



# Between Life and Death

## The Barriers to Calling 9-1-1 During an Overdose Emergency





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We extend a sincere thank you to the 450 people who generously gave their time and experience to the survey team. We are grateful for their participation, without which this study would not exist.

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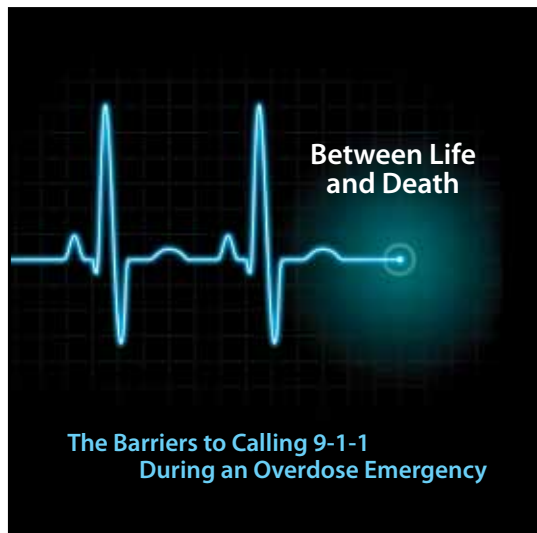
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## Executive Summary

In Ontario and Waterloo Region, accidental poisoning, of which unintentional drug overdoses are the leading component, are the third leading cause of accidental death (Ontario Mortality Data, 2007). In Ontario, opioid-related deaths doubled from 1991 to 2004 from 13.7 per million to 27.2 per million (Dhalla et al., 2009). Fatal and non-fatal overdoses have significant social, health and economic impacts, including loss of productivity and direct costs to health care and law enforcement (Rehm et al., 2006). The societal burden of opioid-related mortality and morbidity in Canada is substantial (Dhalla et al., 2009).

Overdose deaths, and related harms, can be prevented through interventions such as prompt emergency medical attention, but for people who use drugs there are barriers to calling 9-1-1 during these emergencies. Locally, and in most of Canada, a 9-1-1 emergency call triggers a response from police, fire and ambulance.



This research confirms barriers exist to calling 9-1-1 during an accidental overdose in the Waterloo Region, Wellington County and Guelph area. Fear of the criminal justice system is the number one reason people would not call. The research also revealed that populations more likely to witness an overdose are less likely to call 9-1-1 than others in the survey sample. For example, younger individuals are significantly less likely to call 9-1-1 and wait for help to arrive. They are also significantly more likely to cite fearing arrest as a reason they would not make the call.

The barriers to calling 9-1-1 during an accidental drug overdose represent both challenges and opportunities for Waterloo Region to implement mechanisms that will preserve and protect life. While finding a way to appropriately reach individuals at risk of an accidental overdose can be challenging, from a community policing and service provider perspective, addressing issues related to overdoses can provide windows of opportunity to build connections (Cunningham, Sobell, Sobell & Gaskin, 1994). For a population that is traditionally hard-to-reach and serve, lowering the threshold to calling 9-1-1 may forge the path to improved health care and access to resources (Kerr & Palepu, 2001).



## Introduction

Described by the Waterloo Region Record as a clean-cut biochemistry student and aspiring pharmacist, Maxim Vasilieva recently plead guilty to a charge of methadone trafficking. Vasilieva received an 18-month conditional sentence, probation for a year, and 50 hours of community service for supplying his girlfriend with a dose of methadone that almost killed her. With a history of recreational-drug experimentation, the couple decided to celebrate their one-year anniversary by trying this prescription painkiller. Over the next two days, the young woman experienced difficulty breathing, walking and talking. Her heart stopped for 30 to 40 minutes and she was placed in a medically induced coma; while in hospital, she became at risk of having her arm amputated due to an infection.

Interestingly, neither Maxim, nor the overdose victim told anyone that the symptoms were due to drugs she had taken, even though she was at high risk of brain damage and death. “Vasilieva had several chances during the crisis to tell people about their drug use, but didn’t admit it until methadone was found in her system and he was confronted by police” (p. B2). Justice Sharon Nicklas explained “this is a prime example of what can go wrong” (Caldwell, 2012, August 25).

### Overdose: A Potentially Fatal Loss of Nervous System Functioning

An overdose<sup>1</sup> occurs when a person takes more of a substance or combination of substances than their body can handle. Consequently, the central nervous system is not able to function properly and the person loses control of basic functioning. An opioid overdose will manifest as respiratory failure as the brain fails to keep the lungs breathing while a stimulant overdose can trigger cardiac arrest.

Overdoses can be unintentional and accidental, wherein the person does not realize the quantity, quality, or mixture of substances would cause an overdose, or they can be intentional, thus being an attempt to end their life (Darke, 2011; Wagner et al., 2010; Coffin, Sherman & Curtis, n.d.; Bell & Parkinson, 2008; Tracy et al., 2005). The focus of this study is on accidental overdoses.

Overdoses can be fatal, but typically they are not (Darke, Mattick & Degenhardt, 2003). That some substances are legal or illegal makes no difference to the body. In gauging the acute fatal reaction of psychoactive substances, researchers conclude many illegal substances are “considerably safer than alcohol” (Gable, 2006, p.208).

There are several factors affecting one’s probability of an accidental overdose beyond just amount and type of substance ingested, including ingesting multiple substances, any period of abstinence, mood, setting and more. Substances which can lead to overdose can be categorized into three types: downers (such as alcohol and opioid), stimulants (such as speed and cocaine), and hallucinogen (such as magic mushrooms and LSD). The overdose victim may pass out, have shallow breathing or stop breathing, and they may not respond to loud noises or react to pain. The person’s lips or fingernails may turn blue and their eyes may roll back; they may have heart failure or experience seizures. Table 1 details the different types, common symptoms, and recognizable behaviours of overdoses (Preventing Overdose Waterloo-Wellington, 2012)<sup>2</sup>.

<sup>1</sup> For this report, an overdose does not include drug-attributable suicide or attempts.  
<sup>2</sup> The current study is primarily concerned with opioid overdoses.



Table 1: Types of Overdoses

<u>Downer</u>	<u>Stimulant</u>	<u>Hallucinogen</u>
<b>Examples</b>		
<ul style="list-style-type: none"> <li>Alcohol</li> <li>Opioids, such as:               <ul style="list-style-type: none"> <li>OxyContin, OxyNeo,</li> <li>Heroin</li> <li>Fentanyl</li> <li>Morphine</li> <li>Hydromorphone,</li> <li>Dilaudid</li> <li>Percocet</li> </ul> </li> <li>Benzodiazepines               <ul style="list-style-type: none"> <li>Diazepam/Valium</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Amphetamine (speed)</li> <li>Methamphetamine (crystal meth)</li> <li>Cocaine</li> <li>Crack cocaine</li> </ul>	<ul style="list-style-type: none"> <li>Magic mushrooms</li> <li>LSD</li> <li>Ketamine ('Special K')</li> <li>Peyote</li> </ul>
<b>Feels Like</b>		
<ul style="list-style-type: none"> <li>Can't stay awake</li> <li>No energy or strength</li> <li>Can't walk or talk</li> <li>Clammy skin</li> </ul>	<ul style="list-style-type: none"> <li>Short of breath</li> <li>Very hot, sweaty, shaky</li> <li>Heartbeat is fast</li> <li>Faintness, nausea, chest pain</li> </ul>	<ul style="list-style-type: none"> <li>Gasping for air</li> <li>Hot, Sweaty</li> <li>Fidgety</li> <li>Rapid, pounding pulse</li> <li>Irregular heart beat</li> <li>Sense of dread/fear</li> </ul>
<b>Looks Like</b>		
<ul style="list-style-type: none"> <li>Breathing is slow, erratic or has stopped</li> <li>Snoring or gurgling sounds</li> <li>Lips or fingernails are blue, purple</li> <li>Non-responsive to shouting, rubbing knuckles between nose and upper lip</li> </ul>	<ul style="list-style-type: none"> <li>Tremors, Convulsions, Seizures</li> <li>Fast or no breathing/pulse</li> <li>Hot/sweaty skin, overheating</li> <li>Confusion, anxiety, panic, paranoia, psychosis</li> <li>Vomiting/nausea/foaming at mouth</li> </ul>	<ul style="list-style-type: none"> <li>Emotional crises</li> <li>Confusion, anxiety, panic, paranoia, psychosis</li> <li>Unwanted hallucinations</li> <li>Short or long-term psychosis</li> </ul>

Research based on medical examiner data, ambulance and emergency room records, and surveys of individuals who use drugs (Coffin, Sherman & Curtis, n.d.) indicates several overdose risk factors are fairly consistent across studies. The most notable risk factors for overdose are: mixing drugs<sup>3</sup> (Darke, 2011; Darke & Hall, 2003; Davidson et al., 2003) prior overdose (Stoove et al., 2009), a history of injection (Kinner et al., 2012), a recent period of abstinence such as after treatment or prison (Baca & Grant, 2007; Darke & Hall, 2003), HIV-positive status (Wang et al., 2009); moderately related to overdosing are drug potency and impurities (Darke & Hall, 2003; Coffin et al., n.d).

<sup>3</sup> Mixing benzodiazepines and alcohol is particularly dangerous (Darke, 2011).



Death from overdose is rarely immediate and the prognosis is usually positive if appropriate interventions are undertaken quickly (Davidson, Ochoa, Hahn, Evans & Moss, 2002). Non-fatal overdoses (NFOD) are still of serious concern as they can lead to significant and long-term health problems, particularly if the person is not treated by medical personnel in a timely manner. For example, NFOD can lead to peripheral neuropathy (numbing of the extremities), rhabdomyolysis (rapid break down of muscle tissue), pulmonary edema (fluid in the lungs), temporary paralysis of the limbs, chest infections, and pneumonia. Treating an overdose victim with serious injuries can cost up to \$100,000 (Butler, 2011).

## The Likelihood of Overdose Victimization is Influenced by Demographics

Opioid overdose is affecting all sectors of society regardless of class, ethnicity or geography (Beletsky, Burris & Kral, 2009). However, studies show populations who carry a higher burden of overdose can have similar demographic characteristics and are influenced by similar structural forces and systemic inequalities, such as local drug availability (Babor et al, 2010), poverty, and homelessness (Kinner et al., 2012; Wagner et al., 2010; Hall et al., 2008). People who use substances in problematic ways are

marginalized by beliefs that drug abuse is self-inflicted and that it is a criminal issue, instead of a health or social issue (Fulton, 2001; Ritson, 1999). Other notable risk factors are the individual's pattern of consumption and their overdose history (Kinner et al., 2012; Darke, 2011; Stoove, Dietze & Jolley, 2009).

*"In Waterloo Region 88% of people believe the best way to address substance abuse and addiction is through a combination of health and criminal justice approaches."*

*(Piscitelli, 2011)*

Demographically, males are more likely to die from overdose, while there is reportedly no gender difference for the likelihood of non-fatal overdoses (Marshall et al., 2012; Stoove et al., 2009; Hall et al., 2008; Fischer et al., 2004; Darke et al., 1996). Similarly, in Waterloo Region (2006), 75% of overdose deaths were male and for every one male who experienced a non-fatal overdose emergency and was seen at a local

hospital, there were 1.6 females (Bell & Parkinson, 2008). The age of people who overdose is usually 30's or 40's (Marshall et al., 2012; Bohnert et al., 2011b; Darke & Hall, 2003) with non-fatal overdoses typically during early thirty's and fatal overdoses happening later in life (Stoove et al., 2009; Darke & Hall, 2003). Aboriginal people in Canada have highly elevated overdose death rates and premature mortality rates in comparison to the general population (Marshall et al., 2012; Milloy et al., 2010).

Homelessness is associated with higher overdose risks (Kinner et al., 2012; Wagner et al., 2010; Hall et al., 2008; Fischer et al., 2004); poverty, quality of the built environment, and social under-investment are shown to increase the likelihood of overdosing and the likelihood that an overdose will be fatal (Hall et al., 2008). Participation in a methadone treatment program is a protective factor (Kinner et al., 2012; Kerr et al., 2007; Darke & Hall, 2003) as it reduces both non-fatal (Stewart, Gossop & Marsden, 2002) and fatal (Caplehorn, Dalton, Cluff & Petrenas, 1994) overdoses.

The seriousness of overdoses has not received the public attention, or response, it needs (Burris et al., 2009). The stigma of problematic drug use can render overdoses invisible. It casts a veil of silence over the true nature of overdose, namely that prescription drugs are currently a major part of the problem (Burris et al., 2009; Fulton, 2001). Interestingly, in Waterloo Region 88% of people believe the best way to address substance abuse and addiction is through a combination of health and criminal justice approaches (Piscitelli, 2011).





## Overdoses the Third Leading Cause of Accidental Death

Overdose is a leading cause of death in Canada. In Ontario, opioid-related deaths doubled from 1991 to 2004 from 13.7 per million to 27.2 per million (Dhalla et al., 2009). In 2007, accidental overdoses or undetermined intent poisonings were the third leading cause of death in Ontario (Ontario Mortality Data, 2007). In the Wellington-Waterloo Local Health Integration Network (LHIN) there were 366 reported emergency room visits related to overdoses in 2010 (See Table 2: Overdose deaths, overdose emergency room visits, and overdose hospitalizations in Waterloo Region, Wellington-Waterloo LHIN, and Ontario). For community members who use legal or illegal drugs for recreational purposes, overdose continues to be the leading cause of premature death (Darke, 2011).

**Table 2: Overdose deaths, overdose emergency room visits, and overdose hospitalizations in Waterloo Region, Wellington-Waterloo LHIN, and Ontario<sup>4</sup>**

	Number	Rate Per 100,000
<b>Overdose Deaths Waterloo Region (2007)</b>	17	3.11
<b>Overdose Deaths Wellington-Waterloo LHIN (2007)</b>	22	2.82
<b>Overdose Deaths Ontario (2007)</b>	410	2.99
<b>Emergency Dept Visits Waterloo Region (2010)</b>	273	51.68
<b>Emergency Dept Visits Wellington-Waterloo LHIN (2010)</b>	366	48.92
<b>Emergency Dept Visits Ontario (2010)</b>	8282	63.26
<b>Hospitalizations Waterloo Region (2010)</b>	95	17.73
<b>Hospitalizations Wellington-Waterloo LHIN (2010)</b>	137	17.97
<b>Hospitalizations Ontario (2010)</b>	2700	18.98

Of note, there is limited data on the number of overdoses in Canada as a whole and Ontario is no exception. Statistics need to be read with caution as overdose deaths are often underestimated due to recording difficulties and the lack of a standardized nation-wide data collection system (Bell & Parkinson, 2008). Furthermore, different methods of collecting overdose data give a range of total overdoses. Although the data may differ from one source to the next, the extent of accidental overdose continues to stand out as a significant public health concern in Ontario, behind falls and on the heels of motor vehicle collisions; in Peterborough, accidental overdoses are on par with motor vehicle collisions (Peand, 2012); in the U.S.A., among people 25 to 64 years old, unintentional poisoning caused more deaths than motor vehicle crashes (Centers for Disease Control and Prevention, 2012).

## Opportunities to Intervene Exist During Overdoses

Drug overdoses frequently happen in the presence of others (Bohnert, Tracy, & Galea, 2012; Baca & Grant, 2007; Hickman et al., 2006; Tracy et al., 2005; Davidson et al., 2002; Strange, Best, Man, Noble & Gossop, 2000; Powis et al., 1999; Darke et al, 1996). In an audit of 148 drug overdose deaths subjected to a Coroner's investigation during 2003, a witness was present in 61% of the cases. Evidence suggested that death occurred in these cases because the overdoses continued for too long, thus inhibiting effective intervention (Hickman et al., 2006). Tracy and colleagues (2005) show there is a significant likelihood that people who use drugs habitually have an opportunity to save an overdose victim from brain damage or death.

*Accidental drug overdoses frequently happen in the presence of others.*

<sup>4</sup> Ontario Mortality Data (2007), Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO. Extracted: March 16, 2012.  
Population estimates (2007, 2010), Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO. Extracted: December 19, 2011  
Inpatient Discharges External Cause (2010), Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO. Extracted March 16, 2012  
Ambulatory Emergency External Cause (2010), Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO. Extracted: March 16, 2012



## Canada Has Been Overlooked When Examining Calling 9-1-1 During an Overdose

Much of the current research on overdoses has taken place in the United States, Europe, and Australia. No research has been found in a Canadian context which examines the barriers to calling 9-1-1 during an overdose.<sup>5</sup> While understanding the local context is important when developing policy, representative local findings can help inform broader policy considerations. It is therefore important to have a Canadian case study to help inform policy decisions that aim to preserve and protect the lives of citizens across Canada. This study will partially address this gap in the literature, using Waterloo Region, Guelph and Wellington County (Ontario) as such a case study exploring barriers to calling 9-1-1 during an accidental overdose emergency.

### In Conclusion

Overdose is a significant and complex social, health, and economic issue. There has been a great deal of research done to understand overdoses; that overdose causes death and brain damage; and those most at risk are those who are already largely considered marginalized. There also exists major opportunities to intervene. Overdoses can be prevented and lives can be saved.

Still, the Canadian context is not fully understood. This research seeks to fill a gap by exploring the possible barriers and issues to calling 9-1-1 during overdose situations in a Canadian context. Before examining such barriers, it is important to examine what existing research already tells us about calling 9-1-1 during an overdose.

## Literature Review

The majority of research on overdose typically focuses on illicit opioids, specifically the use of drugs by injection, primarily heroin. In recent years, researchers have begun to look at prescription opioids prescribed for acute or chronic pain but are also widely available on the black market for narcotics. Pain experts generally agree opioids are the most effective analgesics (painkiller) available (Cheatle & Savage, 2012). However, in a study examining West Virginia, which experienced the largest increase in drug overdose mortality in the United States from 1999 to 2004 (Hall et al., 2008), opioid analgesics contributed to 93% of the 295 overdose deaths in the state in 2006. Only 44% of the victims had ever been prescribed the drugs. Studies further suggest that increased opioid prescribing is associated with increased opioid-related deaths (Bohnert et al., 2011b; Dhalla, Mamdani, Gomes & Juurlink, 2011; Gomes et al., 2011a; Gomes et al., 2011b; Hall et al., 2008). In the U.S.A., prescription opioids are the substances most often implicated in overdose fatalities (Centers for Disease Control and Prevention, 2011). Indications are that the re-formulation of OxyContin in the U.S.A. in 2010, similar to the policy change in Ontario and other provinces in 2012, has not lead to a decrease in opioid use. In a study of 2,566 people surveyed throughout 2009-2012, almost one-fourth of participants were able to use a reformulated OxyContin, and 66 percent had switched to heroin (Cicero, Ellis & Surratt, 2012).

*"In Ontario, from 1991 to 2004, Oxycodone prescriptions rose faster than any other opioid and was accompanied by a five fold rise in Oxycodon related deaths."*

(Dhalla et al., 2009)

<sup>5</sup> An extensive review of Google Scholar and a search of several related academic databases occurred. Often the researcher team would search "backwards" wherein reference lists were examined to find new sources, and "forwards" wherein, once an interesting article was located, other studies which cited the work were found. The researchers also corresponded with a Canadian scholar in the areas of addiction, HIV/AIDS, injection drug use, and health policy



Research shows that someone can experience an overdose for one to three hours (Drug Policy Alliance, 2012; Davidson et al., 2002), but the more time that passes before medical help is received, the higher the risk of permanent damage or death (Darke, 2011; Darke, Ross, Zador & Sunjic, 2000; Sporer, Firestone & Isaacs, 1996). Overdose victims need medical attention immediately. Unfortunately, research also shows that rates of calling 9-1-1 during an overdose are low (Tobin, Davey & Latkin, 2005; Darke et al., 2000) or delayed (Pollini et al., 2006a; Tracy et al., 2005), particularly in comparison to rates during other medical emergencies such as heart attacks (Brown et al., 2000). The characteristics and behaviours of people who witness overdoses have been examined; many factors come into play when someone is faced with an overdose emergency (Bohnert et al., 2012; Tracy et al., 2005; Davidson et al., 2002; Darke et al., 1996). One of these factors is the fear of police involvement and subsequent arrest, which stands to be the most prevalent reason people hesitate, or do not call, 9-1-1 (Bohnert et al., 2011a; Baca & Grant, 2007; Tobin et al., 2005; Tracy et al., 2005; Davidson et al., 2002; McGregor, Darke, Ali & Christie, 1998).

### Overdose Victims Need Medical Help Immediately

Across Waterloo Region, in 2005 there was one overdose 9-1-1 call for every 1.7 hospital admission related to overdose (Bell & Parkinson, 2008). In 2005, there were 411 calls for overdose-related Emergency Medical Services, yet 715 people were admitted into hospital emergency rooms for drug overdose, suggesting that rather than call 9-1-1, victims were dropped at the hospital and the witnesses left (Bell & Parkinson, 2008). This raises concerns about the amount of time before an overdose victim receives medical attention. More specifically, an overdose is a medical emergency, time is of the essence and any delay in treatment can put a person at risk of death or brain damage. For example, Sporer and colleagues (1996), in a San Francisco based study found overdose victims who received emergency medical care while they still had a pulse and blood pressure have survival rates greater than 90% but most overdose cases resulting in death (101 of 117) were reported only after the victim had advanced signs of death.

### Rates of Calling 9-1-1 During an Overdose are Low

Although people who use drugs can often identify signs and symptoms of overdose (Sherman et al., 2008; McGregor et al., 1998; Powis et al., 1999), sometimes bystanders may not recognize the symptoms as life threatening (Beletsky et al., 2009) and typically rates of calling 9-1-1 during an overdose are low (Bradvik, Hulenvik, Frank, Medvedeo & Berglund, 2007; Tobin et al., 2005; Darke et al., 2000) or delayed (Pollini et al., 2006a; Tracy et al., 2005).

In reviewing 953 coroner files, Darke and colleagues (2000) found that in only 15% of the cases an ambulance was called and in 79% of cases no intervention occurred. Using a cross-sectional survey, Tobin et al. (2005) found that an ambulance was called in only 23% of overdose cases. Pollini et al. (2006a) surveyed 924 people who use and found that 63.4% called but more than half delayed calling by five minutes. Tracy and colleagues (2005) showed similar results, wherein 67.7% of their sample called for medical assistance but 21.2% delayed making the call. Research has also shown people are usually with friends or partners at the time of overdosing and that these bystanders are usually aware of the type(s) of drugs the victim has taken (Strange et al., 2000; Strange et al., 1999).

Studies consistently show that although bystanders are usually aware of the victim's circumstances, people hesitate to call 9-1-1 when witnessing an overdose and too often the call is never made.



## Who the Bystander is Changes the Likelihood of 9-1-1 Being Called

The presence of a female bystander increases the odds of calling 9-1-1 and males report taking longer to call than females. Darke et al. (1996) suggest this difference may be due to gender-defined social norms. Indeed, Tracy and colleagues (2005) showed 70.6% of women called for medical help, while 66.7% of males called. Darke et al. (1996) also suggest that people between the ages of 35 to 44 were most likely to witness an overdose, followed by 25 to 34. Yet, the 35 to 44 age range were not the most likely to have made a 9-1-1 call, instead 25 to 34 year olds were. In other words, people who were more likely to witness an overdose were not the most likely to call 9-1-1.

If a bystander had previously personally overdosed, they are less likely to call 9-1-1 when witnessing an overdose in the future. However, if bystanders were taken to the hospital during their last overdose, they are more likely to call in comparison to people who had not been taken (Tracy et al., 2005). Bohnert et al. (2012) found the more overdoses people witness, the less likely they are to have called 9-1-1 at the last overdose. There is also evidence that “individuals who had witnessed more overdoses were more likely to report potentially dangerous or counterproductive actions at the last overdose they witnessed” (p.170) such as injecting the victim with water, salt, speed or bleach. Such mythical remedies can have detrimental effects on the victim’s health (Davidson et al., 2002). For participants who witnessed eleven or more overdoses and delayed or did not call 9-1-1, the main reason for not calling was the belief that the victim could be helped without medical assistance. However, despite having more experience witnessing overdoses, they were no more likely to report that the overdose victim lived (Bohnert et al., 2012).

People who witness overdoses may have greater overdose risk themselves (Bohnert et al., 2012; Tracy et al., 2005). Typically bystander and victim belong to similar social networks and have similar risk characteristics. Tracy and colleagues (2005) looked at the circumstances of 672 people who use heroin, crack, and cocaine, and had witnessed an overdose. They found people who were more likely to witness an overdose were more likely to have overdose risk characteristics, such as previous incarceration, currently injecting, and to have ever overdosed her or himself. Bohnert and colleagues (2012) administered 1,184 structured interviews to people who had recently used heroin and/or cocaine. They found that males, who had experienced homelessness, used heroin, and had overdosed themselves, were more likely to witness an overdose.

## Fear of Police Involvement is the Most Common Barrier to Calling 9-1-1

American (Bohnert et al., 2011a; Baca & Grant, 2007; Pollini et al. 2006a; Tobin et al., 2005; Tracy et al., 2005), Australian, (Darke, 2011; McGregor et al.1998; Darke et al., 1996) and European (Togia et al., 2008; Sergeev, Karpets, Sarang & Tikhonov, 2003) research demonstrates there are barriers to calling 9-1-1 during accidental drug overdoses.

The most prevalent reasons for not calling 9-1-1 are fear of police involvement and subsequent arrest (Bohnert et al., 2011a; Baca & Grant 2007; Tobin et al., 2005; Tracy et al., 2005; Davidson et al., 2002; McGregor et al., 1998), as well as having inaccurate information, such as believing they are in control of the situation and can revive the individual (Bohnert et al., 2012; Pollini et al., 2006a; Tracy et al., 2005). Another barrier to calling 9-1-1 is the illegality of certain substances (Health Officers Council of British Columbia, 2005; Kerr, Small & Wood, 2005). Community members are also concerned they will be labeled a “drug user” suggesting stigma can make people less willing to call 9-1-1 (Beletsky et al., 2009). Other common reasons for not calling 9-1-1 are that the bystander may not have access to a phone (Tracy et al., 2005; Davidson et al., 2002) or the person regained consciousness before seeking medical assistance (Davidson et al., 2002).



## Surveying Individuals Who Use Substances Problematically is a Challenge

In general, studies on overdoses are limited by several factors. First, convenience samples are usually used because people who use substances illicitly are stigmatized, “hidden”, and difficult to reach for random sampling. This limits a study’s ability to be generalizable. Second, many studies are based on coroner files, however these data sources may be significant underestimations of the problem because autopsies are conducted on only a fraction of people who die, and only a fraction of those have toxicology reports. A cocaine overdose, for example, could be recorded as a cardiac arrest. These methodological issues go beyond the scope of this current report as the research team is focusing solely on the perceived barriers to calling 9-1-1 during an accidental overdose for people who use or used substances. Indeed, research shows us the complexities of overdose emergencies and people who witness them, wherein a “hidden” population live with various risk factors and barriers (Bohnert et al., 2011a; Beletsky et al., 2009; Baca & Grant 2007; Pollini et al., 2006a; Tobin et al., 2005; Tracy et al., 2005; Davidson et al., 2002). This report, of course, does not deal with all methodological and pragmatic issues. What this report does do however, is fill a gap in research by identifying barriers to calling 9-1-1 in a Canadian context and by providing specific policy options for Canadian jurisdictions. Ideally this work will help inform Canada-wide policy discussions that aim to preserve and protect the lives of Canadians.

## Study Methodology

It is important to understand the local context, to effectively inform evidence-based interventions, as overdose risks and contextual factors are not entirely comparable between regions and countries (Marshall et al., 2012). This makes finding a representative area for a Canadian case study important for aiding in policy development. The area covered by the Waterloo-Wellington Local Health Integration Network (LHIN)<sup>6</sup> is a suitable location to study barriers to calling 9-1-1 during an overdose because it is a geographic area relatively representative of Ontario and Canada in several ways.

The Waterloo-Wellington LHIN is made up of a mix of urban and rural areas with four cities, Kitchener, Waterloo, Cambridge and Guelph, and five rural townships, Wellington, Wilmot, Wellesley, Woolwich and North Dumfries, and Grey County (Local Health Integration Network, 2012b). For the purposes of this study Grey County was largely excluded and minimal responses were received from the other townships. Socio-demographically (see Table 3: Socio-Demographic Profile of Wellington-Waterloo LHIN, Ontario, and Canada) the area covered by the Waterloo-Wellington LHIN, had a labour force participation rate of 71.8% in 2004, while Ontario was 67.3%, and Canada was 67.4% in 2007. In terms of education, 47% of the Waterloo-Wellington population (age 20+) had completed post-secondary education, with 48.7% of Ontarians (2004) and 53% of Canadians (2011). The percentage of people with incomes below the low income cut off (LICO) was 10.2% in Waterloo-Wellington, 14.4% in Ontario (2004) and 9% in Canada (2010).

The age-standardized hospitalization rate per 100,000 due to injury and poisoning was 611 in Waterloo-Wellington and 578.6 in Ontario, meaning that Waterloo-Wellington’s rate of hospitalization due to injury and accidental poisoning is 10% higher than the provincial percentage. In Waterloo-Wellington, 20.6% of deaths occur before the age of 65 and 40.5% occur before the age of 75. In Ontario, percentages are 21.3% and 41.2% respectively. Wellington-Waterloo has a lower percentage of Aboriginal identified people, with 0.7% in 2006 compared to 3.8% in Canada. This is noteworthy as Aboriginal people in Canada are at higher risk of overdosing than non-Aboriginal Canadians (Human Resources and Skills Development Canada, 2012a; Human Resources and Skills Development

<sup>6</sup> Ontario is comprised of 14 not-for-profit corporations called LHINs who work with local health providers and community members to determine the local health service priorities (Local Health Integration Network, 2012a).



Canada, 2012b; Human Resources and Skills Development Canada, 2012c; Statistics Canada, 2012; Canadian Institute for Health Information, 2011; Milloy et al., 2010; Health System Intelligence Project, 2004; Region of Waterloo, n.d.). In conclusion, the Waterloo-Wellington LHIN is a relatively good representation of Ontario and Canada because of its geography and socio-demographic characteristics.

**Table 3: Socio-Demographic Profile of Wellington-Waterloo, Ontario, and Canada**

	<b>Wellington-Waterloo LHIN (2004)</b>	<b>Ontario (2004)</b>	<b>Canada</b>
<b>Labour Force Participation (age 15+)</b>	71.8%	67.3%	67.4% (2007)
<b>Population (age 20+), completed post-secondary education</b>	47%	48.7%	53% (2011)
<b>Percentage of people in low income</b>	10.2%	14.4%	9% (2010)
<b>Age-standardized hospitalization rate per 100,000 due to injury and poisoning</b>	611	578.6	534 <sup>7</sup> (2009)
<b>Population of Aboriginal Identified</b>	0.7%	1.7%	3.8% (2006)

Waterloo Region, a sub-geography within the Waterloo-Wellington LHIN has had a substantial amount of previous research conducted. The Waterloo Region Crime Prevention Council published the “Waterloo Region Integrated Drugs Strategy” (2011), which marks a local attempt at creating and implementing a comprehensive strategy that includes integration, prevention, harm reduction, recovery and criminal justice initiatives. In relation to overdoses, it recommends a review on the regional emergency response protocol during overdoses, enhanced local data on drug-overdose related emergencies, and overdose prevention strategies. “A First Portrait of Drug-Related Overdoses in Waterloo Region” (Bell & Parkinson, 2008) examines the extent of drug-related overdose emergencies and deaths in Waterloo Region. “Saving lives: Overdose prevention and intervention projects in select North American cities” (Weisser & Parkinson, 2008) identifies key elements of programs that prevent and reduce drug-related overdoses. “Baseline Study of Substance Use, Excluding Alcohol in Waterloo Region” (Centre for Community Based Research, 2008) indicates that local community members are reluctant to call 9-1-1 during an overdose. Half of the 32 participants believed the people in their social network that used drugs would be unlikely to seek medical help on their behalf.

*“They believed that their friends would either try to help them themselves or would simply flee the scene. The remaining half of the PWUD [People Who Use Drugs] felt confident that members of their social network would contact health providers. In some situations, a friend would then stay with them until the medical response arrived, while others would flee the scene once a call to emergency had been made.” (p.31).*

The Baseline Study of Substance Use Excluding Alcohol findings are consistent with the findings of the current study. This cross-study validation shows one of the benefits of conducting research in a region that has been studying accidental overdoses as it provides a firm understanding of local challenges and opportunities.

<sup>7</sup> Hospitalization due to poisoning is not included in this number.



## Survey Administration Designed to Reach a Large Sample of People

This research specifically seeks to understand if there are issues or barriers to calling 9-1-1 during emergencies of suspected accidental overdoses in the Waterloo-Wellington LHIN area. The project has been reviewed by the Wilfrid Laurier University, Research Ethics Board in Waterloo, Ontario. Two populations were surveyed: clients of Ontario Addiction Treatment Centres (OATC) and people who access local outreach services.

Staff and students at the Waterloo Region Crime Prevention Council administered a survey to the clientele of the “Ontario Addiction Treatment Centres” (OATC) in Kitchener, Cambridge, and Guelph on four separate days from April 19 to May 10, 2012. The OATC is the primary provider of methadone locally, a substitution therapy used to treat opioid addiction. The surveys were also administered by outreach workers across the WWLHIN, and Waterloo Region Public Health Staff in Cambridge and Waterloo. A poster to advertise the study and the survey was placed in the OATC’s and emailed to the outreach workers a week before the administration began.

Each person who participated was given an information letter explaining the survey, a card with the local Mental Health Crisis line phone number on it, and an information card from Public Health regarding calling 9-1-1 during drug overdoses. Once the surveys were administered at OATC, they were placed anonymously in a box and brought to the Crime Prevention Council Office immediately after daily survey administration, and locked in a secure cabinet. For the outreach workers, participants placed their surveys in envelopes, sealed them, and marked the seal. These processes ensured anonymity.

## The Survey was Revised to Ensure Accurate Results

After administering the surveys for the first time, Crime Prevention Council staff and students noticed there was a disconnection within survey responses. In the original survey (n= 159) 91 people indicated they had witnessed an overdose. Among these respondents 44% (n=40) indicated 9-1-1 was called at the most recent overdose, 51% (n = 46) indicated 9-1-1 was not called and 5% (n=5) indicated they did not know if 9-1-1 was called. Among those who did not call or did not know if 9-1-1 was called 72% (n=33) thought they would call 9-1-1 if they were to witness an overdose in the future. This result seems unlikely as past practice is one of the best predictors of future behaviour (Ajzen, 2002).

It is plausible some respondents who did not call 9-1-1 in the past would call in future. Since the original survey was only conducted at two OATC locations, some respondent’s life circumstances would have significantly changed, in other cases it is possible respondents witnessed individuals die as a result of an overdose and this changed their propensity to call. However, it seems unlikely that so many respondents who had not called 9-1-1 in the past when witnessing an overdose would call in the future. The survey team therefore modified the survey slightly (see Appendices A & B).

The revised edition of the survey had some other minor additions. Retirement was added as an option for personal circumstances. Retirement was handwritten by a few respondents on the original survey. These results were coded as retirement. In addition, “including OW/ODSP” (Ontario Works/Ontario Disability Support Program, Ontario’s terms for social assistance programs) was added as an explanation below social assistance. This change was a result of questions from some survey respondents. Once the surveys were complete, results were coded. During the coding if a response was inputted despite a previous question result suggesting the question should be skipped it was coded as missing. In addition, if a respondent checked off two options when only one option was allowed this was also coded as a missing variable.



The final results were explored using frequency tables and then compared using crosstabulations. Frequency tables allow the ranking of results. Crosstabulations places data in a table to show relationships between variables. These techniques illuminated the barriers to calling 9-1-1 in the area covered by the Waterloo-Wellington LHIN.

## Results

The Overdose Response Survey was administered to individuals who use or have used illicit drugs and/or alcohol and/or prescription drugs for recreational purposes. The demographics of this population as a whole are not known; therefore it is not possible to assess how well the demographics of respondents are representative of all people who use illicit drugs problematically and people who use prescription drugs for recreational purposes.

The survey was conducted from April 19, 2012 to July 15, 2012 inclusively. During this time a total of 450 surveys were completed. Among these 159 were completed before the survey was revised, which were all completed at methadone clinics. The revised survey had 291 respondents of which 180 were completed at methadone clinics and 111 through outreach workers or at public health needle exchange clinics.

### High Response Rates

Response rates were tracked at the methadone clinics. The results showed 71% of individuals approached completed the original survey. The response rate was higher on the revised survey at 76%. Response rates were also higher among females for both surveys.

**Table 4: Response Rates of Methadone Participants**

Survey	Total (%)	Males (%)	Females (%)
<b>Original Survey Kitchener</b>	67.6	62.9	73.2
<b>Original Survey Cambridge</b>	65.5	57.1	75.0
<b>Revised Survey Cambridge</b>	78.1	70.9	89.1
<b>Revised Survey Guelph</b>	72.7	67.7	78.6
<b>Original Survey Total</b>	67.1	61.6	73.7
<b>Revised Survey Total</b>	75.6	69.4	84.1
<b>All Survey Total</b>	71.4	65.4	79.3

### Survey Demographic Suggest the Target Population was Reached

The 450 survey respondents were 62% male and 38% female, not including respondents who identified as 'other'. Only a small number of people identified as 'other' therefore these individuals were excluded from reporting to protect their confidentiality. These percentages were the same for the original survey and the revised survey. Examining only the revised survey results shows a slight different between males and females when comparing outreach clients to methadone clinic clients. The methadone clinic showed 40% of respondents as female and 60% as male whereas among outreach clients the breakdown was 31% to 69%.





**Table 5(a): Demographics Gender**

<b>Gender</b>	<b>Original Survey</b>	<b>Revised Survey</b>	<b>Total Survey</b>
Male	62%	62%	62%
Female	38%	38%	38%

Thirty six per cent of survey respondents were between 16 and 29 years of age, 42% between 30 and 45 and 22% above 46. Survey respondents were slightly younger in the revised survey. Examining the revised survey comparing outreach to methadone clinic shows some minor but non-statistically significant differences. In fact, the breakdown of the outreach clients was 43% among 16-29 year olds, 33% among 30-45 year olds and 24% were 46 or older. In comparison the methadone clients were 34% 16-29, 44% 30-45 and 22% were 46 or older.

**Table 5(b): Demographics Age**

<b>Age</b>	<b>Original Survey</b>	<b>Revised Survey</b>	<b>Total Survey</b>
<b>16-29</b>	29%	40%	36%
<b>30-45</b>	48%	38%	42%
<b>46+</b>	23%	22%	22%

The participant-identified residence for respondents varies considerably between the original and revised survey, likely because of the location of the methadone clinics. Overall one third of respondents came from Kitchener, 31% from Cambridge, 24% from Guelph, 6% from Waterloo and 6% from area classified as 'other'. The areas included in the 'Other' category represented a township within the Waterloo-Wellington LHIN boundaries, or a city or township outside of the Waterloo-Wellington LHIN boundaries.

**Table 5(c): Demographics City of Residence**

	<b>Original Survey</b>	<b>Revised Survey</b>	<b>Total Survey</b>
<b>Waterloo</b>	10%	4%	6%
<b>Kitchener</b>	59%	18%	33%
<b>Cambridge</b>	24%	35%	31%
<b>Guelph</b>	0%	38%	24%
<b>Other</b>	7%	5%	6%

Other demographics were relatively similar between the original and revised survey. A total of 24% of respondents indicated they were on probation or parole at the time of the survey. Thirty-eight per cent of respondents had children under 17. Finally, and perhaps most importantly, 65% of our sample indicated they have used illicit drugs in the past year and 59% had used prescription drugs for recreational purposes in the past year. A total of 71% had used illicit drugs or prescription drugs for recreational purposes in the past year. This clearly indicates that the research team reached the target population as individuals who use illicit drugs and drugs for recreational purposes are more likely to witness an overdose (Tracy et al., 2005).



Table 5(d): Demographics Other

	Original Survey	Revised Survey	Total Survey
On Probation/Parole	21%	25%	24%
Children under 17	36%	39%	38%
Illicit drugs	67%	64%	65%
Prescription drugs	57%	60%	59%
Illicit drugs and/or Prescription drugs	71%	72%	71%

### Most of the Survey Respondents Have Experience with Overdoses

*59% witnessed at least one overdose, yet only 46% indicated that 9-1-1 was called the last time an overdose was witnessed.*

The majority of respondents, 59%, had witnessed at least one overdose. Among those who said they saw an overdose, 76% had witnessed between one and four overdoses. Among those who had witnessed an overdose, 46% said the last time they witnessed an overdose someone called 9-1-1. This means that in slightly more than half the cases 9-1-1 was not called or the respondents did not know if it was called. This low calling rate is consistent with the findings in the literature (Tobin et al., 2005; Darke et al., 2000).

Table 6: Overdoses Witnessed

	Original Survey	Revised Survey	Total Survey
Witnessed Overdose	59%	58%	59%
1 Overdose	23%	27%	26%
2 Overdoses	22%	26%	25%
3-4 Overdoses	32%	23%	26%
5 or more overdoses	22%	24%	24%
9-1-1 Called	40%	49%	46%

### Approximately 1 in 5 Respondents Have Had Overdose Prevention Training

Survey respondents were also asked if they had received any training on how to prevent overdoses. Approximately one in five indicated they had received such training.

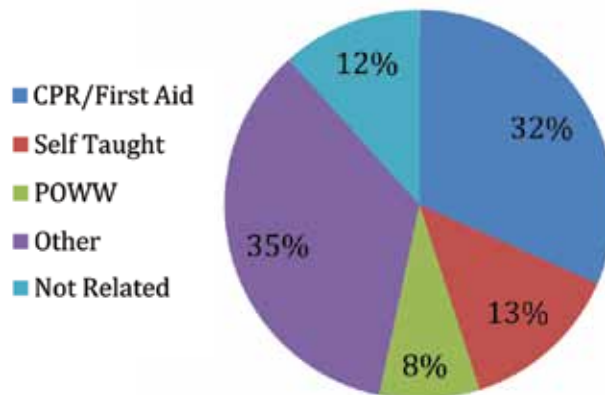


**Table 7: Received Training on Overdose Prevention**

	Original Survey	Revised Survey	Total Survey
<b>Overdose Training</b>	23%	17%	19%

However, the kind of training varied from CPR/First Aid training with 19 respondents. The second most common response was Self Taught with 8 respondents. Third was POWW (Preventing Overdose Waterloo Wellington, a local group of individuals active in training service providers and individuals in overdose prevention and intervention) training with 5 responses. In addition 21 respondents indicated some other type of training and 7 respondents made a comment not related to training. Self taught as the second most common answer is a concern as street remedies can often be dangerous for overdose victims (Warner-Smith et al., 2000).

**Received Training on Overdose Prevention and Intervention**



**What to do and what not to do during an Overdose**

Street remedies during an overdose can often be dangerous for the victim, causing injuries such as burns, bruises, broken bones & hypertension (Warner-Smith, Darke & Day, 2002). Common street responses include slapping the victim, inflicting painful stimuli, walking them around, injecting them with saline, milk or other drugs, placing ice on them, or putting them in a cold shower (Baca & Grant, 2007; Pollini et al., 2006a; Tracy et al., 2005). Bystanders do these things more often than one may hope. Pollini et al. (2006a) showed bystanders typically walked the victim (71%), shook them (65%), inflicted pain (63%) & injected with salt water (26%). These responses and percentages vary of course, and in comparison to other studies, Tracy et al. (2005) demonstrated a higher percentage (19.3%) of respondents who injected the victim with water, salt, bleach, or speed. Ultimately, street remedies can delay appropriate responses and can cause further harm. Examples of appropriate responses include calling 9-1-1, administering first aid measures such as cardiopulmonary resuscitation (CPR), placing the victim in a recovery position or providing Naloxone (Centers for Disease Control and Prevention, 2012).



## Two Thirds of Respondents Would Call 9-1-1 in a Future Overdose Situation

Just over half (54%) of respondents to the revised survey indicated that if in future they saw an overdose they would call 9-1-1 and wait for help to arrive.

Among those that would not call and wait, 25% indicated they would call but not wait for help to arrive. This means approximately 2/3 of respondents thought they would call 9-1-1 if they witness an overdose in future. This study found no statistically significant difference between males and females with respect to if 9-1-1 was called during the most recent overdose that they witnessed. This is in contrast to previous studies that found that females were more likely to call 9-1-1 in comparison to males (Tracy et al., 2005).

## Fear of Arrest the Most Common Barrier to Calling 9-1-1

The most common concern cited by respondents was fear of being arrested. This was stated by 28% of all respondents and 53% of respondents who would not call 9-1-1 and wait. The second most common concern was breaching probation or parole at 16% or 30% of those who would not call and wait. This numbers jumps significantly to 53% if only respondents on probation or parole are included. The third most common response among those that would not call 9-1-1 was fear of losing custody of children. This was stated by 24% of respondents who would not call 9-1-1 and wait. It was cited as a concern by 43% of respondents with children and 73% of women with children. This last percentage should be used with caution as only 15 women with children answered the revised surveyed. Next was fear of damaging relationship with employer or losing one's job which was cited by 24% of those who would not call 9-1-1 and wait. This number increases to 38% if only those who indicated they were employed are included. Other common barriers for respondents (10-15%) were: getting drugs confiscated; friends and/or family finding out; cost of ambulance; don't have access to a phone; and relationship with landlord. The final four responses were each identified by less than 14% of those who would not call 9-1-1 and wait. They include: dislike paramedics or hospital personnel; I can take care of it; don't believe 9-1-1 would help; and I have Narcan/Naloxone and would administer it (see Table 8: Barriers to Calling 9-1-1 During an Overdose).

Diagram 1: Summary of Survey Responses

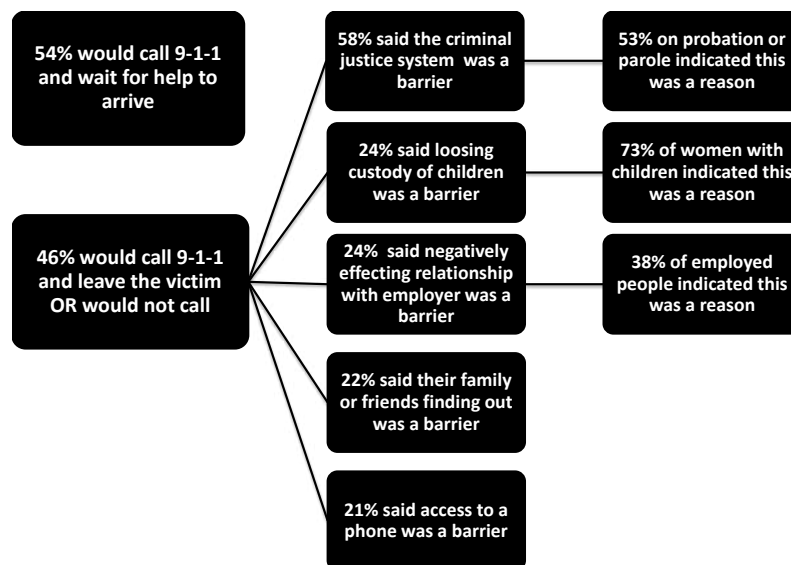


Table 8: Barriers to Calling 9-1-1 During an Overdose<sup>8</sup>

Response	All Respondents	Excluding Would Call and Wait
<b>Would call and wait until help arrived</b>	<b>54%</b> (n=243)	-
<b>Would call and leave</b>	<b>14%</b> (n=243)	<b>25%</b> (n=112)
<b>Getting arrested</b>	<b>28%</b> (n=243)	<b>53%</b> (n=112)
<b>Breaching probation/parole</b>	<b>16%</b> (n=243)	<b>30%</b> (n=112)
<i>On parole/probation</i>	<b>43%</b> (n=63)	<b>53%</b> (n=40)
<b>Losing custody of children</b>	<b>14%</b> (n=243)	<b>24%</b> (n=112)
<i>With children</i>	<b>22%</b> (n=91)	<b>43%</b> (n=35)
<i>Women with children</i>	<b>28%</b> (n=46)	<b>73%</b> (n=15)
<b>Employer Relationships</b>	<b>13%</b> (n=243)	<b>24%</b> (n=112)
<i>Employed</i>	<b>18%</b> (n=71)	<b>38%</b> (n=29)
<b>Getting drugs confiscated</b>	<b>14%</b> (n=243)	<b>23%</b> (n=112)
<b>Friends, family finding out</b>	<b>14%</b> (n=243)	<b>22%</b> (n=112)
<b>Cost of ambulance</b>	<b>12%</b> (n=243)	<b>22%</b> (n=112)
<b>Don't have phone access</b>	<b>15%</b> (n=243)	<b>21%</b> (n=112)
<b>Relationship with landlord</b>	<b>10%</b> (n=243)	<b>19%</b> (n=112)
<b>Dislike paramedics/hospital</b>	<b>7%</b> (n=243)	<b>14%</b> (n=112)
<b>I can take care of it</b>	<b>8%</b> (n=243)	<b>11%</b> (n=112)
<b>Don't Believe 9-1-1 will help</b>	<b>5%</b> (n=243)	<b>7%</b> (n=112)
<b>Have Narcan/Naloxone</b>	<b>5%</b> (n=243)	<b>5%</b> (n=112)

<sup>8</sup> Percentages do not add up to 100 as respondents were asked to choose more than one if applicable (see Appendices A & B).



## Discussion

Approximately two thirds of survey respondents said if they saw an overdose in the future they would call 9-1-1 and half of the sample would call and wait for help to arrive. This is promising, however, it is not ideal. It compares poorly with bystander responses to other medical emergencies such as heart attacks, where “community members intending to use EMS during a witnessed cardiac event

**46% of respondents indicated 9-1-1 was called during the last overdose they witnessed.**

was 89%” (Brown et al., 2000, p.173). The results look even worse when asking people about the last overdose they had witnessed. In these circumstances only 46% of respondents indicated that they knew 9-1-1 had been called. This is significantly lower than other related studies which indicate that during the last witnessed heroin overdose, 9-1-1 was called 67.7% of the time (Tracy et al., 2005). Note, the question in both studies asked if 9-1-1 was called,

not if the respondent called it. So in some of these circumstances it is likely that someone other than the respondent called 9-1-1. While 43% of respondents indicated 9-1-1 was not called and another 11% did not know if 9-1-1 was called or not. Comparing these results to the 2/3 of respondents who said they would call 9-1-1 in the future suggests either the respondents are being overly optimistic about if they will call 9-1-1 in future and/or the sample captures a number of individuals who are unlikely to witness an overdose but would call 9-1-1 if they did see one. There is some evidence, as will be shown shortly, to suggest both of these issues cause the discrepancy in results.

In the revised survey 60% of those who called 9-1-1 in the past indicated they would call and wait for help to arrive, this compares to only 33% in the did not call or do not know group. This still means almost half (49%) of the respondents who did not call in the past believe they would call in the future. While this number is more plausible, it still seems high.

**60% of people who were present at an overdose where 9-1-1 was called, indicated that they would call 9-1-1 in the future.**

Considering the results from the original survey and the revised survey suggest that it is plausible that some individuals are being overly optimistic about the likelihood they will call 9-1-1 in future should they witness an overdose. Since past behaviour

is often a good predictor of future behaviour (Ajzen, 2002) it is likely that some of the participants who did not call 9-1-1 at the most recent overdose they witnessed are overestimating the likelihood they will call 9-1-1 in future overdose situations.

### Witnesses to a Past Overdose More Likely to Fear Calling 9-1-1

A crosstabulation was conducted to compare the likelihood of calling 9-1-1 among individuals who have witnessed an overdose to those who have not. Those who had not witnessed an overdose were significantly more likely to believe they would call 9-1-1 and wait for help to arrive. This holds true when comparing these individuals to those who would not call and wait and when separating those who would call and run. The number of overdoses witnessed also predicts the likelihood of calling 9-1-1 during an overdose.



**People who have previously witnessed an overdose are more likely to fear arrest and less likely to call 9-1-1.**

The likelihood of calling 9-1-1 decreases as the number of overdoses witnessed increases up until someone has witnessed four overdoses. Individuals who have witnessed more than four overdoses are about as likely to call 9-1-1 as those who have not witnessed an overdose. This is an interesting contrast to previous studies (Bohnert et al., 2012; Tracy et al., 2005; Davidson et al., 2002). Tracy et al. (2005) found that when participants witnessed 1 to 2 overdoses, there was a 73% chance they would call 9-1-1 in the future; the chance that someone would call continuously decreased the more overdoses one witnessed. Likewise Bohnert et al. (2012) examined the association between number of overdoses ever witnessed and the likelihood that 9-1-1 was called. They found participants who witnessed 11 or more overdoses were significantly less likely to call in comparison to people who had witnessed 1 or 2. They also found the more overdoses participants witnessed, the more likely they were to engage in street remedies. Similarly, this study found a positive relationship between a respondent indicating “I can take care of it” and number of overdoses witnessed. However, this result was not statistically significant.

A crosstabulation exploring fear of arrest compared individuals who witnessed an overdose to those that have not witnessed one. These results showed witnessing an overdose is significantly related<sup>9</sup> to a respondent citing fear of being arrested being a barrier to calling 9-1-1. Unfortunately the research team does not know how often overdose bystanders are arrested locally, however, previous studies indicate that police presence is common, but arrests are not (Tobin et al., 2005). “Little research has been conducted that examines police and bystander interactions during overdose. It is possible that exposure to police contradicts the perception that arrest is common, thus minimizing its effect as a barrier to calling 911” (p. 403). Interestingly, Zakrisson, Hamel & Hwang (2004) examined the possible health effects of a lack of trust in police and paramedics, specifically amongst the homeless population in Toronto. The study found that amongst 160 people who use emergency shelters, 61% had interacted with the police in the last 12 months and 37% interacted with paramedics. In an emergency situation, 92% of participants expressed willingness to call paramedics, but only 69% of participants expressed willingness to call police. Only 7% of participants in this study said they do not trust hospital personnel. This is fortunate as levels of trust may have health consequences such as the avoidance or delay in seeking help in emergency situations.

Overall the crosstabulations suggest that individuals who have witnessed an overdose are more likely to fear being arrested and less likely to call 9-1-1. Results show those who are more likely to witness an overdose are less likely to call 9-1-1. The results suggesting 9-1-1 would be called by respondents in approximately 2/3 of overdose cases may therefore overestimate the likelihood of calling occurring during an actual overdose emergency. Using the individuals who witnessed an overdose in the past as proxies for those who are likely to witness an overdose in the future means those who would call 9-1-1 are less likely to witness an overdose.

<sup>9</sup> At the .01 level



## Fear of Criminal Justice Response is the Most Significant Barrier to Calling 9-1-1

The overall results clearly indicate fear of being arrested is a significant barrier to calling 9-1-1 during an overdose. This was the most common reason people cited as a concern. The second most common answer, fear of breaching probation or parole is a very similar type of answer lending further credence to the argument that fear of criminal justice is a barrier to calling 9-1-1 during an overdose. When delving deeper into the results, this barrier becomes even more evident.

Amongst the 63 individuals on probation and parole, just 37% indicated they would call and wait for help to arrive. This is significantly less than other respondents. Those on probation and parole are afraid of breaching their conditions (for example, conditions related to not being in the company of people who use substances, not engaging in personal substance use etc.), as previously noted. They are also more likely to be afraid of being arrested than other respondents. For participants who were on probation, 43% said breaching their condition was a concern.

## People who Use Illicit Drugs and Younger People are Less Likely to Call 9-1-1

Individuals who have used illicit drugs in the past year are significantly less likely to call 9-1-1 and wait for help to arrive. They are also significantly more likely to call and run.

Younger individuals are significantly less likely to call 9-1-1 and wait for help to arrive. They are also significantly more likely to cite fearing arrest as a reason they would not call 9-1-1.

## Methadone Clients Have Some Differences Compared to Outreach Clients

Comparing individuals surveyed at methadone clinics to outreach clients reveals a number of significant differences. These results are generally not surprising as individuals in a methadone clinic are more likely to be in, or on the road to, recovery than outreach clients.

Methadone clients were more likely to be employed, a student or be retired whereas outreach clients were more likely to have no income or be on social assistance. Methadone clients were more likely to have used prescription drugs in the past year for recreational purposes. Outreach clients were more likely to have witnessed an overdose. This makes intuitive sense as it is likely that a number of methadone clinic clients became addicted to opioid-based painkillers. Interestingly, outreach clients were also more likely to state 9-1-1 was called the last time they witnessed an overdose. Methadone clients, however, were more likely to say that if they saw an overdose in future they would call 9-1-1 and wait for help to arrive. This is an interesting contrast which suggests multiple possibilities. For methadone clinic clients it suggests their life circumstances may have changed and they now have less to fear about calling 9-1-1 during an overdose. It could also suggest that methadone clients are more likely to overdose in private with fewer witnesses who will call 9-1-1. With regard to outreach clients it could be that some outreach clients would not call 9-1-1 in an overdose but at the most recent overdose they witnessed someone else did call 9-1-1. This would be more likely if outreach clients witnessed their overdoses in group settings. It could also suggest that some individuals previously have called 9-1-1 but had poor experiences and would not call again in the future. Finally, outreach clients were more likely to cite not having a phone as a reason they would not be able to call 9-1-1 if they witnessed an overdose in future.





**Table 9: Differences in demographics, substance use trends, and witness behaviour of methadone and outreach participants**

<b>Methadone Clients (n= 180)</b>	<b>Outreach Clients (n= 111)</b>
<b>Demographics</b>	
More likely to be employed, a student, or retired	More likely to have no income or be on social assistance
<b>Substance Use</b>	
More likely to use prescription drugs in the past year for recreational purposes	Less likely to use prescription drugs in the past year for recreational purposes
<b>Witnessing Overdoses</b>	
More likely to say they will call 9-1-1 and wait for help to arrive, should they witness an overdose in the future	More likely to witness an overdose More likely to say 9-1-1 was called the last time they witnessed an overdose

### This Study Faces Some Limitations

There are several limitations of this study. First, participant responses are subject to error and bias in recall, mainly due to the time that transpired between the last witnessed overdose and when they completed the survey. Second, a participant's responses were likely affected by positivity bias, meaning they could have overestimated the probability that they would call 9-1-1 as this is the most socially desirable thing to do. Third, the environment of the methadone clinic may have affected responses. For example participants may have been in a rush, may have been frustrated by delays in waiting for service, or may be skeptical of why such information was being collected. Fourth, participants were not asked about their ethnic or cultural identity, specifically regarding Aboriginal or non-Aboriginal identity. This is important as Aboriginal identified people are at higher risk of overdosing (Marshall et al., 2012; Milloy et al., 2010). Still, only 0.7% of the population in Wellington-Waterloo LHIN identified as Aboriginal during a Health System Intelligence Project (2004), therefore it is unlikely the survey reached a significant proportion of Aboriginal people. Fifth, the results are based on a convenience sample therefore generalizing these numbers to describe other populations' needs to be done cautiously. Lastly, the outreach participant recruitment method did not allow the research team to access a refusal rate.

This research project will conclude by exploring policy options to reduce death and injury by increasing the likelihood of a witness calling 9-1-1 during an overdose emergency. Recommendations from previous local reports will be summarized together with findings from this report. Policies, which are in place in Canada and the United States that aim to increase calls to 9-1-1 during an overdose emergency will be reviewed.



## Policy Options

Understanding the local context is essential for policy development. Community size (Wardman & Quantz, 2006), population density, distribution of populations who are considered at-risk (Marshall et al., 2012), access to health and financial resources, social environment, availability of research infrastructure (Buxton, Preston, Mak, Harvard, Barley, & BC Harm Reduction Strategies and Services Committee, 2008; Wardman & Quantz, 2006), attitudes toward harm reduction strategies and cultural differences (Wardman & Quantz, 2006) each have implications for policy and programming related to the preservation and protection of life for those at risk of an accidental overdose.

For Waterloo Region, significant research has explored problematic substance use within the local context, putting the area in a unique position to craft policies and programs that save lives and reduce harm. Accidental overdoses have been the subject of inquiry since 2008, and an overdose prevention group, Preventing Overdose Waterloo-Wellington (POWW), began training locally and in Southern Ontario in 2009.

### Existing Recommendations from Local Research

Several recent local studies have made recommendations relating specifically to accidental overdoses. These recommendations include interventions such as: Naloxone provision; training and education; ongoing local data collection; reviewing emergency protocol; and future research.

**Table 10: Waterloo Region Reports with Recommendations on Accidental Overdoses**

Source	Harm Reduction Programs <sup>1</sup>	Naloxone Provision	Education	Local Data Collection	Review Emerg. Protocol	Future Research	Other
WRCPC <sup>2</sup> (2011)	X	X		X	X		
Bell & Parkinson (2008) <sup>3</sup>	X	X	X	X		X	- Introduce a local warning system <sup>4</sup>
Weisser & Parkinson (2008) <sup>5</sup>	X		X			X	- Peer-based cascade training <sup>6</sup>
Centre for Community Based Research <sup>7</sup> (2008)						X	
WG Drug Strategy & WRCPC (2012) <sup>17</sup>	X	X	X		X		

Comprehensive programming provides holistic approaches to overdose prevention and intervention. It can include treatment programs, educational interventions, take-home Naloxone programs, and structural interventions such as providing supportive housing for people who are at risk of overdosing (Marshall et al., 2012; Albert et al., 2011).

1 Harm reduction involves a range of non-judgemental interventions which provide enhanced resources, supports, and skills for individuals, families, and communities. These interventions reduce the potentially adverse health, social and economic consequences of problematic substance use. It can include, but does not require, abstinence (Waterloo Region Crime Prevention Council, 2011)  
 2 "Integrated Drugs Strategy"

3 "A first portrait of drug-related overdoses in Waterloo Region"  
 4 A local warning system would let people know when bad or lethal drugs become available.  
 5 "Saving lives: Overdose prevention and intervention projects in select North American cities"  
 6 See Appendix D  
 7 "Baseline study of substance use, excluding alcohol"  
 17 "Oxy to Oxy: Impact and Recommendations", March 2012



## Naloxone Saves Lives

Naloxone, also known as Narcan, is the “treatment of choice to reverse the potentially fatal respiratory depression cause by overdose of heroin and other opioids” (Centers for Disease Control and Prevention, 2012, p.1). Naloxone is most effective as part of a comprehensive program. One successful and comprehensive program using Naloxone is “Project Lazarus”. Developed in North Carolina, the program includes components such as education for prescribers and people “at risk”, monitoring, and harm reduction interventions (Albert et al., 2011). The program’s “principle efforts include education of primary care providers in managing chronic pain and safe opioid prescribing, largely through the creation of a tool kit and face-to-face meetings” (p.s77). Preliminary evaluations show fatal overdose rates dropped from 46.6 per 100,000 in 2009 to 29.0 per 100,000 in 2010 (Albert et al., 2011). An important intervention within comprehensive programming is take-home Naloxone and the training on how to use it. These programs are widely regarded as the soundest evidence-based intervention to prevent overdoses from becoming fatal (Centers for Disease Control and Prevention, 2012; Wagner et al., 2010; Kim, Irwin & Khoshnood, 2009; Maxwell, Bigg, Stanczykiewicz & Carlberg-Racich, 2006; Davidson et al., 2002).

In 2012, Naloxone was made available free of charge in Ontario by the Ontario Harm Reduction Distribution Program to organizations with an interest in reducing opioid overdose fatalities and injuries. Kits can be individually prescribed by a medical doctor and/or a medical directive (e.g. from medical officer of health or other medical doctor at, for example, a Community Health Centre) that can allow medical and/or non-medical staff to dispense Naloxone as set out in the directive. (Ontario Harm Reduction Distribution Program, 2012; Deeth, 2012, September 3).

## Policy Can Influence How Strongly Drug Use is Associated with Drug-Related Harms

Drug overdose is often thought to be caused by the drug itself or by the person using the drug. However, Babor et al. (2010) point out that on a deeper level, the incident may have been determined by contextual factors, such as the availability of the drug in the community or whether local policies support Naloxone availability. In Marshall et al.’s (2012) study, where fatal overdoses were highest in rural areas close to the U.S.-Canada border, the authors point out that during the time of their study (2001-2005) Canada Border Services Agency reported a tripling in the amount of cocaine seized; they speculate those changes in trafficking routes, in combination with a marked increase in cocaine purity, may explain the geographic variations they observed. Conceptually, the harms that can result from the political and social responses to local drug use can be separated from the harms caused by the drug itself. Policymakers can influence how strongly drug use is associated with drug-related harms (Babor et al., 2010).

Local law enforcement policy determines the degree to which police are likely to arrest during an overdose. These policies are often influenced by the “Broken Windows Theory” which posits that minor criminal activity and disorder cause fear in community members, which decreases cohesiveness and ultimately results in a decrease of informal control over unacceptable behaviours. Decreased informal control leads to more serious crime; aggressive enforcement against minor violations circumvents the fear-crime cycle (Hinkle & Weisburd, 2008). Although this theory may work in some enforcement contexts, research shows the relationship between misdemeanor arrests and drug overdose is considerably more complicated (Bohnert et al., 2011a; Hinkle & Weisburd, 2008).

17 “Threshold” refers to “the eligibility criteria for program entrance and the state of readiness to participate and meet program demands” (Kerr & Palepu, 2001, p.436).



In examining the link between disorder and individual fear of crime, Hinkle and Weisburd (2008) compared two areas: one area that received increased enforcement for drug activity and prostitution to a second “control” area, which did not receive the intervention. The results showed that the police intervention itself increased the probability of feeling unsafe. “Accordingly, any fear reduction benefits gained by reducing disorder may be offset by the fact that the policing strategies employed simultaneously increase fear of crime” (p.503). Bohnert et al. (2011a) looked at the misdemeanor arrest rate (independent variable) and the overdose rate (dependant variable), and reported that the rates of accidental drug overdose were significantly higher in police precincts with higher misdemeanor arrest rates, independent of several confounding variables, such as age and socioeconomic status. This is somewhat counterintuitive, as one may assume that misdemeanor arrests reduce levels of drug use. However, the researchers explain that the unintended consequence of this police involvement is fear and fear impedes making a 9-1-1 call during an overdose.

Although increased levels of misdemeanor policing may decrease the rate of drug overdose mortality in a precinct both directly, by reducing levels of drug use, and indirectly, by strengthening the community capacity to maintain informal control over drug use and associated risk behaviors, it may also engender an environment in which drug users are increasingly fearful of police arrest for minor infractions. Fear of arrest may promote behaviors, such as not calling for medical help when witnessing an overdose... (p. 66).

For overdose emergencies, broken windows policies and programs need to be implemented with caution as fear of arrest may be a determinant of drug overdose mortality (Bohnert et al., 2011a). Indeed, as this current study found, fear of arrest is a barrier to calling 9-1-1 during an overdose.

In the following section we briefly highlight two policy options that exist in North America and were created to improve calls to 9-1-1 during overdose emergencies. To the best of the research team’s knowledge, these are the only two policy responses currently in place and receiving wide support where they exist.

## Limiting Police Involvement during “Routine” Overdoses

Regulations that limit police involvement during “routine” overdoses (Vancouver Police Department, 2006) may encourage people to call 9-1-1 during an overdose emergency.

The Vancouver Police Department (VPD) is, to the best of the research team’s knowledge, the only police force in Canada to have such regulations (see Appendix E). In December 2003, the VPD approved an interim overdose response policy. Their intent was “to reduce deaths by not having police regularly attend all overdose incidents with Emergency Health Services (EHS). [However] [p]olice still attend all fatal overdoses and incidents where there is a safety risk to EHS personnel and/or the public” (Vancouver Police Department, 2006, p.2). By the end of 2004, “police non-attendance at “routine” overdose calls was an established practice and procedure” (p.2). The policy explains that:

There is little value in police attendance at a routine, non-fatal overdose. It would be a rare circumstance for criminal charges to arise from attendance at a routine overdose call. In order to encourage a witness to a drug overdose to access emergency medical aid without delay, it is necessary to establish policy with respect to police attendance at overdose calls. Policy should tend to restrict police attendance to drug overdose calls only in the event there is a specific need for public safety (p.3).



In practice, this has several procedural implications. During non-fatal or “routine” overdose calls the police will not attend unless emergency services request their assistance. For a fatal overdose, the member will investigate fully according to the “Sudden Death” and “Drugs-Handling” procedures.

*“Risk of criminal prosecution or civil litigation can deter medical professionals, drug users and bystanders from aiding overdose victims. Well-crafted legislation can provide simple protections to alleviate these fears, improve emergency overdose responses, and save lives.”*

(Drug Policy Alliance, 2012)

## Good Samaritan Drug Overdose Laws Lower the Threshold to Calling 9-1-1<sup>17</sup>

Good Samaritan Drug Overdose Laws<sup>18</sup> are perhaps the most widely recommended policy response to alleviating barriers to calling 9-1-1 in the U.S.A. Existing in several states<sup>19</sup>, and pending in several others, these laws provide limited legal immunity from drug prosecution for people who witness an overdose. The Drug Policy Alliance (2012) explains Such legislation does not protect

people from arrest for other offenses, such as selling or trafficking drugs. This policy protects only the caller and overdose victim from arrest and prosecution for simple drug possession, possession of paraphernalia, and/or being under the influence (p.2).

Preliminary evaluation of Good Samaritan laws from the United States reveals that 88% of surveyed opiate users indicated that now that they were aware of the law they would be more likely to call 911 during future overdoses. In addition, concerns about negative consequences of these laws, such as prosecutions being impeded, have not been substantiated (Banta-Green, Kuszler, Coffin & Schoeppe, 2011).

## Conclusion

This study examined the barriers to calling 9-1-1 during an overdose in the Wellington-Waterloo-LHIN area and found that fear of the criminal justice system is a barrier. When fear of criminal justice was cited as a concern, respondents believed they would either call 9-1-1 and leave the victim, or they would not call. The research also revealed that populations who are considered most “at risk” are those who are less likely to call 9-1-1 during an overdose. For example, younger individuals are significantly less likely to call 9-1-1 and wait for help to arrive. They are also significantly more likely to cite fearing arrest as a reason they would not make the call. Furthermore, individuals who have used illicit drugs in the past year, are on probation or parole, or outreach clients, are also less likely to call 9-1-1.

Finding a way to appropriately reach individuals who overdose is difficult however, from a community policing and service provider perspective, overdoses can provide windows of opportunity to build connections (Cunningham et al., 1994). When people experience medical emergencies, they are more willing to reach out to emergency personnel (Tracy et al., 2005). Indeed, although Tracy et al. (2005) found overdose victims feared criminal justice involvement, they also found that people who had been taken to the hospital were more likely to call for help in the future. They suggest “it is possible that uncertainties and fears about medical care and potential police involvement at overdose events,

<sup>18</sup> Good Samaritan Laws are of provincial jurisdiction in Canada. In Ontario they provide legal immunity for emergency aid, by emergency personnel or an individual, unless there is gross negligence. The law states that anyone “who voluntarily and without reasonable expectation of compensation or reward provides the services described... is not liable for damages that result from the person’s negligence in acting or failing to act while providing the services, unless it is established that the damages were caused by the gross negligence of the person” (Good Samaritan Act, 2001).

<sup>19</sup> Including Colorado, Connecticut, Florida, Illinois, New Mexico, New York, Rhode Island, and Washington (Smith, 2012, August 21).



which commonly dissuade drug users from seeking help, were less acute among those who had already experienced an overdose and subsequent hospitalization themselves” (p.187). Instituting policies such as Good Samaritan Laws, and limiting police involvement during “routine” overdoses, may not only help to lower the threshold to access emergency services, but may also help to reduce uncertainties against police services in general. For a population that is traditionally hard-to-reach and serve, lowering the threshold to 9-1-1 may forge the path to improved health care and access to resources (Kerr & Palepu, 2001). Ultimately, and most importantly, lives can be saved.

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Appendix A: Original Overdose Response Survey

1. What is your gender? A. Male B. Female C. Other

2. Accidental overdoses do not include attempted suicides.

Have you ever witnessed an accidental overdose? Yes No

A. If YES, how many accidentally overdose incidents have you witnessed in your lifetime? \_\_\_\_\_

B. If NO, please skip to question #4

3. Think about the most recent time you witnessed someone experiencing an accidental overdose.

Was 9-1-1 called? Yes No Don't Know

4. If you were to witness an accidental overdose in the future, do you think you will call 9-1-1? Probably Probably Not

A. If **PROBABLY**, please skip to question #5

B. If **PROBABLY NOT**, what are you concerned about? *(Please check all the concerns that would apply to you or the overdose victim)*

- |   |  |
|---|--|
| <input type="checkbox"/> Friends, family, or partner finding out                                | <input type="checkbox"/> Losing custody of children        |
| <input type="checkbox"/> Usually don't have access to a phone                                   | <input type="checkbox"/> I can take care of it             |
| <input type="checkbox"/> Cost of ambulance  | <input type="checkbox"/> Getting arrested                  |
| <input type="checkbox"/> Getting drugs confiscated  | <input type="checkbox"/> Breaching parole or probation     |
| <input type="checkbox"/> Damaging relationship with employer and/or losing job                  | <input type="checkbox"/> Damage relationship with landlord |
| <input type="checkbox"/> Dislike emergency response paramedics and/or hospital personnel        | <input type="checkbox"/> Don't believe 911 would help      |
| <input type="checkbox"/> I have Narcan/Naloxone and would administer (reverses opiate overdose) | <input type="checkbox"/> Other (explain):                  |

5. If the police showed up during an accidental overdose, in your opinion how likely is it that a person present would be charged with any offense?

No chance Maybe Probably

6. Are you on probation or parole? Yes No



7. Excluding marijuana have you used any illegal drugs in the past year? Yes No

8. Have you used any prescription drugs in the past year for recreational purposes? Yes No

9. Do you have children 17 years of age or under? Yes No

10. Have you ever received training on how to prevent overdose? Yes No

A. If YES, what was the training called?

11. What is your age range? 16-29 30-45 46-59 +60

12. What BEST describes your circumstances (choose one): No Income Social Assistance Employed Student

13. In which area do you live? Waterloo Kitchener Cambridge Guelph Other



**Appendix B: Revised Overdose Response Survey**

**1. What is your gender?**      A. Male                      B. Female                      C. Other

**2. Accidental overdoses do not include attempted suicides.**  
**Have you ever witnessed an accidental overdose?**                      Yes                      No

- A. If YES, how many accidentally overdose incidents have you witnessed in your lifetime? \_\_\_\_\_
- B. If NO, please skip to question #4

**3. Think about the most recent time you witnessed someone experiencing an accidental overdose. Was 9-1-1 called?**                      Yes      No      Don't Know

**4. If you were to witness an accidental overdose in the future, would any of the following keep you from calling 9-1-1? (Please check all that apply to you or the overdose victim).**

- |   |   |
|---|---|
| <input type="checkbox"/> Friends, family, or partner finding out                                | <input type="checkbox"/> I can take care of it  |
| <input type="checkbox"/> Usually don't have access to a phone                                   | <input type="checkbox"/> Getting arrested   |
| <input type="checkbox"/> Cost of ambulance  | <input type="checkbox"/> Breaching parole or probation  |
| <input type="checkbox"/> Getting drugs confiscated  | <input type="checkbox"/> Damage relationship with landlord  |
| <input type="checkbox"/> Damaging relationship with employer and/or losing job                  | <input type="checkbox"/> Don't believe 911 would help   |
| <input type="checkbox"/> Dislike emergency response paramedics and/or hospital personnel        | <input type="checkbox"/> I would call, but I would make sure I wasn't with the person when help arrived |
| <input type="checkbox"/> I have Narcan/Naloxone and would administer (reverses opiate overdose) | <input type="checkbox"/> Nothing would concern me, I would call and wait until help arrived             |
| <input type="checkbox"/> Losing custody of my children  | <input type="checkbox"/> Other (explain):   |

**5. If the police showed up during an accidental overdose, in your opinion how likely is it that a person present would be charged with any offense?**                      No chance                      Maybe                      Probably



- |  |     |    |
|--|-----|----|
| <b>6. Are you on probation or parole?</b>  | Yes | No |
| <b>7. Excluding marijuana have you used any illegal drugs in the past year?</b>            | Yes | No |
| <b>8. Have you used any prescription drugs in the past year for recreational purposes?</b> | Yes | No |
| <b>9. Do you have children 17 years of age or under?</b>                                   | Yes | No |
| <b>10. Have you ever received training on how to prevent overdose?</b>                     | Yes | No |

**B.** If YES, what was the training called?

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**11. What is your age range?** 16-29                      30-45                      46-59                      +60

**12. What BEST describes your circumstances (choose one):**

No Income	Social Assistance (including <i>OW/ODSP</i> )	Employed	Student	Retired
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**13. In which area do you live?**

Waterloo      Kitchener      Cambridge      Guelph      Other





## Appendix C: Statistically Significant Crosstabulations

	<b>Call and Wait</b>	<b>Would Not</b>
Did not call or Don't know	33%(n = 23)	67% (n = 46)
9-1-1 was called	60% (n = 51)	40% (n = 34)

n = 154  $\chi^2=10.849$  df = 1,  $p < .001$

	<b>Would Call 9-1-1<sup>20</sup></b>	<b>Call and Run</b>	<b>Would Not Call</b>
Did not call or Don't know	33% (n = 23)	16% (n = 11)	51% (n = 35)
9-1-1 was called	60% (n = 51)	9% (n = 8)	31% (n = 26)

n = 154  $\chi^2=10.851$  df = 2,  $p < .01$

	<b>Call and Wait</b>	<b>Would Not Call and Wait</b>
Witnessed an overdose	47% (n = 74)	53% (n = 82)
Has not witnessed an overdose	66% (n = 56)	34% (n = 29)

n = 241  $\chi^2=7.536$  df = 1,  $p < .01$

	<b>Would Call 9-1-1<sup>13</sup></b>	<b>Call and Run</b>	<b>Would Not Call</b>
Witnessed an overdose	47% (n = 74)	12% (n = 19)	40% (n = 63)
Has not witnessed an overdose	66% (n = 56)	11% (n = 9)	23% (n = 20)

n = 241  $\chi^2=8.129$  df = 1,  $p < .05$

	<b>Call and Wait</b>	<b>Would Not Call and Wait</b>
No Overdoses witnessed	66% (n = 56)	34% (n = 29)
One overdose witnessed	49% (n = 19)	51% (n = 20)
Two overdose witnessed	41% (n = 15)	59% (n = 22)
Three or four overdoses witnessed	35% (n = 11)	65% (n = 20)
More than four overdoses witnessed	61% (n = 22)	39% (n = 14)

n = 228  $\chi^2=12.977$  df = 4,  $p < .02$

20 Includes those who said they would call 9-1-1 and wait but also said they would call and run



	Would Call 9-1-1 <sup>21</sup>	Call and Run	Would Not Call
No Overdoses witnessed	65% (n = 56)	11% (n = 9)	23% (n = 20)
One overdose witnessed	49% (n = 19)	13% (n = 5)	38% (n = 15)
Two overdose witnessed	41% (n = 15)	13% (n = 5)	46% (n = 17)
Three or four overdoses witnessed	36% (n = 11)	6% (n = 2)	58% (n = 18)
More than four overdoses witnessed	61% (n = 22)	14% (n = 5)	25% (n = 9)

n = 228  $\chi^2 = 17.533$  df = 8,  $p < .05$

	Fear Arrest	No Fear Arrest
Witnessed an overdose	33% (n = 51)	67% (n = 105)
Has not witnessed an overdose	20% (n = 17)	80% (n = 68)

n = 241  $\chi^2 = 7.536$  df = 1,  $p < .01$

	Call and Wait	Would Not
On probation/parole	37% (n = 23)	63% (n = 40)
Not on probation/parole	61% (n = 106)	39% (n = 69)

n = 238  $\chi^2 = 10.806$  df = 1,  $p < .001$

	Would Call 9-1-1 <sup>14</sup>	Call and Run	Would Not Call
On probation/parole	37% (n = 23)	14% (n = 9)	49% (n = 31)
Not on probation/parole	61% (n = 106)	10% (n = 18)	29% (n = 51)

n = 238  $\chi^2 = 11.014$  df = 2,  $p < .01$

	Fear Arrest	No Fear Arrest
On probation/parole	48% (n = 30)	52% (n = 33)
Not on probation/parole	22% (n = 38)	78% (n = 137)

n = 238  $\chi^2 = 15.232$  df = 1,  $p < .001$

	Call and Wait	Would Not
Used illicit drugs	49% (n = 78)	51% (n = 80)
Has not used illicit drugs	65% (n = 51)	35% (n = 27)

n = 236  $\chi^2 = 5.406$  df = 1,  $p < .05$

	Would Call 9-1-1 <sup>14</sup>	Call and Run	Would Not Call
Used illicit drugs	49% (n = 78)	15% (n = 24)	35% (n = 56)
Has not used illicit drugs	65% (n = 51)	4% (n = 3)	31% (n = 24)

n = 236  $\chi^2 = 8.66$  df = 2,  $p < .05$

21 Includes those who said they would call 9-1-1 and wait but also said they would call and run



	<b>Call and Run</b>	<b>Would Not Call</b>
Used illicit drugs	30% (n = 24)	70% (n = 56)
Has not used illicit drugs	11% (n = 3)	89% (n = 24)

$n = 107 \chi^2 = 3.818 \text{ df} = 1, p = .05$

	<b>Call and Wait</b>	<b>Would Not</b>
16-29	42% (n = 40)	58% (n = 55)
30-45	57% (n = 51)	42% (n = 38)
46 plus	70% (n = 40)	30% (n = 17)

$n = 241 \chi^2 = 11.808 \text{ df} = 2, p < .01$

	<b>Would Call 9-1-1<sup>22</sup></b>	<b>Call and Run</b>	<b>Would Not Call</b>
16-29	42% (n = 40)	12% (n = 11)	46% (n = 44)
30-45	57% (n = 51)	12% (n = 11)	30% (n = 27)
46 plus	70% (n = 40)	9% (n = 5)	21% (n = 12)

$n = 241 \chi^2 = 13.100 \text{ df} = 4, p < .05$

	<b>Fear Arrest</b>	<b>No Fear Arrest</b>
16-29	36% (n = 34)	64% (n = 61)
30-45	27% (n = 24)	73% (n = 65)
46 plus	18% (n = 10)	82% (n = 47)

$n = 241 \chi^2 = 5.964 \text{ df} = 2, p = .051$

	<b>Employed Student/Retired</b>	<b>No Income/Social Assistance</b>
Methadone Clinic (Revised)	45% (n = 76)	55% (n = 94)
Outreach	27% (n = 28)	73% (n = 76)

$n = 274 \chi^2 = 8.665 \text{ df} = 1, p < .01$

	<b>Prescription Drugs Used</b>	<b>Prescription Drugs Not Used</b>
Methadone Clinic (Revised)	66% (n = 115)	34% (n = 58)
Outreach	50% (n = 54)	50% (n = 55)

$n = 282 \chi^2 = 7.984 \text{ df} = 1, p < .01$

	<b>Witnessed OD</b>	<b>Not Witnessed OD</b>
Methadone Clinic (Revised)	53% (n = 93)	47% (n = 84)
Outreach	68% (n = 75)	32% (n = 36)

$n = 288 \chi^2 = 6.336 \text{ df} = 1, p < .05$

<sup>22</sup> Includes those who said they would call 9-1-1 and wait but also said they would call and run



	<b>9-1-1 Called</b>	<b>No/Don't Know</b>
Methadone Clinic (Revised)	38% (n = 45)	62% (n = 72)
Outreach	65% (n = 51)	35% (n = 28)

n = 196  $\chi^2 = 12.851$  df = 1,  $p < .001$

	<b>Call and Wait</b>	<b>Would Not</b>
Methadone Clinic (Revised)	60% (n = 84)	40% (n = 57)
Outreach	46% (n = 47)	54% (n = 55)

n = 243  $\chi^2 = 4.339$  df = 1,  $p < .05$

	<b>Phone Access</b>	<b>Not a Concern</b>
Methadone Clinic (Revised) <sup>23</sup>	7% (n = 4)	93% (n = 53)
Outreach	36% (n = 20)	64% (n = 35)

n = 112  $\chi^2 = 14.317$  df = 1,  $p < .001$

	<b>Call and Wait</b>	<b>Would Not</b>
Females	61% (n = 57)	49% (n = 37)
Males	49% (n = 70)	51% (n = 72)

n = 236  $\chi^2 = 2.928$  df = 1,  $p < .1$

<sup>23</sup> Table excludes those who said they would call 9-1-1 and wait for help to arrive



## Appendix D: Peer-Based Cascade Training Model (Weisser & Parkinson, 2008)

### Phase One: Train the Trainers

An appropriate service provider(s) and a person(s) who uses drugs (PWUD) are identified and work together to develop a curriculum that will be used to train their respective peers. Two curricula are developed in this phase: one tailored to the service providers and one tailored to PWUD. Both trainers jointly deliver the training. Each trainer supports the other to ensure that information is real, relevant and understandable.

Caution: The curriculum that is developed needs to be basic so that when the content is funneled down the branches, the main points remain intact.

### Phase Two: Spread the word.

After the above training sessions the service provider and PWUD will be able to run subsequent training sessions with their peers. In these sessions the trainers will be asked to identify “leaders” and ask them to inform others in their peer group about what they have learnt, perhaps in a group setting themselves and/or by arranging opportunities for the trainers. This process can be repeated.

### Phase Three: Common Knowledge

After a number of the above sessions have been facilitated, a threshold of people will be reached. From there, the message will be passed on through word of mouth, peers acting in a particular way when they are faced with an OD and the second hand distribution of training materials. It is expected that approaches to intervention and prevention of drug overdoses will change from the current knowledge and practice base. At this stage it is expected that the initial message conveyed in phase one will be muddled. If the original message is simple, there a greater chance it will be effective at this phase. Also, by phase three there will be a significant number of peers (both service providers and drug users) who have been through the training sessions multiple times.

### Rationale

**Premise One:** If a Service Provider (SP) works together with a PWUD, they will develop a curriculum that is knowledge based and practical, based on experience and expertise.

*Assumption:* SP and PWUD will be willing to work together or see the value in working together.

*Assumption:* The service provider has the necessary skills, the DU has the practical experience; both are “experts in their field.”

*Assumption:* There is a difference between the SP and the PWUD in their ability to understand and communicate with their peer group.

**Premise Two:** Peer training establishes trust early and the message are more likely to be absorbed.

*Assumption:* Peers will be willing to train others

*Assumption:* SPs are more likely to trust other SPs than PWUD and, PWUD are more likely to trust other PWUD than SPs.

*Assumption:* An understanding of the material can be enhanced depending on presentation style or presenter.

*Assumption:* An understanding of the material can be enhanced depending on presentation style or presenter.



**Premise Three:** If peers train numerous SP and PWUD then the message will also reach community members.

*Assumption:* The SP and PWUD who go through the training will discuss the training with friends and/or family and/or other SPs etc..

*Assumption:* The main messages of the training will get passed on.

*Assumption:* Being trained by your peer is more of a motivation to share what you know than being trained by a “professional”

**Premise Four:** If the majority of people in the community receive pertinent information then it could re-define how ODs are treated and improve the effectiveness of prevention-intervention.

*Assumption:* Through a word of mouth transfer people will begin to change their perceptions and practices.

*Assumption:* The key points from the original curriculum will be repeated to SP and PWUD from many different peers.

*Assumption:* Receiving a message multiple times can change ones perception and practice.

### **Conclusion**

A branched peer-training model has the potential to effectively communicate relevant information that will prevent overdose incidents and deaths.



Appendix E: Vancouver Police Department Overdose Policy- Guidelines  
for Police Attending Illicit Drug Overdoses



**VANCOUVER POLICE DEPARTMENT  
PLANNING AND RESEARCH SECTION**

**POLICY REPORT**

**REPORT DATE:** June 13, 2006  
**BOARD MEETING:** June 14, 2006  
**BOARD REPORT #** 0648

**TO:** Sam Sullivan, Chair, Vancouver Police Board  
Vancouver Police Board Members  
Vancouver Police Union

**FROM:** Daryl Wiebe, Inspector 1162  
i/c Planning and Research Section

**SUBJECT:** Amendments to the Regulations and Procedures Manual (RPM)

**RECOMMENDATION(S):**

THAT, as presented in Report #0648, the Vancouver Police Board approve the following amendments to the Regulations and Procedures Manual:

Overdose Policy

- 11.04 Guidelines for Police Attending Illicit Drug Overdoses

**POLICY:**

THAT, the Vancouver Police Board approve the amendments to the Regulations and Procedures Manual pursuant to Section 28 of the *Police Act*.

**PURPOSE:**

THAT, the following amendments to the Regulations and Procedures Manual be submitted to the Vancouver Police Board for their consideration and approval, and subsequent forwarding to Police Services as required by Section 28 of the *Police Act*.



**DISCUSSION/ IMPLICATIONS/ ALTERNATIVES**

Overdose Policy

In December 2003, the Vancouver Police Department (VPD) approved an interim overdose response policy, to be reviewed and evaluated after a one-year trial period. This response policy was based on research from Australia, and recognized the occurrence of drug overdoses as medical emergencies. It showed that the incidents of drug overdose deaths can decrease if the police do not lay charges for the drug use.

The intent of the VPD procedure was to reduce deaths by not having police regularly attend all overdose incidents with Emergency Health Services (EHS). Police still attend all fatal overdoses and incidents where there is a safety risk to EHS personnel and/or the public. Orientation/information sessions were conducted with front-line police members, E-Comm, EHS, community stakeholders and drug user groups. Eventually police non-attendance at "routine" overdose calls became an established practice and procedure by the end of 2004.

It is recommended that the interim overdose response policy under Section 11.04 of the RPM be amended and adopted as the regular procedure/policy for the Vancouver Police Department.

**CONCLUSION:**

The Executive Committee of the Vancouver Police Department has approved the proposed amendments outlined in this report and request that the Vancouver Police Board approve and adopt these procedures.

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Author: Insp. Daryl Wiebe Telephone: 604-717-2682 Date: June 13, 2006

Submitting Executive Member (signature): \_\_\_\_\_ Date: \_\_\_\_\_

This report has been prepared in consultation with the Sections/Divisions listed below, and they concur with its contents.

Concurring:  
\_\_\_\_\_  
Date: \_\_\_\_\_  
\_\_\_\_\_  
Date: \_\_\_\_\_  
\_\_\_\_\_  
Date: \_\_\_\_\_





## APPENDIX 1

### EXISTING/PROPOSED PROCEDURE

#### 11.04 Guidelines for Police Attending Illicit Drug Overdoses

##### Policy

Recent research has shown that though many drug overdose cases are witnessed, there is often reluctance in calling for emergency medical assistance for fear that police will also attend, resulting in prosecution. A drug overdose is by its very nature a medical emergency requiring rapid medical intervention to preserve life.

There is little value in police attendance at a routine, non-fatal overdose. It would be a rare circumstance for criminal charges to arise from attendance at a routine overdose call. In order to encourage a witness to a drug overdose to access emergency medical aid without delay, it is necessary to establish policy with respect to police attendance at overdose calls. Policy should tend to restrict police attendance to drug overdose calls only in the event there is a specific need for public safety.

The primary reason for police attendance at a non-fatal drug overdose call is to assist with life saving measures, and to assist with public safety.

##### Procedure

##### Non Fatal Drug Overdose Calls

1. When a member is advised of a drug overdose while in the performance of their duties, they shall immediately notify EHS through ECOMM and attend to the location of the victim until EHS arrives.
2. When EHS receives a call of "a possible drug overdose" EHS dispatch will notify Police Dispatch, through ECOMM, who shall, by way of a general broadcast, advise District Units that "EHS is responding to a possible drug overdose", the location and "assistance not requested."
3. Police will not normally attend EHS calls for a routine drug overdose unless EHS has advised ECOMM that "Assistance is Requested", for any or all of the reasons below:
  - a) Death of a person from an overdose is likely; or
  - b) EHS personnel request police attendance to assist with public safety; or
  - c) EHS personnel request police attendance because there is something suspicious about the incident; and
  - d) In each instance when police assistance is requested, the reason for the request will be broadcast to police units by the district dispatcher.

##### Fatal Drug Overdose Calls

4. In the case of a drug overdose death, the member will fully investigate the incident as a sudden or suspicious death (refer to: Section 15.09- Sudden Death; Section

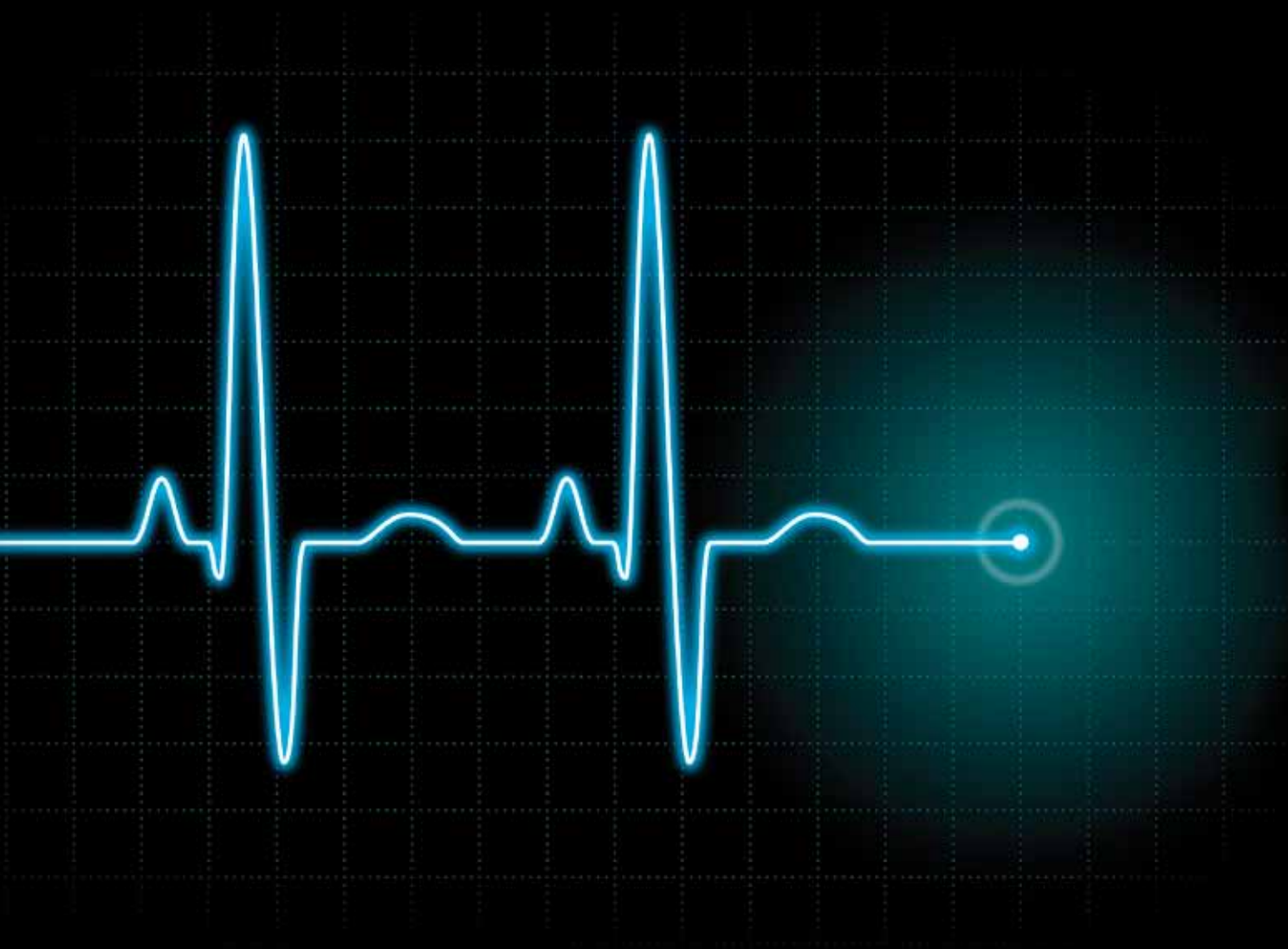


26.13-Drugs-Handling Procedures and Section 18.02-Crime Scene Responsibilities).(link)

5. The assigned unit shall notify their Supervisor of the fatal overdose, and record the details of the incident in the District Overnight Book for discussion at the Daily Operations Management Meeting. The assigned patrol unit will ensure that a copy of the General Occurrence Report is routed to the Inspector i/c of the Drug Squad for follow up consideration.







[www.preventingcrime.ca](http://www.preventingcrime.ca)  
[www.smartoncrime.ca](http://www.smartoncrime.ca)