race-ethnicity, primary language, living situation, insurance, and referral source.

Results: Contact was made with 77% of adults and 97% of children referred to mobile crisis teams. Field visit contact rates differed by age. Unsuccessful visits were more likely when the referral source was from institutional settings than from individuals.

Conclusions: Approximately one-quarter of attempted field visits with adults by an urban mobile crisis team were not completed, particularly among referrals from institutional settings. As mobile crisis services proliferate, field visit contact rate could be a key performance metric for these critical services.

Mobile crisis (MC) services, which were present in all 50 U.S. states as of July 2022 (1), have been increasingly promoted as a strategy for preventing suicide and as an alternative to inappropriate law enforcement responses for people in crisis (2). First developed in the 1970s (3), MC services have been prioritized by policy makers (4) as a way of addressing emergency department (ED) boarding of psychiatric patients (5) and inadequate psychiatric inpatient bed capacity (6, 7), as well as for diverting individuals from criminal-legal settings. MC teams comprise clinicians, medics, peers, and other specialists and have a unique ability to respond rapidly in an environment that is less restrictive than acute care settings (8) and to coordinate with community partners, such as law enforcement and EDs, to provide care and divert people from those settings (9).

MC teams have been studied for their impact on post-crisis service utilization, including increased community engagement (10–12), decreased ED utilization (13), and decreased psychiatric admissions (14). However, significant gaps remain in the evidence base regarding clinical best practices in MC settings.

Little is known about how often attempted MC field visits result in an evaluation, which has major implications for efficient use of a scarce resource. When MC teams are dispatched into the field in response to a crisis call requiring an in-person evaluation, inevitably scenarios will arise in which clinicians are unable to evaluate the client for a range of reasons. Such reasons include the MC team not being able to locate the client or the client declining MC services, which are typically initiated on a voluntary basis (although they may later result in involuntary treatment if the client's condition meets the relevant criteria). In this study, we conducted an evaluation of field visit contact rates in a self-dispatched MC team serving a highly diverse urban population.

METHODS

This was a retrospective observational study of all field visits attempted by the San Francisco Comprehensive Crisis Services (SFCCS) MC team between January 2016 and June 2019. Data were extracted from manually entered crisis call logs based on staff-completed clinical records. SFCCS is a publicly funded provider of MC services for adults and children in the city and county of San Francisco. SFCCS staff includes social workers, psychologists, and nurses who respond to approximately 3,000 crisis calls annually and dispatch MC providers for approximately 600 visits per year. The decision to dispatch an MC team is made by the supervising SFCCS clinician; other calls are resolved by telephone or referred to 911 for emergency situations. SFCCS rarely dispatches MC teams to bystander calls because response times (typically 1–2 hours) are not rapid enough to reach people in crisis in public.

Our primary outcome variable was field visit contact rate, defined as the proportion of client evaluations among all attempted field visits by the MC team. A visit was coded

as unsuccessful if no evaluation occurred and the reason for the unsuccessful visit was documented as either inability to locate the client or the client's refusal of service.

To evaluate associations between unsuccessful visits and their possible predictors, we examined client characteristics, including age, gender, race-ethnicity, primary language, living situation, and insurance status. Living situation was defined as being unstably housed because of lack of permanent residence (i.e., homeless, single-room occupancy, shelter, or residential care). Insurance status was either private or public (i.e., Medicaid or Medicare, Children's Health Insurance Program, U.S. Department of Veterans Affairs, TRICARE, or uninsured). Referral sources were grouped by institutions (i.e., hospital, city agency, law enforcement, community-based organization, or provider), which we hypothesized would have professionals trained to engage a person in crisis, and individuals (i.e., family, friend, self, or residence), who we hypothesized might have a personal connection to engage the person in crisis; the remainder originated from other sources that could not be clearly categorized with the available information in the crisis call logs. Day and time when the call was received were coded according to full versus reduced staffing levels (staffing levels on nights and Sundays were considered reduced because field visits were attempted only for children during those times).

Crisis call logs were coded for key variables and tabulated for descriptive statistics. Only cases with clearly defined disposition outcomes were included in the analysis (N=2,581 of 3,207 total records, 80%). Given the very small number of adult field visits attempted during hours with low coverage (N=91 of 1,411, 6%), regression analyses were restricted to data collected during periods with full staffing levels (N=1,320). We first performed unadjusted logistic regression analyses with field visit contact as the dependent outcome and demographic and referral source characteristics as potential predictors. We then conducted fully adjusted logistic regression analyses by using field visit contact as the dependent outcome and controlling for all demographic and referral source characteristics, including interaction terms to assess potential effect modification by covariates. We used inverse probability weighting to account for bias introduced by missing data (11.2% of all values, N=1,263 of 11,288). All analyses were conducted at the p=0.05 level of statistical significance and performed with Stata/IC 15.1. The study protocol was approved by the institutional review board at the University of California, San Francisco (IRB 19–28717).

RESULTS

Overall, the rate of field contact visits was 86% (N=2,216 of 2,581). Children had a very high field visit contact rate of 97% (N=1,140 of 1,170). Therefore, subsequent results and analyses are reported only for adults in the sample, for whom the field visit contact rate during full MC team staffing levels was 77% (N=1,015 of 1,320). Table 1 summarizes our findings.

The mean±SD age at evaluation for the adult population was 47.3±17.5 years, with a skew toward the 55 age group. Of the 1,320 adult field visits during full staffing levels, requests for service from institutional settings included 22% (N=292) from a provider, community-based organization, or case manager; 8% (N=110) from hospitals; 2% (N=27)

from law enforcement; and 7% (N=90) from city agencies. Individual referral sources included 23% (N=297) by a family or friend and 4% (N=56) from a residence; 4% (N=49) were self-callers, and only 5 calls (<1%) originated from bystanders. Overall, 25% (N=329) of calls originated from other sources, with 5% (N=65) missing information about the type of caller. SFCCS conducted similar numbers of field visits between 2 p.m.–10 p.m. (52%, N=684) and 6 a.m.–2 p.m. (48%, N=636). Most field visits occurred on weekdays (92%, N=1,219), with Fridays (21%, N=282) being the busiest day of the week. Overall, 305 visits were unsuccessful because clients were not found (89%, N=270) or refused evaluation (11%, N=35).

Results of logistic regression of field visits occurring during periods with full staffing levels (N=1,320) revealed that the adjusted OR (AOR) of an unsuccessful field visit was 2.35 times (95% CI=1.11–4.99; $p=0.026$) higher among people ages 25–34 than among those ages 18–24. In addition, an AOR=0.65 (95% CI=0.43–0.98; $p=0.038$) indicated a lower likelihood of an unsuccessful field visit among referrals made by an individual compared with referrals from institutions. All other covariates, including race-ethnicity, were not found to be statistically significantly associated with field visit contact rates. Stratification and interaction analyses indicated that only gender had the potential to modify the main association of contact rate with age, with significantly higher odds of not being contacted for the older age groups among females but not males.

DISCUSSION

This study of an urban MC program revealed that 77% of attempted field visits resulted in an evaluation of adults in crisis and that 97% of field visit evaluations were completed for children. We also found that field visits were more likely to make contact with adults when the referral source was another individual. Both findings suggest that MC teams were more likely to successfully contact the individual in crisis when the client was familiar with the person placing the crisis call—such as was the case for children under the supervision of their parents, teachers, or caretakers and for adults accompanied by family or friends.

Apart from lower field visit contact rates among young adults compared with transition-age youths, we observed no significant differences in outcomes by gender, race-ethnicity, language, or living situation. This is an encouraging finding, indicating that this MC program may be less affected by mental health disparities that are widespread in the United States. Although demographic differences did not appear to play a role in field visit contact rates within the SFCCS program, future studies should explore whether differences in underlying social determinants and demographic characteristics have effects on which callers can access a crisis line and on decisions by clinicians to attempt an MC field visit, resolve calls with phone support, or transfer calls to 911.

Clients may decline evaluation by an MC team because of fear of being hospitalized, incarcerated, or given medication against their will—all of which may be based on previous traumatizing experiences. Other reasons for declining services may include disagreement between the client and clinician about the need for an evaluation, stigma attached to mental illness, limited privacy in field-based evaluation settings, or concerns about the cost of

services. Further research is needed to identify barriers to client engagement and optimize strategies to increase engagement.

The results of this analysis reveal that additional strategies may be needed to improve care by MC services, particularly for adult clients referred by health care, law enforcement, or other city agency staff. Such strategies may include prioritizing field visits and minimizing response times for calls originating from institutional referral sources and for young adults. Moreover, programs may develop training sessions and partnerships with frequent referral sources to implement best practices for encouraging clients to remain onsite by using a noncoercive, trauma-informed approach. To establish the field visit contact rate as an MC service performance metric, validation in other settings and further refinement of measurement criteria is needed.

These findings also have financial implications for MC teams, which are rarely cost neutral (5). High staffing levels are needed to meet expectations for 24/7 rapid response times, but fluctuations in demand and unpredictable downtimes mean that programs are already burdened by inefficiencies. Given that unsuccessful field visits are not reimbursable, MC programs have a clear financial incentive to do everything possible to maximize field visit contact rates.

Several limitations of this study should be considered. Transforming free-text call log entries into categorical data limited the variables we could examine and could have altered the findings. Nearly one-fifth of outcome data were missing because of incomplete manual record keeping in crisis call logs, which means that this analysis may have over- or underreported the rate of field visit contacts. The available data did not allow for identification of duplicate clients or control for other variables of interest (e.g., reason for call or response time). Further, data documented by SFCCS clinicians may have been affected by recall bias. Focusing on an urban MC team limited the generalizability to other settings. The high percentage of callers with English as primary language may not be reflective of all San Franciscans in crisis and suggests that people with limited English proficiency may be less likely to access MC services. Finally, information was not available about the outcomes of the crisis field visits in terms of client satisfaction or service outcomes. Additional research is needed on how MC teams fit within systems of care.

CONCLUSIONS

The United States has seen the recent implementation of the national 988 crisis hotline, so coordination between crisis call centers and MC teams must be optimized to ensure efficient, high-quality crisis responses. As MC services proliferate, field visit contact rates could be considered as a performance metric for these critical services.

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HIGHLIGHTS

- Among attempted mobile crisis field visits, 77% resulted in a contact with adult clients and 97% in a contact with children.
- Unsuccessful field visits were more likely when the referral came from institutional settings (e.g., providers or city agencies) than from individuals.
- Field visit contact rate should be considered as a performance metric for mobile crisis services.

Demographic and call characteristics and odds of these characteristics resulting in unsuccessful mobile crisis team field visits to adults in distress

TABLE 1.

Variable	Total (N = 1,320) ^d			Unsuccessful field visit (N=305)						
	N	%	N ^b	% ^c	OR	95% CI	P	AOR ^d	95% CI	P
Demographic characteristic										
Age in years										
18–24 (reference)	139	11	20	14	1.00	–	–	1.00	–	–
25–34	235	18	65	28	2.14	1.02–4.48	.044 [*]	2.35	1.11–4.99	.026 [*]
35–44	216	16	52	24	1.56	.72–3.35	.260	1.58	.72–3.47	.253
45–54	255	19	50	20	1.62	.78–3.36	.201	1.62	.75–3.49	.216
55	475	36	118	25	1.94	.99–3.83	.055	1.95	.96–3.93	.063
Gender (N = 1,284)										
Female (reference)	530	41	131	25	1.00	–	–	1.00	–	–
Male	754	59	166	22	.98	.69–1.39	.890	1.01	.70–1.46	.958
Race-ethnicity (N=1,259)										
White (reference)	558	44	127	23	1.00	–	–	1.00	–	–
African American	266	21	66	25	1.21	.76–1.91	.420	1.31	.82–2.10	.259
Asian American	178	14	38	21	.89	.53–1.50	.655	1.02	.57–1.81	.945
Hispanic or Latino	151	12	37	25	.82	.45–1.52	.534	.93	.49–1.80	.837
Other ^e	106	8	22	21	.83	.43–1.59	.572	.88	.46–1.70	.707
Primary language (N = 1,114)										
English (reference)	1,028	92	241	23	1.00	–	–	1.00	–	–
Other	86	8	15	17	.76	.38–1.51	.436	.83	.39–1.78	.631
Living situation (N = 1,026)										
Housed (reference)	665	65	158	24	1.00	–	–	1.00	–	–
Unstably housed	361	35	88	24	1.04	.72–1.51	.826	.99	.67–1.46	.947
Insurance (N = 885)										
Private (reference)	117	13	31	27	1.00	–	–	1.00	–	–
Public	448	51	99	22	.69	.41–1.16	.157	.62	.36–1.06	.083
Other	320	36	81	25	.79	.46–1.34	.384	.72	.41–1.28	.267

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Variable	Total (N = 1,320) ^a		Unsuccessful field visit (N=305)				
	N	%	N ^b	% ^c	OR	95% CI	P
Referral source (N = 1,255)							
Institutions (reference)	519	41	134	26	1.00	—	—
Individuals	407	32	83	20	.67	.45–.99	.044*
Other	329	26	80	24	.80	.49–1.29	.360
					AOR ^d	95% CI	P
					1.00	—	—
					.65	.43–.98	.038*
					.80	.49–1.32	.379

^aThe total excluded calls received outside hours (10 p.m.–6 a.m. Monday–Saturday or on Sundays) with full staffing levels.

^bTotals for some subcategories may not add up to N=305 because of missing data.

^cRow percentages are shown.

^dAdjusted ORs (AORs) were adjusted for all demographic and referral source characteristics.

^eIncludes Middle Eastern or North African, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, biracial, and other races.

* Statistically significant (p<0.05).