



Arizona Peace Officer Standards and Training Board

LESSON PLAN COVER SHEET

COURSE TITLE: In-Custody Deaths		HOURS: 5
DATE FIRST PREPARED: October 29, 2021	PREPARED BY: Officer Dane Lambert #7800 / Phoenix PD	
DATE REVISED / REVIEWED: <small>(Please Circle one)</small>	BY:	
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LIST ANY PREREQUISITES: DNA		
LEAD INSTRUCTOR:	BACK-UP INSTRUCTOR(s):	
APPROVAL NUMBER:		
COURSE DESCRIPTION: This course is designed to prepare civilian police review board members in areas of in-custody deaths. This course identifies common causes of in-custody deaths and the training of officers to reduce these tragic events. This course meets the mandatory standard established through Arizona House Bill 2462.		
INSTRUCTOR REFERENCES: <ol style="list-style-type: none"> 1. American College of Emergency Physicians White Paper Report on Excited Delirium Syndrome. September 10, 2009 acep-excited-delirium-white-paper-final-form.pdf 2. American College of Emergency Physicians Tactical Emergency Medicine Newsroom Tactical Emergency Medicine // Excited Delirium for the TEMS Provider (acep.org) 3. Centers for Disease Control and Prevention Rhabdomyolysis NIOSH CDC 4. Heart.org https://www.heart.org/en/health-topics/heart-failure/treatment-options-for-heart-failure/hyperkalemia-high-potassium 5. Healthline.com https://www.healthline.com/health/lactic-acidosis#symptoms 6. Tufts Medical Care https://hhma.org/healthadvisor/ac-dysrhythmia-dx/ 7. PubMed.gov 	TRAINING AIDS, EQUIPMENT, MATERIALS:	

<p>https://pubmed.ncbi.nlm.nih.gov/22390995/</p> <p>8. Force Science Institute New Study: Excited Delirium, Injury, and Use of Force Force Science Institute</p> <p>9. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>10. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>11. Asphyxia & Excited Delirium Restraint Trauma And Fatalities</p> <p>12. By Richard Kay www.securitysolutionsmedia.com</p>			
<p>METHOD OF INSTRUCTION: Online or in-person lecture / PowerPoint</p>	<p>PRE-TEST: Yes No</p> <p>POST-TEST: Yes No</p>		
<p>SUCCESS CRITERIA:</p>			
<p>PERFORMANCE OBJECTIVES: At the end of this course of instruction, the students will be able to:</p> <ol style="list-style-type: none"> 1. Define Exds. 2. Identify the symptoms of ExDS. 3. Identify the concerns related to EXDS. 4. Describe the recommended ways to deal with ExDS. 5. Define Positional Asphyxiation (PA). 6. Describe how to prevent Positional Asphyxiation (PA). 7. Identify the difference between ExDS & PA. 			
<p>AGENCY APPROVAL</p>	<p>Name (Type or Print)</p>	<p>Signature</p>	<p>Date</p>
	<p>Title (Type or Print)</p>	<p>Agency Name (Type or Print)</p>	

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<p>I. INTRODUCTION</p> <ul style="list-style-type: none"> A. Instructor Introductions <ul style="list-style-type: none"> 1. Instructor Biographies B. Purpose and Motivator C. Administrative Issues D. Performance Objectives <p>At the end of this block of instruction, the students will be able to:</p> <ul style="list-style-type: none"> 1. Define Exds. 2. Identify the symptoms of ExDS. 3. Identify the concerns related to EXDS. 4. Describe the recommended ways to deal with ExDS. 5. Define Positional Asphyxiation (PA). 6. Describe how to prevent Positional Asphyxiation (PA). 7. Identify the difference between ExDS & PA. <p>II. COURSE OVERVIEW</p> <ul style="list-style-type: none"> A. Gain knowledge to have a better understanding of what ExDS is and how it rapidly develops and becomes dangerous for the person who has ExDS, Law enforcement, emergency medical services (fire department) and ER workers B. Learn what PA is and how LE can help prevent it C. Learn the difference between ExDS and PA <p>III. WHAT IS EXDS</p> <ul style="list-style-type: none"> A. acep-excited-delirium-white-paper-final-form.pdf B. For more than 150 years, there have been case reports that do not use the exact term “excited delirium,” yet describe a similar constellation of symptoms and features. Historical cases occurred primarily within institutions that housed mentally disturbed individuals in protective custody largely because of the lack of effective pharmacologic treatment available during that time period. The behavior seen in these early cases has been called “Bell’s Mania,” named after Dr. Luther Bell. Dr. Bell was the first to describe a clinical condition that took the lives of over 75% of those suffering from it. Based on the clinical features and outcomes of the institutionalized cases from the 1800s when compared to the presently accepted criteria known to accompany ExDS, it is believed that Bell’s Mania may be related to the syndrome of ExDS that we witness today.acep- 	<p>PO #1</p>

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<p>excited-delirium-white-paper-final-form.pdf</p> <p>C. Historical research indicates that the worrisome behaviors and deaths following uncontrolled psychiatric illness described in the 1800s seemed to decline drastically by the mid-1950s. This is largely attributed to the advent of modern antipsychotic pharmaceutical therapy acep-excited-delirium-white-paper-final-form.pdf</p> <p>D. In the 1980s, there was a dramatic increase in the number of reported cases with behavior similar to an uncontrolled psychiatric emergency. While some seemed to be unchecked psychiatric disease, most of these cases were found to be associated with the introduction and abuse of cocaine. ExDS has now been recognized to occur in association with other illicit drugs acep-excited-delirium-white-paper-final-form.pdf</p> <p>E. Before 1985, there was no single unifying term to describe the clinical pattern seen in these patients. In 1985 a subset of cocaine deaths was described by Wetli and Fishbain in a seminal paper which for the first time used the term “excited delirium.”</p> <ol style="list-style-type: none"> 1. Faced with the lack of a clear definition and cause, the decision to identify ExDS as a syndrome instead of a unique disease is similar to the decades-long controversy over the causes of Sudden Infant Death Syndrome. acep-excited-delirium-white-paper-final-form.pdf <p>F. The typical course of a published ExDS patient involves acute drug intoxication, often a history of mental illness (especially those conditions involving paranoia), a struggle with law enforcement, physical or noxious chemical control measures or electrical control device (ECD) application, sudden and unexpected death, and an autopsy which fails to reveal a definite cause of death from trauma or natural disease. acep-excited-delirium-white-paper-final-form.pdf</p> <p>G. ExDS has been portrayed as “a fabricated diagnosis to excuse police brutality. While quality data is lacking, there is no doubt that ExDS is an important topic for LE and their EMS partners. By some estimates, ExDS is ultimately implicated in approximately 3% of police use of force encounters and mortality rates of 12% are cited for ExDS cases in police custody. Clearly this is an important topic for Law Enforcement and EMS. Tactical Emergency Medicine // Excited Delirium for the TEMS Provider (acep.org)</p> <ol style="list-style-type: none"> 1. ExDS may be associated with life-threatening conditions such as: 	

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<p>Tactical Emergency Medicine // Excited Delirium for the TEMS Provider (acep.org)</p> <ol style="list-style-type: none"> a. <u>Rhabdomyolysis</u>, or Rhabdo is a serious medical condition that can be fatal or result in permanent disability. Rhabdo occurs when damaged muscle tissue releases its proteins and electrolytes into the blood. These substances can damage the heart and kidneys and cause permanent disability or even death. Rhabdomyolysis NIOSH CDC b. <u>Hyperkalemia</u>, is a higher than normal level of potassium in the blood and severe cases of hyperkalemia that are left untreated can lead to fatal cardiac arrhythmias. Hyperkalemia (High Potassium) American Heart Association c. <u>Acidosis</u>, lactic acidosis is a form of metabolic acidosis that begins when a person overproduces or underutilizes lactic acid, and their body is not able to adjust to these changes. Lactic acidosis has many causes and can often be treated. But if left untreated, it may be life-threatening. Lactic Acidosis: Symptoms, Causes, Treatment, and More (healthline.com) d. <u>Dysrhythmias</u>, is an abnormal rhythm of your heartbeat. It can be slower or faster than a normal heart rate. It can also be irregular. It can be life-threatening if the heart cannot pump enough oxygen-rich blood to the heart itself or the rest of the body. Cardiac Dysrhythmia - Tufts Medical Center Community Care (hhma.org) e. Ultimately resulting in cardiopulmonary collapse, and since recommended treatment may involve sedation with its potential complications, ExDS is a medical and law enforcement emergency. <p>IV. SYMPTOMS OF EXDS Excited delirium syndrome (ExDS): treatment options and considerations - PubMed (nih.gov)</p> <ol style="list-style-type: none"> A. The exact signs and symptoms are difficult to define precisely, clinical findings often include many of the following: <ol style="list-style-type: none"> 1. Rapid breathing, 2. Sweating, 3. Elevated temperature, 	<p>PO #2</p>

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<p>4. Superhuman strength</p> <p>5. Non-compliance or poor awareness to direction from police or medical personnel,</p> <p>6. Inappropriate clothing for the current environment</p> <p>7. Constant/near constant activity</p> <p>8. Lack of fatiguing</p> <p>9. Tolerance to significant pain</p> <p>10. Glass attraction/destruction</p> <p>B. For both paramedics and physicians, the difficulty in diagnosing the underlying cause of ExDS in an individual patient is that the presenting clinical signs and symptoms of ExDS can be produced by a wide variety of clinical disease processes. For example, agitation, combativeness, and altered mental status can be produced by hypoglycemia, thyroid storm, certain kinds of seizures, and these conditions can be difficult to distinguish from those produced by cocaine or methamphetamine intoxication. Prehospital personnel are generally not expected to differentiate between the multiple possible causes of the patient's presentation. Excited delirium syndrome (ExDS): treatment options and considerations - PubMed (nih.gov)</p> <p>V. CONCERNS OF EXDS</p> <p>A. In modern times, a law enforcement officer (LEO) is often present with a person suffering from ExDS because the situation at hand has degenerated to such a degree that someone has deemed it necessary to contact a person of authority to deal with it. LEOs are in the difficult and sometimes impossible position of having to recognize this as a medical emergency, attempting to control an irrational and physically resistive person, and minding the safety of all involved. acep-excited-delirium-white-paper-final-form.pdf</p> <p>B. Given the irrational and potentially violent, dangerous, and lethal behavior of an ExDS subject, any LEO interaction with a person in this situation risks significant injury or death to either the LEO or the ExDS subject who has a potentially lethal medical syndrome. This already challenging situation has the potential for intense public scrutiny coupled with the expectation of a perfect outcome. Anything less creates a situation of potential public outrage. Unfortunately, this dangerous medical situation makes perfect outcomes difficult in many</p>	<p>PO #3</p>

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<p>circumstances. acep-excited-delirium-white-paper-final-form.pdf</p> <p>C. ExDS subjects are known to be irrational, often violent and relatively impervious to pain. Unfortunately, almost everything taught to LEOs about control of subjects relies on a suspect to either be rational, appropriate, or to comply with painful stimuli. Tools and tactics available to LEOs (such as pepper spray, impact batons, joint lock maneuvers, punches and kicks, and ECD's, especially when used for pain compliance) that are traditionally effective in controlling resisting subjects, are likely to be less effective on ExDS subjects. acep-excited-delirium-white-paper-final-form.pdf</p> <p>D. When methods such as pain compliance maneuvers or tools of force fail, the LEO is left with few options. It is not feasible for them to wait for the ExDS subject to calm down, as this may take hours in a potentially medically unstable situation fraught with scene safety concerns. acep-excited-delirium-white-paper-final-form.pdf</p> <p>VI. RECOMMENDED WAYS TO DEAL WITH EXDS</p> <p>A. Unfortunately, the customary formula for soothing agitated individuals—speaking directly in a calm, firm voice, along with reducing stimuli in the surrounding environment—is rarely effective with ExDS. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>1. These patients respond poorly to direction from police. There may be multiple voices from many individuals attempting to engage the patient, including bystanders and family members. In a chaotic and dynamic locale, the environment may include stimuli from flashing lights and sirens, police dogs, additional responding officers, and other ambient noises. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>B. Recent research indicates that physical struggle is a much greater contributor to catecholamine surge and metabolic acidosis than other causes of exertion or noxious stimuli. Since these parameters are thought to contribute to poor outcomes in ExDS, the specific physical control methods employed should optimally minimize the time spent struggling, while safely achieving physical control. acep-excited-delirium-white-paper-final-form.pdf</p> <p>C. After adequate physical control is achieved, medical assessment and treatment should be immediately initiated. Indeed, because death might occur suddenly, EMS should ideally be present and prepared to resuscitate before definitive LEO</p>	<p>PO #4</p>

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<p>control measures are initiated. acep-excited-delirium-white-paper-final-form.pdf</p> <p>D. Ideally, any necessary law enforcement control measures should be combined with immediate sedative medical intervention to attempt to reduce the risk of death. acep-excited-delirium-white-paper-final-form.pdf</p> <p>E. In expert opinion, verbal de-escalation efforts are likely to prove futile...physical struggles will probably worsen the risk...a TASER electronic control device may be the odds-on favorite tool of choice for hurrying the afflicted party toward life-saving medical care. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>1. The advice comes from two physicians with close ties to law enforcement, Dr. Gary Vilke and Dr. Jason Payne-James. Vilke is a professor of clinical emergency medicine at the University of California-San Diego and is also responsible for inmate health care at multiple sheriff's jails. Payne-James is a specialist in forensic and legal medicine in the United Kingdom who frequently collaborates with police agencies there on medical research and related matters. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>F. Control and restraint tactics to gain dominance "should focus on rapid control and minimization of the patient's exertional activity, while maintaining the safety of officers and the subject," doctors, Gary Vilke and Jason Payne-James write. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>1. Pain compliance usually doesn't work because of the subject's extraordinarily high pain tolerance level. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>2. Wrestling or fighting with him will stimulate "heavy physical exertion" on his part, "which has been shown to have a deleterious effect" on his body chemistry and "contribute to a greater risk for cardiac arrest." Indeed, of ExDS subjects who ultimately die, "the majority do so shortly after a violent struggle, often within minutes of the cessation of the struggle,". Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>3. Bottom line: "The use of a TASER...to gain control and restrain someone exhibiting signs of ExDS is felt by many experts to be preferable...." Compared to "significant prolonged exertion," a "short burst</p>	

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<p>from an ECD [electronic control device] and subsequent rapid restraint” lessens the risk of cardiac arrest and seems safer for everyone involved, including the agitated individual, Vilke and Payne-James advise. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>4. Some researchers have speculated that shocks from conducted energy weapons may induce excited delirium in resistant arrestees. But a new study serves to debunk that rumored risk.</p> <p>5. The speculation has centered on serotonin, an important chemical and neurotransmitter in the human body. Abnormally high levels of serotonin can be life-threatening, while producing some of the same symptoms commonly associated with excited delirium syndrome (ExDS), including high body temperature, agitation, sweating, tremor, muscle rigidity, altered mental state, etc.</p> <p>6. Serotonin levels can be influenced by stress and are also known to be raised significantly by electroconvulsive therapy, often referred to as shock treatment. So a plausible link led to the hypothesis that the high-stress electrical exposure from a CEW could spike serotonin to a level that triggers or exacerbates sometimes-fatal ExDS. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>a. A research team headed by Dr. Mark Kroll, a biomedical engineer with the U. of Minnesota and California Polytechnic U., has now tested that theory for the first time with reassuring results for law enforcement. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>7. Trainers attached a TASER X26 via alligator clips to the torsos of 31 cadet volunteers at a Texas police academy and discharged the unit for five seconds to obtain the highest level of involuntary muscle contraction of the subjects upper and lower limbs. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>8. Blood draws taken before, immediately after, and 24 hours later by certified EMTs were tested to measure any changes in concentrations of serotonin and two other stress-related chemical. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>9. In a paper recently appearing online in the journal Forensic Science,</p>	

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<p>Medicine and Pathology, Kroll reports: With a very broad [i.e., effective] electrode spread, CEW exposure did not significantly raise [blood] serotonin levels in any of the tests. All remained within the clinically normal range. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>Indeed, Kroll says, the trivial increase recorded in serotonin levels was far less than that shown in previous studies to be produced by low-intensity (50% maximum heart rate) physical exercise. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>10. Addressing the speculative comparison of a CEW event to electroconvulsive therapy (ECT), Kroll points out that typical ECT [exposure] delivers 20 watts vs. the CEW which delivers less than 2 watts of electrical power. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>11. While the cause(s) of ExDS are not yet fully understood, Kroll writes that the serotonin-provoked hypothesis is not supported by the findings of this new study. Even if the negligible effect on serotonin levels had been tripled, he says, the result would not have been clinically significant compared to the shifts seen with [mere] exercise. Rumored Risk Of CEWs Put To Rest (No, They Don't Cause ExDS) Force Science Institute</p> <p>G. EMS role, once the subject is controlled and restrained, EMS personnel can safely begin sedation, airway protection, cooling, and other preliminary medical treatment en route to the more sophisticated services of an emergency facility. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>1. “[A]ggressive medication therapy is the mainstay of treatment and needs to be given as early as possible,” the doctors Vilke and Payne-James emphasize. A sizeable section of their chapter is devoted to what are currently considered “appropriate medication therapies” for ExDS. Electronic Control Likely Best Option For Excited Delirium, Docs Say Force Science Institute</p> <p>VII. WHAT IS POSITIONAL ASPHYXIATION</p> <p>A. In simple terms, asphyxia is a lack of oxygen and an excess of carbon dioxide in the body’s tissues, causing CO2 toxicity. Positional (postural) asphyxia relates to</p>	

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<p>a position in which the body is placed so that the ability to breathe is restricted to a degree that insufficient air is inhaled, and insufficient carbon dioxide is exhaled. That is, when someone's position prevents them from breathing adequately. www.securitysolutionsmedia.com</p> <p>B. Research has suggested that restraining a person, face down, is likely to cause greater restriction of breathing. Public safety and health personnel are now taught to avoid restraining people face down, or to do so only for a short period of time. Risk factors which may increase the chance of death include obesity, prior cardiac or respiratory problems and the use of illicit drugs.</p> <p>1. Like ExDS subjects who have died during restraint have engaged in extreme levels of physical resistance against the restraint for a prolonged period of time. www.securitysolutionsmedia.com</p> <p>C. Other issues of subject restraint can also increase the risk of death. For example, kneeling or otherwise placing weight on the subject for a prolong period of time. www.securitysolutionsmedia.com</p> <p>1. Research measuring the effect of restraint positions on lung function suggests that restraint which involves bending the restrained person or placing body weight on them has more effect on breathing than a face-down position alone. www.securitysolutionsmedia.com</p> <p>D. There is a degree of controversy among researchers regarding the extent to which restraint positions restrict breathing. Some studies of the effects of restraint on breathing and oxygen levels indicate the effect was limited. Others point out that deaths in real life situations occur <u>after prolonged, violent resistance</u> which has not been studied in simulations. Positional asphyxia may also occur as a result of accident or illness. www.securitysolutionsmedia.com</p> <p>VIII. PA PREVENTION</p> <p>A. People are designed to fight what is in front of them, so officers are trained to place individuals into a prone position because it affords safety and control advantages. www.securitysolutionsmedia.com</p> <p>1. Current practice for officers is to place a handcuffed person on their side in a recover position as soon as practical. If the subject is compliant they may be placed in a seated position all the while the subject is monitored by an officer.</p>	<p>PO #5</p>

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<p>B. During transport subjects are to be placed in the rear passenger compartment in an upright seated position with the seat belt on.</p> <p>IX. DIFFERENCE BETWEEN EXDS AND PA</p> <p>A. PA or asphyxia is a lack of oxygen and an excess of carbon dioxide in the body's tissues, causing CO2 toxicity and in most cases can be remedied by putting a subject in a position that allows a normal breathing pattern.</p> <p>B. ExDS is a way more complicated syndrome to diagnose and treat by officers with their basic level of medical training and requires acute medical treatment.</p> <p>1. Best practices for ExDS is fast and immediate control of a subject displaying ExDS symptoms and to have EMS near by to start treatment once the subject has been detained.</p> <p>X. INDIVIDUAL AGENCY POLICIES</p> <p>XI. SMALL GROUP DISCUSSION / SELF REFLECTION</p> <p>XII. CONCLUSION</p> <p>A. Review of Performance Objectives</p> <p>At the end of this block of instruction, the students will be able to:</p> <ol style="list-style-type: none"> 1. Define Exds. 2. Identify the symptoms of ExDS. 3. Identify the concerns related to EXDS. 4. Describe the recommended ways to deal with ExDS. 5. Define Positional Asphyxiation (PA). 6. Describe how to prevent Positional Asphyxiation (PA). 7. Identify the difference between ExDS & PA. <p>B. Summarize</p> <p>C. Encourage, reinforce</p> <p>D. Questions?</p> <p>***ANY CHANGES TO THIS OUTLINE CONSTITUTES A REVISION AND MUST BE DOCUMENTED AS A NEW LESSON PLAN AND RE-APPROVED. ***</p>	<p>PO #6</p> <p>PO #7</p>

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