What Does Robbery Really Cost? An Exploratory Study into Calculating Costs and 'Hidden Costs' of Policing Opioid-Related Robbery Offences

Abstract

Recent attention on the opioid crisis has near exclusively focused on this issue as a public health concern. While we do not dispute this approach, we recognize that the opioid crisis in Canada has also generated significant policing costs – particularly in the form of robberies of pharmacies and other businesses. Much of this cost, we argue, remains unknown and/or hidden from public discussion. In the present study we present a more accurate costing of investigating robbery cases, by focusing on a series of opioid-related robberies committed by two individuals in London, Ontario. To calculate the costs, we sought to identify some of the hidden factors not commonly accounted for. Our results indicate that the cost of investigating a robbery case – from initial call to closing of the case – is comparable to previous estimates. However, as opioid-related pharmacies occur as a series of events, total costs are not insignificant. The results of this study have implications for resource allocation policies and highlight the need for a standard police costing metric and a more nuanced understanding of opioid addiction as a policing issue.

> Officers were called to the drug store at 109-460 Springbank Dr. around 3:20 p.m. for an attempted robbery.
>
> Police say a lone male approached the pharmacist, threatened violence and demanded medication, but was not given any and fled on foot (CTV London 2016a).
>
> According to officers a man entered the Rexall Pharmacy at Oxford and Waterloo Streets and demanded narcotics.
>
> An undisclosed amount of narcotics was turned over to the man who then fled on foot (CTV London 2016b).

Between January 6th to April 9th, 2016 the London Police Service responded to a string of seven robbery calls involving pharmacies within their jurisdiction. In each case, robbers demanded that pharmacy staff provide them with narcotics. Two men were subsequently identified, arrested, charged and convicted.

Although the present study focuses on costs associated with the mini-crime wave described above, it is important to keep in mind that opioid-related robberies have been on the rise in Canada and the U.S. (Burke 2017; Coffey and Copenhagen 2017; Fletcher 2017; Heydari 2017; Potkins 2017), as have been thefts of opioids from pharmacies and hospitals (Tromp 2016; Howorun 2017). Indeed, that same year, there were nineteen pharmacy robberies in London in total, with eight occurring in December 2016 alone (Daniszewski 2017). We point this out because media, policy and public discourse has tended to focus largely on opioid addiction as a public health issue, often paying less attention to the crimes associated with the current crisis and the costs of those crimes for communities. While we recognize that it is important to treat addiction as a health, and not as a criminal justice, issue, we are also mindful of the fact that increases in opioid-related crimes are occurring at a time when public officials

have been looking at the 'economics of policing' in Canada (Public Safety Canada 2013), 'austerity policing' in the U.K. (Innes 2010), and making police 'more affordable' in the U.S. (Gascon and Fogelson 2010) as means of shrinking police budgets. Regardless of their bottom-line impact on policing budgets, the costs of opioid-related crimes are, and will continue to be, absorbed by local communities.

In the present study we contribute to on-going discussion on the 'costs of the opioid crisis' by presenting a more accurate costing of investigating opioid-fueled robbery cases. As noted, our focus is on a series of opioid-related robberies committed by two individuals in 2016 in London, Canada. To calculate the costs, we sought to identify some of the hidden factors not commonly accounted for and thus provide an opportunity for future researchers to advance methodology in this area. Our results indicate that the cost of investigating a robbery case – from initial call to closing of the case – is comparable to previous estimates (Ellingwood 2016). However, as opioid-related pharmacies occur as a series of events, total costs are not insignificant. The results of this study have significant implications for resource allocation policies and highlight the need for a standard police costing metric and a more nuanced understanding of opioid addiction as a policing issue.

What do we currently know?

Currently, there are no well-established methods for accurately estimating policing costs. This is perhaps not entirely surprising given that personnel and other costs can differ among agencies and that researchers, as well as police services, may employ different metrics for allocating costs, which, in turn, produce varied results (Ellingwood, 2016). As an example of the latter, Di Matteo (2014) explores crime rates and costs by analyzing real per capita police

expenditures, as well as police service strength[1]. Easton et al. (2014) estimate police costs by comparing expenditures to the volume of crimes of which police are aware. Somewhat problematically, reliance on official crime rates means that both of these studies may unintentionally include operational costs not associated with crime (ie. such as community engagement or crime prevention activities), as well as excluding operational costs of non-counted crimes and forms of disorder[2]. Gabor (2015) recently synthesized data from other published studies as a means of measuring policing expenditures. As with other studies on costs, several issues pertaining to the methodology of measuring policing costs can be identified. First, cost metrics differed across the studies used. For example, some of the studies included by Gabor focus directly on criminal justice system costs, whereas others include perceived costs incurred to victims and to society as a whole. Second, some researchers chose to break down victim costs into tangible costs (i.e. hospital bills) and intangible costs (i.e. pain and suffering). In short, as Gabor notes, the lack of standardized costing metrics makes attempts at creating average costs incredibly difficult (see also Ellingwood 2016).

Such difficulties have not, however, stopped individuals and groups from attempting to generate crime costs. One such attempt was made in 2010, when researchers at RAND developed a 'Cost of Crime Calculator'. This tool attempts to measure the effects of altering the number of police offers on crime rates within a particular jurisdiction, which is seen by

[1] Defined as the number of officer per 100,000 individuals in a given area (Di Matteo, 2014)

[2] Where an incident involves multiple offences, the Uniform Crime Reports (UCR) system only records the most serious offence (Ellingwood, 2016). The incompleteness of UCR2 data highlights a critical gap in this area, as factors that play a significant role in certain offences may be buried; the potential concealing of drug offences related to a robbery may be an example of this.

some as informative for policy-makers who are conducting cost-benefit analyses (Ruddell and Jones, 2014). When calculating policing costs, the program looks at the levels of crime reported, perceived societal costs of these offences, and police effectiveness in reducing crime (ibid). In this process, the societal costs are estimated using accounting-based methods (totaling of tangible and intangible costs) and contingent evaluation methods (the willingness of society to pay more taxes to improve crime reduction programs) (Heaton 2010). In a recent paper in which the authors applied the Calculator to Canadian data, Ruddell and Jones (2014) found that although the Calculator was intended to be used in the U.S., it may also be useful in the Canadian context. They tested this idea using data from the Regina Police Service in 2013 (ibid), observing that the addition of one police officer would produce a $290,215 (CAD) crime reduction benefit (ibid). However, the authors note that the U.S. direct and indirect costs of crime may differ from those in Canada, which will most likely lead to the calculator underestimating the value of increasing the number of officers. Another issue worth noting is that Canadian data are constructed using accounting-based methods rather than contingent evaluation, which ultimately leads to lower costs estimates (ibid).

It is not uncommon for societal shifts to generate changes in policing and policing costs. Perhaps the most dramatic example of this is the deinstitutionalization movement in the 1960s and 70s, which is experienced today in the form of high rates of mental health-related calls to local police (Boyce, Rotenberg and Karam, 2015). One of the most recent significant shifts to impact local policing is the opioid epidemic. Most Canadians are familiar with the rather dismal statistics on increasing rates of opioid overdose deaths: from 2, 946 Canadian deaths in 2016 to 2,923 fatal overdoses for the first nine months of 2017 (Government of Canada, 2018). What is less well known is the extent to which opioid addiction has fueled certain forms of

crime, generating potential increases in both acquisitive and violent crimes. In relation to the latter, we know from previous research that that there is a positive link between drug addiction and robbery (Cousineau and Gillet 2001). Anecdotally, we have multiple published reports of increasing rates of pharmacy robberies in which robbers demand 'drugs.' Thus, if we want to better understand how the opioid crisis is affecting policing costs, at least one place to start is with a better understanding of robbery costs.

An early attempt to investigate the costs of police activity was undertaken by Webster (1970), who calculated averages for the frequency and time allocated to particular police tasks. The study examined robbery – a form of crimes against persons – which constituted 2.82% of the total assignments and 2.96% of the total time consumed on all assignments (Webster, 1970). While this indicates that robbery has a low rate of occurrence, these data are in contrast with the National Incident Based Reporting System, which lists robbery in the category of crimes against property (National Incident Based Reporting System [NIBRS], 2011). According to the study, 13.76% of police activities consisted of responding to crimes against property, which took up 14.82% of their total time (Webster, 1970). During the 54-week period of this study, officers received calls for service relating to robbery 2,917 times. From this data, it was found to be very rare for police officers to arrive at the scene while the robbery was being carried out (Webster, 1970). No further analysis on robberies was put forth in this study; however, it may be inferred that the length and overall cost of investigations are larger when perpetrators are not found and arrested at the scene.

The Gabor (2015) study previously cited also attempted to estimate the cost of robbery. In this case, the mean, minimum, and maximum costs of robbery per incident in 2014 were calculated using a global literature review approach that compiled data from existing studies.

Categories included in the study were criminal career costs (cost of losing productive members of society), criminal justice system costs, and victim costs (both tangible and intangible). Gabor (2015) estimated that the mean cost of a robbery case in 2014 was $92,350.41 and that the minimum and maximum cost ranged from $4,658.11 to $673,727.39. As we noted earlier, it is difficult to analyze the accuracy of these results due to the wide range of the estimates, as well as the unstandardized inclusion of criminal career and victim costs.

Recently, a new approach to measuring policing costs was developed by Ellingwood (2016). Prior to Ellingwood's method, data on police expenditures had focused on the total estimated costs, yet no effort had been made to break down the costs by offence type (ibid). The data used in the study by Ellingwood (2016) were provided by the Waterloo Regional Police Service and the Ontario Provincial Police. The data were used to estimate the cost of frontline responses to different offences, as well as the total investigative cost from the initial call to the closing of the case (Ellingwood, 2016). Ellingwood estimated that the frontline cost of robbery-related incidents was $779.25 (CAD). Rather than using actual salaries, this estimation was constructed using Computer Aided Dispatch recordings of officer time and the lowest salary for Constables serving over 12 months (ibid). This approach does not provide an accurate calculation of a frontline robbery cost and is most likely an underestimation. The average cost to investigate a robbery case was calculated using 2009 data from the Ontario Provincial Police (OPP), which was reported to be an estimated $6,461.08 (CAD) (Ellingwood, 2016). It was stated that this estimation covered the costs incurred by proactive and preventive police programs, and administrative, statute, and operational tasks (ibid). No further breakdown of costs within these tasks was given, which leaves the possibility for additional hidden costs that have been unaccounted for. It should be noted that each year from 2009 to

2013, the Ontario Provincial Police data indicated that the OPP duty code and the Uniform Crime Reports (UCR) codes did not match up exactly (Ellingwood, 2016). This may reflect the fact that the estimated costs are not precise representations of the cost of the UCR code offence.

In short, despite the fact annual costs of policing services have steadily increased over the years (Public Safety Canada 2013), and thus generated a significant need for a better understanding of the cost and resource impacts of various forms of police work – as well as the operational impacts of major societal shifts – research in this area remains underdeveloped.

Method of inquiry

The present study draws on police data collected in relation to a string of seven pharmacy robberies that occurred in London, Canada in 2016. Our goal was to answer the following two research questions:

RQ1: What is the cost of investigating robbery offences?

RQ2: When calculating this cost, what are some of the hidden cost factors that need to be considered?

Data and Procedure

To identify the various policing costs that accumulate throughout an investigation, we focused on police time from the initial 911 call through to the official closing of the case. We were fortunate in that all initial police responses to robbery incidents are recorded by a Computer-Aided Dispatch call. This call consists of the address, date, time, nature of the call, and details as to which officers were dispatched. The time between an officer being dispatched and the call being cleared was also recorded. In addition to tracking the total time duration of the initial response, each dispatched officer's hourly pay rate – which varies by experience

level and rank – was collected in order to calculate the cost of the initial response. To further increase the accuracy of these estimates, each officer's hourly rate with benefits – which often accounts for approximately 25% of an officer's salary – was considered.

The next phase of the robbery investigation was led by the Criminal Investigation Division. During this time, the investigations were assigned to a Detective, who took the lead on investigative procedures such as interviewing witnesses, reviewing reports, writing and executing search warrants, conducting strategy meetings, organizing surveillance, contacting the Crown Attorney, arresting suspects, and submitting disclosure. The data pertaining to the Criminal Investigation Division was not collected electronically. Instead, each Detective documented the time allocated to working on the robbery cases in a notebook.

As the offenders in this string of robberies were arrested, charged and eventually convicted, subsequent steps in our research entailed tracking their processing and accumulating costs as they moved through the court system. We note that court-related costs are not often incorporated into police costing estimations, although both court prep and court attendance can account for a significant portion of an investigator's time (Ericson 1981). Each court appearance by an offender was documented by the date and purpose of the appearance. Further, other offender processing activities were recorded, such as the time spent by administrative staff to create charge sheets, update computer records, and swear an information before a Justice of the Peace. Each of these activities fall under the Support Services Divisions. It should also be noted that these time recordings are based on estimates of the typical time duration of such activities and have not been specifically tracked for this study. In addition to these recordings, the data also includes the costs of court security staff who are in charge of monitoring offenders and transferring them from their cells to the courtroom. Finally, the data

documents all costs associated with seized property that is stored in the Property Control and Document Unit storage area.

Results

Initial Response – Standard Costs

Although the seven robberies were eventually linked and treated as one case, initially each robbery offence was treated separately and generated individual police responses. Later in this paper, we present the overall costs for this case. In this section, however, we focus on presenting standard policing costs generated by two of the cases, to avoid unnecessary repetition for the reader.

Costs considered to be standard in this study include: the wages of the Uniform Division Lead (the primary patrol officer on the call), the Criminal Investigation Division Lead (the detective assigned to the case), the supervisor in charge of the scene, and the Emergency Response Section (officers trained to combat high-risk situations). In addition, the cost of communications (the dispatchers involved in the calls) were considered to be standard costs.

Table 1 below displays the standard initial response costs for the robbery incident that occurred on January 21st, 2016. The target was a Pharma Plus store. It should be noted that this case was deemed "cleared other", indicating that although there were grounds to believe an offence was committed, a charge did not immediately follow. As a result, the cost of investigating a robbery offence is likely reduced in this case.

Division	Role	Dispatch	Cleared	Time	Hourly Rate	Cost
UD	Investigate	20:51:41	22:43:44	1:52:03	37.74	$70.47
UD	Investigate	20:51:41	22:43:15	1:51:34	55.72	$103.61
UD	Supervise	20:54:21	22:14:54	1:20:33	68.25	$91.63
UD	UD - Lead	21:17:01	1:15:42	3:58:41	34.15	$135.86
UD	Investigate	20:52:12	22:25:12	1:33:00	55.72	$86.36

UD	ERS	21:02:37	21:56:10	0:53:33	57.39	$51.22
UD	Communications			0:14:51	46.31	$11.46
UD	Communications			0:02:03	34:21	$1.17
UD	Communications			0:01:00	40.26	$0.67
UD	Communications			0:01:00	46.31	$0.77
UD	ERS	20:54:55	21:50:30	0:55:35	68.25	$63.23
UD	ERS	20:54:55	21:50:30	0:55:35	57.39	$53.17
UD	ERS	20:55:16	21:37:05	0:41:49	55.72	$38.83
UD	ERS	20:55:16	21:37:05	0:41:49	57.39	$40.00
UD	ERS	21:02:37	21:56:10	0:53:33	57.39	$51.22
UD	Supervisor	21:02:57	21:36:56	0:33:59	66.58	$37.71
UD	Communications			0:11:58	46.31	$9.24
UD	UD - Lead	21:17:01	1:15:42	3:58:41	55.72	$221.65

Table 1. Standard initial response costs for Pharma Plus robbery (January 21, 2016)

The second noteworthy offence in this study occurred on March 22nd, 2016. This case involved the robbery of a Shoppers Drug Mart. This incident accumulated the largest investigative-related cost across all of the robberies that were analyzed in this study. Table 2 summarizes the data for the standard costs that occurred during the initial response for the Shoppers Drug Mart offence.

Division	**Role**	**Dispatch**	**Cleared**	**Time**	**Hourly Rate**	**Cost**
UD	Communications			0:03:23	46.31	$2.61
UD	Investigate	16:34:36	20:16:03	3:41:27	37.74	$139.28
UD	UD - Lead	16:34:39	20:46:54	4:12:15	57.39	$241.28
UD	UD - Lead	21:53:26	22:05:11	0:11:45	57.39	$11.24
UD	ERS	16:34:41	17:24:08	0:49:27	57.39	$47.30
UD	ERS	16:34:41	17:24:08	0:49:27	57.39	$47.30
UD	Communications			0:01:00	46.31	$0.77
UD	Supervisor	16:34:53	18:52:36	2:17:43	70.17	$161.06
UD	Supervisor	16:34:57	20:19:08	3:44:11	64.91	$242.54
UD	Investigate	16:35:03	21:35:56	5:00:53	55:72	$279.41
UD	Investigate	16:36:03	20:47:55	4:11:52	57.39	$240.91
UD	Investigate	21:53:07	22:47:20	0:54:13	57.39	$51.86
UD	Communications			0:57:31	68.25	$65.43
UD	Communications			0:00:15	34.21	$0.14
UD	Communications			1:02:15	37.23	$38.63
UD	Investigate	17:17:55	22:47:20	5:29:25	57.39	$315.09

UD	Investigate	17:20:45	21:24:39	4:03:54	57.39	$233.29
UD	Communications			0:01:00	46.31	$0.77
UD	Communications			0:01:00	46.31	$0.77
UD	Communications			0:00:30	46.31	$0.39
UD	Communications			0:01:00	34.21	$0.57
UD	Communications			0:00:15	34.21	$0.14
UD	Communications			0:00:15	46.31	$0.19

Table 2. Standard initial response costs for Shoppers Drug Mart robbery (March 22, 2016)

Initial Response – Hidden Costs

A more accurate accounting of policing costs has to include those 'hidden costs' that are not typically identified in conventional studies of robbery investigations, which may overly focus on police investigators' time or on officer to crime statistics ratios. The first hidden cost we identified was the wages of scene officers responsible for ensuring that the crime scene remains intact for investigators. Another hidden cost identified is the presence of a Canine Unit officer. Police dogs and their accompanying officers are often involved in robbery offences due to the dog's ability to track down suspects or missing objects. Despite their use in cases of this nature, the cost of using Canine Units is often overlooked when estimating policing expenditures. Table 3 outlines the hidden costs that were uncovered during the initial response to the Pharma Plus robbery on January 21st, 2016. When accounting for the hidden costs in addition to the standard ones, the total cost of this initial response is significantly greater.

Division	**Role**	**Dispatch**	**Cleared**	**Time**	**Hourly Rate**	**Cost**
UD	Scene	20:52:40	21:49:35	0:56:55	55.72	$52.86
UD	Scene	20:52:40	21:49:35	0:56:55	59.06	$56.03
UD	Scene	20:52:46	21:33:12	0:40:26	37.74	$25.43
UD	K9	20:56:19	22:34:46	1:38:27	60.73	$99.65
UD	Scene	20:57:09	21:49:18	0:52:09	55.72	$48.43
UD	Scene	20:57:09	21:49:18	0:52:09	34.15	$29.68

Table 3. Hidden initial response costs for Pharma Plus robbery (January 21, 2016)

The initial response to the Shoppers Drug Mart robbery on March 22nd, 2016, similarly had several hidden costing factors. In addition to the previously mentioned cost of scene officers, the investigation was also aided by the Community Oriented Response (COR) unit. The COR unit has many responsibilities, including the implementation of both proactive and reactive policing strategies in order to reduce the volume of calls for service. This expense – and the expense of similarly structured policing programs – are not frequently factored into the calculation of policing expenditures due to the indirect nature of their involvement. Another hidden cost we identified is the participation of the Case Management Unit. The Case Management Unit – lead by a Sergeant – is responsible for managing the files of ongoing court cases. Table 4 displays the hidden costs that accumulated during the initial response to the Shoppers Drug Mart robbery, which markedly increases the total cost.

Division	**Role**	**Dispatch**	**Cleared**	**Time**	**Hourly Rate**	**Cost**
UD	Scene	17:21:11	20:22:50	3:01:39	55.72	$168.69
UD	COR Unit	18:14:42	20:04:24	1:49:42	57.39	$104.93
UD	COR Unit	18:14:42	22:47:20	4:32:38	55.72	$253.18
UD	COR Unit	17:53:06	22:44:37	4:51:31	57.39	$278.84
Other	Case Management			0:05:00	68.25	$5.69

Table 4. Hidden initial response costs for Shoppers Drug Mart robbery (March 22, 2016)

Initial Response – Total Costs

The total cost of the initial response stages for the Pharma Plus and Shoppers Drug Mart robberies are outlined in Table 5 and Table 6, respectively. These tables include both the standard and hidden costs of the initial responses in order to display the total accumulated costs. The total costs of the remaining five initial responses, which included similar standard and hidden factors, can be found in Appendix A.

Division	Role	Dispatch	Cleared	Time	Hourly Rate	Cost
UD	Investigate	20:51:41	22:43:44	1:52:03	37.74	$70.47
UD	Investigate	20:51:41	22:43:15	1:51:34	55.72	$103.61
UD	Supervise	20:54:21	22:14:54	1:20:33	68.25	$91.63
UD	UD - Lead	21:17:01	1:15:42	3:58:41	34.15	$135.86
UD	Investigate	20:52:12	22:25:12	1:33:00	55.72	$86.36
UD	ERS	21:02:37	21:56:10	0:53:33	57.39	$51.22
UD	Communications			0:14:51	46.31	$11.46
UD	Communications			0:02:03	34:21	$1.17
UD	Communications			0:01:00	40.26	$0.67
UD	Communications			0:01:00	46.31	$0.77
UD	ERS	20:54:55	21:50:30	0:55:35	68.25	$63.23
UD	ERS	20:54:55	21:50:30	0:55:35	57.39	$53.17
UD	ERS	20:55:16	21:37:05	0:41:49	55.72	$38.83
UD	ERS	20:55:16	21:37:05	0:41:49	57.39	$40.00
UD	ERS	21:02:37	21:56:10	0:53:33	57.39	$51.22
UD	Supervisor	21:02:57	21:36:56	0:33:59	66.58	$37.71
UD	Communications			0:11:58	46.31	$9.24
UD	UD - Lead	21:17:01	1:15:42	3:58:41	55.72	$221.65
UD	Scene	20:52:40	21:49:35	0:56:55	55.72	$52.86
UD	Scene	20:52:40	21:49:35	0:56:55	59.06	$56.03
UD	Scene	20:52:46	21:33:12	0:40:26	37.74	$25.43
UD	K9	20:56:19	22:34:46	1:38:27	60.73	$99.65
UD	Scene	20:57:09	21:49:18	0:52:09	55.72	$48.43
UD	Scene	20:57:09	21:49:18	0:52:09	34.15	$29.68
Totals				**26:38:18**		**$1,380.35**

Table 5. Total initial response costs for Pharma Plus robbery (January 21, 2016)

Division	Role	Dispatch	Cleared	Time	Hourly Rate	Cost
UD	Communications			0:03:23	46.31	$2.61
UD	Investigate	16:34:36	20:16:03	3:41:27	37.74	$139.28
UD	UD - Lead	16:34:39	20:46:54	4:12:15	57.39	$241.28
UD	UD - Lead	21:53:26	22:05:11	0:11:45	57.39	$11.24
UD	ERS	16:34:41	17:24:08	0:49:27	57.39	$47.30
UD	ERS	16:34:41	17:24:08	0:49:27	57.39	$47.30
UD	Communications			0:01:00	46.31	$0.77
UD	Supervisor	16:34:53	18:52:36	2:17:43	70.17	$161.06
UD	Supervisor	16:34:57	20:19:08	3:44:11	64.91	$242.54
UD	Investigate	16:35:03	21:35:56	5:00:53	55:72	$279.41
UD	Investigate	16:36:03	20:47:55	4:11:52	57.39	$240.91
UD	Investigate	21:53:07	22:47:20	0:54:13	57.39	$51.86

UD	Communications			0:57:31	68.25	$65.43
UD	Communications			0:00:15	34.21	$0.14
UD	Communications			1:02:15	37.23	$38.63
UD	Investigate	17:17:55	22:47:20	5:29:25	57.39	$315.09
UD	Investigate	17:20:45	21:24:39	4:03:54	57.39	$233.29
UD	Communications			0:01:00	46.31	$0.77
UD	Communications			0:01:00	46.31	$0.77
UD	Communications			0:00:30	46.31	$0.39
UD	Communications			0:01:00	34.21	$0.57
UD	Communications			0:00:15	34.21	$0.14
UD	Communications			0:00:15	46.31	$0.19
UD	Scene	17:21:11	20:22:50	3:01:39	55.72	$168.69
UD	COR Unit	18:14:42	20:04:24	1:49:42	57.39	$104.93
UD	COR Unit	18:14:42	22:47:20	4:32:38	55.72	$253.18
UD	COR Unit	17:53:06	22:44:37	4:51:31	57.39	$278.84
Other	Case Management			0:05:00	68.25	$5.69
Totals				**51:55:26**		**$2,932.30**

Table 6. Total initial response costs for Shoppers Drug Mart robbery (March 22, 2016)

CID Follow-Ups – Hidden Costs

Upon the completion of the initial investigation, the case was then assigned to the Criminal Investigation Division (CID). The CID was required to conduct several follow-up actions in the course of investigating the robbery offences. The CID consists of several investigative sections, one of which is the Robbery Unit. In addition, it includes the Forensic Identification Section (FIS). This section involves forensic officers who photograph crime scenes, conduct DNA swabs, and sweep for fingerprints. The CID follow-ups for the robbery cases resulted in several costs which are outlined in Table 7. As all seven robbery offences were committed by the same two offenders, the cases were managed as one large investigation, and therefore, the times and costs for this division were calculated aggregately.

Follow-Up Date	**Time**	**Hourly Rate**	**Cost**
7-Jun-17	102:30:00	57.39	$5,882.47
7-Jun-17	191:30:00	55.72	$10,670.07
7-Jun-17	100:00:00	68.25	$6,825.47
7-Jun-17	80:00:00	68.25	$5,460.37

7-Jun-17	0:22:00	57.39	$21.04
7-Jun-17	4:10:00	57.39	$293.12
7-Jun-17	2:00:00	46.31	$92.61
7-Jun-17	1:30:00	64.91	$97.37
7-Jun-17	1:00:00	57.39	$57.39
7-Jun-17	1:30:00	57.39	$86.08
7-Jun-17	7:30:00	57.39	$430.42
7-Jun-17	4:45:00	57.39	$272.60
Totals	**496:47:00**		**$30,135.03**

Table 7. CID follow-ups for all seven robbery offences

Offender Processing – Hidden Costs

Additional hidden costs occurred once the two offenders were in custody. Costs that arise after an arrest is made are not often included in police costing calculations. There are several costing factors that were accounted for during the offender processing stage. One key factor is the cost associated with both offenders' first appearances in court. During a first appearance, the offender shows up to court to have their charges read aloud to them and the next action is determined. The process of transferring the offender to and from court involves several Court Prison Security Officers (CPSOs). CPSOs are special constables under the Police Services Act who are required for a variety of prisoner-related activities, such as accepting offenders into their cell, transferring them to and from the courtroom, monitoring them during the court hearing, and attending to their general care. The monitoring and transferring of a prisoner can often require a number of CPSOs, which can significantly and discretely add to the total cost of processing a case. Similar costs occurred when the offenders had either bail or plea hearings. In addition, the offenders sometimes appeared in court via a video system, which resulted in further costs. All offender processing costs for the first offender (M) are outlined in Table 8, and the second offender (B) in Table 9.

Date	Status	Update	Hourly Rate	Cost
6-Apr-16	1st Appearance	0:25:00	44.47	$18.53
11-Apr-16	Video	0:10:00	25.17	$4.20
18-Apr-16	Video	0:10:00	25.17	$4.20
28-Apr-16	Plea	4:00:00	44.47	$177.88
28-Apr-16	Bail Hearing	4:00:00	44.47	$177.88
5-May-16	Video	0:10:00	25.17	$4.20
12-May-16	Video	0:10:00	25.17	$4.20
26-May-16	Video	0:10:00	25.17	$4.20
3-Jun-16	Video	0:10:00	25.17	$4.20
17-Jun-16	Video	0:10:00	25.17	$4.20
29-Jun-16	Video	0:10:00	25.17	$4.20
20-Jul-16	Video	0:10:00	25.17	$4.20
3-Aug-16	Video	0:10:00	25.17	$4.20
24-Aug-16	Video	0:10:00	25.17	$4.20
29-Aug-16	Video	0:10:00	25.17	$4.20
7-Sep-16	Video	0:10:00	25.17	$4.20
21-Sep-16	Video	0:10:00	25.17	$4.20
29-Sep-16	Video	0:10:00	25.17	$4.20
18-Oct-16	Video	0:10:00	25.17	$4.20
25-Oct-16	Video	0:10:00	25.17	$4.20
1-Nov-16	Video	0:10:00	25.17	$4.20
29-Nov-16	Video	0:10:00	25.17	$4.20
1-Dec-16	Video	0:10:00	25.17	$4.20
2-Dec-16	Video	0:10:00	25.17	$4.20
7-Dec-16	Video	0:10:00	25.17	$4.20
16-Dec-16	Plea	4:00:00	44.47	$177.88
19-Dec-16	Video	0:10:00	25.17	$4.20
23-Dec-16	Video	0:10:00	25.17	$4.20
27-Jan-17	Video	0:10:00	25.17	$4.20
2-Feb-17	Plea	4:00:00	44.47	$177.88
Totals				**$839.12**

Table 8. Offender processing costs for first offender (M)

Date	Status	Update	Hourly Rate	Cost
6-Apr-16	1st Appearance	0:25:00	44.47	$18.53
11-Apr-16	Video	0:10:00	25.17	$4.20
15-Apr-16	Video	0:10:00	25.17	$4.20
18-Apr-16	Video	0:10:00	25.17	$4.20
25-Apr-16	Bail Hearing	4:00:00	44.47	$177.88
27-Apr-16	Video	0:10:00	25.17	$4.20
4-May-16	Video	0:10:00	25.17	$4.20
11-May-16	Video	0:10:00	25.17	$4.20

16-May-16	Video	0:10:00	25.17	$4.20
26-May-16	Plea	4:00:00	44.47	$177.88
15-Jun-16	Video	0:10:00	25.17	$4.20
27-Jun-16	Video	0:10:00	25.17	$4.20
11-Jul-16	Video	0:10:00	25.17	$4.20
20-Jul-16	Video	0:10:00	25.17	$4.20
3-Aug-16	Video	0:10:00	25.17	$4.20
24-Aug-16	Video	0:10:00	25.17	$4.20
7-Sep-16	Video	0:10:00	25.17	$4.20
21-Sep-16	Video	0:10:00	25.17	$4.20
5-Oct-16	Video	0:10:00	25.17	$4.20
19-Oct-16	Video	0:10:00	25.17	$4.20
2-Nov-16	Video	0:10:00	25.17	$4.20
5-Dec-16	Video	0:10:00	25.17	$4.20
9-Dec-16	Video	0:10:00	25.17	$4.20
6-Jan-17	Plea	4:00:00	44.47	$177.88
1-Feb-17	Sentencing	4:00:00	44.47	$177.88
Totals				**$813.95**

Table 9. Offender processing costs for second offender (B)

Property Control – Hidden Costs

The final hidden costs that occurred during this case were as a result of property control. The Property Control and Document Unit is responsible for storing all seized physical evidence in a case, which requires a paid property control clerk to accept and sign-out property. The costs associated with property control for this case are outlined in Table 10.

Date	**Action**	**Time**	**Hourly Rate**	**Cost**
21-Jan-16	3 Items Added/Stored	00:15:00	37.38	$9.35
22-Mar-16	4 Items Added/Stored	00:15:00	37.38	$9.35
22-Mar-16	2 Items Signed Out	00:10:00	37.47	$6.25
5-Apr-16	33 Items Added/Stored	01:30:00	37.38	$56.07
5-Apr-16	7 Items Returned to Owner	00:15:00	37.38	$9.35
5-Apr-16	10 Items Signed Out	00:20:00	37.38	$12.37
Totals				**$102.74**

Table 10. Property control costs for all seven robbery offences

Total costs

The accumulated total for investigation and processing of the seven robberies committed by the two offenders was: $43,052.29. This total is derived from costs associated with the investigation stage, CID follow-ups, offender processing, and property control, which were categorized as either UD, CID, or Other. The breakdown of these expenditures is displayed in Table 11.

Division	**Total Time**	**Total Cost**
UD	178:42:54	$9,807.13
CID	520:00:54	$31,468.88
Other	0:18:00	$1,776.28
Totals	**699:01:48**	**$43,052.29**

Table 11. Total costs for all seven robbery offences

Conclusions

The opioid crisis has been consistently framed as a major public health issue. While the authors support this framing, seeing it as a far more useful way to tackle the problems of addiction and deaths from overdoses, we also recognize that this epidemic is generating both violent and non-violent crimes. These crimes remain largely unaccounted for within the research literature, and the associated business, personal, criminal justice, human and other costs generally ignored. In the present study, we begin the process of exploring how best to compile policing expenditures through an examination of both the obvious and hidden costs of responding to opioid-fueled pharmacy robberies. Drawing attention to these crimes, and their economic impacts on at least one part of the criminal justice system, will, we hope, begin to expand public discussions on the state of the current epidemic so that we can more fully understand what this crisis is costing us in both human and economic terms.

Previous studies (Ellingwood 2006) have estimated the average costs of investigating a robbery at $6,461.08 (CAD), the present study – which focused on a string of 7 cases – lends some support for this number on average. However, this average does not accurately reflect the reality of opioid-fueled pharmacy robberies, which typically occur as a series of events. In other words, pharmacy robbers seeking opioids usually rob more than one store. In the present case, two individuals were responsible for 7 events over a couple of months that cost local police $43,052.29 (CAD) in resources. As we noted earlier, there were 19 pharmacy robberies in London in 2017 alone. This means that, at a time of shrinking police budgets, one medium-sized municipal agency spent approximately $121,600 (CAD) in one year on pharmacy robberies alone.

Based on the results of our study, it is evident that the economic burden that is generated from policing opioid-related crimes is a significant issue that requires attention. Considering the widespread nature of the opioid crisis, it can be assumed that other police agencies are similarly encountering costly opioid-related crimes. This then raises the question: What is the true extent of costs incurred by law enforcement due to the opioid crisis? Our study provides a framework that allows police agencies to begin to answer this question. By identifying the actual cost of policing opioid-related crimes, police agencies can become cognizant of the true costs of the opioid crisis, and thus effectively allocate the time and resources required to combat this issue.

No study is without limitations. Although we made every effort to include every conceivable cost associated with all phases of the police response to each event, there remains the possibility that we missed something. It is for this reason, among others, that we urge other researchers to adopt this methodology and attempt to replicate our results in other locations (as

we did with Ellingwood's work). One of the innovations offered in the present study is that we specifically sought to identify and explore both obvious and hidden costs associated with policing these crimes. Thus, future researchers have the advantage of an enhanced understanding of how they can use comparable methods to more fully flesh out their own local costs and continue to advance methodology in this area. Through continued replication of the methods used in this study, police agencies can then advance towards a more standardized costing metric that is currently missing within law enforcement, and researchers and public officials can have a fuller picture of how different social phenomena impact criminal justice costs.

Appendix A

Division	Role	Dispatch	Cleared	Time	Hourly Rate	Cost
UD	UD - Lead	20:36:09	22:16:10	1:40:01	57.39	$95.67
UD	Investigate	20:40:15	21:33:17	0:53:02	48.15	$42.56
CID	Investigate	21:08:46	21:47:07	0:38:21	68.25	$43.63
UD	Investigate	21:20:40	22:09:05	0:48:25	42.70	$34.46
UD	Supervisor	20:37:32	21:28:23	0:50:51	75.19	$63.72
UD	Supervisor	20:36:08	21:22:13	0:46:05	66.58	$51.14
UD	Scene	20:36:12	21:22:22	0:46:10	55.72	$42.87
UD	Scene	20:36:15	21:05:09	0:28:54	37.74	$18.18
UD	K9	20:36:32	21:13:43	0:37:11	57.39	$35.57
UD	K9	20:36:32	21:13:43	0:37:11	57.39	$35.57
UD	Communications			0:04:24	46.31	$3.40
UD	Communications			0:26:50	46.31	$20.71
UD	Communications			0:42:59	46.31	$33.17
UD	ERS	20:40:10	21:02:33	0:22:23	57.39	$21.41
UD	ERS	20:38:37	21:05:03	0:26:26	57.39	$25.28
UD	ERS	20:38:37	21:05:03	0:26:26	57.39	$25.28
UD	Scene	20:39:53	21:03:52	0:23:59	55.72	$22.27
UD	Scene	20:36:16	21:05:52	0:29:36	55.72	$27.49
UD	Communications			0:01:00	46.31	$0.77
Totals				**11:30:14**		**$643.14**

Table 12. Investigative costs for Pharma Plus robbery (January 6, 2016)

Division	Role	Dispatch	Cleared	Time	Hourly Rate	Cost
UD	Communications			0:28:51	40.26	$19.36
UD	Communications			0:01:00	46.31	$0.77
UD	Scene	15:24:59	15:54:52	0:29:53	55.72	$27.75
UD	Scene	15:25:01	15:27:07	0:02:06	55.72	$1.95
UD	Scene	15:25:16	15:51:20	0:26:04	55.72	$24.21
UD	Scene	15:25:22	15:46:34	0:21:12	55.72	$19.69
UD	Scene	15:25:22	15:35:16	0:09:54	60.73	$10.02
UD	Investigate	15:25:26	17:42:18	2:16:52	37.74	$86.08
UD	Supervisor	15:26:07	16:25:10	0:59:03	60.18	$59.22
UD	Scene	15:26:16	15:49:09	0:22:53	55.72	$21.25
UD	K9	15:26:50	15:47:58	0:21:08	57.39	$20.21
UD	K9	15:26:50	15:47:58	0:21:08	66.58	$23.45
UD	Communications			0:01:00	46.31	$0.77
UD	Scene	15:24:49	16:04:55	0.40.06	55.72	$37.24
UD	Scene	15:34:49	16:00:46	0:25:57	55.72	$24.10
UD	Communications			0:00:30	34.21	$0.29

UD	UD - Lead	15:37:08	19:15:54	3:38:46	57.39	$209.25
UD	UD - Lead	15:37:08	19:15:54	3:38:46	34.15	$124.53
UD	Scene	15:27:10	15:56:25	0:29:15	55.72	$27.16
CID	CID - Lead	15:58:28	19:37:37	3:39:09	55.72	$203.51
UD	Communications			0:01:00	46.31	$0.77
Other	Case Management			0:03:30	68.25	$3.98
Totals				**18:58:03**		**$945.56**

Table 13. Investigative costs for Simply Pharmacy robbery (February 3, 2016)

Division	**Role**	**Dispatch**	**Cleared**	**Time**	**Hourly Rate**	**Cost**
UD	Communications			0:12:57	46.31	$9.99
UD	Investigate	17:39:22	21:47:10	4:07:48	57.39	$237.02
UD	Scene	17:39:22	18:29:16	0:49:54	57.39	$47.73
UD	Supervisor	17:39:23	22:25:53	4:46:30	60.18	$287.34
UD	Scene	17:39:43	21:06:41	3:26:58	57.39	$197.96
UD	Communications			0:01:00	46.31	$0.77
UD	Communications			0:01:00	46.31	$0.77
UD	Communications			0:01:00	46.31	$0.77
UD	Investigate	17:43:10	22:59:40	5:16:30	57.39	$302.73
UD	ERS	17:47:25	23:05:26	5:18:01	57.39	$304.18
UD	ERS	17:47:25	22:39:59	4:52:34	57.39	$279.84
UD	ERS	17:47:26	21:48:44	4:01:18	57.39	$230.80
UD	Investigate	17:57:41	23:05:26	5:07:45	48.15	$246.99
UD	ERS			0:01:00	64.91	$1.08
UD	Communications			0:01:39	34.21	$0.94
UD	Communications			1:23:04	46.31	$64.11
UD	Communications	19:10:02	20:25:04	1:15:02	60.73	$75.95
UD	Communications			0:02:14	46.31	$1.72
Other				0:01:00	68.25	$1.14
Totals				**40:47:14**		**$2,291.85**

Table 14. Investigative costs for Rexall robbery (February 28, 2016)

Division	Role	Dispatch	Cleared	Time	Hourly Rate	Cost
UD	Communications			0:28:15	46.31	$21.80
UD	Scene	18:04:49	19:34:56	1:30:07	55.72	$83.69
UD	Scene	18:04:53	19:34:52	1:29:59	55.72	$83.56
UD	Investigate	18:04:58	20:59:00	2:54:02	55.72	$161.61
UD	Scene	18:04:59	20:25:48	2:20:49	57.39	$134.69
UD	UD - Lead	18:05:03	21:00:15	2:55:12	55.72	$162.70
UD	Supervisor	18:05:06	19:15:05	1:09:59	75.19	$87.70
UD	Communications			0:01:00	46.31	$0.77
UD	Scene	18:05:38	20:06:01	2:00:23	55.72	$111.79
UD	Scene	18:05:38	20:06:01	2:00:23	57.39	$115.15
UD	Supervisor	18:05:40	18:31:33	0:25:53	66.58	$28.72
UD	Scene	18:05:45	20:32:03	2:26:18	55.72	$135.86
UD	Scene	18:06:04	19:23:32	1:17:28	48.15	$62.17
UD	Supervisor	18:06:13	19:12:01	1:05:48	66.58	$73.02
UD	Supervisor	18:06:13	19:12:01	1:05:48	64.91	$71.19
UD	Communications			0:03:00	46.31	$2.32
UD	Scene	18:07:05	19:20:37	1:13:32	55.72	$68.29
UD	Scene	18:05:01	19:11:00	1:05:59	60.73	$66.79
UD	Scene	18:10:02	19:11:00	1:00:58	57.39	$58.31
UD	Scene	18:10:02	19:11:00	1:00:58	34.15	$34.70
CID	CID - Lead	18:11:33	0:21:45	6:10:12	55.72	$343.78
CID	Investigate	18:11:33	0:21:45	6:10:12	57.39	$354.10
UD	Communications			0:01:00	46.31	$0.77
UD	K9	18:20:11	19:22:44	1:02:33	57.39	$59.83
UD	Communications			0:01:00	46.31	$0.77
UD	Scene	18:18:12	19:10:41	0:52:29	55.72	$48.74
UD	Communications			0:01:00	46.31	$0.77
Other	Case Management			0:02:30	68.25	$2.84
Totals				**41:56:47**		**$2,376.44**

Table 15. Investigative costs for Rexall robbery (March 15, 2016)

Division	Role	Dispatch	Cleared	Time	Hourly Rate	Cost
UD	Communications			0:11:16	46.31	$8.70
UD	Communications			0:01:00	46.31	$0.77
UD	Scene	18:47:17	19:17:56	0:30:39	34.15	$17.45
UD	Scene	18:47:21	19:14:32	0:27:11	57.39	$26.00
UD	UD - Lead	18:47:24	22:24:00	3:36:36	55.72	$201.14
UD	Investigate	18:47:26	20:18:30	1:31:04	57.39	$87.11
UD	Scene	18:47:29	19:22:11	0:34:42	57.39	$33.19

UD	Communications			0:01:00	46.31	$0.77
UD	Supervisor	18:47:39	19:40:36	0:52:57	57.39	$50.65
UD	Investigate	18:49:33	20:17:34	1:28:01	57.39	$84.19
CID	Investigate	18:54:18	20:00:38	1:06:20	66.58	$73.61
UD	Communications			0:01:00	40.26	$0.67
UD	Communications			0:01:00	46.31	$0.77
Other	Case Management			0:06:00	68.25	$6.83
Totals				**10:28:46**		**$591.84**

Table 16. Investigative costs for Shoppers Drug Mart robbery (April 5, 2016)

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