The Judicious Judicial Dispositions Juggle: Characteristics of Police Interventions Involving People With a Mental Illness

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Abstract

Objective: The number of police interventions with people presenting a mental health problem has been increasing over the past 30 years and police services are becoming more aware of the human resources and skills these interventions require. Our study addresses the characteristics explaining police time used and outcomes of interventions as police officers interact with people with mental illness.

Method: Using a police service administrative database from a large Canadian city, and an identification algorithm method, police interventions with people with mental illness were identified on 3 randomly selected days in the year. A content analysis of intervention logs was carried out to identify characteristics of those interventions; the call initiator, the location, and the final outcome of the intervention.

Results: Interventions with people with mental illness represent a small proportion (3%; n = 272) of all police interventions (n = 8485). General linear models show that the type of outcome is the most important factor in estimating the time required by police interventions. Arrests and hospitalizations are the least time-efficient outcomes, consuming 2.0 and 3.2 times, respectively, more time than informal dispositions. A multiple correspondence analysis shows that police interventions can be depicted in 2 dimensions, representing their main roles concerning people with mental illness, namely, to ensure the public safety and to protect the most vulnerable citizens. The more these services are required, the more police time will be required.

Conclusion: Education and partnerships between police services and mental health services are essential to a proper management of outcomes.

Keywords: mental illness, police, criminality, diversion, police resource allocation

Over the years, an increase in the number of police interventions involving people with mental illness has been reported.[1–3] Despite this increase, people with mental illness represent a small proportion of all police interactions with citizens.[4–6] Nevertheless, some studies have suggested that for minor offenses, people with mental illness are more likely than people without mental illness to be arrested.[3,7,8] However, when controlling for confounding factors (that is, other suspect characteristics, situational characteristic, and legal variables), the presence of mental illness reduced the odds of being arrested by up to 2.9 times.[9] To that extent, factors that influence the outcome of police interventions are essential to understanding the choice of outcome preferred by police officers.

The following factors have been found to increase the probability of arrest for people with mental illness following a police intervention; if the person exhibits violent behaviour,[10,11] if a citizen initiates the call for police services,[12,13] if the person has an aggressive demeanor[9,14] (although some studies did not find this result[13,15,16]), and if there are indications of alcohol or drug consumption.[13] Most studies have focused on the risk of arrest and few have attempted to understand the factors influencing other outcomes such as hospitalization and informal dispositions. However, Green[14] found that minor offenses and homelessness increased the probability of informal dispositions.

Interactions with people with mental illness have been known to take more police time and effort than with the general population.[17–20] The choice of the outcome police officers use may be at least partly influenced by the time they are expected to spend on each intervention. Police officers need to calculate the amount of time alternative outcomes will take because supervisors exert pressure to get them back into service as quickly as possible.[21,22] However, hospitalization and arrest have often been described as very long and complicated processes.[14] Police officers have expressed frustration about bringing people with mental illness to the hospital, a situation which may discourage them to try to initiate medical care for a person.[19,23]

Time police officers spend on interventions is a simple measure and has significant administrative weight as it addresses issues of human resource allocation. Three methods have been used to estimate the duration of interventions in previous studies; surveys,[19,20] in situ observation,[8,9,13,16,24] and analyses of administrative data.[4–6] Surveys are limited in obtaining valid and accurate measures. For in situ observation studies, accessing large samples is extremely costly and time consuming. In our study, inspired by a previous study,[4–6] we developed an algorithm to identify indicators of mental health problems during interventions using a police administrative database.

Method

Our study took place in Montreal, Québec. In 2006, the Montreal Police Service handled 913 679 interventions[25] rendering a detailed content analysis of each one practically unfeasible. Consequently, our study reports all interventions made to the Montreal Police Service during 3 randomly selected days of the year. During those days, 8 485 interventions were carried out.

To identify interventions involving people with mental illness, the content of all police contact logs were analyzed using a method similar to that of Hartford et al.[4] Three main identification criteria were used: the address of the call's initiator and of the intervention; the type of event; and the key words related to mental health in the log.

Address. If the address of either the call's initiator or the location of the intervention was that of a provincial psychiatric hospital, a psychiatric ward in a general hospital, or outpatient community mental health clinic or resource, the intervention was coded as related to people with mental illness.

Type of Event. Some event codes are indicators of mental health issues such as person in need and

suicide which can be used as a flag to help determine possible mental health problems.

Key Words. Some important key words mentioned in the logs were indicators of possible mental health problems. However, not all key words carry the same level of certainty of mental illness. They were thus classified in to 2 major categories: probable (for example, schizophrenic, paranoid, and mental health) and possible (for example, bizarre, medication, and confused).

This algorithm led to the identification of 272 interventions related to people with mental illness (3.2%). To ensure validity of the classification, we submitted 900 (10.6%) randomly selected interventions to interrater agreement testing with another researcher reviewing the case logs. The kappa coefficient revealed a good level of interrater reliability for content analysis at 0.76 corresponding to 98.2% agreement in categorization of mental health related interventions.

Two procedures were used to extract the characteristics of the interventions. In the first, the type of event and the required police time by the intervention were identified directly as they are already part of the systematic coding in the police database. However, a logarithmic transformation was required to overcome the skewness of the distribution of the police time used and to respect the assumption of normality (K-S test = 0.03, $P = 0.200$) and equality of variance (Levene's $F = 0.943$, $df = 215, 56$, $P = 0.625$). Required police time takes into account both the duration of the intervention and the number of police officers required. In the second, a content analysis of the intervention reports was carried out to explore the context in which the interventions occurred. This identified additional characteristics; the initiator, the location, and the outcome of the intervention as well as other specific issues (sex, homelessness, suspicion of drugs or alcohol use, aggressiveness, court orders or breach of legal condition, the presence of psychosocial crisis intervention team diversion program,[26] and need for the emergency medical service unit).

Analyses

General linear models were used to test associations between required police time for interventions and the characteristics of the interventions. To analyze the pattern of relations between the several categorical variables in our study, multiple correspondence analysis (MCA) was used. MCA is a factor analysis that processes multiple categorical variables. MCA is often interpreted on proximities between points in a low dimensional map.[27] These visual proximities allow the exploration and interpretation of complex links between variables' categories. All analyses were conducted using SPSS.[28] Our study was approved by the Douglas Mental Health University Institute Research Ethics Board and by the Quebec Access to Information Commission.

RESULTS

Interventions Characteristics

As can be observed in Table 1, the most common location of interventions between police and people with mental illness was in private residences (47.8%, $n = 130$). Interventions were primarily initiated by people with mental illness (21.0%, $n = 57$), a relative (20.2%, $n = 55$), or a bystander (19.5%, $n = 53$). Hospital staff-initiated interventions represented only 6.3% ($n = 17$) of all interventions regarding people with mental illness.

The most common outcome (38.2%, $n = 104$) was informal in nature, namely situations in which the officer took no formal action, usually involving a type of counsel and release.[14] The second most common outcome was referring the person to the hospital (36.0%, $n = 98$). Arrest only occurred in 3.7% ($n = 10$) of all outcomes. Interestingly, only 4 interventions (1.5%) were carried out with the mental health diversion program while 97 (35.7%) were carried out with the help of emergency medical services.

Men represented 62.1% ($n = 169$) of people with a mental health problem. Homelessness was

Table 1 : Characteristics of the police interventions involving persons with mental illness

	n	%	MCA Tag
Location of the intervention			
Outdoor	87	32.0	L outdoor
Public area	14	5.1	L public
Private residence	130	47.8	L private
Hospital	10	3.7	L hospital
Mental health care location	16	5.9	L service
Business	15	5.5	L business
Initiator of the intervention			
Relative	55	20.2	I relative
Business owner	23	8.5	I business
Bystander	53	19.5	I bystander
Public institution	10	3.7	I public
Health care services	23	8.5	I service
Hospital	17	6.3	I hospital
Emergency response unit	17	6.3	I ambulance
Police officer	17	6.3	I police
PMI themselves	57	21.0	I pmi
Specific issues (non-exclusive)			
Homelessness	22	8.1	Homeless
Drugs or Alcohol	65	23.9	Drugs
Suicidal	55	20.2	Suicidal
Aggressiveness	82	30.1	Aggressive
Court Order	14	5.1	CourtOrder
Emergency response unit required	97	35.7	Ambulance
Male PMI	169	62.1	Male / Female
Presence of psychosocial crisis intervention team	4	1.5	--
Type of event			
Offense against person	11	4.0	T person
Offense against object	6	2.2	T object
Other criminal offense	6	2.2	T other
Potential offense	84	30.9	T potential
Individual in distress	93	34.2	T distress
Other incidents	72	26.5	T incident
Outcome			
Referred to the hospital	98	36.0	O hospital
Informal disposition	104	38.2	O informal
Referred to mental health care services	17	6.3	O service
Arrest	10	3.7	O arrest
Unfounded	43	15.8	O unfounded
Total	272	100	

identified in 8.1% (n = 22) of the interventions. Nearly one-quarter (n = 65, 23.9%) of people with mental illness were suspected of being under the influence of drugs or alcohol at the time the police arrived on the scene. One in 5 interventions involved a suicidal component (n = 55, 20.2%). One-third of the interventions involved some level of aggressiveness (n = 82, 30.1%) during the interaction, as reported in the logs.

Explaining Police Time Required

The following analyses explore the influence of the aforementioned characteristics on the police time required by the intervention. Table 2 presents general linear models explaining the police time by interventions. The first step takes into consideration the location and the call's initiator. Neither of these factors explained the variance of required time (P > 0.05) of any significance; the model explained only 9% of the variance of the required police time (R^2 = 0.09).

In the second step, the aforementioned specific issues were added to the equation. In this model, the location and the initiator still had no impact on required police time (P > 0.05). Those 2 kept constant. Interventions with a suicidal component ($F(1, 251)$ = 4.66, P = 0.032), interventions where people with mental illness were perceived as aggressive ($F(1,251)$ = 5.14, P = 0.024) or in breach of a court order ($F(1,251)$ = 5.40, P = 0.021), and interventions requiring the presence of an emergency response unit ($F(1,251)$ = 17.00, P < 0.001) consumed more police time. Conversely, interventions where people with mental illness were homeless ($F(1,251)$ = 4.78, P = 0.030) used up significantly less police time. Thus those specific issues explain more efficiently the variance of required police time than the initiator and the location of the intervention (R^2 Change = 0.15, P < 0.001).

In the third step, the type of event was added. The presence of suicidal issue ($F(1,246)$ = 5.99, P = 0.015) and emergency response unit ($F(1,246)$ = 15.83, P < 0.001) still increased the police time while the presence of a homelessness issue still reduced the required police time ($F(1,246)$ = 4.77, P = 0.030). However, the presence of aggressiveness ($F(1,246)$ = 3.46, P = 0.064) and breach of court order ($F(1,246)$ = 3.09, P = 0.080) lost their statistical significance in this step. The variance they shared with the required

Table 2 : General linear model in four steps explaining the police time required (log) for PMI interventions according to the characteristics of those interventions

		Step 1		Step 2		Step 3		Step 4	
	df	F	η^2	F	η^2	F	η^2	F	η^2
Intercept	1	2226.14		622.98		574.56		513.56	
Location	5	1.71	.03*	0.44	.01	0.31	.01	0.85	.02
Initiator	8	1.83	.05*	1	.03	0.79	.03	0.68	.02
Specific issues									
Homelessness	1	-		4.78	.02*	4.77	.02*	3.33	.01
Drugs or Alcohol	1	-		2.99	.01	2.12	.01	0.25	.00
Suicidal	1	-		4.66	.02*	5.99	.02*	2.73	.01
Aggressive	1	-		5.14	.02*	3.46	.01	0.11	.00
Court Order	1	-		5.4	.02*	3.09	.01	0.5	.00
Emergency response	1	-		17	.06**	15.83	.06*	1.08	.00
Gender	1	-		0.34	.00	0.8	.00	0.57	.00
Type of event	5	-		-		2.32	.05*	0.67	.01
OutcomeDisposition	4	-		-		-		11.35	.16**
R^2		0.09		0.24		0.27		0.39	

* p < .01; ** p < .05

police time was better explained by the type of event (*F(5,246)* = 2.32, *P* = 0.044). This model did not explain additional variance in police time required by interventions compared with the previous model (R^2 Change = 0.03, *P* = 0.110).

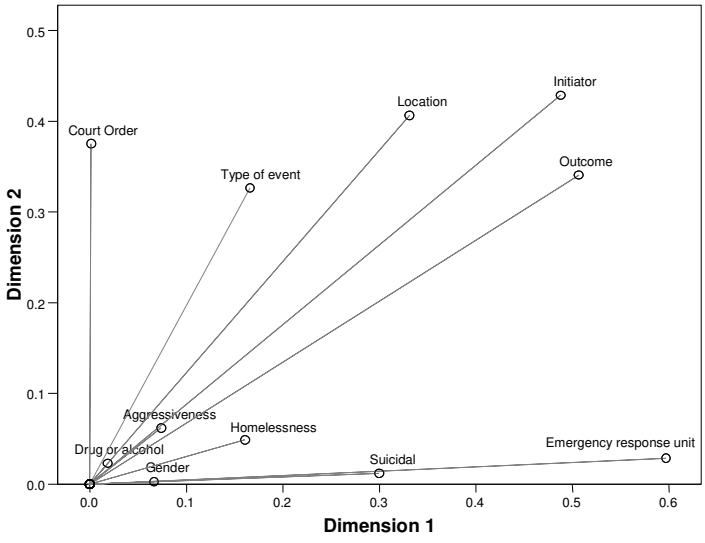
In the final step, the type of outcome following the intervention was added to the equation. With the addition of this indicator, the model explained 39% of the variance, which is significantly better than former models (R^2 Change= 0.12, *P* < 0.001). When outcomes are kept constant, none of the other characteristics have an impact on the time used (*P* > 0.05). Using parameter estimates with informal disposition as a reference value, we conclude that escorting people with mental illness to the hospital almost doubles (Exp(b) = 1.95, *P* < 0.001), arrest increases by 3.2 times (Exp(b)=3.16, *P* < 0.001), and unfounded interventions reduced by 1.5 times (Exp(b) = 0.68. *P* = 0.014) the time required by the intervention. However, referring a person to mental health services other than hospitals is not more time consuming than informal dispositions (Exp(b) = 1.05, *P* = 0.810).

Exploring the Context of Interventions Related to People With Mental Illness

MCA has the advantage of providing a graphical representation of each intervention's characteristics in a bi-dimensional space and allows visualizing which characteristics are close to each other. MCA creates 2 dimensions with the best correspondence to the characteristics of the interventions inserted in the equation. In this analysis, 24.9% of the variance is accounted for by the first dimension and 18.6% by the second.

Figure 1 shows the discrimination measures for each variable in both dimensions. Interpreted as squared factor loadings, this discrimination measure represents how well the dimension represents the variable. Discrimination measures (D_i) help clarifying the dimensional interpretation. Aggressiveness, sex, and presence of drugs and alcohol are close to the

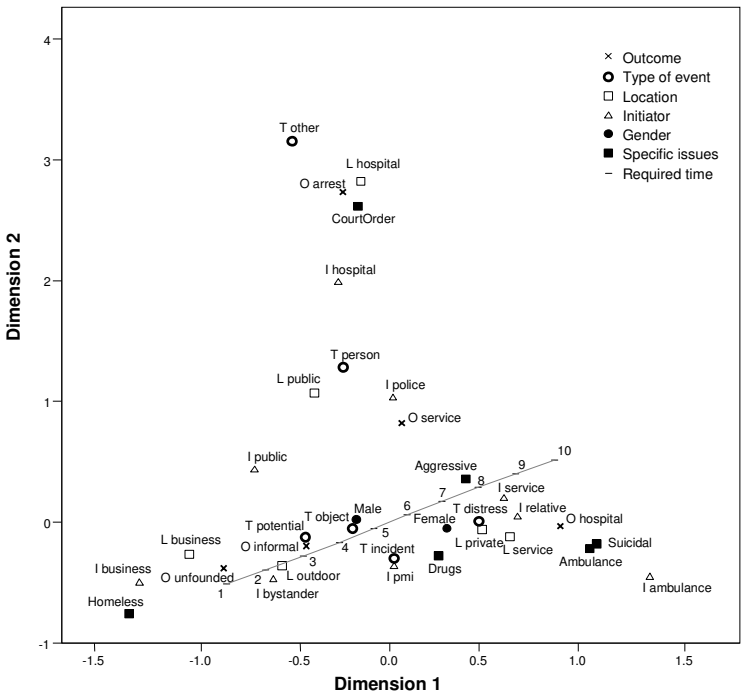
Figure 1 : Multiple correspondence analysis discrimination measures per variable and per dimension



origin so they do not have great discrimination power on either of the dimensions ($D_i < 0.08$). The presence of a court order and the type of event have large discrimination power on the second dimension (D_i = 0.36; 0.32) and little discrimination power on the first dimension (D_i = 0.00; 0.17). Conversely, the presence of homelessness, suicidal tendencies, and emergency response unit has large discrimination power on the first dimension (D_i = 0.16; 0.30; 0.60) and little discrimination power on the second (D_i = 0.05; 0.01; 0.03). The location of the intervention, the initiator of the call, and the outcome have large values of discrimination on both dimensions 1 (D_i = 0.34; 0.48; 0.51) and 2 (D_i = 0.42; 0.44; 0.35).

Figure 2 presents a simplified representation of the interventions' characteristics according to the 2 dimensions. The space proximity represents the statistical proximity of the intervention characteristics. An object near the origin means that it is not different from the average observation; it does not permit a good discrimination. The farther an object is from the origin on a dimension, the more it represents this dimension.

Figure 2 : Multiple correspondence analysis joint category plots of intervention characteristics and police time required



In Figure 2, it can be observed that each point, representing each category of each variable, is more or less situated within the 2 perpendicular axes representing the 2 dimensions described above. The first capital letter of the tag identifies the variable to which the point corresponds (for example, O stands for outcome) and the rest of the tag represents the category. Meanings of tags are presented in Table 1. Each category position will be analyzed using outcomes (represented by an X in the map) as reference points. At the center of the map, near the origin, there is the informal disposition point. Interventions ending by this outcome are near potential offenses, other incidents and offenses against object. To the left side of dimension 1, there are the unfounded interventions. This position shares common space with interventions initiated by a bystander or a business owner, interventions located in a business, and interventions related to homelessness. On the right side of the graph is the hospitalization outcome. Interventions related to suicidal issues or a person in distress and interventions requiring an emergency response unit are located near this outcome. Interventions referred by relatives or by mental health services are also in proximity of this outcome. Higher on dimension 2, but at the origin of dimension 1, are interventions referred to other mental health services. The closest characteristics of this type of outcome are interventions initiated by the police officer. At the upstate of dimension 2 are interventions ending with an arrest. Interventions coming from or occurring in a hospital, interventions presenting a court order, and interventions representing other criminal offenses are in proximity of the arrest outcome.

According to the results emerging from this exploratory analysis, the 2 axes seem to refer to the 2 principal tasks of police officers in a context of intervention involving people with mental illness. Dimension 2 could represent the axis of law and justice, where police officers intervene in the case of serious offenses. The extreme outcome according to this dimension is arrest. Dimension 1 represents the axis of health and protection, where police officers

intervene in cases where people are in distress and need care. The extreme point of this outcome is hospitalization. At the origin of both axes, of the role of peace keeping, where no serious threats are present and those interventions end by informal dispositions. In Figure 2, considering the line that represents the required police time, the farthest one goes on both service dimensions, the more time consuming the intervention will be. In fact, required police time is positively correlated with both dimension 1 (r = 0.41, P = 0.000) and dimension 2 (r = 0.23, P = 0.000) scores.

Discussion

As other recent studies have suggested,[4–6] the results of our study indicate that interventions concerning people with mental illness represent a small proportion of all police interventions. Our study also revealed the great diversity of interactions between people with mental illness and police services as well as a diversity of possible outcomes. This situation is a clear indication for more involvement of diversion programs and psychosocial intervention teams to lend a hand to police forces. Nevertheless, many mental health and social services already exist. Could they better serve if they were to be better known by police services or if more of these intervention teams were visible and available? As observed in our study, only 1.4% (n = 4) of interventions were referred to the local pre-adjudication diversion program.

The choice of outcome made by police officers has a clear impact on the time the intervention will take. Hospitalization and arrest have been shown to be the least time-efficient outcomes. The results indicate that informal dispositions are the most time efficient, followed by reference to mental health services other than the hospital. Informal dispositions may seem appealing, because they do not criminalize people with mental illness and are time efficient. However, it does not necessarily result in offering any form of help to the person in need. Informal dispositions may increase the rate of second calls due to this absence of care and these recalls reduce the efficiency interventions because the police will have to go back to the location of the intervention. Call recidivism constitutes an important part of interactions between police services and people with mental illness.[4,6] They may also lead to increased frustration on the part of citizens and business owners who get the impression that justice is not being served and social problems are not being dealt with by police forces. Future studies should investigate recalls to understand more precisely the efficiency of each outcome.

Hospitalization and informal dispositions are the most common outcomes. Even if it does not criminalize people with mental illness and shows an evolution in police practices, it appears legitimate to ask if the person in need gets the necessary help or support to avoid the recurrence of the situation that led to a call to the police in the first place. Moreover, referral to mental health or social services was the least frequent outcome besides arrest. However, our study does not allow to identify the reasons for which other mental health or social services are not used more often.

The results underline the importance of improving communication between justice and mental health services and the different challenges it imposes (Who should do what, when, and how?) to increase the efficiency of interventions and appropriateness of outcomes. Further, the fact that most police interventions regarding people with mental illness requested by bystanders relate to bizarre behaviour and behaviours that are probably demonstrations of psychiatric symptoms rather than any form of emergency situation or criminal behaviour, points to the necessity of continuing public education programs to increase awareness and understanding of mental illness in the general population.

Limitations

The results of our study must be interpreted taking into account a certain number of limitations. Three days of interventions may not be

representative of all interventions made by the police service over a full year. Further, the algorithm of identification of people with mental illness was created in a conservative manner, favouring false negatives over false positives, which may have underestimated the number of interventions with people with mental illness. Intervention logs are very short and it may be that phone operators and the police officers may judge it unimportant to note the mental state of citizens to preserve their integrity. This information may not come up in reports and logs and would be unaccounted for in our study.

Other limitations pertain to inescapable realities: the knowledge of police officers regarding the signs of mental illness. Police officers and phone operators may not have been able to identify signs of mental illness and thus not written them in reports. False-positive categorization could have also been encountered as police officers and phone operators may misjudge the mental state of citizens, and described them as mentally ill when they, in fact, were not. Taking these limitations into account, the results of our study are to be considered conservative. Finally, our study was limited by the structure of the administrative database in that some case recidivism was probably not identified which can constitute in some situations as an aggravating factor for final outcomes.

Conclusion

This research tested the possibility of using an algorithm to measure the prevalence of police interventions related to citizens with a mental illness. Further studies could use this method to assess the evolution in time of those interventions and the resources they require. Thus as a new diversion or outreach programs for people with mental illness are put in place, it would be possible to see their impact on the evolution of police resources used and outcomes privileged by police officers for interventions involving people with mental illness. Moreover, a recent study[29] showed that police time required is an efficient measure to evaluate programs related to police intervention involving people with mental illness.

Police interventions represent the point of entry to the justice system and often to mental health services for people with mental illness. The police officers' discretionary powers are of high importance at this stage of the process. The choice of the judicial disposition has important consequences on the lives of people who interact with police services. Police officers juggle with numerous types of potential outcomes for interventions with people with mental illness. The consequences of their choice may be complex both for themselves as well as for the people they are dealing with. In the current post-deinstitutionalization context and the lack of community resources, police officers are more and more likely to intervene with this type of clientele. Educating police officers about the different options that are available to them and encouraging them in maintaining a good relationship with the mental health services then becomes key to judicious judicial choices.

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