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## **Force Science® News**

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[www.forcescience.org](http://www.forcescience.org)

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**EDITORS NOTE:** At our deadline for this transmission, the Canadian Academy of Health Sciences released a major report on the Health Effects of Conducted Energy Weapons, featuring the findings of an international panel of experts on the medical and physiological impact of these devices. We will cover this report in detail in a future edition of *Force Science News*. Meanwhile, you can access an Executive Summary or the full 106-page document at: [www.caHS-acss.ca/completed-projects](http://www.caHS-acss.ca/completed-projects)

Meanwhile, we feature a dispatch regarding a separate, important use-of-force study.

### **I. Large new study details realities of force use, including sudden deaths**

For the first time, a research study of a "very large sample size of real-world subjects" who actually underwent police use of force has determined with precision how often deaths occur in conjunction with forceful encounters.

The frequency, in contrast to the impression often conveyed by the media and activist "watchdog" organizations, is extremely minimal, statistically.

Out of nearly 5,000 use-of-force events analyzed across a nearly six-year period, a total of seven subjects died. Those fatalities represent 0.14% of the use-of-force incidents studied. In other words, according to the study report, 99.86% of police applications of force do "not result in subject death."

Heretofore, the "lack of scientific investigation into the issue...has enabled widespread theorizing" and misinterpretation, adding to "confusion and fears for both the lay public and for police services," the researchers state.

Now with their documented, detailed findings, ranging from the common characteristics of resistant individuals to the relative safety of various control methods, "the general public may be reassured" regarding police use of force.

Principal investigator for the study was Dr. Christine Hall, an emergency medicine physician, a member of the medical faculty at the University of British Columbia and the University of Calgary, and an instructor for the certification course in Force Science Analysis. Hall is internationally recognized as an authority on excited delirium and on the outcomes of force events.

She led the study under a contract administered by the Canadian Police Research Centre of the Defense Research & Development Canada (DRDC) agency. She describes her team's methods and findings in an official final report on the project submitted to the DRDC last month.

**RESEARCH APPROACH.** The team meticulously collected details of all force events involving officers from seven municipal agencies in four Canadian urban areas. Cities involved ranged in population from 16,000 to 1,200,000, and the participating departments' sworn personnel from 23 to 2,069.

During the study period (Aug. 2006 through Mar. 2013) officers in the cooperating agencies filled out standardized "comprehensive but succinct" report forms after each use of force. Out of nearly 3.6 million police/public interactions, the researchers identified 4,992 "force events" that met the study's criteria: subjects 18 or older and a force application more intense than "simple joint locks" and "soft-hands physical control." Police records were matched up with medical information about the force incidents from EMS, hospital, or medical examiner records.

Virtually every type of force showed up in the street reports, including stuns and strikes, vascular neck restraint, OC spray, conducted energy weapons, firearms, K9s, batons, and even spit hoods. In about 40% of the encounters, more than one type of force was applied.

**CRITICAL FINDINGS.** Although the researchers studied only Canadian incidents, Hall told *Force Science News* that she believes many of the findings closely mirror US law enforcement experience as well. "Subject behavior dictates police response in both countries and use-of-force paradigms are similar," she says. "In terms of force methods and outcomes, there would not likely be much difference."

Among the study findings she considers most important are these:

**Frequency of force.** "Overall, use of force was rare in all agencies," the report states. Force factored into only 0.1% of the 3,594,812 police/public interactions recorded during the study period. Even at the agency with the most frequent force occurrence, the proportion of force-related contacts was only 0.6%. Over 99% of public encounters "did not include [any] police use of force."

Since the media largely ignore these "unnewsworthy" peaceable events, civilians get a skewed impression of how common the use of force actually is in police work, Hall points out.

**Subject characteristics.** Nearly 90% of the subjects were male, with a median age of 30; the oldest was 75. The vast majority requiring forceable control were assessed by police at the scene as drunk, drugged, emotionally distressed/mentally ill--or with some combination of those factors. (Hall is analyzing the data further to determine the correlation between police assessments and subsequent medical evaluations.)

Participating officers were asked to indicate whether each subject they contacted showed signs of possible excited delirium, and were given a checklist of 10 common factors associated with that condition. One in eight subjects on which force was used exhibited at least three symptoms and about 2% displayed six or more, indicating individuals in the midst of a "medical emergency," the researchers conclude.

The tabulations showed that "features of excited delirium can be easily documented by patrol officers in the field, using a simple checklist." The fact that officers often said no indicators were present "should reassure those who have concern that teaching officers about excited delirium" will cause them to exaggerate its prevalence.

**Frequency of injury/death.** After the 4,992 force incidents, 23% of the subjects were transported to a hospital. Most had retrievable medical records, which showed that about four in ten had no physical injuries, even cuts or bruises, that were documented by an examining physician. It could not be determined from doctors' notes whether confirmed injuries, minor or more severe, were present before the use of force or occurred during it.

As for the seven subjects who died, six were killed by police gunfire; "the other was a sudden in-custody death in the context of excited delirium. Thus, unanticipated, sudden in-custody death without the use of any firearm occurred in...a total of [only] 0.02% of all use-of-force events." At most, the researchers estimate, such deaths will occur in "a maximum of one-tenth of one percent" of force incidents.

The subject who died suddenly in custody exhibited all 10 features on the excited delirium checklist.

**CEW deployment.** In cases where researchers were able to analyze TASER use, they found that one dart struck the recipient's chest about 35% of the time, with two darts hitting the chest in 7% of deployments. "No subject died with darts to the chest in any configuration," the study notes.

This findings helps reduce the misconception that darts to the chest are expected to be fatal, Hall says. But she believes that further study of this risk is needed.

**Prone positioning.** Officers in the study were asked to document the final resting position of subjects "while awaiting transport or further disposition" after a use of force. More than 40% remained proned out. The rest were positioned face up, lying on their side, sitting, kneeling, or standing. An equal proportion of individuals in the proned and not-proned groups had been Tased and/or showed signs of excited delirium.

"[N]o person who remained in the prone position...died," the report states. The single excited delirium subject who died "was clearly documented to be in the side-lying position up to and including the moment of collapse.... [S]tatistically there is no difference between the [positions]...for the health and safety of subjects."

**MORE AHEAD.** Hall says that "comprehensive, multifaceted analyses" of the study data "is ongoing." So she expects to report more findings and their implications in the near future.

Meanwhile, she laments that despite widespread public and police interest in force and its consequences, "no national or international databases have been scientifically created, maintained, and evaluated" to help researchers better understand deaths and injuries

related to police restraint and "determine whether there are features of the subject and/or the situation that are predictive" of adverse outcomes.

The creation of such a collection and screening program is a long-term goal she'll continue to campaign for, she says. In order to draw meaningful conclusions that improve policies and practices, "systematic data collection must be an all day, every day event that includes all use of force events and not just those considered extremes."

In her report, Hall details 10 recommendations for departments wishing to enhance their own force data collection.

Next month, Hall will speak on her study and other force-related issues before the Assn. of Chief Police Officers in Birmingham, England, and at a conference organized by the Police Assn. of New South Wales in Sydney, Australia.

To access her study report in full, [click here](#) or visit: [www.forcescience.org/forcestudy.pdf](http://www.forcescience.org/forcestudy.pdf)

## **II. From our in-box: Our readers write**

*Force Science News #240, sent 10/7/13, reported a study that disputes allegations that the prone positioning and hog-tying of suspects carries significant cardiac risks. Reader responses, edited slightly for clarity and brevity, included these:*

### **Reasons to doubt study results**

The study on prone positioning is far from scientific in my opinion because you cannot replicate the suspect's condition and officer factors at the time of the restraint, including the suspect's health, psychological condition, excessive weight, drug abuse, prescription medication, etc. The report tends to give officers a false sense of security with prone restraint, despite reasons enough to have doubts.

*Sgt. Bill Pennypacker  
Broward County (FL)*

### **Be careful of discarding traditional concerns**

What the research on prone positioning doesn't talk about is what happens physiologically when 150-300 lbs. is applied to a prone and handcuffed individual who is already physiologically stressed and/or intoxicated and/or suffering from a mental disorder. Precaution caveats should be highlighted and placed toward the front of articles like the one of prone positioning. We need to be careful before we start discarding some the "traditional concerns" us old-timers have had for many years now about dangers to arrestees from certain arrest procedures.

*Dan Montgomery, chief of police (Ret.)  
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## **III. Campaign underway to create First Responders holiday**

Would you like to see a national holiday created to honor LEOs, firefighters, and EMS personnel for their courageous service?

You can sign an online petition urging Congress to designate a federally recognized First Responders Day at [www.change.org/firstresponders](http://www.change.org/firstresponders) and ask your family, friends, colleagues, and professional organizations to support the effort too.

The campaign was launched by Andrew Collier, a NASCAR auto mechanic from North Carolina, whose 27-year-old brother Sean was a victim of the Boston Marathon terrorist attack last spring. An officer with the Massachusetts Institute of Technology police department, Sean Collier was ambushed and shot dead, allegedly by the bombing suspects, while sitting in his patrol car.

Grieving, Andrew Collier says he "thought about so many tragedies around the country where police officers and other public safety people are putting their lives on the line." A special day to annually commemorate their service seemed entirely appropriate to him.

US Rep. Michael Capuano (D-MA) has agreed to sponsor legislation to create the Day, but strong public support is needed to move the proposal forward. Initially Collier hopes to gather at least 100,000 signatures. So far, more than 24,000 visitors have signed the petition online.

NOTE: If you'd like to forward this message to a friend, please click [here](#)

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