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Positional Asphyxia—Sudden Death

Major portions of this bulletin are drawn from a report prepared by the International Association of Chiefs of Police for the National Institute of Justice (NIJ), based on research conducted by Dr. Charles S. Petty, Professor of Forensic Pathology, University of Texas, and Dr. Edward T. McDonough, Deputy Chief Medical Examiner, State of Connecticut, and reviewed by the Less-Than-Lethal Liability Task Group.

Police, sheriffs, and correctional officers have a limited and largely inadequate set of tools to use to safely subdue violent and aggressive subjects. Through NIJ's National Law Enforcement Technology Center (NLETC), the Federal Government is working to identify and support the development of a range of less-than-lethal technologies—from those suitable for one-on-one encounters to those that might be used for stopping fleeing vehicles. In a recent analysis of in-custody deaths, we discovered evidence that unexplained in-custody deaths are caused more often than is generally known by a little-known phenomenon called positional asphyxia.

This NLETC bulletin presents information relevant to positional asphyxia—i.e., death as a result of body position that interferes with one's ability to breathe—as it occurs within a confrontational situation involving law enforcement officers. We offer this information to help officers recognize factors contributing to this phenomenon and, therefore, enable them to respond in a way that will ensure the subject's safety and minimize risk of death.

The bulletin identifies factors found to precipitate positional asphyxia, and provides recommendations for ensuring a subject's safety and advisory guidelines for care of subjects. Information regarding the collection of potential evidence in cases involving positional asphyxia is also included. Through officer awareness and resultant action, it is anticipated that deaths attributable to this cause will be reduced.

Sudden in-custody death is not a new phenomenon—it can occur at any time, for a variety of reasons. Any law enforcement agency may experience a sudden in-custody death, and while rare, such deaths appear to be associated most often with the following variables:

- **Cocaine-induced bizarre or frenzied behavior.** When occurring while confined by restraints, cocaine-induced excited delirium (an acute mental disorder characterized by impaired thinking, disorientation, visual hallucinations, and illusions) may increase a subject's susceptibility to sudden death by effecting an increase of the heart rate to a critical level.
- **Drugs and/or alcohol intoxication.** Drug and acute alcohol intoxication is a major risk factor because respiratory drive is reduced, and *subjects may not realize they are suffocating*.
- **Violent struggle extreme enough to require the officers to employ some type of restraint technique.** Subjects who have engaged in extreme violent activities may be more vulnerable to subsequent respiratory muscle failure.
- **Unresponsiveness of subject during or immediately after a struggle.** Such unresponsive behavior may indicate cardiopulmonary arrest and the need for immediate medical attention.

It is important to understand how preexisting risk factors, combined with the subject's body position when subdued or in transit, can compound the risk of sudden death. Information contained in this bulletin may help to alert officers to those factors found frequently in deaths involving positional asphyxia.

Basic Physiology of a Struggle

A person lying on his stomach has trouble breathing when pressure is applied to his back. The remedy seems relatively simple: get the pressure off his back. However, during a violent struggle between an officer or officers and a suspect, the solution is not as simple as it may sound. Often, the situation is compounded by a vicious cycle of suspect resistance and officer restraint:

- A suspect is restrained in a face-down position, and breathing may become labored.
- Weight is applied to the person's back—the more weight, the more severe the degree of compression.

- The individual experiences increased difficulty breathing.
- The natural reaction to oxygen deficiency occurs—the person struggles more violently.
- The officer applies more compression to subdue the individual.

Predisposing Factors to Positional Asphyxia

Certain factors may render some individuals more susceptible to positional asphyxia following a violent struggle, particularly when prone in a face-down position:

- Obesity.
- Alcohol and high drug use.
- An enlarged heart (renders an individual more susceptible to a cardiac arrhythmia under conditions of low blood oxygen and stress).

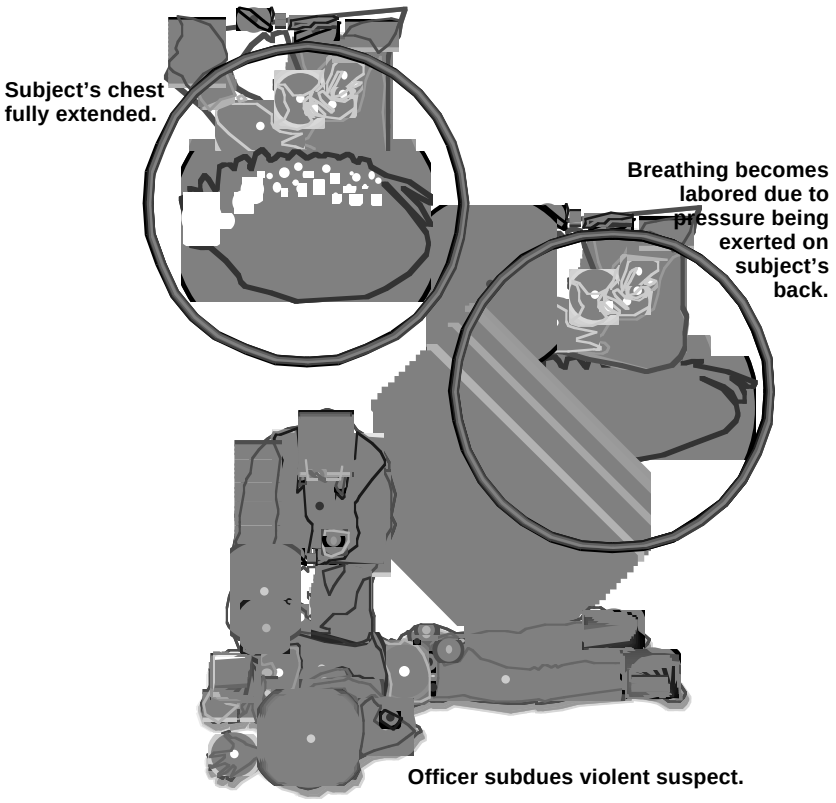
The risk of positional asphyxia is compounded when an individual with predisposing factors becomes involved in a violent struggle with an officer or officers, particularly when physical restraint includes use of behind-the-back handcuffing combined with placing the subject in a stomach-down position.

Advisory Guidelines for Care of Subdued Subjects

To help ensure subject safety and minimize the risk of sudden in-custody death, officers should learn to recognize factors contributing to positional asphyxia. Where possible, avoid the use of maximally prone restraint techniques (e.g., hogtying). To help minimize the potential for in-custody injury or death, officers should:

- Follow existing training and policy guidelines for situations involving physical restraint of subjects.

Officer Subduing a Violent Suspect and How It Can Interfere With Breathing



- As soon as the suspect is handcuffed, get him off his stomach.
- Ask the subject if he has used drugs recently or suffers from any cardiac or respiratory diseases or conditions such as asthma, bronchitis, or emphysema.
- Monitor subject carefully and obtain medical treatment if needed.
- Be trained to recognize breathing difficulties or loss of consciousness and immediately transport the individual to the emergency room, or call for an emergency medical team (EMT) unit if such signs are observed.
- Obtain medical care upon subject's request.
- If the subject is turned over to a detention facility, inform the facility's custodians of any preexisting medical conditions (cardiac, respiratory) or that the subject requested or needed medical treatment because of respiratory difficulty or because he became unconscious.

Collection of Potential Evidence

Officers involved in confrontational situations should collect information that may later be of value in a civil or perhaps criminal action.

A use-of-force report should include details of how the individual was

restrained. The following information should be included:

- What was the nature of the postarrest restraint procedure? Identify whatever type of restraint (including chemical incapacitants) was used.
- How long was the subject face down and/or restrained?
- How was the subject transported, and in what position was the subject during transport?
- How long did the transport phase last, and what observations were made of the subject's condition?

To reasonably establish the cause of death or serious injury, a broad range of factors must be examined:

- Nature of the confrontation.
- Weapon(s), if any, employed by officers.*
- Duration of the physical combat.
- System or type of postarrest restraint employed.
- Transportation of the subject: destination, duration, mode of transport, and position of subject during transport.
- Emergency room observations and actions, names of attending medical personnel.
- Postmortem examination (autopsy) of subject: nature of injuries, diseases present, drugs present, and other physical factors.

*If any incapacitant was used (e.g., pepper spray), the delivery system should immediately be secured for possible analysis.

Conclusion

To help minimize the risk of positional asphyxia, diligent observation and monitoring of subjects displaying any one or a combination of the described indicators are procedurally warranted. Furthermore, the use of maximal, prone restraint techniques should be avoided. If prone positioning is required, subjects should be closely and continuously monitored. By implementing such procedural protocols, the potential for in-custody deaths may be lessened.

NLETC Bulletin

The *NLETC Bulletin* is designed as a forum for disseminating to the law enforcement and criminal justice communities the most current information on technologies relevant to your needs. We welcome your comments or recommendations for future *Bulletins*.

The National Law Enforcement Technology Center is designing data bases to help respond to agencies that want to know who manufactures a specific product and what other agencies may be using that product. Your contributions to the Center's information network are important. What technologies or techniques are you using that you would like to share with colleagues? Please call or write to the National Law Enforcement Technology Center, P.O. Box 1160, Rockville, MD 20849, 800–248–2742.

NYPD's Guidelines to Preventing Deaths in Custody

- As soon as the subject is handcuffed, *get him off his stomach*. Turn him on his side or place him in a seated position.
- If he continues to struggle, *do not sit on his back*. Hold his legs down or wrap his legs with a strap.
- Never tie the handcuffs to a leg or ankle restraint.
- If required, get the suspect immediate medical attention.
- Do not lay the person on his stomach during transport to a station house or hospital. Instead, place him in a seated position.
- An officer should sit in the rear seat beside the suspect for observation and control.

The New York City Police Department (NYPD) has developed a training tape on positional asphyxia. The Department has agreed to make the tape available to interested law enforcement agencies. To request a complimentary copy, please send your written request on departmental letterhead, and a blank VHS tape, to the Deputy Commissioner of Training, NYPD, 235 East 20th Street, New York, New York 10003.

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