Police Encounters Involving Citizens With Mental Illness: Use of Resources and Outcomes

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Objective: **Few studies have addressed use of resources in police interventions involving individuals with mental illness. The time police officers spend on interventions is a straightforward measure with significant administrative weight, given that it addresses human resource allocation. This study compared the characteristics of police interventions involving individuals with mental illness and a control sample of individuals without mental illness.** ***Methods:*** **A total of 6,128 police interventions in Montreal, Québec, were analyzed by using a retrospective analysis of police intervention logs from three days in 2006. Interventions involving citizens with (N=272) and without (N=5,856) mental illness were compared by reason for the intervention, the use of arrest, and the use of police resources.** ***Results:*** **Police interventions involving individuals with mental illness were less likely than those involving individuals without mental illness to be related to more severe offenses. However, interventions for minor offenses were more likely to lead to arrest when they involved citizens with mental illness. Interventions for reasons of equal severity were twice as likely to lead to arrest if the citizen involved had a mental illness. After controlling for the use of arrest and the severity of the situation, the analysis showed that police interventions involving individuals with mental illness used 87% more resources than interventions involving individuals without mental illness.** ***Conclusions:*** **Future studies using administrative police data sets could investigate the use of resources and division of costs involved in new programs or partnerships to better address the interface of criminal justice and mental health care. (*Psychiatric Services* 65:511–516, 2014; doi: 10.1176/appi.ps.201300053)**

Police officers wear many hats as they carry out their main role as society's peacekeeper. Because of their around-the-clock accessibility, they are exposed to an extensive range of situations and to citizens from all walks of life, including individuals with mental illness (1–6). Even though encounters with individuals with mental illness represent a small proportion of all police interactions (7–10), their repetitive nature, elevated association with arrest, and sometimes fatal outcome raise important concerns. Furthermore, in the past decade, police services have shown greater interest in finding more efficient ways to allocate resources and training for interacting with individuals with mental illness, leading to the creation of various diversion programs and specialized intervention teams (11).

According to the theory of mental illness criminalization, individuals with mental illness are more likely to be arrested for minor offenses (12–14). However, arrest rates of individuals with mental illness seem more likely to be influenced by an aggressive demeanor than by the presence of mental illness itself (4,15). These results suggest that the higher arrest rates among individuals with mental illness are due not to a deliberate policy but rather to the police response to an individual's presenting behavior. Nevertheless, individuals with mental illness are often arrested because of the behavioral expression of certain symptoms, which can be perceived as disrespectful or hostile (4).

Justice involvement of individuals with mental illness is associated with psychosocial consequences, but it also implies certain financial costs, including the public-safety and justice-system resources implicit in police intervention. Although a considerable number of studies have examined the arrest rate following interventions involving individuals with mental illness (3,4,15–17), few have addressed the use of resources involved in these interventions. We know little about the use of police resources in interventions involving individuals with mental illness above and beyond that these interventions have been known to take up more police time and effort

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than interventions with citizens without mental illness (1,18–20) and that the outcome of an intervention plays a major role in the amount of resources used (3,7). Nonetheless, time spent on interventions is a relatively straightforward way to measure police involvement and has significant administrative weight, given that it addresses issues of human resource allocation.

Three methods have been used in previous studies to gather information on police interventions: surveys, in situ observation, and analysis of administrative data. Surveys have limited ability to obtain valid and accurate measures. As for in situ observation, accessing large enough samples is extremely costly and time consuming. Hartford and others (9) proposed an efficient and accurate alternative to identify interactions between police services and citizens with mental illness. Using a police administrative database, they developed an algorithm that helps identify indicators of a possible mental health problem.

Until recently, studies estimating time allocated by police services to individuals with a mental illness were based on small samples (3,21) or on police officers' perceptions (1,18,20). Furthermore, use of resources by police for persons with and without a mental illness had not been compared (3,7,21). Finally, duration of the intervention is not a true estimate of the human resources expended because it does not take into consideration other factors, such as the number of police officers dispatched for each intervention (1,3,7,18,20,21).

The main objective of this study was to compare the characteristics of police interventions among individuals with mental illness and a control sample of citizens without a mental illness. A retrospective design was used to compare reason for the intervention, use of arrest, and use of resources. This study was approved by the Douglas Mental Health University Institute Research Ethics Board, and data were obtained with permission from the Québec Access to Information Commission.

Methods

Setting

This study was carried out in Montreal, a large city of 1,854,442 inhabitants located in Québec, Canada. In 2006, a total of 4,383 police officers were employed by the Montreal police service (22). Little specific training on mental health or prebooking diversion programs was available to police officers at the time of the study. A team of emergency mental health specialists was available to police officers on request (Urgence Psychosocial-Justice), but it was requested in only 1.5% of all mental health calls (7). Few formal partnerships existed between the police service and the mental health system.

Sample

To identify interventions involving a person with mental illness, we analyzed the content of intervention logs by using a method similar to that of Hartford and others (9) for three randomly selected days in 2006: February 1, April 25, and July 7. Initial analyses showed no major differences between days 1–3, respectively, in number of calls (N=2,041, N=1,965, and N=2,122), number of mental health–related calls (N=83, N=89, and N=100), number of arrests (N=65, N=66, and N=69), or use of police resources (44.7±3.0, 40.4±3.3, and 40.4±3.3 minutes per intervention).

As we described in a previous study (7), three main criteria were used to identify interventions involving individuals with mental illness: the address of the caller and of the intervention, the code for reason of event, and a content analysis of key words related to mental health in the intervention logs (filled in by police officers and 911 operators). Over the three days, there were 8,485 interventions, and 272 (3.2%) involved an individual with mental illness (95% confidence interval=2.7%–3.7%, given a total of 913,679 interventions by the Montreal police service in 2006). As we described previously (7), 900 interventions, corresponding to approximately 15% of the total sample of interventions, were randomly selected and submitted to interrater agreement testing in order to ensure validity of the mental illness identification. Interrater reliability for content analysis was good (κ_c=.76; 98.2% agreement).

Interventions that did not involve an individual with mental illness constituted the control sample. In order to maintain relative comparability between groups, interventions with codes for reason of event that were not found among the interventions involving individuals with mental illness were not included in the control group (N=1,727). Moreover, 630 interventions lasting less than one minute were excluded from the analyses, given that they were considered to have been "cancelled." This yielded a control sample of 5,856 interventions.

Characteristics of the interventions

Reason. Event codes were categorized into six themes, similar to those used by Labonté (23): offenses against persons (events in which violence against a person may have been perpetrated), offenses against property (events that may have involved principally material loss or breakage, such as stealing or mischief), other criminal offenses (all other offenses, such as drug possession or breach of probation), potential offenses (incidents stemming from crises, contentious situations that may degenerate into violence, and antisocial acts or situations that suggest a crime is about to be committed), individual in distress or in a dangerous situation (events that are not offenses but that can compromise personal or public safety, such as a suicide attempt), and other noncriminal incidents. A severity scale from least to most severe was created by assigning each category an ordinal indicator from 0, for other noncriminal incidents, to 5, for offenses against persons.

Use of resources. The duration of the intervention was calculated by subtracting the dispatch time from the closing time of the intervention for patrol units involved in the intervention. Because all units did not spend the same amount of time on an intervention, the total police time for each intervention was calculated by multiplying the duration of the intervention by each patrol unit involved by the number of police officers per unit. Thus we obtained a measure of police work interpretable in minutes. The two measures

used to create this scale, the duration of the intervention and the number of police officers, can also be interpreted independently.

Use of arrest. The outcome of the intervention is entered by police officers at the end of each intervention. Given the literature on the criminalization of mental illness, we were particularly interested in arrest as a disposition.

Analyses

In order to respect the assumption of normality of parametric models, we used a logarithmic transformation (ln) to overcome the skewness in the distribution of resources use. Geometric means (GMs) and geometric standard deviation (GSD), which can be interpreted on a regular time scale (minutes), are presented to facilitate interpretation. Because the assumption of homogeneity of variances could not be respected in group comparisons, the Welch-Satterthwaite method (24,25) was used. For logistic regressions, standardized coefficients were calculated with the equation suggested by King (26).

Results

Reason for the intervention

Table 1 illustrates that the reasons for interventions involving individuals with mental illness and the control sample were not the same (V=.36, p<.001). Interventions involving individuals with mental illness were less likely than interventions involving the control sample to be categorized as offenses against property (2.2% versus 8.5%, φ=–.05, p<.001). No significant differences between the groups were observed for interventions for other criminal offenses. Interventions involving individuals with mental illness were less likely than interventions involving the control sample to be potential offenses (φ=–.14, p<.001). As would be expected, the category of individual in distress was overrepresented among interventions involving individuals with mental illness (34.2%) compared with interventions involving the control sample (2.4%) (φ=.34, p=.001). A point-biserial correlation showed an inverse relation between the presence of an individual with mental illness and the level of severity of the intervention (r_{pb}=–.11, p<.001); interventions involving individuals with mental illness were for less severe situations.

Table 1

Reason for police interventions involving individuals with or without a mental illness

Reason	No mental illness (N=5,856)		Mental illness (N=272)			
	N	%	N	%	φ[a]	p
Offense against person	213	3.6	11	4.0	.00	ns
Offense against property	496	8.5	6	2.2	–.05	<.001
Other criminal offense	238	4.1	6	2.2	–.02	ns
Potential offense	3,784	64.6	84	30.9	–.14	<.001
Individual in distress	139	2.4	93	34.2	.34	<.001
Noncriminal incident	986	16.8	72	26.5	.05	<.001
Total	5,856	100	272	100	.36[b]	<.001

[a] df=1

[b] df=5; Cramèr's V was used because of the number of degree of freedom.

Outcomes of police interventions

As shown in Table 2, 3.3% (N=200) of all interventions led to arrest. Interventions involving arrest accounted for 4.0% of interventions involving individuals with mental illness and 3.2% of interventions involving the control sample, a difference that was not statistically significant. However, there was a notable difference between the two groups in the percentage of interventions leading to arrest when the seriousness of the offense was taken into account. Interventions for property offenses (φ=.09, p=.046) and potential offenses (φ=.06, p<.001) were more likely to lead to arrest among individuals with mental illness compared with the control sample. There were no differences in the distribution of arrests of individuals with mental illness and the control group in interventions for offenses against persons, other criminal offenses, individual in distress, and noncriminal incidents.

A logistic regression analysis was carried out to assess whether the presence of an individual with mental illness in the intervention had some impact on the decision to arrest beyond the level of severity of the situation (χ^2=70.89, df=2, p=.001, Nagelkerke pseudo-R^2=.17). Even though the severity of the situation had the most important impact on arrest (B=.91, SE=.06, β=3.54, p<.001), the involvement of an individual with mental illness independently increased the odds of arrest by 2.04 when severity was kept constant (B=.71, SE=.34, β=.46, p=.037).

Use of resources

The three days of our study sample corresponded to 8,400 police work hours spent in interventions. Interventions involving individuals with a mental illness represented 4.4% of all police interventions, but they represented nearly twice the proportion of work hours spent in interventions (7.8%, N=652.2). As can be observed in Table 3, police spent an average of 2.2 times fewer minutes for interventions involving the control sample than for interventions involving individuals with mental illness (40.4 versus 89.1 minutes; p<.001). The independent comparisons of the two measures of resources showed that compared with interventions involving the control sample, interventions involving individuals with mental illness were longer (GM=23.8±3.1 versus GM=42.9±2.5 minutes; t=17.97, df=311.9, p<.001) and required more police officers (GM=2.0±1.6 versus GM=2.7±1.6 officers; t=–10.71, df=298.1, p<.001).

The difference in use of resources between groups varied according to the reason for the intervention. For all criminal offenses collapsed (offenses

Table 2

Reason for police interventions leading to arrest among individuals with and without mental illness

Reason	Without mental illness			With mental illness				
	Interventions (N)	Arrest		Interventions (N)	Arrest			
		N	%		N	%	φ[a]	p
Offense against person	213	33	15.5	11	2	18.2	.02	ns
Offense against property	496	46	9.3	6	2	33.3	.09	.046
Other criminal offense	238	81	34.0	6	4	66.7	.11	ns
Potential offense	3,784	19	.5	84	3	3.6	.06	<.001
Individual in distress	139	2	1.4	93	0	—	–.08	ns
Noncriminal incident	986	8	.8	72	0	—	–.02	ns
Total	5,856	189	3.2	272	11	4.0	.01	ns

[a] df=1

against persons, offenses against property, and other criminal offenses), there was no significant difference between the resources used for interventions involving individuals with mental illness (23 interventions; GM=127.7±2.9 minutes per intervention) and those involving the control sample (947 interventions; GM=107.8±2.8 minutes per intervention). There were also no significant differences between the two groups in the resources used for interventions involving individual in distress.

As shown in Table 3, marked differences were found between the groups in the resources used for interventions involving potential offenses ($p<.001$) and noncriminal incidents ($p<.001$), with interventions involving individuals with mental illness using more police resources (potential offenses, 73.0±2.5 versus 29.7±2.9 minutes; noncriminal incidents, 74.4±2.3 versus 44.7±2.8 minutes).

Table 3

Use of police time during interventions involving individuals with and without mental illness, in minutes[a]

Reason	Without mental illness (N=5,856)		With mental illness (N=272)		t	df	η	p
	GM	GSD	GM	GSD				
Offense against person	137.0	3.2	145.5	2.5	−.23	11.8	.02	ns
Offense against property	94.6	2.5	61.6	4.4	.72	5.1	.03	ns
Other criminal offense	113.3	2.9	198.3	1.6	–2.83	6.5	.18	.028
Potential offense	29.7	2.9	73.0	2.5	–8.96	88.3	.14	<.001
Individual in distress	93.7	2.8	114.4	2.9	–1.43	192.0	.09	ns
Noncriminal incident	44.7	2.8	74.4	2.3	–4.88	87.3	.15	<.001
Total	40.4	3.2	89.1	2.7	–12.95	306.8	.16	<.001

[a] Time is reported as a geometric mean (GM) and geometric standard deviation (GSD), which can be interpreted on a regular time scale (minutes).

Given that the probability of arrest was greater for more severe or critical situations, and that the outcome of an intervention is the most important factor influencing use of resources (7), one could be tempted to infer that the use of arrest explained why more severe situations used more resources. However, a multiple linear regression analysis ($F=265.7$, $df=3$ and 61, $p<.001$, $R^2=.12$) found that even after accounting for the major influence of severity of the intervention ($B=.13$, $SE=.01$, $\beta=.13$, $p<.001$) and arrest ($B=1.65$, $SE=.08$, $\beta=.25$, $p<.001$) on resource use, the involvement of an individual with mental illness incrementally increased the time of the intervention by 86.7%, when severity and arrest were kept constant ($B=.87$, $SE=.07$, $\beta=.15$, $p<.001$).

Discussion

As observed by Engel and Silver (15) in the United States, our results showed that interventions involving individuals with mental illness were less likely than interventions involving a control sample to be related to more severe offenses. More specifically, interventions involving individuals with mental illness were overrepresented among interventions for individual in distress and noncriminal incidents but not among interventions for criminal offenses. Only a small proportion of the interventions involving individuals with mental illness (4.0%) led to arrest. However, consistent with observations by Teplin (13), our results showed that compared with interventions involving individuals without mental illness, interventions involving individuals with mental illness were more likely to lead to arrest for minor offenses (other criminal offenses and potential offenses) but were not more likely to lead to arrest for more severe situations (offenses against person). In addition, interventions for reasons of similar severity were twice as likely to lead to arrest among individuals with mental illness than among the control sample. However, our administrative data set did not allow us to control for individual factors, such as the suspect's demeanor. According to Engel and Silver (15), police officers may

misinterpret some symptoms of mental illness: "Individuals with clinical symptoms of mental disorder may be arrested not because officers are intentionally 'criminalizing' them, but because officers fail to perceive the clinical symptoms of mental disorder among those arrested."

Our results showed that interventions involving individuals with a mental illness took twice as much police time as interventions involving the control sample. After controlling for the occurrence of arrest and the severity of the intervention, the analysis showed that an intervention involving an individual with a mental illness still used nearly 90% more resources than interventions involving the control sample. As observed in a previous study, other factors specific to mental illness, such as an outcome involving psychiatric hospitalization, can considerably increase the time used (7).

This use of resources should not be seen as ineffective. Individuals with mental illness have specific and often complex needs that must be addressed. As noted by Cotton and Coleman (27), police and providers of mental health services need to work together, each one influencing the other as they interact with the same population. Steadman and others (28) commented that "collaborations between the criminal justice system, the mental health system, and the advocacy community, when combined with essential elements in organization of services . . . may reduce the inappropriate use of jails to house persons with acute symptoms of mental illness."

The interpretation of the results of this study must take into account certain limitations. This study took place in one city, and the generalization of its results can be applied only to similar jurisdictions. Nevertheless, the prevalence of interventions with citizens with mental illness that we obtained is similar to that obtained in other Canadian studies (9,10). The three-day sample may not be representative of all interventions made by the police service over a year. This sample size also limits the conclusion of some analyses, especially for arrest rates, which were particularly low. Police officers and 911 operators might not systematically identify the involvement of mental illness in their report. Furthermore, they might have considered other issues, such as drug abuse, as a mental illness. Consequently, the algorithm of identification of mental illness was created in a conservative manner, favoring false negatives over false positives. Beyond these limitations, our use of an administrative database to identify interventions involving individuals with a mental illness offered the affordability, the rapidity, and the flexibility that could be useful in the evaluation of new programs.

Conclusions

The goal of this study was to compare estimates of arrest rates and police resources used for interventions involving citizens with mental illness and a control sample of citizens without mental illness. The results clearly show the importance of mobilization of police resources for interventions involving citizens with a mental illness as well as the higher likelihood of arrest during interventions involving individuals with a mental illness. Those estimates may provide important information for economic analysis of the costs related to those interventions.

Partly on the basis of results of this and another study (7), the Montreal police service recently established a new strategic mental health plan and set up two new specialized teams (29). One consists of police officers with special training (along the principles of the Memphis crisis intervention team model [30]), and the other consists of a police officer paired with a professional from the mental health system (along the principles of the Vancouver Car 87 model [31]). It is expected that these diversion programs will reduce the inappropriate use of arrest and jail for individuals with mental illness (11,28). Our identification technique could be used in future research to evaluate if new programs and partnerships are using resources efficiently and how financial costs can be shared.

Police interventions involving citizens with a mental illness entail multiple and complex realities. Understanding, evaluating, and guiding these interventions, therefore, require more than efficiency measures. A good fit between the intervention and the needs of people with mental disorders is essential in developing long-term and person-centered interventions.

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The authors report no competing interests.

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