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POLICE RESPONSE TO EXCITED DELIRIUM

By

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A major project submitted in partial fulfillment of

the requirements for the degree of

MASTER OF ARTS

In

LEADERSHIP AND TRAINING

We accept this major project as conforming

to the required standard

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Abstract

This study will address the question: "How to prepare Ontario police officers to effectively respond to incidents involving persons experiencing excited delirium (ED)?"

Method: An action based research project collected data from a focus group involving experts in ED; semi-structured interviews of officers with experience in controlling subjects experiencing ED; and a survey of experienced front line officers.

Results: The data was coded and themed into general areas of agreement relative to police response to incidents involving persons experiencing ED.

Conclusion: Three themes emerged, from the data: the need for improvements in police knowledge and training related to ED; the need to better integrate and engage other emergency response systems; the need for public education surrounding the issues of police response to persons experiencing (ED).

Acknowledgements

There are several people to whom I am eternally grateful for the opportunity to complete this goal, as well as providing assistance and guidance along the way. Dr. Greg Brown, project supervisor and friend. Ron Hoffman, coach, mentor, and fireman. Dr. Wanda K. Mohr, role model, and pathfinder. Deputy Director Bill Stephens, a person who allowed me to take up this challenge. Deputy Director Steve Hibbard, project sponsor and great listener. Director Rudy Gheysen, for supporting this opportunity. Lino Couto and John Weiler for putting up with the extra work this endeavor created for them.

In particular, I would like to acknowledge the assistance, guidance, patience and support provided by my wife and partner, Sharon, without whom nothing would have been accomplished.

Dedication

To my wife Sharon,

son William,

and daughter Catherine

as well as in gratitude for the love and support of my family.

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Chapter One: Focus and Framing

Introduction

The term ***excited delirium***, dates back to 1985 (Wetli & Fishbain, 1985), when it was used to identify symptoms associated with the sudden death of members of the public while in police custody. Immediately prior to death, those believed to have the condition appeared to exhibit behaviors that included extreme mental and physiological excitement characterized by high level agitation, hostility, exceptional strength and high pain tolerance (Farnham & Kennedy, 1997), all signs associated with significant sympathetic nervous system arousal (Tortora & Anagnostakos, 1990). In some circumstances, sudden death and/or serious injury have been the outcome associated with ED, making it a subject of great concern to the policing community and the public, and worthy of scientific inquiry.

The author has been either a police officer or a full-time police trainer since 1979. Currently, as Team Leader of Defensive Tactics at the Ontario Police College (OPC) he is required to testify at inquests regarding the appropriateness of police action in cases involving ED. He has developed an extensive network of colleagues in the fields of forensic psychiatry, psychology, use of force, and medicine and he has access to coroner's inquests and other data at a provincial level which uniquely position him to scientifically study this important issue.

The research question addressed by this major project is: How to prepare Ontario police officers to effectively respond to incidents involving persons experiencing excited delirium?

The Opportunity

The circumstances surrounding calls for assistance involving subjects found to be experiencing ED are very consistent. Officers are confronted with a person acting in a bizarre manner, often partially clothed or naked. Officers consistently report that the subject was incoherent or speaking in another language. During the effort to gain control of the individual extraordinary strength on the part of the subject is a central feature of the struggle. The efforts of several officers are necessary to overcome the subject's resistance. During the restraint process the subject will be heard grunting and making animal like noises. Almost immediately after the officers gain control of the subject there is a period of sudden tranquility. It is at this point the officers realize that the subject has stopped breathing. Invariably resuscitation efforts fail.

At autopsy the pathologist is typically unable to determine the exact cause of death. The literature identifies hyperthermia or hyperpyrexia as a prominent potential feature in these deaths (Callaway & Clark, 1994; Chan, Evans, & Clark, 1997; Crandall, Vongpatanasin, & Victor, 2002; Farnham & Kennedy, 1997; Karch & Stephens, 1998; Karch & Wetli, 1995; Kennedy & Farnham, 1998; Lawrence, 2004a; Marzuk et al., 1998; Nolte, 1991; A.J. Ruttenber et al., 1997; A. J. Ruttenber, McAnally, & Wetli, 1999; Wetli & Fishbain, 1985).

The restraint process and the tools used to gain control of the subject are typically implicated as causing the death. Friends and family of the deceased look to the police for answers as to why the death occurred. Answers provided are incomplete or not backed up by expert opinion. Family and community leaders question the integrity of the officers and the investigation. An air of mistrust often surrounds the event.

The ***term excited*** delirium or ED is used to describe a medical emergency frequently associated with crisis situations (Alagiakrishnan & Blanchette, 2002; Farnham & Kennedy,

1997; Lawrence, 2004a, 2004c; Lawrence & Cairns, 2001; Wetli & Fishbain, 1985; Young, 1995b). The common feature of each situation is that the individual had exhibited bizarre, often threatening behavior and death occurred during or immediately after the process of being restrained. There is currently a debate over whether death would have occurred if no attempt had been made to restrain the person (Rosh, Sampson, & Hirsch, 2003).

Significance of the Opportunity

Deaths related to ED continue to occur, not only in Ontario, but also throughout the world. Much of what we know about the disorder is based on retrospective studies. The current project contributes toward maintaining the Ontario Police College as a progressive leader in the field of subject control. The information gleaned from this research effort can also be shared with other policing agencies and training facilities internationally. On the individual level, there is the potential to reduce the loss of life and possibly prevent injury to those who experience ED and the police officers and other front line staff who must interact with them. Additionally, this major project will assist in addressing public confidence, or lack of it, in how police control people experiencing a condition such as ED, and crisis situations in general. Finally, there is the possibility that non-police crisis professionals may benefit from the findings of this study as ED occurs in other settings such as correctional facilities, emergency rooms and acute care hospitals, psychiatric hospitals, and long-term care facilities.

Systems Analysis of the Opportunity

The sponsoring organization, the Ontario Police College (OPC), falls within the Policing Services Division of the Ontario Ministry of Community Safety and Correctional Services. As outlined in its Vision, Mission and Values Statement, the Policing Services Division promotes excellence in policing by "providing leadership to enable all provincial, municipal and First Nations police services in the province of Ontario" to promote community safety and crime prevention initiatives. The Division provides and supports training, education and professional development, and develops and monitors professional standards and policies.

OPC is the centralized police training facility for all provincial and municipal police services within the province of Ontario. The College occasionally provides training from provincial enforcement agencies outside the Ministry of Community Safety and Correctional Services. It also provides training opportunities to international law enforcement officers.

This major project is tied directly to the values of the Policing Services Division in that the outcome contributes towards excellence in policing and demonstrates the Division's commitment to engaging in open communication related to the topic of sudden death and ED; leadership by identifying solutions for the important area of public safety; flexibility through innovative approaches to solving the problem; and responsiveness to the issue of sudden deaths in police custody, in particular ED. The project is also consistent with the mission of the Division in that it will assist the Policing Services Division in providing leadership as it works with stakeholders to promote community safety by being in a position to provide and support training, education and professional development as it relates to ED. The project also enhances our ability to develop professional standards and policies in support of legislation.

Organizational Context

OPC is responsible for preparing Ontario's police officers through the Basic Constable Training Course (BCT). One portion of this training relates to Defensive Tactics Training, comprised of concepts and tactics officers can use to defend themselves from attack, protect members of the public, as well as take aggressive and resistant subjects into custody. Part of Defensive Tactics Training deals with engaging subjects experiencing ED, restraining them in a safe and effective manner, and either preparing the subject for transport, or in some remote areas, transporting the subject to medical assistance.

The College also provides specialized training for instructors specializing in Defensive Tactics as well as general training for Use of Force instructors. The latter group is comprised of officers, mandated under the Police Services Act (1990), to annually re-qualify front line officers in use of force tactics.

Both Defensive Tactics Facilitators and Use of Force Instructors rely partly upon OPC to collect the latest information and techniques in the area of officer safety and subject control methods, and to develop related training. The rapidly developing information relating to subjects experiencing ED falls within this area of responsibility. Should an ED-type incident occur, and the subject involved dies, an inquest is mandatory under law (Coroners Act, 1990). In such a case the author is commonly called to testify as an expert relating to OPC provided police training associated with the problem. The author has also been required to provide information to Crown prosecutors and lawyers involved in associated civil litigation.

This research project is tied directly to the values of the Policing Services Division in that the outcome contributes towards excellence in policing and demonstrates the Division's commitment to engaging in open communication related to the topic of sudden death and ED;

leadership by identifying solutions for the important area of public safety; flexibility through innovative approaches to solving the problem; and responsiveness to the issue of sudden deaths and ED. The current project is also consistent with the mission of the Division in that it will assist the Policing Services Division in providing leadership as it works with stakeholders to promote community safety by being in a position to provide and support training, education and professional development as it relates to ED. The project also enhances our ability to develop professional standards and policies in support of legislation.

Chapter Two: Review of the Literature

Current State of Knowledge of Excited Delirium

Sudden and unexpected deaths after a struggle with police officers, or with others involved in crisis interventions has been the subject of extensive investigation over the past half decade (Joint Commission for Accreditation of Healthcare Organizations, 1998; Mohr, Petti, & Mohr, 2003; Weiss, 1998). In some instances the immediate cause of death is obvious, while in others it is more ambiguous, such as in the case of what the forensic and police literature have termed excited delirium (Cotton, 2004; A.J. Ruttenber et al., 1997; Wetli & Fishbain, 1985),

The historical origins of a similar malady are found in a 19th century paper by Dr. Luther Bell (1849) physician and Superintendent of the McLeon Asylum for the Insane in Somerville Massachusetts. Bell reported 40 cases of a "peculiar" form or delirium, fatal to about 75 % of the subjects. Victims were described as ranging in emotion from apathy and depression to fearful or enraged. The cases reported by Bell occurred within a cohort of approximately 1700 patients admitted to the asylum between 1836 and 1849. Recently, a case series reported the incidence of death related to ED was 8.4 per cent (18 of 214). (Stratton, Rogers, Brickett, & Gruzinski, 2001).

It is estimated that sudden deaths, where ED may be a factor, occur at the rate of 50 – 125 per year in the United States (Conner, 2002). Acting Inspector Darren Laur, project manager of the Canadian Police Research Centre Conducted Energy Device Review provided an informed estimate of approximately 10 such deaths occurring annually in Canada (personal communication, July 16, 2005). An Ontario case review identified 18 deaths related to police involvement with persons with ED between 1988 and 1995 (Pollanen, Chaisson., Cairns, & Young, 1998). Other than the incidence and the relationship between restraint techniques reported by Pollanen et al., little is known about the cases of ED in Ontario.

In recent years, much has been added to our knowledge in regard to this condition (Laur, 2004; Lawrence, 2004b; Ross, 1998), however, the true extent of the problem has not been studied. Dr. Christine Hall, Division Chief of Education, Director of the Fellow of the Royal College of Physicians Program in Emergency Medicine at the University of Calgary, Faculty of Medicine states:

> "I think that no doubt there is reporting bias as deaths proximal to police restraint are virtually always reported, particularly in the lay press, while survivals after police restraint would seldom make good news. Similarly, in terms of our own police agencies' reporting/recording, it is very easy to keep stats for deaths since it is such a highly charged issue and the details are often diligently recorded, but many services do not keep stats on restraint use especially where no harm comes to the subject. Whether the actual incidence of injury proximal to police restraint is lower than that currently represented is unknown at this point" (personal communication July 18, 2005).

Dr. Hall is developing a national, multi-site prospective study that will begin to examine the extent of the ED issue and its relationship to policing.

Excited delirium has been described as "a state of extreme mental and physiological excitement, characterized by extreme agitation, hyperthermia, epiphoria (excessive tearing of the eyes), hostility, exceptional strength and endurance without apparent fatigue" (Farnham & Kennedy, 1997, p. 1107), all signs associated with significant sympathetic nervous system arousal (Tortora & Anagnostakos, 1990). ED has been found to occur in many different settings, including medicine (Paterson et al., 2003). Excited delirium is believed to be a symptom cluster, the characteristics of which are listed in Table 1.

Table 1.
Characteristics of persons experiencing excited delirium

- bizarre and/or aggressive behavior
- impaired thinking
- disorientation
- hallucinations
- unexpected physical strength
- apparent ineffectiveness of pepper spray
- significantly diminished sense of pain
- acute onset of paranoia
- panic
- shouting
- violence towards others
- sweating, fever, heat intolerance
- sudden tranquility after frenzied activity.

Note: Adapted from "Memo 630: Excited delirium and the use of restraint". by J.G. Young, 1995, Ministry of the Solicitor General, Office of the Chief Coroner. Adapted with permission.

Additional factors may include an attraction to traffic, destroying property, creating a disturbance or banging on residential doors (Ross, 1998). Breaking glass windows was a feature noted in a sub-group of men with schizophrenia within a cohort of 1241 prisoners in a British jail (Taylor, 1998). The affinity to glass by people experiencing ED is noted yet is not understood.

Two factors have been associated with people who experience the sudden onset of ED: users of stimulant drugs such as cocaine (Wetli & Fishbain, 1985) and methamphetamine (O'Halloran & Frank, 2000) and/or mental illness, in particular schizophrenia (Farnham & Kennedy, 1997). Abuse of these substances can overlap with mental disorders and produce

paranoia and/or control over-ride, where the subject perceives a loss of control over their thoughts and actions (Link, Monahan, Stueve, & Cullen, 1999).

Many cases of ED are caused by a combination of drugs, alcohol and psychiatric illness (Young, 1995b). Cocaine is the best-known cause of drug-induced ED (Allam & Noble, 2001; Laur, 2004; Lawrence, 2004a; Ross, 1998; A.J. Ruttenber et al., 1997; A. J. Ruttenber et al., 1999; Wetli & Fishbain, 1985). Cocaine users who have ED are known to struggle violently when restrained and can suffer cardiac arrest at any time during or after the struggle. Cocaine induced ED is now recognized as a potentially fatal condition, whether the police interact with the subject in crisis or not (Duran, Brennan, Vandervoort, & Garavaglia, 2004). Alcohol is another common substance that may be a factor in the development of ED (Bunn & Giannini, 1992; Karch & Stephens, 1998; Mittleman & Wetli, 1987; Young, 1995a).

Some psychiatric illnesses have also been known to contribute to the onset of ED. There are persons living in community settings who have recurrent bouts of ED particularly if they neglect to take their prescribed antipsychotic medication (Young, 1995a, 1995b). Recent reports have implicated cannabis use with the onset of psychosis (Favrat et al., 2005; Ferdinand et al., 2005; Fergusson, Horwood, & Ridder, 2005; Hall, Degenhardt, & Teesson, 2004; Semple, McIntosh, & Lawrie, 2005), which can lead to excited delirium (Pollanen et al., 1998; Young, 1995a, 1995b).

Excited delirium (ED) type behavior has been associated with detrimental physiological effects including:

- overheating or hyperthermia (Crandall et al., 2002; Marzuk et al., 1998; Nolte, 1991; Stephens, Jentzen, Karch, Wetli, & Mash, 2004);

- a change in the acidity of the blood that can be life threatening by effecting cardiac contractibility possibly due to metabolic acidosis (Allam & Noble, 2001; Hick, Smith, & Lynch, 1999a; Leadbetter, 2003);
- electrolyte imbalances resulting from poor diet and or inappropriate hydration (Allam & Noble, 2001; Lawrence & Mohr, 2004; Mohr et al., 2003);
- breakdown of muscle cells and leaching of the cellular contents into the blood stream, a process known as rhabdomyolysis, which makes the heart susceptible to an arrhythmia (Henry, 2000; Laur, 2004; Lawrence, 2004a, 2004b; Mohr et al., 2003; A.J. Ruttenber et al., 1997; A. J. Ruttenber et al., 1999);

all of which can make the heart susceptible to ventricular fibrillation; an uncoordinated heartbeat that causes the heart to become an inefficient pump often resulting in death. These events can occur independent of any restraint use (Di Maio & Di Maio, 1993; Karch, 1997; A.J. Ruttenber et al., 1997; Welte, Bohnert, & Pollak, 2004).

Increasingly, ED is being identified as a life threatening condition, or a "medical emergency" requiring the services provided by a hospital (Farnham & Kennedy, 1997; Lawrence & Cairns, 2001; Wetli & Fishbain, 1985; Young, 1995b). In many cases, the responsibility for ensuring that medical attention is received has been left to the police and other front-line staff. However, transporting an agitated subject to hospital may require that police use some degree of force to maintain control of the subject. Further, a strategy often employed by police to gain control is to force the individual to the ground in a prone position. The ground is used as a stable, consistent platform permitting the officer to establish a mechanical advantage in applying control holds. Officers then attempt to position themselves behind the individual where the danger posed by the subject's "weapons" is significantly reduced (Lawrence, 2004b).

Currently, there is debate with respect to the safety of the prone position because of the number of deaths "proximal to restraint" (Chan, Vilke, Neuman, & Clausen, 1997; Hick, Smith, & Lynch, 1999b; Pollanen et al., 1998; Reay & Howard, 1999; Roggla et al., 1997). A suspected reason why the face down, or prone position may have led to death has to do with the effect it has on impairing the subject's respiratory function. The prone position is believed to hamper breathing and the effect might be magnified in someone who is already in a physiologically "hyper" state. Thus, it is recommended that once control is established, the subject should be rolled off their stomach and placed in a position that least compromises their respiratory efforts so long as it is safe to do so (Hick et al., 1999b). By doing so, any impairment to the subject's ability to breathe will be reduced and the potential for any type of asphyxia might be reduced.

To further complicate matters, many of those with ED are not in optimum physical shape. That is, poor general health has been linked to mental illnesses, such as schizophrenia as well as substance abuse (Greenwell & Brecht, 2003; Phelan, Stradins, & Morrison, 2001; Ruschena et al., 1998; World Health Organization, n.d.). These conditions are commonly associated with ED. Medical advances in the study of ED are increasing rapidly as interest in this condition grows. As police officers are often the first responders to people experiencing ED, an integrated systems approach, including medical and police personnel needs to be studied.

Police Use of Force to Control a Person Experiencing Excited Delirium

Police officers are granted a number of authorizations where force can be used to effect their lawful purpose. The police are unique in that the state provides them with a general authority to employ coercive force within the state's domestic territory (Klockers, 1985). Specifically, Canadian police officers are authorized to use necessary force to protect life, prevent crimes, and protect themselves and the citizenry. It is acknowledged that if the police are

not safe then members of society cannot be safe (Canadian Association of Chiefs of Police, 2000; United Nations High Commission for Human Rights, 1990). The level of force used by the officer to establish control of a given situation must be consistent with the type of resistance offered by the subject. In situations where the subject is experiencing ED the level of resistance is often extreme.

Ontario's Police Services Act (1990) states that adequate and effective police service must include five categories of police activity: crime prevention; law enforcement; providing assistance to victims of crime; public order maintenance; and emergency response. These terms are not defined within the act. The following definitions will be used for the purposes of this discussion.

- Crime prevention – activities intended to prevent acts or omissions that would constitute an offence under the Criminal Code (1985);
- Law enforcement – the enforcement of various municipal and provincial statutes, for example, the Trespass to Property Act (1990) or the Mental Health Act (1990);
- Assistance to victims of crime –activities designed and, or intended to provide succor to individuals and entities that have suffered perceived or actual harm from criminal acts;
- Public order maintenance – activities intended to result in maintenance of the public peace and where breaches of the peace are apprehended or have occurred such actions intended to restore the peace. Examples of such activities include crowd control and disaster response.
- Emergency response – actions intended to resolve a situation where serious harm to persons or property is imminent.

In situations involving ED it can be argued that the activities of the police fall under the headings of crime prevention, law enforcement, public order maintenance, and emergency response. In the case of crime prevention, officers may be responding to a call relating to property damage or investigating a report of a subject's unusual behavior. Situations where officers are involved in law enforcement may involve apprehensions under the provisions of the Mental Health Act (1990). Public order maintenance is associated with keeping the peace, a primary common law and statutory police duty. Finally, ED is identified by Ontario's Office of the Chief Coroner as a medical emergency (Young, 1995a, 1995b) therefore police response to such events would constitute an emergency response associated to the subject's health.

The Mental Health Act (1990) provides that where a police officer reasonably believes that a person is acting in a disorderly manner such that the officer believes that the individual may harm himself or herself, another person, or is demonstrating a lack of competence to care for himself or herself and the result of the individual's actions may lead to serious bodily harm of the individual or some other person, and it would be dangerous to proceed using some other apprehension mechanism, then the officer may take the individual into custody. Cases of ED would fit within these criteria.

Ontario's Provincial Offences Act (1990) authorizes the use of necessary force for the purpose of enforcing provincial legislation. Officers apprehending a subject experiencing ED could rely upon this legislation to authorize the use of necessary force to take the subject into custody pursuant to the authority of the Mental Health Act (1990).

The Criminal Code (1985) provides several sections that authorize a police officer to use force necessary to gain control of a situation. Section 25 authorizes the use of force for general law enforcement purposes. Therefore, an officer is not justified in using force intended to cause

death or grievous bodily harm unless that officer believes, on reasonable grounds that such force is necessary to protect the officer or some other person from such harm. Section 27 provides for the use of force necessary to prevent certain offences; ones likely to result in serious harm to the persons or property of anyone.

Section 30 provides for the use of force to prevent a breach of the peace, a term undefined within the Criminal Code (1985). The general understanding of the term includes situations such as a violation of the quiet, peace and security of community; unlawful assemblies, riots, or affrays; physical and armed attacks as well as causing persons to believe their safety is in jeopardy (Heskett, 1998). Section 31 provides for a police officer to arrest anyone he or she witnesses committing a breach of the peace as well as an authority for the officer to receive into custody anyone found to be breaching the peace.

Section 34 of the Criminal Code (1985) deals with an officer being able to defend himself or herself from an assault, while section 37 speaks to protecting a person under the protection of the officer from assault.

In all the above cases the aggressor could be a person experiencing ED. Officers routinely report that subjects experiencing ED possess super human strength. Physical control techniques, pepper spray and baton strikes are used by officers to establish control of the subject. Recently the use of TASER™ [1] devices has been added to the tools of control available to responding officers.

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[1] TASER stands for the Thomas A Swift Electric Rifle, and was developed by former NASA scientist John (Jack) Cover in 1974. He named the weapon after a similar device described in a series of adolescent adventure books written early 20th century (S. Tuttle, personal communication, July 25, 2005).

In each instance the involved officers' use of force is defined within the law and is part of their duties. The police officer would be liable, under section 26 of the Criminal Code (1985), for any excess use of force.

Chapter Three: Research Approach and Methodology

The research method used in this study is action research (Morton-Cooper, 2000). Action research is inquiry or research in the context of an effort to improve the quality and performance of an organization, in this case, the Ministry of Community Safety and Correctional Services – Policing Services Division, Ontario police services and the individual police officers of Ontario as they respond to persons experiencing ED. Most often it is designed and carried out by practitioners, or teams of colleagues, who gather and analyze data in order to improve their own practices. The team approach is called collaborative inquiry and its strength lies in providing an in-depth perspective that is unavailable from a quantitative inquiry. A team of experts was utilized in a focus group setting to optimize police response to persons experiencing ED.

Action research is a qualitative research method (Palys, 2003). The goal of qualitative research is to generate a holistic and realistic description or understanding filtered through the perceptually limited lens of the researcher. Qualitative research uses no prepackaged research plan but is rather question-specific, which evolves throughout the project (Miller & Crabtree, 1999).

Action research involves a three-step iterative process: planning, action, and evaluation. The researcher will plan the project, facilitate the participant's involvement and evaluate the result of the action taken (Kemmis & McTaggert, 1988). This method provides for the engagement of the participants as equal and full partners in the research process (Stringer, 1999).

The research question addressed by this major project is: How to prepare Ontario police officers to effectively respond to incidents involving persons experiencing excited delirium?

Research Methods

The current study utilized a triangulated methodology (Grbich, 1999) to identify the competencies police officers should possess. The optimal police response was determined through a focus group activity, interviews and a survey questionnaire. Interviews were conducted with officers who have had first hand experience with persons with ED. These interviews completed the triangulation and provide added validation of the data obtained from the other sources. In all three methods the same basic question was asked: "How best to prepare Ontario police officers to effectively respond to incidents involving persons experiencing excited delirium?"

To provide a background to the study, Ontario inquests were reviewed for the period 1988 to 2004 [2]. A total of 370 inquest files were reviewed and incidents fitting a classic ED episode identified. These incidents were analyzed for patterns and to identify any differences between an agitated subject and a person experiencing ED. This has been identified as a concern in the memo from Ontario's Chief Coroner's Office to correctional institutions, coroners, police agencies, paramedic services and hospitals (Young, 1995a, 1995b). These patterns or features included: age and gender of the subject; day, month and year of altercation; environmental temperature; population density; subjects' mental health, behavior, and use of illicit substances. The information from these files was coded, and the anonymity of the deceased persons maintained. An event profile was created (Appendix B) which lists consistent features in each incident.

Second, a focus group was conducted using a nominal group technique (NGT) (Delbecq, Van de Ven, & Gustafson, 1986). The focus group used 7 participants whose backgrounds

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[2] Coroners' inquests involving excited delirium type deaths occurring in 2004 and 2005 are pending.

included an internationally recognized medical expert on the subject of ED and sudden and unexpected death and an internationally recognized police trainer who is an expert in police restraint tactics as well as ED and sudden, unexpected death. One participant had been responsible for investigating several deaths caused by ED. The other four participants were trainers of large police services (greater than 1000 officers) in Ontario. Each of the trainers had experience in developing police training programs, part of which address ED. Each police service represented also had experienced more than three ED related deaths.

The NGT was used because it is advantageous for pooling judgments, particularly where creative solutions are required (Delbecq et al., 1986). A professional moderator, experienced in using this style of data collection, facilitated the focus group.

Participants were given 10 minutes to independently compile points they considered important in response to the question, "How to prepare Ontario police officers to effectively respond to incidents involving persons experiencing excited delirium?" (Appendix C) Participants provided their comments in a round-robin sequence until all points had been exhausted. Each point was recorded on flip-chart paper and taped to the walls of the meeting room. After all comments had been recorded, each point was clarified to ensure all participants shared a common understanding of the statement. Each comment was sequentially numbered. Similar items were pooled and assigned the same number. Participants were asked to assign a weight for each item based on a three-point scale of importance: (3 = high; 2 = medium; 1 = low).

The results were coded and those items the majority of participants (4 of 7) weighed as very important were used as a framework to develop the questionnaire survey (Appendix E).

Next, interviews were conducted with selected officers who had first hand encounters

with individuals experiencing ED. These participants were purposefully selected using information gleaned from Ontario inquest files.

Seven participants who had been involved with subjects experiencing ED agreed to be interviewed. Four participants were interviewed in person and three interviews were conducted by telephone. Four participants had experience with subjects who died while three participants were involved with surviving subjects.

The investigator used a semi-structured interview (Appendix G) to collect the officers' perspectives on the essential question of how to prepare Ontario police officers to effectively respond to incidents involving persons experiencing ED. All participants were interviewed for approximately 30 minutes. Each interviewee was probed for their response strategies, effective tactics used in their response to incidents involving persons experiencing ED as well as their recommendations. The data was collected using field notes, which were read back to the participant to ensure their comments had been accurately recorded. These notes were later coded and themed in a manner consistent with the focus group results. No information relating to the identity of the subject experiencing ED was requested or recorded.

Finally, a sample of front line police officers was surveyed using a questionnaire based on the findings of the inquest review, focus group and interviews. Sample questions for the survey were first piloted on police officers seconded as instructors to the OPC. They were asked to comment on question clarity and ease of instrument use. Suggestions made by this group were used to revise the instrument.

The OPC maintains contact with a group of officers consistently used to identify training needs for Ontario's police officers, most of which include use of force trainers as well as patrol officers and supervisors. The use of this group of officers is validated by their routine inclusion

in the identification of training issues at OPC. The bulk of group members are actively serving police officers, representing the majority of police services in the province of Ontario.

Instructions were included with the survey on how to return the completed document, either by email or by facsimile. The survey was designed to allow each participant to score each item in one of four ways: not important (1); somewhat important (2); very important (3); and "**must** be in training" (4).

Ethical Issues

All participants and their data submitted were kept anonymous. This maintained the rights and privacy of participants and subjects who experienced dealing with subjects demonstrating ED.

Bias by the researcher or other participants in all three methods of data collection was avoided. Two groups were approached individually in a structured manner, either one-on-one by interview or through a survey. The NGT for the focus group used a team approach to brainstorm ideas to answer the research question. A moderator, other than the researcher was used. This approach created collaboration and empowered individuals allowing for equal and full participation. The voting that ranked the items identified in the brainstorming session was done by a closed system, which prevented competitive or authoritarian relationships from skewing the data (Stringer, 1999). The interviews were conducted by the author and therefore avoided the potential bias resulting from multiple interpretations of interviews. Additionally, each interview participant was advised of the contents of the author's field notes at the conclusion of the interview, in an attempt to accurately record the views and remarks of the interview participant.

An ethical dilemma surrounds the issue of ED, as there is no advocacy group representing subjects who die from this syndrome. Without a collective stakeholder group it

becomes difficult to obtain research funding especially when the incidence of ED is considered rare. As a result of limited resources (funding, personnel, and time), there is little evidence to support what type of response emergency personnel should take when encountering a person experiencing ED.

All participants in this study were officially thanked for their assistance and were offered a copy of the final version of this study for their use.

Chapter Four: Action Research Project Results and Conclusions

The Inquests- Background

Between 1988 and 2004, there were 29 coroners' inquests that examined the issue of ED in Ontario. Of these 29 inquests, ED was identified as a cause of death, a means of death, or within the presiding Coroner's synopsis 13 times, or in 45 % of the cases. The remaining 16 cases (55%) outlined a constellation of events consistent with ED behaviors. Only 2 inquests (7%) had incomplete records, but these were included where information was available.

Table 2. – Features involved in excited delirium incidents

Results of Analysis of Coroners Inquests

Most Likely Features	Least Likely Features
male subject;	female subject;
33.3 years of age;	under 20 or over 50 years of age;
occur within 2 hours driving time of the GTA or GOA;	occur within a rural jurisdiction beyond 2 hours driving time of the GTA or GOA;
occur between Thursday and Sunday, with the greatest chance being Sunday;	occur on a Wednesday;
May through September;	October through April
ambient temperature will be 20 ° C or above;	ambient air temperature below 6.3° C;
illicit substance involved will be cocaine;	illicit substance involved will be heroine;
mental health issue will involve schizophrenia	mental health issue involved will be bipolar.

The Focus Group

The 7 participants in the focus group identified 38 issues or items (Appendix C). Participants individually prioritized each item based on a 3-point scale of importance, 3 being the highest and 1 being the lowest. The majority of participants rated the following 20 items as "most important" (Appendix D):

1. Education and recognition of what you're facing; the actual factors that contribute to excited delirium (signs & symptoms)/Educate them as to what the diagnosis for ED is/Recognize super human strength and other symptoms
2. Articulate their use of force actions relative to the scenario/Articulating why they went to this option vs. (in detail never enough; with correct terminology)
3. Emphasis should remain on public safety and physical control (police role & response – procedure)/ Emphasis must remain on restoring order regardless of fact of ED
4. Recognizing it as a medical emergency - call the ambulance
5. Recognizing it early leads to more effective use of force options
6. Physical restraints – avoid face down position and when to not use/Training them about the potential dangers of prone restraint.
7. High stress situational training (ED should be incorporated)
8. More emphasis on proper assessment of the situation
9. More training on assessment skills
10. All front line officers should be armed with TASERS
11. More information / research on effects of TASER on ED

12. Knowing that the TASER should be used to give the officers the time to apply proper restraint techniques
13. TASER must not be used in the stun mode which is for pain compliance only
14. More emphasis on chemical restraint used by ambulance people
15. More teamwork with paramedics
16. More coordinated approach with police / paramedic / other services
17. Need joint protocol for emergency services
18. Officers should be told that restraining person is the correct procedure & death may occur with or without police involvement
19. Must recognize the difference between psychotic outburst and ED
20. Use inquest scenarios in training (Case studies)

The Interviews

A total of seven interviews were conducted. Four interview participants had experience with subjects who died while three participants were involved with subjects who survived. The interviews resulted in a series of answers with consistent themes. Interview participants all agreed that the subject they were attempting to control demonstrated extraordinary strength.

Of the seven incidents described there were consistent themes surrounding the event as it unfolded. All subjects engaged in a significant struggle with attending officers. Two subjects experienced moments where involved officers were able to gather some information from the subject; 1 subject died and 1 survived. Officers were unable to meaningfully communicate with 5 subjects; 3 subjects died and 2 survived. The incident required not fewer than 3 officers and not more than 8 to establish control of the subject. Paramedic transport was provided in 5 cases, police transported 1 subject to hospital. The two surviving subjects were transported to hospital

by ambulance. Subjects were impervious to pain compliance techniques and any injuries sustained prior to police arrival or during the event. Property damage was evident in 6 cases, 4 involved broken glass and resultant subject injury. Running into traffic occurred in 1 case. Subjects were found fully clothed in 2 cases; 2 subjects were partially clothed (trousers); the remaining 3 were either naked or only wearing underwear. In 5 instances subjects were described as unbelievably strong; 1 case involved a subject who had fought with friends at the residence prior to police arrival; 1 case involved a subject who could be controlled by officers after a brief struggle. Subjects appeared to be involved in escape type behavior in 5 cases; 1 case involved concerted efforts to enter the subject's residence; 1 case involved only actions which appeared to defeat the officers' attempt to gain control.

Participants were asked to describe information they would have liked to have when handling their situation. The majority indicated a desire to have greater awareness of the condition to allow for earlier recognition (i.e. the difference between an agitated, angry person and someone experiencing ED). In two cases, responding officers were aware that the subject might be in crisis before arrival. In one case the officers seemed to be gaining the subjects cooperation when, for reasons unknown, the subject's behavior suddenly changed. In 4 cases, the incident occurred before police officers had knowledge of ED.

When recommendations were solicited regarding improving future outcomes involving police response to ED, comments consistently involved training to improve awareness and engaging paramedic transport as soon as possible. In particular, interview participants advised that scenario based training be incorporated so that officers see "more than just a movie of a guy in excited delirium." Suggestions included case studies and incorporating discussion so that the

information can be assimilated into the officers' experience. Another consistent theme was the inclusion of medical transport early in the incident.

When asked if alternative restraint methods would have been beneficial, one participant said no, three said yes while three gave a neutral response.

When asked about the level of understanding by the involved officers, 6 participants perceived their understanding as poor, while 1 stated that the topic was raised annually during in-service training. Interview participants acknowledged that training on ED had been provided during the course of their career. In some instances, the training consisted of a video and a handout with accompanying information provided by the instructor. Participants consistently raised the concern that there was a need for scenario-based training on ED.

All participants agreed that in addition to recruit training, experienced front line officers must be provided information on ED. Other police related roles consistently mentioned included officers responsible for prisoner care and transport as well as training for supervisors, including sergeants, staff sergeants and inspectors. Several participants also mentioned the need for training to include tactical and canine officers.

Responses in respect to length of time for ED training ranged from 30 minutes to 8 hours. The majority of participants (5 of 7) mentioned the 1.5 to 4 hour time- frame.

The Questionnaire

Information obtained from inquests, focus group and interviews was used as a framework to develop the survey that consisted of 21 questions (Appendix D). The response rate was 65% (58 of 89).

Over 60% of participants rated the following as "very important":

- Continue to perform the job of keeping the peace, using physical control techniques regardless of whether the person has excited delirium or not.
- Effectively and thoroughly assess the situation.
- Receive additional training to enhance assessment skills.
- All front line officers should be armed with the TASER.
- That the individual experiencing excited delirium needs to be chemically restrained (sedated) as soon as possible after being physically restrained.
- That there be a coordinated approach with police / paramedic / fire service as well as medical / hospital staff.
- There should be a joint protocol for emergency services.
- Recognize the difference between a psychotic outburst and excited delirium.
- That more information be gathered on the effects of TASER on persons experiencing excited delirium.
- That alternative restraint methods be developed to decrease the pressure applied to the subject's back.

Nearly 50% of participants rated the following as "must be included in training":

- recognize the factors that contribute to excited delirium
- effectively articulate the rationale underlying their choice of use of force option(s)
- continue to perform the job of keeping the peace, using physical control techniques regardless of whether the person has excited delirium or not.
- recognize excited delirium as a medical emergency
- know the potential dangers of the prone position and face down restraint
- engage in high stress training

- know that the usefulness of the TASER is to give officers time (a "window of opportunity") to apply restraint techniques
- recognize that the Taser must not be used in the stun mode when attempting to control subjects in excited delirium
- understand that individuals with excited delirium should not remain in the prone position
- officers be informed that restraining people experiencing excited delirium is the correct procedure and death may occur with or without police involvement
- excited delirium must be a separate training issue from mental illness
- recognize the difference between a psychotic outburst and excited delirium

Synthesis of the Data

Based upon information obtained from the inquest review, focus group and interviews, the following were believed to be necessary to effectively deal with persons with ED:

- recognize the factors that contribute to excited delirium;
- effectively articulate the rationale underlying their choice of use of force options(s);
- continue to perform the job of keeping the peace, using physical control techniques regardless of whether the person has excited delirium or not;
- recognize excited delirium as a medical emergency;
- know the potential dangers of the prone position and face down restraint;
- engage in high stress situational training;
- effectively and thoroughly assess the situation;
- receive additional training to enhance assessment skills;

- be armed with the TASER; know that the usefulness of the TASER is that it gives officers time (a "window of opportunity") to apply restraint techniques;
- recognize that the TASER must not be used in the stun mode when attempting to control subjects in excited delirium;
- understand that individuals with excited delirium should not remain in a prone restrained position;
- recognize that the individual experiencing excited delirium needs to be chemically restrained (sedated) as soon as possible after being physically restrained;
- be aware that a coordinated approach with police / paramedic / fire service as well as medical / hospital staff is required;
- aware that there should be a joint protocol for emergency services;
- be informed that restraining people experiencing excited delirium is the correct procedure & death may occur with or without police involvement;
- recognize the difference between a psychotic outburst and excited delirium.

Study Conclusions

Data collected from the focus group, interviews, and questionnaire survey corroborated each other in that there was a high level of agreement between the different sources of data. All agreed that the issues were very important, however, there was some disagreement as to whether some were considered critical to training.

Not surprisingly, all three sources identified that police officers need to be able to recognize the factors that contribute to ED. There were 13 associated behaviours identified by the Office of the Chief Coroner through two memos that were disseminated in 1995 (Young, 1995a, 1995b). Likewise, the ability to effectively and thoroughly assess a situation and

articulate the rationale underlying their choice of use of force option(s) received a high level of concurrence. The officer's ability to articulate their use of force option is at the heart of policing. Explaining why an officer chose a particular option, or course of action, is at the core of policing and not restricted to incidents involving ED. That is, it is already an integral component of police training.

Interestingly, in regard to keeping the peace, there was the feeling that keeping the peace as a central police function must be reinforced. That is, the police function must remain, to keep the peace and that this involves using force to control aggressive or resisting subjects. Death may occur with or without police intervention. This fact must be reinforced both through police training but also through public education.

All agreed that ED should be recognized as a medical emergency, however some clarification might be needed as to the meaning of "medical emergency". Traditionally, it has meant "get him to a doctor". What needs to be reinforced is that the period immediately following the application of restraint is a critical period in terms of ED. Physiologically, they may be fighting against the restraint and the metabolic process overwhelms their compensation mechanisms. In other words, the apparent calm following the storm may be deceiving. This is the crucial period when death may occur.

There was agreement that the officers should be aware of the dangers of the prone position and face down restraint. The prone restraint position is, however so integral to subject control that its current use is unavoidable. Officers need to be aware it is not the use of the prone restraint position but the danger inherent to the duration of its use, and that handcuffing alone does not constitute control. After control has been established, the subject should be moved from the prone position.

The results indicated that high stress situational training should be incorporated into current police training. The rationale was to present training as realistic as possible. This may be a challenge using actors due to the extreme level of exertion required. There is, however, new technology available including the use of virtual reality that may compensate.

Recognizing that the TASER device should not be used in the stun mode while attempting to control subjects experiencing ED. This information is relatively new and reflects the fact that a TASER device stun is a pain compliance technique that historically has been ineffective with this population (Young, 1995a, 1995b; Lawrence, 2004; Ross, 1998). Also new, is the notion that the usefulness of the TASER device is to provide a window of opportunity to establish control, rather than as a means of gaining compliance.

All sources identified the need to separate training on mental illness from training on ED. The reason underlying this concurrence, most likely relates to the fact that as revealed from the review of coroners inquests, there were more incidents involving substance abuse, particularly cocaine, than there were those involving mental health. Similarly, it was noted that officers must be able to recognize the difference between a psychotic outburst and ED. The rationale is that an individual exhibiting a psychotic outburst may eventually calm down while someone experiencing ED may exert themselves until they are exhausted or they die.

There was agreement that officers need more training on assessment skills but not that it must be included in training. This may seem contradictory, however participants were probably acknowledging that officers already receive fairly extensive training in assessing situations particularly those involving use of force.

In regard to the use of TASER devices, the majority of experts expressed an opinion that there should be more research to identify the effects of using a TASER device on persons with

ED and that all front line officers should be armed. However only 4 experts and 77% of front line officers themselves felt that they should be armed and that only 4 experts and 84% of front line officers felt there should be more information on the effects of TASER devices on an individual. These findings may be reflective of the deep division or debate currently being raged in Canadian society regarding the use of the TASER device.

Two issues were related to the use of chemical restraint. The experts in the focus group believed that persons with ED need to be chemically restrained as soon as possible after being physically restrained and that there should be greater emphasis on its use by paramedics. The front line officers were not in agreement and a possible explanation may be that the experts have greater awareness of the potential effectiveness of this form of intervention. Similarly, the front line officers did not seem aware of the potential benefits that could result from a coordinated approach and a joint protocol with police, paramedic, and fire service together with medical/hospital staff. This may indicate a need to enhance police training in this regard.

Finally, neither the focus group participants nor the front line officers believed that the development of alternative restraint methods was very important. There is no clear reason to explain this lack of concurrence other than possibly a general reluctance to learning something new or possibly the inclination to agree to something where there is no clear answer.

It is interesting to note that when the expert group was asked to identify the competencies (i.e. specific knowledge, skills and abilities) required of front line officers, their responses were not as detailed as expected and appeared to relate to knowledge-based elements such as "recognizing the factors that contribute to excited delirium". That lack of focus on skills and abilities may indicate that police officers are perceived has already possessing these capabilities.

The results of this study indicate a fairly high degree of agreement over issues related to ED at least among police and the expert group. Why then is there such public consternation over such incidents as evidenced by extensive media coverage and inquests? Why is enhanced police training continuously mentioned as the panacea? How might this be explained? The answer might be related to the fact that recent deaths have been associated with the TASER device and the relationship may not be fully understood. There appears to be a lack of understanding relative to the potential use of sedation to resolve the issue. There may be a need to integrate paramedics and other medical people into the problem resolution. Further, the public may need to be aware that police officers are doing the job they are trained to do and that this subgroup of people are in dire straights and would likely die regardless of intervention. Finally, it may stem from the fact that there is an expectation that police officers resolve a problem that even the medical community has no clear answer.

Overall, three major themes emerged through this study: issues related to police training, the impact of other systems on the police response, and public education regarding the police role. The major contribution of the current study includes the development of a framework to guide police training in responding to incidents involving ED. It has also identified the need for public education as to the role of the police and the need for an integrated systems response involving all medical services.

Scope and Limitations of the Research

The study was limited to Ontario police officers. The problems associated with ED are international in scope and impact on other law enforcement, correctional and medical settings. The initial proposal intended to include members of these other group. It soon became apparent

that completing such an undertaking was beyond the timeframe and resources allowed for this study.

Access to inquest documents was limited to a synopsis and associated recommendations. Greater access to complete files may reveal more details, resulting in an improved understanding of the characteristics associated with ED incidents.

The primary source of information was related to ED incidents where the subject involved died. Information relating to people who experience ED and survive is not currently collected into any readily accessible database. Interview participants provided information and perspectives on incidents where the subjects survived, however, this was an unanticipated step in the research design. Investigation of incidents where the subjects survived may lead to sources of information that would alter the understanding and appreciation of these events and potentially suggest strategies or methods that may alter the negative outcome of death.

The study was retrospective and therefore limited by the information that was available at the time of inquiry.

Implications for Future Research

The Ontario Police College should continue to engage and be open to research on the ED disorder itself, the use of TASER device and other force options and the most effective response strategies. Consideration should also be given to leveraging, where possible, OPC's impact in planned research of intervention improvements relating to subjects experiencing ED.

The fact that most of the information collected in this study is related to events the subject did not survive has been pointed out. Future efforts should consider collecting data on incidents where the subjects survived. This type of information is uncommonly reported, if at all. This new ground should be explored as opposed to following a path now marked.

Chapter Five - Research Implications

Training issues

The results provide a court-defensible background to justify adjustments in the training on ED provided by the OPC. A review will be conducted to ensure that current OPC training complies with the framework so that it integrates the major elements identified by this study that characterize the optimal response to persons experiencing ED. .

Information in regard to the most effective use of the TASER device and chemical restraints should be integrated into current training together with a more complete explanation of "medical emergency" and the critical need for swift action after physical restraints have be utilized.

The identification of other systems, which will impact on police response to ED incidents, identifies the need for integrating paramedics into future ED training design. Steps are being taken to ensure that officers trained within the OPC Basic Constable Program will be familiar with the use of ambulance stretchers. This evolution will assist in training officers in how to best prepare subjects experiencing ED for medical transport.

Collaboration with the Officer Safety Training Section should occur to determine how best to separate ED related training from current mental health training. The potential for team-teaching between staff in the Defensive Tactics Training Section and the Officer Safety Training Section should be explored. This approach will further reduce any perception of training silos within the Basic Constable Program.

The survey questionnaire can be further developed and administered to a wider source of front line police officers to determine the level of proficiency of officers within the field.

Inquest reviews could be used to identify precipitating factors that could be incorporated into police training for a questionnaire that could be given to front line officers to determine their level of competency. Appendix H demonstrates the usefulness of such data that should be incorporated into training. That is, do they have the necessary knowledge, skills and abilities to effectively deal with incidents involving persons with ED?

Organizational issues

Police trainers and the OPC need to recognize that the issue is not solely a police responsibility, that a coordinated systems approach be implemented. Efforts should be made to foster a relationship with leading paramedic and medical trainers to develop complimentary programs.

OPC and the Ministry should be open to, and seek out opportunities to educate and inform the public as to the role of police officers in responding to these calls for service and the need for a coordinated response.

Consideration should be given to using a model, similar to this research project, to determine training needs in the areas where a dearth of information relating to evidence based training exists. Examples of such topics include handgun retention training, defenses to spontaneous attacks by subjects armed with edged weapons, and training relating to officers struggling with subjects while on the ground.

Chapter Six - Lessons Learned

The original intent of the research was to develop a "best practice" in responding to situations involving ED. A major lesson learned is that there may not be one single solution, rather the identification of a "framework" that incorporates or guides best practice may be the most fruitful consequence of such research.

The critical importance of maintaining focus and prioritizing endeavors is essential to the successful completion of any research project.

Research requires money. Phone calls to participants and colleagues, travel, postage, and paper, are only a few of the items that must be paid for. Without funding sources research activities are very limited.

Effective research design requires flexibility to enable the incorporation of diverse view. Unexpected outcomes should be viewed as learning opportunities rather than gaps in knowledge, or nuisance.

No single viewpoint can be relied upon nor excluded from consideration. The synthesis necessary to consolidate various viewpoints provides a stronger base than one poured from a single source, no matter how well informed.

Thinking and acting in silos is contrary to effective problem resolution. System based thinking and approaches enhance decision quality.

Future training needs should be evaluated using similar methods, particularly action based research. Much of police training relative to use of force has been driven by consensus and tradition, very little instruction is research based. Areas where controversy continues, for example, handgun retention, edged weapons training, and ground defenses, would benefit from a similar research effort, particularly using experts in kinesiology and bio-mechanical engineering.

Such expertise would assist in developing techniques that would result in maximum energy transfer using minimum energy expenditure.

It was surprising to learn that the issue of ED is still not well understood by the average Ontario front line police officer. Upon reflection the reasons for this situation become clear; the segmentation of the training makes it difficult for officers involved in such a dynamic situation to reconfigure their training. In contrast the poor understanding could be attributed to the fact that while incidents involving ED, particularly when a death occurs, are often reported such occurrences are rare within the experience of any single officer's career. Without a broad survey of Ontario police officers the actual answer to this point is not known.

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Appendix A

June 1, 2006

Letter of Invitation / Telephone Script / Email Invitation

Dear **[Prospective Participant],**

I would like to invite you to be part of a research project, which I am conducting. This project is part of the requirement for a Master's Degree in Leadership and Training, at Royal Roads University. My name is Chris Lawrence and my credentials with Royal Roads University can be established by calling Dr. Tony Williams, ([redacted]) [redacted]-[redacted] ext.[redacted].

The objective of my research project is to optimize training relative to the problem of excited delirium for Ontario's front line police officers at the Ontario Police College. In addition to submitting my final report to Royal Roads University in partial fulfillment for a Master's Degree in Leadership and Training, I will also be sharing my research findings with the Ontario Police College. I am also planning to write articles for publication in trade journals using the information I will gather in my research and, possibly, a book in the not too distant future.

My research project will consist of a focus group, interviews and a survey and is foreseen to last varying amounts of time. For example, focus group participants will require no more than two hours to complete the process. Interview participants will require 15 to 20 minutes. Survey participants will require approximately 15 to 20 minutes to complete the survey form. You will only be asked to participate in one of the data collection processes. The foreseen questions will surround the identification of the knowledge, skills, and abilities needed by front line Ontario police officers when responding to incidents involving excited delirium.

Your name was chosen as a prospective participant because of one of the following reasons:
Focus Group Participants: your experience with the problem of police response to incidents involving excited delirium;
Interview Participants: your experience in an incident involving a police response to a person experiencing excited delirium;
Survey Participants: your association with the Ontario Police College's Advanced Patrol Training Advisory Committee.

All data will be reported so that participants' identity will remain anonymous.

Information will be recorded in handwritten form, and or computer word-processing software format and, where appropriate summarized, in anonymous format, in the body of the final report. At no time will any specific comments be attributed to any individual unless your specific agreement has been obtained beforehand. All documentation will be kept strictly confidential.

Please do feel free to contact me at any time should you have additional questions regarding the project and its outcomes. There will be no debriefing session associated with this research project.

There are no perceived conflict of interest issues related to this research project.

You are not compelled to take part in this research project. If you do elect to take part, you are free to withdraw at any time with no prejudice. Similarly if you choose not to take part in this research project, this information will also be maintained in confidence.

If you would like to participate in my research project, please contact me at:
Name: Chris Lawrence
Email: [redacted]
Telephone: ([redacted]

Sincerely,

Chris Lawrence

Appendix B

Event Profile

	Substance Abuse /Psychiatric Illness	Fight / Flight	Bizarre / Unusual Behavior	Cause of Death
1	Cocaine	Running down roadway at night; superhuman struggle with 5-7 officers; second struggle at hospital.	Paranoid; jumping around like a boxer; looking about as if someone was speaking to him.	Cocaine induced excited delirium.
2	Bipolar	Ran from officers upon reaching lobby of apartment; chased and taken down; significant struggle.	Banging on door with fire extinguisher; kicking door with bare feet; partially disrobed.	Excited delirium / restraint asphyxia associated with underlying psychiatric illness.
3	Alcohol	Kicking and screaming while being transported in prisoner van.	Shaking	Alcohol withdrawal leading to excited delirium complicated by positional asphyxia from restraint
4	Cocaine	Attacked officers with tree branch, broken hockey stick, broom handle; fought with police attempts to control.	Running through backyards early a.m.; breaking glass; grunting and screaming.	Cardio-pulmonary arrest caused by cocaine toxicity and excited delirium.
5	Paranoid Schizophrenia	Kicked door of police cruiser; struck at the officer; ran into bush; tried to flee backup officers.	Increasingly strange behavior preceded call to police; driving complaint.	Cardiorespiratory arrest due to moderate coronary disease, fractured rib, hog-tie position, exhaustion and the effects of excited delirium (sic) brought on by paranoid schizophrenia.
6	Cocaine	Ran from officers at scene.	Behaved in strange, excited and aggressive manner.	Cocaine induced excited delirium associated with physical struggling and restraint.
7	Schizophrenia	Forcible extraction from motor vehicle.	Delusional 1 day before event; fight with citizen precipitated police contact; ramming motor vehicles.	Excited delirium associated with restraint.

	Substance Abuse /Psychiatric Illness	Fight / Flight	Bizarre / Unusual Behavior	Cause of Death
8	Treated for Depression Cocaine	Loud banging and shouting; broken furniture and holes in wall; incident occurred prior to police arrival. Report from spouse of subject's paranoia: "they are coming for me;" "they are after me"	Smashing property in apartment.	Diffuse anoxic encephalopathy post cardiorespiratory arrest caused by positional asphyxia associated with restraint in the prone position precipitated by excited delirium from the use of cocaine. Neither the positional asphyxia or the excited delirium appear sufficient to cause death by themselves.
9	Depression Alcohol	Fight with attending paramedics and police officers	**Known to be violent	Mixed overdose of Amitriptyline, alcohol and other drugs.
10	Cocaine	Fight with neighbors and attending police officers.	Walking in bathrobe and shorts along street; uttering incoherently	Cocaine overdose
11	Cocaine	"Very violent at the scene";	"Freaked out"	Death due to cocaine overdose resulting in agitated / excited delirium leading to cardiac arrest and subsequent organ failure.
12	Cocaine	Struggle to control after attempts to persuade subject to calm down and dress.	Wandered apartment building naked; calling on God and his mother.	A: Cardio vascular collapse precipitated by cocaine poisoning and positional asphyxia. B: excited delirium precipitated by cocaine intoxication, made worse by positional asphyxia.
13	Alcohol	Force used to arrest resistive, drunken subject.	N/A	Alcohol consumption with associated vomiting in combination with physical exertion, method of restraint, length of time in restraint, contributed to positional asphyxia and associated complications.

	Substance Abuse /Psychiatric Illness	Fight / Flight	Bizarre / Unusual Behavior	Cause of Death
14	Tylenol; Cocaine; A.S.A.; Heroin	Behaved excitedly and aggressively.	No further info.	Unknown
15	Alcohol/Drugs	Kicking interior of cruiser.	Yelling loudly; appeared to be hallucinating; unable to remain still.	Coronary atherosclerosis with myocardial ischemia and acute alcohol/drug withdrawal syndrome.
16	Paranoid Schizophrenia & Depression	Significant exertion prior to police arrival and struggle with police	Sudden screaming, pounding on walls.	Cardio pulmonary arrest associated with acute psychosis, physical restraint, positional asphyxia, exhaustion, and stress due to pepper spray.
17	Cocaine	Agitated and thrashing on floor prior to police arrival; struggle with officers	Sudden onset of agitated behavior without provocation.	Acute cocaine poisoning.
18	Paranoid Schizophrenia Cocaine	Prior to police attendance went berserk; broke windows; broke a chair; banged on walls; fought with responding officers.	Sudden uncontrollable behavior.	Traumatic asphyxia
19	Alcohol & Hashish	Struggle with police after refusing to comply.	N/A	Sudden cardiac arrest
20	Cocaine	Ran from police after being approached.	Unnatural body movements noticed during booking procedure.	Cardiac arrest caused by aspiration.
21	Cocaine	Assaulted a bus driver; fought with police	Screaming someone was after him; tried to bite a citizen; attempted to bite an officer; bit antennae off police radio.	Asphyxia due to the external application of mechanical force, while in a state of cocaine toxicity.
22	Unidentified mental illness.	Struggle during apprehension.	On scene physician endorsed psychiatric commitment forms.	Acute bronchial pneumonia
23	Paranoid Schizophrenia	Struggle during apprehension.	Subject's sudden return during investigation; concern for family safety.	Cardiac arrest due to myocardial bridging.
24	Cocaine & Amitriptyline.	Resistance to apprehension.	Naked man boarded transit bus.	Cocaine and Amitriptyline overdose.
25	Cocaine	No further info.	No further info.	Cardiac arrest due to cocaine overdose
26	No further info.	No further info.	No further info.	Due to heart disease and high level of anxiety and stress brought on by struggle while resisting arrest.
27	No further info.	Minimal struggle	Confused, aggressive	Cardiac arrhythmia due to underlying myocarditis and moderate coronary artery disease.

	Substance Abuse /Psychiatric Illness	Fight / Flight	Bizarre / Unusual Behavior	Cause of Death
28	Cocaine & Hashish	Loud voices and banging awakened others in house.	Up in the middle of night shouting and banging in residence.	Cardiac arrhythmia.
29	Cocaine	Minimal struggle	No further info.	Heart arrhythmia secondary to an acquired anomaly, contraction band necrosis due to previous cocaine use.

Appendix C

Focus Group Results

1. Education and recognition of what you're facing the actual factors that contribute to excited delirium (signs & symptoms).
1. Educate them as to what the diagnosis for ED is.
1. Recognize super human strength and other symptoms
2. More scenario based training with the front line officers, incorporating a ED scenario (ask them court room type questions.
3. Articulate their use of force actions relative to the scenario.
3. Articulating why they went to this option vs. (in detail never enough; with correct terminology).
4. Viewing the behavior in the context of the reason we are called (relatively minor property crime vs. public safety.
5. Don't set unrealistic goals i.e. we're not doctors.
6. Emphasis should remain public safety and physical control (police role & response – procedure).
7. Recognizing it as a medical emergency - call the ambulance.
8. Recognizing it early leads to more effective use of force option.
9. Physical restraints – avoid face down position and when to not use.
9. Training them about the potential dangers of prone restraint.
10. Recognize the use of chemical restraint & who can use it.
11. Develop new forms of restraints.
12. High stress situational training (ED should be incorporated).

13. Need good role players.
14. Supervisor must take more active role & take charge (quarterback position).
14. Better training for supervisors.
15. More emphasis on proper assessment of the situation.
16. More training on assessment skills.
17. Team approach to deal with situation.
18. Call takers must be trained.
19. Disengage if needed (know when to disengage)
20. All front line officers should be armed with TASERS.
21. More effort in getting info on excited delirium from police (who probably know most about it).
22. More information / research on effects of TASER on ED
23. Knowing that the TASER should be used to give the officers the time to apply proper restraint techniques.
24. Officers are currently prepared for getting people with ED under control.
25. Police are doing the job they were trained to do.
26. TASER must not be used in the stun mode which is for pain compliance only.
27. More emphasis on chemical restraint used by ambulance people.
28. More teamwork with paramedics
29. More coordinated approach with police / paramedic / other services.
30. Emphasis on time, only limited amount to get injection (can't restrain too long).
31. Need joint protocol for emergency services.

32. Officers should be told that restraining person is the correct procedure & death may occur with or without police involvement

6. Emphasis must remain on restoring order regardless of fact of ED.

33. More training should be given to paramedic services.

34. ED must be a separate training issue from mental illness.

35. Must recognize the difference between psychotic outburst and ED.

36. Use inquest scenarios in training (Case studies).

37. Recognize major and minor symptoms

38. Give more info to public on what the current training consists of...(how extensive it already is).

Appendix D

Focus Group Weighting Chart

	A	B	C	D	E	F	G	
1.	2	3	3	3	3	3	3	✓
2.	3	2	2	3	1	1	3	
3.	3	3	3	2	2	2	3	✓
4.	3	3	2	2	1	2	3	
5.	1	1	2	1	3	3	3	
6.	3	3	3	3	3	2	3	✓
7.	3	3	3	3	3	3	2	✓
8.	1	3	3	3	3	3	3	✓
9.	2	3	3	3	3	3	2	✓
10.	2	3	2	2	3	1	1	
11.	3	1	1	2	3	1	3	
12.	3	1	3	3	2	2	3	✓
13.	2	1	1	1		1	2	
14.	2	3	1	2	1	2	3	
15.	3	3	2	2	3	2	3	✓
16.	3	3	1	2	3	1	3	✓
17.	1	2	1	2	2	2	3	
18.	1	2	3	2	1	1	2	
19.	2	3	2	3	2	2	3	
20.	2	3	3	3	1	3	1	✓
21.	2	2	2	3	3	1	3	
22.	2	3	3	2	3	1	3	✓
23.	3	3	2	3	1	2	3	✓
24.	1	3	3	2	2	2	1	
25.	1	3	2	2	1	2	1	
26.	3	3	2	3	3	3	3	✓
27.	3	3	3	2	3	3	2	✓
28.	3	3	3	2	3	2	3	✓
29.	3	3	2	2	3	2	3	✓
30.	3	3	2	2	2	2	1	
31.	3	3	3	2	3	2	3	✓
32.	2	3	3	3	3	3	3	✓
33.	3	3	2	2	2	1	2	
34.	2	2	3	3	3	2	3	
35.	2	2	3	3	3	2	3	✓
36.	3	2	2	3	2	2	3	✓
37.	1	3	3	2	1	2	2	
38.	2	1	1	2	2	3	3	
39.								

Appendix E

Excited Delirium Questionnaire Survey

Instructions
Please circle the most appropriate response according to how important you feel the issue is to police officers.

Issue	Not Important	Somewhat Important	Very Important	Must be in training
1. Recognize the factors that contribute to excited delirium.	1	2	3	4
2. Effectively articulate the rationale underlying their choice of use of force options(s).	1	2	3	4
3. Continue to perform the job of keeping the peace, using physical control techniques regardless of whether the person has excited delirium or not.	1	2	3	4
4. Recognize excited delirium as a medical emergency.	1	2	3	4
5. Know the potential dangers of the prone position and face down restraint.	1	2	3	4
6. Engage in high stress situational training, which should be incorporated into current police training.	1	2	3	4
7. Effectively and thoroughly assess the situation.	1	2	3	4
8. Receive additional training to enhance assessment skills.	1	2	3	4
9. All front line officers should be armed with the TASER.	1	2	3	4
10. Know that the usefulness of the TASER is to give officers time (a "window of opportunity") to apply restraint techniques.	1	2	3	4

11. Recognize that the TASER must not be used in the stun mode when attempting to control subjects in excited delirium.	1	2	3	4
12. Understand that individuals with excited delirium should not remain in a prone restrained position.	1	2	3	4
13. That the individual experiencing excited delirium needs to be chemically restrained (sedated) as soon as possible after being physically restrained.	1	2	3	4
14. That there be a coordinated approach with police / paramedic / fire service as well as medical / hospital staff.	1	2	3	4
15. There be a joint protocol for emergency services	1	2	3	4
16. Officers be informed that restraining people experiencing excited delirium is the correct procedure & death may occur with or without police involvement	1	2	3	4
17. Excited delirium must be a separate training issue from mental illness	1	2	3	4
18. Recognize the difference between a psychotic outburst and excited delirium	1	2	3	4
19. That more information be gathered on the effects of TASER on persons experiencing excited delirium	1	2	3	4
20. There should be greater emphasis on chemical restraint (sedation) used by paramedics.	1	2	3	4
21. That alternative restraint methods be developed that decrease the pressure applied to the subject's back	1	2	3	4

Thank-you for your assistance!

Appendix F

Survey Scores

Q	1	2	3	4	Choice	#AE	%AE	%T	R
1.		1	18	39	4	57	98	67	3
2.			9	47	4	56	97	81	5
3.		2	29	27	3	56	97	47	7
4.		1	14	43	4	57	98	74	1
5.		2	14	42	4	56	97	72	6
6.		4	17	37	4	54	93	64	11
7.		2	33	23	3	56	97	40	8
8.		10	27	21	3	48	83	34	18
9.*	2	11	24	20	3	44	77	35	19
10.		3	24	31	4	55	95	53	10
11.**	1	2	20	33	4	53	95	59	9
12.		1	16	41	4	57	98	71	2
13.*	1	7	32	17	3	49	86	30	14
14.	1	5	32	20	3	52	90	34	12
15.	1	5	36	16	3	52	90	28	13
16.*		1	20	36	4	56	98	63	4
17.	4	6	18	30	4	48	83	52	16
18.	1	7	23	27	4	50	86	47	15
19.*	1	7	37	12	3	49	84	21	17
20.*	3	19	23	12	3	35	61	21	21
21.	2	15	30	11	3	41	71	19	20

Legend

#AE Number of responses agreeing with experts (scored 3 or higher).
%AE Percentage of responses agreeing with experts (scored 3 or higher).
%T Percentage of responses agreeing the point must be in training (scored 4).
R Rank order of point based on responses.

21. (1) survey contained no response for this point.
22. (2) surveys contained no response for this point.
23. (1) survey contained no response for this point.
24. (1) survey contained no response for this point.
25. (1) survey contained no response for this point.
26. (1) survey contained no response for this point.

Appendix G

Excited Delirium Interview Guide

1. Without providing the name or identifiers of the person who was the subject of the event, briefly outline the circumstances of the incident.
2. What information would you have liked to have that may have helped you resolve this incident?
3. What recommendations do you have for resolving these types of events that may be passed on to other officers?
4. How well do you think the average Ontario officer understands the issue of excited delirium?
5. What should any training on excited delirium look like? In other words, who should get it; at what point in an officers career; how much time needs to be given to this type of training?

Appendix H

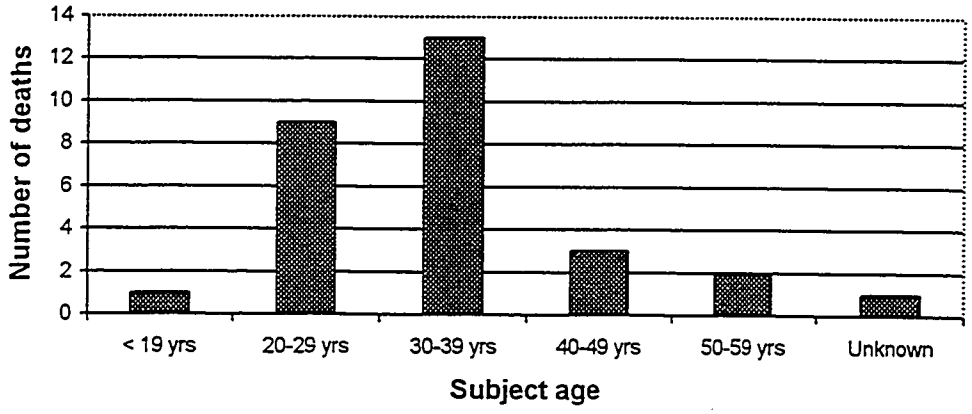
The Inquests

In total 29 ED deaths, occurring between 1988 and 2003 were examined from the database of inquests maintained at the OPC library. From this collection 13 cases (45%)were associated with the term excited delirium as a cause of death, a means of death, or within the presiding Coroner's synopsis of the case. The remaining 16 cases (55%) outlined a constellation of events consistent with ED behaviors. Of the 29 files identified 2 cases (7%) had incomplete records, but were included where information was available.

Subject age

Subjects ranged in age from 17 years to 57 years, with one case whose age was unrecorded. The mean age at time of death was 33.3 years. The majority of cases (13) involved subjects aged between 30 and 39 years (45%). Nine cases involved subjects aged between 20-29 years old (31%), and 3 cases involved subjects aged 40-49 years old (10%). Finally 2 cases involved subjects aged 50-59 years (7%).

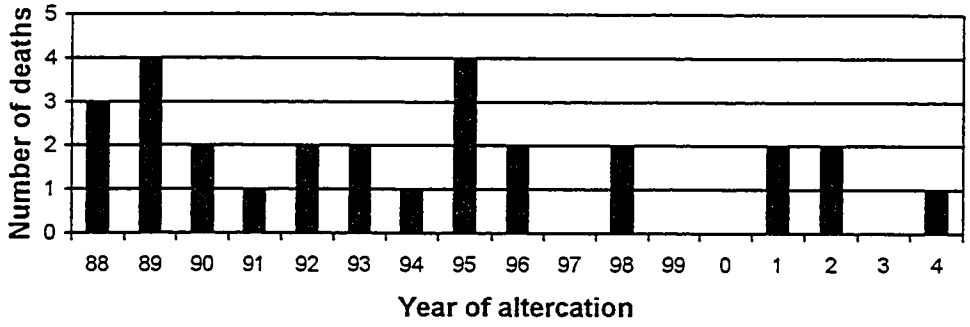
Figure 1. - Subject age at time of altercation



Frequency of altercation per year

Ontario has experienced 19 deaths, related to ED type subject behaviors, over a 17-year period from 1988 to 2004. In February and again in June 1995 the Office of the Chief Coroner issued what has become referred to as Memos 630 and 636 (Young 1995a, 1995b). These documents outlined information intended for police officer training when responding to ED incidents. Prior to the first memo, issued February 20, 1995, 16 of these types of deaths involving police actions had occurred in Ontario. In 1996 four deaths occurred. No deaths were reported in 1997, 1999, 2000 and 2003. Since 1995 the situation seems to be improving.[3]

Figure 2. - Frequency of altercations per year

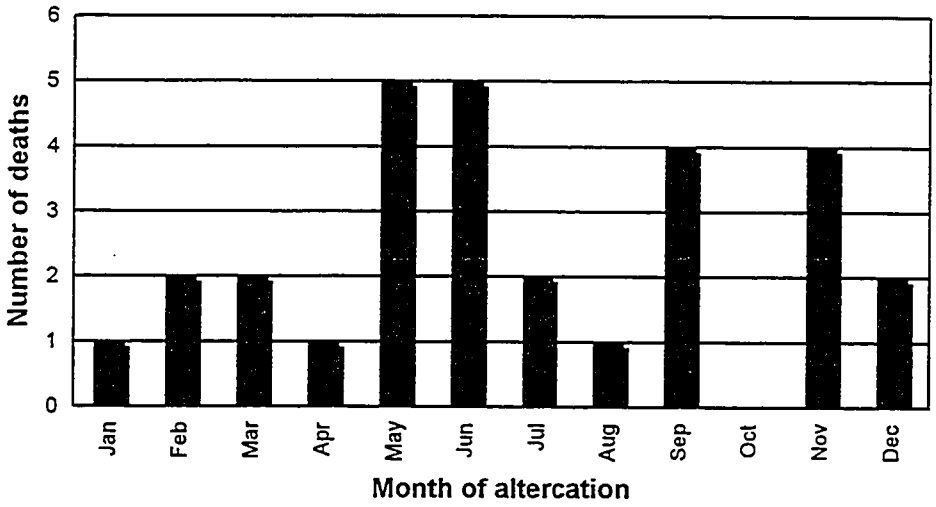


[3] Coroners inquests involving excited delirium type deaths occurring in 2004 and 2005 are pending.

Frequency of altercations per month

The files were examined to determine any pattern relating to heat or weather conditions. Excited delirium deaths per month showed a higher frequency in May and June (5), with the months of September and November following close behind (4). The only month where a death did not occur was October.

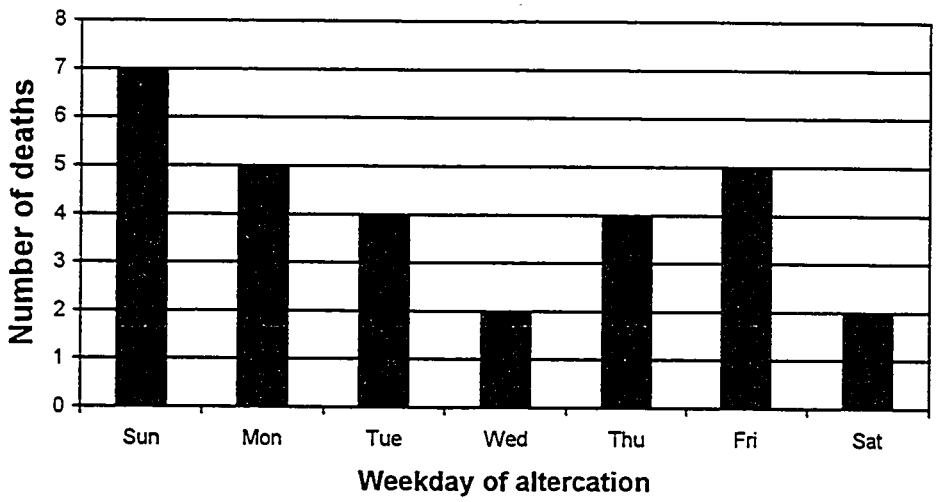
Figure 3. - Frequency of altercations per month



Frequency of altercations per weekday

Most deaths occurred when police engaged the subject on a Sunday (7 cases = 24%), followed by a Monday or Friday (5 cases each = 17%). The days that police engaged a subject with the least likelihood of death occurred on a Wednesday or Saturday (2 cases each = 7%).

Figure 4. - Frequency of altercation by weekday

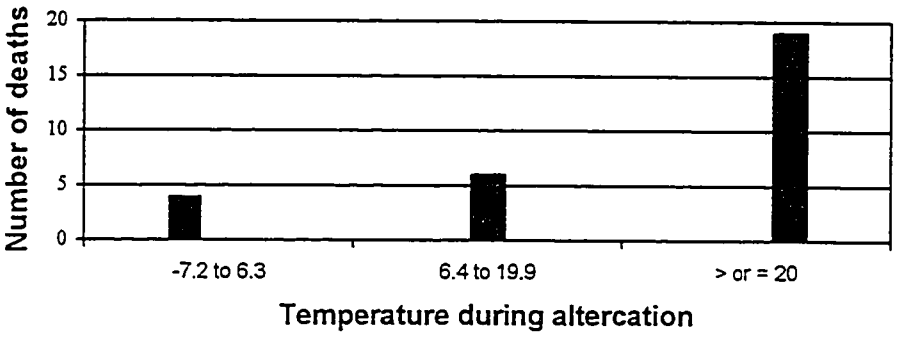


A general trend saw an increase in incidents during days associated with weekends as well as a corresponding decrease during midweek.

Ambient temperature during altercation

The effect of ambient temperature was examined. A total of 15 cases (52 %) occurred inside a building, while 10 (34 %) occurred outdoors. In 4 cases (14 per cent) the location of the event was unclear. An arbitrary ambient temperature, chosen by the author, used for cases occurring indoors was 20° Celsius. Of the cases known to have occurred outside 4 occasions (14%) involved temperatures over 20° Celsius. Therefore in a total of 19 cases (66%) the ambient temperature was above 20° Celsius. It was also noted that in 4 outdoor cases (14%) the recorded temperature around the time of the incident ranged between a low of –7.2 and a high of 6.3° Celsius.

Figure 5. - Ambient temperature at time of event for known cases



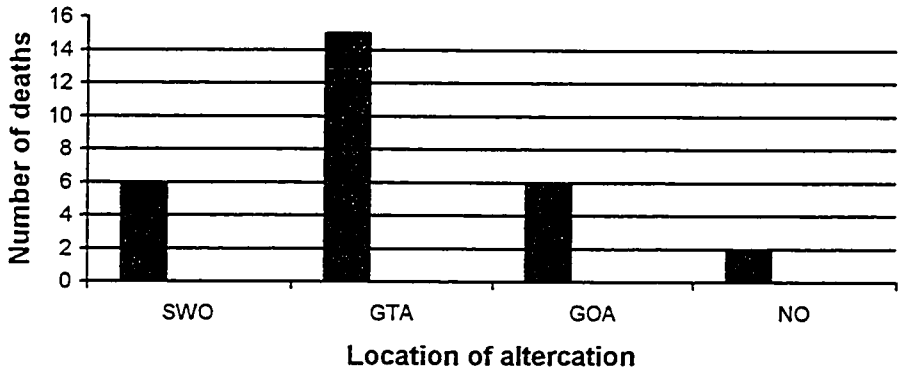
Subject Gender

One unique feature found within the Ontario inquest files was the inclusion of a case involving a female. Of the literature associated with ED and related deaths in police custody, reviewed over a five-year period, only one other report mentions a female death (Ross 1998).

Geographic distribution

Ontario deaths are focused around two areas –the Greater Toronto Area (GTA) and the Greater Ottawa Area (GOA). The GTA accounted for 15 cases (52%) and the GOA 4 cases (14%). Southwestern Ontario (SWO) accounted for 6 cases (21%) and 2 cases (7%) occurred in Ontario's north (NO). In extending the catchment areas to within a 2 hour drive of either location the number of cases grew to 25 cases (86%). Three ED deaths (10%) also occurred in small communities with populations from under 1,000 to 10,000 citizens.

Figure 6. - Geographic distribution of altercations



When viewed against the fact that the majority of Ontarians live within these catchments the fact that all but 4 cases occurred in the more heavily populated area comes as no surprise.

Prevalence of substance abuse mental illness

In every case containing sufficient details, each incident involved either substance abuse by the subject and/or the subject's direct association to mental illness. The inquest records indicate that in 9 cases (31%) the subject had been diagnosed with a particular mental illness (see Table 1). In 1 case a physician had determined the subject was mentally ill to the extent that an apprehension pursuant to Ontario's Mental Health Act (1990) was warranted. Six cases (21%) involved mental illness alone. Schizophrenia was associated with ED in 5 cases (17%) followed by a single case of bipolar illness (3%), and one case of undetermined mental illness (3%). The single bipolar illness case was also associated with schizophrenia.

Substance abuse and mental illness simultaneously occurred within the same case on 3 occasions (10%) while substance abuse alone was associated with 18 known cases (62%).

Table H1 – Factors associated with excited delirium.

Substances Involved				Associated Mental Illness			
Cocaine	Alcohol	Cannabis	Heroin	Schizophr.	Depressn.	Bipolar	Unidentified
16	5	2	1	5	3	1	1
55%	17%	7%	3%	17%	10%	3%	3%

Note: Several cases had multiple factors present.

Behaviors

Unusual behavior, described in 22 cases (76%), included the following characterizations:

- Yelling loudly; appeared to be hallucinating;
- Banging on the door with a fire extinguisher;
- Walking along the street in a bathrobe, uttering incoherently;
- Naked man boarding transit bus.

In 21cases (72%) where the struggle with the subject was characterized as significant underlying pathologies were absent at autopsy. In 6 cases (21%) where an underlying pathological process was found the struggle was characterized as minimal.

In 8 of 10 Ontario inquests, reported within the past 10 years, jurors' directly or indirectly identified restraint methods as an important issue needing attention.