REPORT 2 OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH (June 2021)
Use of Drugs to Chemically Restrain Agitated Individuals Outside of Hospital Settings
(Reference Committee E)

EXECUTIVE SUMMARY

Objective. The term "excited delirium" (ExD) is controversial and lacks a defined set of behavioral signs and symptoms used to identify a person in distress and in need of urgent medical or psychiatric help. Additionally, several media reports have recently highlighted the use of ketamine and other sedative/hypnotic agents by non-medical professionals to chemically incapacitate a person for a law enforcement purpose, and in many cases, ExD is listed as the reason for the use of a sedative/hypnotic agent. The Board of Trustees has requested that the Council on Science and Public Health study the use of ketamine and chemical restraints in the context of "excited delirium" and report back to the House of Delegates.

Methods. English-language reports were selected from a PubMed and Google Scholar search using the text terms "excited delirium," "delirium," "fatalities excited delirium," "excited delirium restraint," "excited delirium sedatives," "excited delirium ketamine," "police ketamine," "EMS ketamine," and "crisis response team." Articles were filtered based on relevance. Additional articles were identified by manual review of the references cited in these publications. Searches of selected medical specialty society and international, national, and local government agency websites were conducted to identify clinical guidelines, position statements, and reports.

Results. The assessment, diagnosis, and treatment of ExD remains controversial. Despite a lack of scientific evidence, a universally recognized definition, a clear understanding of pathophysiologic mechanisms, or a specific diagnostic test, law enforcement and EMS personnel are taught that ExD is a potentially deadly medical condition. Even deaths attributed to ExD have no consistent anatomical findings, resulting in ExD diagnosis being one of exclusion, defined by epidemiology and the subjective description of a clinical presentation. The individuals most likely to be disproportionately identified as experiencing ExD, and to die from resulting first responder actions, or as a consequence of administration of chemical sedation for a presumed case of ExD, are otherwise healthy Black males in their mid-30s who are viewed as aggressive, impervious to pain, displaying bizarre behavior, and using substances – characterizations that may be based less on evidence and more on generalizations, misconceptions, bias, and racism. Additionally, the identification of ExD has frequently been used in defense cases of law enforcement violence, despite reported autopsy results listing asphyxiation as the cause of death.

Conclusion. Reviews of law enforcement agencies and EMS have been called for to evaluate the prevalence of ketamine use in the field in unmonitored individuals and also to assess that training and guidelines for law enforcement and EMS have been established by supervising medical and behavioral health specialists. Such reviews are appropriate. It is important to assure that de-escalation training be widely implemented, and that personnel are conducting themselves according to guidelines and training to ensure patient safety. New crisis intervention team models in which medical and behavioral health specialists, not police, are those first deployed to respond to behavioral emergencies in the community should be encouraged. These models can help assure that decision makers in medical and mental health emergencies who are most appropriate to the circumstances are present with first responders, and that administration of any pharmacological treatments in a non-hospital setting is done equitably, in an evidence-based, anti-racist, and stigma-free way.

REPORT OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH

CSAPH Report 2-JUN-21

Subject: Use of Drugs to Chemically Restrain Agitated Individuals Outside of Hospital Settings

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Referred to: Reference Committee E

BACKGROUND

Recent media reports refer to "excited delirium" in discussions about police brutality and the use of conducted electrical devices (CED).[1-4] The term "excited delirium" is controversial and lacks a defined set of behavioral signs and symptoms used to identify a person perceived as in distress and in need of urgent medical or psychiatric help. Additionally, several media reports have recently highlighted the use of ketamine and other sedative/hypnotic agents by non-medical professionals to chemically incapacitate a person for a law enforcement purpose and not for a legitimate medical reason.[4-6] In many cases, "excited delirium" is listed as the reason for the use of a sedative/hypnotic agent. The AMA Board of Trustees has requested that the AMA Council on Science and Public Health study the use of ketamine and chemical restraints in the context of "excited delirium" and report back to the AMA House of Delegates.

METHODS

English-language reports were selected from a PubMed and Google Scholar search using the text terms "excited delirium," "delirium," "fatalities excited delirium," "excited delirium restraint," "excited delirium sedatives," "excited delirium ketamine," "police ketamine," "EMS ketamine," and "crisis response team." Articles were filtered based on relevance. Additional articles were identified by manual review of the references cited in these publications. Searches of selected medical specialty society and international, national, and local government agency websites were conducted to identify clinical guidelines, position statements, and reports.

AMA POLICY

No current AMA policy exists related specifically to excited delirium or the use of chemical restraints by law enforcement. AMA Policy H-515.968, "Informing the Public & Physicians about Health Risks of Sedative Hypnotics, Especially Rohypnol," emphasizes that Rohypnol (a benzodiazepine), other benzodiazepines, and other sedatives and hypnotics carry the risk of misuse, morbidity and mortality. Policy H-345.979, "Evaluation of Delirium," supports efforts to educate physicians regarding the importance of evaluation of delirium for high-risk patients and patients who are symptomatic.

AMA has several polices related to law enforcement that are applicable to the topic of this report. Policy H-65.954, "Policing Reform," recognizes police brutality as a manifestation of structural racism which disproportionately impacts Black, Indigenous, and other people of color, notes AMA's willingness to work with interested national, state, and local medical societies in a public

health effort to support the elimination of excessive use of force by law enforcement officers, states that AMA will advocate against the utilization of racial and discriminatory profiling by law enforcement through appropriate anti-bias training, individual monitoring, and other measures, and will advocate for legislation and regulations which promote trauma-informed, community-based safety practices. Policy H-345.972, "Mental Health Crisis Interventions," supports jail diversion and community based treatment options for mental illness, implementation of law enforcement-based crisis intervention training programs for assisting those individuals with a mental illness, such as the Crisis Intervention Team model programs, federal funding to encourage increased community and law enforcement participation in crisis intervention training programs, and legislation and federal funding for evidence-based training programs by qualified mental health professionals aimed at educating corrections officers in effectively interacting with people with mental health and other behavioral issues in all detention and correction facilities. Policy H-145.977, "Use of Conducted Electrical Devices by Law Enforcement Agencies," recommends that law enforcement departments and agencies should have in place specific guidelines, rigorous training, and an accountability system for the use of CEDs that is modeled after available national guidelines, encourages additional independent research involving actual field deployment of CEDs to better understand the risks and benefits under conditions of actual use, and urges law enforcement departments and agencies have a standardized protocol developed with the input of the medical community for the evaluation, management and post-exposure monitoring of subjects exposed to CEDs.

AMA has policy related to Emergency Medical Services (EMS) and prehospital patient care. Policy H-130.976, "On-Site Emergency Care" reaffirms endorsement of the concept of appropriate medical direction of all prehospital emergency medical services and notes that trauma management differs markedly between locales, settings, and types of patients receiving care and for these reasons, physician supervision of prehospital services is essential to ensure that the critical decision to resuscitate in the field or to transfer the patient rapidly is made swiftly and correctly. Policy H-160.949, "Practicing Medicine by Non-Physicians" opposes allowing non-physician groups to engage in the practice of medicine without physician (MD, DO) training or appropriate physician (MD, DO) supervision and supports the requirement of appropriate physician supervision of non-physician clinical staff in all areas of medicine. Policy H-130.937, "Delivery of Health Care by Good Samaritans" notes that bystander physicians should recognize that prehospital EMS systems operate under the authority and direction of a licensed EMS physician, who has both ultimate medical and legal responsibility for the system.

Ethical Opinion 1.2.7, "Use of Restraints," states that all individuals have a fundamental right to be free from unreasonable bodily restraint. At times, however, health conditions may result in behavior that puts patients at risk of harming themselves. In such situations, it may be ethically justifiable for physicians to order the use of chemical or physical restraint to protect the patient. Except in emergencies, patients should be restrained only on a physician's explicit order. Patients should never be restrained punitively, for convenience, or as an alternate to reasonable staffing. Physicians who order chemical or physical restraints should: (a) Use best professional judgment to determine whether restraint is clinically indicated for the individual patient. (b) Obtain the patient's informed consent to the use of restraint, or the consent of the patient's surrogate when the patient lacks decision-making capacity. Physicians should explain to the patient or surrogate: (i) why restraint is recommended; (ii) what type of restraint will be used; (iii) length of time for which restraint is intended to be used. (c) Regularly review the need for restraint and document the review and resulting decision in the patient's medical record. In certain limited situations, when a patient poses a significant danger to self or others, it may be appropriate to restrain the patient involuntarily. In such situations, the least restrictive restraint reasonable should be implemented and the restraint should be removed promptly when no longer needed.

EXCITED DELIRIUM

Delirium is a well-defined clinical entity with both hypoactive and hyperactive manifestations, commonly caused by an underlying medical condition and not associated with sudden death. The term "excited delirium" (ExD) has been used since the 1980s to refer to a subcategory of delirium that has primarily been described in forensic literature and the term "excited delirium syndrome" (ExDS) was originally used in the forensic literature to describe findings in a subgroup of patients with ExD who suffered lethal consequences from untreated severe agitation. Currently, ExD and ExDS are used interchangeably in literature and media.

History

In 1849, the lead psychiatrist at McLane Asylum for the Insane introduced a condition synonymous to ExD into medical literature as "Bell Mania."[7] The term "excited delirium" first emerged in 1985 from two University of Miami professors who set out to explain a new phenomenon of sudden deaths, mostly in police custody, of otherwise healthy men under the influence of a non-lethal amount of cocaine.[8,9] Soon after, the term gained academic traction, as the United States saw a dramatic rise in use of cocaine and other sympathomimetic substances along with increased efforts to deinstitutionalize patients with chronic mental illness.[10] Currently, ExD and ExDS are referred to as conditions of illness marked by a combination of autonomic hyperadrenergic dysfunction, agitation, and delirium. The purported root of ExD, involving psychiatric, neurologic, and metabolic imbalance, is highly variable and linked to a complicated array of co-morbid and severe health issues.[11]

Historically, the concept of ExD was synonymous with death, but over time the term has made its way into the emergency medicine, psychiatric, law enforcement, prehospital, and medicolegal literature to generally describe patients displaying altered mental status with severe agitation and perceived combative or assaultive behavior that has eluded a unifying, prospective clinical definition. Studies have failed to define ExD as one specific clinical entity, and it remains without a plausible biological pathway to sudden death. Multiple published series highlight that when CEDs and/or police restraints are used, ExD most often becomes fatal.[12-17] CSAPH Report 6-A-09, *Use of Tasers® by Law Enforcement Agencies*, included a very brief paragraph on ExD and notes that ExD is not a validated diagnostic entity in either the World Health Organization's International Classification of Diseases or the *Diagnostic and Statistical Manual of Mental Disorder*s, but is widely accepted in forensic pathology and is cited by medical examiners to explain the sudden in-custody deaths of individuals who are combative and highly agitated.[18]

Pathophysiology

Although it is extensively used in academic and medical literature, considerable debate exists in medicine about how to characterize ExD and ExDS, if they even exist, and how ExD contributes to sudden death. The pathophysiologic mechanisms of ExD have not been elucidated and ExD does not currently have a known etiology.[10,19-21] However, ExD has been characterized in the literature by delirium, agitation, acidosis, and hyperadrenergic autonomic dysfunction, typically in the setting of drug use or serious mental illness or a combination of both.[11] Currently, a general function of the sympathetic nervous system is associated with the listed clinical manifestations of ExD, with possible nervous system dysfunction in some way inciting symptoms. While some authors correlate elevated synaptic dopamine levels to ExD, its causes are yet to be discovered and the absence of a unique pathophysiologic cause or specific diagnostic test remains.[22-24]

No consistent anatomical features define ExD. Due to the biological ambiguity in diagnosing ExD, postmortem findings from autopsy and forensic evidence collection to identify or support ExD are unlikely, and a postmortem diagnosis of ExD is one of exclusion.[8,17,25,26] Because ExD does not currently have a known specific etiology or a consistent anatomic feature, it can only be explained by its epidemiology and described clinical presentation.[20]

Epidemiology

Studies have shown that delirium occurs in between 11 and 42 percent of general medical inpatients and 50 percent of elderly hospitalized patients. This figure is even greater for those with pre-existing cognitive impairments, terminal illness, or in need of intensive care.[27] Patients diagnosed with delirium are found to have extended stays in the hospital by five to ten additional days, and are more likely to be transferred to a long-term care facility post-release.[28]

Those who are most likely to be identified as having ExD are men, with 83 to 95 percent of ExD cases occurring in this population.[24] Otherwise healthy males in their mid-30s who are seen as "aggressive, impervious to pain, and display bizarre behavior" have the highest rate of mortality from ExD/ExDS.[10] Despite similar rates of drug use across race and ethnicity in the United States,[29] epidemiological studies show that it is specifically and disproportionately younger Black men who use cocaine and other psychostimulants and are in police custody that are at highest risk for death from ExD/ExDS.[24,30,31] Mortality rates associated with ExD/ExDS have been reported to be between 8 to 16.5 percent.[11,24,32]

LAW ENFORCEMENT, EMS, AND EXCITED DELIRIUM

Because of its reference in forensic literature, law enforcement groups and EMS have started training staff to identify ExD as a potentially deadly medical condition, despite the absence of a unique pathophysiologic cause or specific diagnostic test.[33,34] ExD often presents itself as a behavioral issue initially evaluated by law enforcement with subsequent EMS involvement.[11,35] Additionally, the identification of ExD/ExDS has been frequently used in defense cases of police violence.[9,36] Some of the cases in which ExD has been invoked in defending the deaths of people, all Black, in police custody include Natasha McKenna,[14] Manuel Ellis,[2] Elijah McCain,[5] George Floyd,[3] and Daniel Prude.[1]

The prevalence of ExD appears to vary widely, both because of varying definitions and context. Reports estimate that ExD is in question in more than 3 percent of police interventions that use force and more than 10 percent of the deaths that occur within law enforcement custody are associated with ExD.[24] Reports also note that between 38 and 86 percent of all fatal ExD cases occur in police custody[24] and that law enforcement officers encounter one person with ExD in every 58 use of force incidents.[25] In cases of suspected ExD, law enforcement officers are encouraged to contact EMS personnel; the combined effort of EMS and law enforcement to provide effective care to those with ExDS has been termed the "dual response."[33,34] Training for EMS personnel states that treatment of ExDS must be focused on rapidly, safely, and effectively sedating the patient and providing intensive, supportive care.[37]

Since ExD lacks a consensus clinical definition and few pathophysiological findings exist about the condition, wrongly characterizing symptoms as ExD, especially by law enforcement with little medical knowledge, frequently leads to additional and potentially fatal medical complications including hypoxia.[17,38-40] The profile of a death attributed to ExD is usually a sudden, unexpected one that occurs most frequently in the summer.[41] It usually occurs immediately following chemical or physical restraint to control ExD and occurs most frequently when the patient is in the prone

position; both chemical restraints and CEDs have been cited to result in sudden death due to ExD.[15,17,42] An *FBI Law Enforcement Bulletin* article discussing ExD describes it as "a serious and potentially deadly medical condition involving psychotic behavior, elevated temperature and an extreme flight-or fight response," and notes that "these patients often die within 1 hour of police involvement."[33]

Studies have evaluated the factors associated with death attributed to ExD in police custody and the confounding effect that restraint has on the risk of death. Results have indicated that a diagnosis of ExD and potentially fatal restraint are "inextricably interwoven."[43,44] Some form of restraint was described in 90 percent of all ExD deaths, making it the most common factor that is a plausible cause or contributing cause of the death. Authors note that there is no evidence to support ExD as a cause of death in the absence of restraint.[44] The reported autopsy results for the individuals referenced above, in which law enforcement officers cited ExD as the cause of death provide examples of this: in the death of Natasha McKenna, "excited delirium," was noted although a stun gun was utilized 4 times resulting in loss of consciousness;[14] the death of Elijah McClain was "undetermined," although carotid hold and excessive restraint were utilized;[5] the death of Manuel Ellis was reported as "hypoxia due to physical restraint;"[2] George Floyd died from "asphyxia due to neck and back compression;"[3] and Daniel Prude's death was due to "complications of asphyxia in the setting of physical restraint."[1]

While the mortality rate associated with ExD is estimated to be between 8 and 16.5 percent,[11,24,32] in the past three decades, a significant decrease in restraint-related deaths of those with ExD has been noted. The period from 2004 to 2011 shows a 33 percent reduction in fatalities from ExD compared to the period 1988 to 1995; authors comment that the decrease is likely due to an increase in warnings and repeated recommendations concerning the association between restraint, especially in a prone position and fatal ExD.[24] However, little information related to the specific details of law enforcement or EMS training related to ExD could be located.

CHEMICAL RESTRAINT

A chemical restraint is when a drug is used to restrict the movement of a patient or in some cases to sedate a patient. Chemical restraint is used in emergency, acute, and psychiatric medical settings to reduce agitation, aggression, or violent behaviors. Drugs that are often used as chemical restraints include benzodiazepines, antipsychotics, and dissociative anesthetics. However, no drugs are U.S. Food and Drug Administration (FDA) approved for use as chemical restraints. The long history of restraint and associated controversies of the use of restraints (physical, mechanical, and chemical) in patients is outside of the scope of this report.

Drugs Used as Chemical Restraints

Medications that are typically used for chemical restraint include the dissociative ketamine, benzodiazepine sedatives such as midazolam, and antipsychotic medications including olanzapine or haloperidol, both alone or in combination.

Studies over the last several years have evaluated and compared the efficacy of sedation for several medications used for chemical restraint, as well as adverse effects associated with them.[45-49] A recent systematic review summarizes available evidence on the effectiveness and safety of chemical restraint from 21 randomized controlled trials conducted in pre-hospital, hospital emergency department, or ward settings and notes limited comparability between studies in drug choice, combination, dose, method of, or timing of repeat administrations. Drugs used in chemical restraint and included in the review include olanzapine, haloperidol, droperidol, risperidol,

flunitrazepam, midazolam, promethazine, ziprasidone, sodium valproate, or lorazepam. The review notes little clarity about the superiority of any of the drugs and recommends additional research on the topic.[50]

Because sedation with slower-onset chemical restraints, such as haloperidol and some benzodiazepines present a risk of delay to adequate sedation, ketamine has emerged as a potentially preferred drug for the control of patient agitation in a pre-hospital context and for a law enforcement purpose.[35,37,39,40,51-54] Although little literature exists directly reporting the frequency of EMS use, authors note that this medication could easily be implemented into out-of-hospital protocols and that ketamine offers a "safe and effective method of controlling the severely agitated patient."[35,37]

Ketamine

Ketamine is FDA approved for use as an anesthetic agent for diagnostic and surgical procedures and esketamine (a pure ketamine stereoisomer) is FDA approved for treatment-resistant depression. Ketamine and esketamine are classified as Schedule III controlled substances.

Ketamine is commonly used off-label in medical settings as an analgesic, antidepressant, and anti-inflammatory medication. No FDA-approved indication for use to treat ExD exists, which is understandable given that there is no medical consensus on definitions of or diagnostic criteria for ExD. Therefore, no standard dosing regimen has been established and there has been no consideration of co-morbid medical conditions for ketamine use for ExD. A rapidly growing movement calls for expanded use of ketamine for several applications, both in and out of the hospital, including for sedation of agitated patients in non-clinical situations and for restraint in custody.[35,55]

Ketamine Use as a Chemical Restraint by Law Enforcement and EMS

Police officers and EMS professionals are the most likely first responders to encounter agitated patients exhibiting what they might consider to be symptoms of ExD. While law enforcement usually evaluates this syndrome, it is usually EMS personnel who provide the sedation, in the "dual response" model. While several chemical restraints are used to sedate those purportedly experiencing ExD within law enforcement custody and in EMS contexts, most commonly the sedative is ketamine. Authors report that the use of ketamine for restraint of an agitated patient induces rapid, predictable sedation within three to four minutes when given by intramuscular injection.[37,54,56]

A recent national survey assessed ketamine training, use, and perceptions among paramedics in civilian prehospital settings. The survey noted that training related to ketamine use was commonly reported among paramedics, however, few are authorized to administer the drug according to their agency protocol. Of those paramedics authorized to use ketamine, most had limited experience administering the drug, but have the perception that the use of ketamine for sedation is safe and effective.[52] Dosing guidelines, safety profile, and efficacy have been described in only a limited fashion for the use of ketamine to chemically restrain a patient in a pre-hospital scenario.[51]

Many police departments have seen a dramatic rise in ketamine administration over the past several years. As an example, a 2018 City of Minneapolis report "MPD Involvement in Pre-Hospital Sedation" documented an average of 4 cases of ketamine use per year prior to 2015, 14 uses in 2015, and 62 instances in 2017.[57] From January 2018 through April 2018, 11 instances of ketamine use were documented in police reports, exceeding the annual use in each year from 2010-2014.[57]

Additionally, the report from Minneapolis presented 8 cases that occurred between 2016 and 2018 in which EMS professionals and Minneapolis Police Department (MPD) officers cooperated in order to administer ketamine. These cases involved instances in which the police officers, with limited medical training, directed EMS professionals to use ketamine.[57] A recent investigation of the death of Elijah McCain in Colorado determined that the use of ketamine contributed to his death.[58]

Little information related to the specific details of law enforcement or EMS training related to the use of ketamine or other chemical restraints could be located. Reviews of law enforcement agencies and EMS have been called for to evaluate the prevalence of ketamine use in the field in unmonitored individuals and to assess that training and guidelines have been established by supervising medical and behavioral health specialists, are appropriate, include de-escalation training, and personnel are conducting themselves according to guidelines and training to ensure patient safety.[35,57,58] Additionally, agencies currently using ketamine for sedation of agitation are encouraged to report their outcomes and protocols to increase the body of evidence and determine best safe practices for this indication.[35]

Ketamine Pharmacology in Pre-hospital Contexts

Ketamine dose dependently exerts broad influences on consciousness and perception, with some patients reporting dissociative and extracorporeal sensations. The most common psychoactive effects reported after a single subanesthetic intravenous administration of ketamine include dissociation, positive psychotomimetic effects (conceptual disorganization, hallucinations, suspiciousness, unusual thought content, and frank paranoia), and negative psychotomimetic effects (blunted affect, emotional withdrawal, and psychomotor retardation). In addition, studies have identified unfavorable effects of administration of ketamine on cognition (including amnesia), vestibular perturbations, nausea/vomiting, tachycardia, hypertension, palpitations, hypersalivation, and respiratory depression. Ketamine has also been found to have negative interactions with alcohol in intoxicated individuals and those taking MAO inhibitors, which is of concern because when ketamine is used by EMS in out-of-hospital settings, individuals may be under the influence of alcohol, cannabis, sedative-hypnotics, or other psychoactive drugs or under medical treatment with a pharmaceutical with potential adverse drug-drug interactions with ketamine.[48,59-62]

Because of the ketamine dose-response and side effects, careful administration and medical expertise is necessary, especially in non-medical and non-hospital contexts.[17,38-40] In general, the duration of sedation should only be long enough to allow for patient assessment, initial treatment, and transfer to a medical facility; restraint beyond this timeframe may induce additional medical complications. Ketamine dosing is dependent on a person's body weight, with a reported standard dosing of 5mg per kilogram of bodyweight starting at 250 mg for pre-hospital treatment.[44,51,63,64] Because of this weight dosing requirement, incorrect dosing of ketamine by law enforcement or EMS can and has led to serious adverse events or death.[58] A recent investigation of the death of Elijah McClain in Aurora, Colorado found that an incorrect estimation of weight for a weight-based dose calculation contributed to his death.[58] Additionally, several studies have reported that while ketamine provides rapid sedation for agitated patients, its use in a pre-hospital setting is associated with higher intubation and hospital admission rates when used by EMS.[35,38,48,51,54,60,62,65,66] Studies have also linked the use of ketamine to death from metabolic acidosis.[67-69]

CRISIS INTERVENTION TEAM PROGRAMS

Crisis Intervention Team programs (CITs) are community partnerships of law enforcement, behavioral health providers, people with mental and substance use disorders, along with their families and others. CITs have become a globally recognized model for safely and effectively assisting people who experience crises in the community. The Substance Abuse and Mental Health Services Administration (SAMHSA) notes that the need for CIT programs is urgent, as communities are challenged with insufficient mental health funding and services.[70] Advocates of CITs, including the National Alliance on Mental Illness (NAMI), note that the programs can reduce police encounters and arrests of people with mental illness while simultaneously increasing the likelihood that individuals will receive mental health services.[71-73] Additional goals of CITs include improving police responses to people in crisis; diverting individuals from the criminal justice system when appropriate; and developing more robust community-based crisis-response systems that minimize both the role of law enforcement and the need to utilize emergency departments.[74] A foundational aspect of successful CITs is a strong and ongoing community partnership.[74]

CITs promote both law enforcement officer safety and the safety of the individual in crisis. NAMI notes that CITs give law enforcement officers more tools to do their job safely and effectively and promotes the expansion of CITs nationwide, providing resources and working with stakeholders to establish standards and promote innovation for CITs.[73] While law enforcement agencies have a central role in program development and ongoing operations, a continuum of crisis services available to citizens prior to police involvement is core to the model. SAMHSA notes that for safety and optimal engagement, two person CIT teams should be put in place to support communities and EMS should be aware of the teams and partner as warranted. SAMHSA guides also note minimum expectations for CITs, including the involvement of a licensed and/or credentialed behavioral health clinician, response to where the person in need is located, and connecting the individual to appropriate care, with a warm hand-off and coordinated transportation. SAMHSA guides and CIT International, the leading national organization promoting successful CIT models, detail best practices for CIT services[75,76] and experts have documented and noted challenges for rural communities.[77]

The Denver Support Team Assisted Response program (STAR), which has been operational for six months, is an example of a CIT. STAR pairs a mental health clinician and a paramedic to address low-level incidents, such as trespassing and mental health episodes, that would have otherwise fallen to uniformed law enforcement officers carrying firearms. In its first six months, STAR has responded to 748 incidents, none of which required police or led to arrests or jail time.[78,79]

Officials note that “STAR represents a more empathetic approach to policing that keeps people out of an often-cyclical criminal justice system by connecting people with services like shelter, food aid, counseling, and medication. The program also deliberately cuts down on encounters between uniformed officers and civilians.” The STAR policing alternative empowers behavioral health experts to dictate patient interactions, even when police officers are around, and has been hailed as a success in local Denver communities.[78,79] Many communities around the United States are exploring alternatives to incarceration and law enforcement response to minor incidents.

NATIONAL ASSOCIATION POSITIONS

The American Psychiatric Association (APA) released a position statement in 2020 related to ExD and the use of ketamine. APA does not recognize ExD as a mental disorder and states that the term should not be used until a clear set of diagnostic criteria are validated. APA notes that persons being detained by the police and described as having ExD have frequently received medication

from EMS personnel intended to chemically sedate them, without a medical condition warranting the use of the drug. The APA statement further cautions that chemical sedation medications, including ketamine, used outside of hospital contexts have significant risks, including respiratory suppression. APA also states that an investigation should be undertaken of cases labeled as ExD, that all relevant data be analyzed for disproportionate application of the term, and that all jurisdictions should develop, implement, and routinely update evidence-based protocols for the administration of chemical restraint medications.[80]

The American College of Emergency Physicians (ACEP) recognizes ExD as a medical condition and notes that the exact pathophysiology of ExD remains unidentified.[11,32,81] In articles on the topic, ACEP representatives note that a large component of treating patients is helping law enforcement and EMS recognize possible ExDS patients, and that prehospital ExDS should be presumed if a patient is disoriented or not making sense, constantly physically active, impervious to pain, has superhuman strength, is sweating and breathing rapidly, has tactile hyperthermia, and fails to respond to a police presence. ACEP experts have also advocated that chemical sedation, with ketamine or benzodiazepines, is a first-line treatment.[32,81]

In a 2020 statement, ACEP and the American Society of Anesthesiologists (ASA) discussed the safe use of ketamine in the emergency department and in prehospital care for effective pain management, sedation, the control of delirium in acute psychotic emergencies and drug intoxications. ACEP and ASA noted the dependence on an appropriate medical assessment by a paramedic with medical direction. The statement notes firm opposition to the use of ketamine or any other sedative/hypnotic agent to chemically incapacitate someone solely for a law enforcement purpose and not for a legitimate medical reason.[82]

The American College of Medical Toxicologists (ACMT) hosts educational information related to ExD and ExDS, including definitions, signs and symptoms, and treatment with chemical support/sedation.[83] In a statement released in 2020, ACMT recognized ExD as a condition that warrants consideration of the decision to administer sedating medications. Based on current evidence, ACMT supports the use of sedative and dissociative medications by appropriately trained prehospital paramedical professionals for treatment of severe agitation when other measures have failed, but ACMT does not support the use of these medications solely for the purpose of behavior control on behalf of law enforcement.[84]

In 2020, ACMT, the American Society of Addiction Medicine (ASAM), and the Opioid Response Network (ORN) co-hosted an Addiction Toxicology Case Conference on the topic of intoxication and ExD.[85] The webinar, for continuing medical education credit, featured "discussion of drug-induced agitated delirium with experts dissecting the mechanism and common course of events that occur in the most severe type of agitated delirium, often referred to as Excited Delirium Syndrome. Myths and misperceptions in care of patients with agitation and delirium [were] addressed, as [was] discussion of the appropriate use of sedation..."[83]

The National Association of EMS Physicians (NAEMSP) recognizes that EMS personnel often encounter agitated and combative patients, and these patients frequently require clinical treatment and transportation. A 2016 statement details the NAEMSP position on a several issues related to patient restraint. Notably, NAEMSP believes that EMS agencies should develop scientific protocols for dealing with violent or combative patients, that EMS agencies must assure that all personnel are knowledgeable about the clinical conditions that are associated with agitated or combative behavior and are trained to apply the principles of the system's restraint protocol during patient care. The NAEMSP position statement provides significant details about restraint protocols, notes the use of chemical restraint for ExD, and that chemical restraint, usually with a

butyrophenone, a benzodiazepine, ketamine or other dissociative agents, or a combination of these agents, is an effective and safe method of protecting the violent or combative patient from self-injury. Importantly, the NAEMSP notes that local law enforcement restraint policies/practices may differ from EMS-based restraint protocols, but both agencies should recognize their roles and work cooperatively and proactively to ensure the safe care of patients when application of restraint(s) is necessary.[86]

CONCLUSION

The assessment, diagnosis, and treatment of ExD remains controversial. Despite a lack of scientific evidence, a universally recognized definition, a clear understanding of pathophysiologic mechanisms, or a specific diagnostic test, law enforcement and EMS personnel are taught that ExD is a potentially deadly medical condition – including at time, by physicians. Even deaths attributed to ExD have no consistent anatomical findings, resulting in ExD diagnosis being one of exclusion, defined by epidemiology and the subjective description of a clinical presentation. The individuals most likely to be disproportionately identified as experiencing ExD, and to die from resulting first responder actions, or as a consequence of administration of chemical sedation for a presumed case of ExD, are otherwise healthy Black males in their mid-30s who are viewed as aggressive, impervious to pain, displaying bizarre behavior, and using substances – characterizations that may be based less on evidence and more on generalizations, misconceptions, bias, and racism. Additionally, the identification of ExD has frequently been used in defense cases of law enforcement violence, despite reported autopsy results listing asphyxiation as the cause of death.

While chemical restraint is used in emergency, acute, and psychiatric medical settings to reduce agitation, aggression, or violent behaviors, a rapidly growing movement calls for expanded use of chemical restraint, specifically using ketamine, for several applications, both in and out of the hospital, including for sedation of agitated patients in non-clinical situations and for chemical restraint of persons in law enforcement custody. Police officers and EMS professionals are the most likely first responders to encounter patients perceived to be exhibiting purported ExD. While law enforcement usually evaluates this syndrome, it is usually EMS personnel who provide the sedation, in the “dual response” model.

Reviews of law enforcement agencies and EMS have been called for to evaluate the prevalence of ketamine use in the field in unmonitored individuals and to assess that training and guidelines have been established by supervising medical and behavioral health specialists. Such reviews are appropriate. It is important to assure that de-escalation training be widely implemented, and that personnel are conducting themselves according to guidelines and training to ensure patient safety. New CIT models in which medical and behavioral health specialists, not police, are those first deployed to respond to behavioral emergencies in the community should be encouraged. These models can help assure that decision makers in medical and mental health emergencies who are most appropriate to the circumstances are present with first responders, and that administration of any pharmacological treatments in a non-hospital setting is done equitably, in an evidence-based, stigma-free way.

RECOMMENDATION

The Council on Science and Public Health recommends that the following be adopted and the remainder of the report be filed:

1. That the following new AMA policy be adopted:

   Use of Drugs to Chemically Restrain Agitated Individuals Outside of Hospital Settings
   Our American Medical Association:
   1. Believes that current evidence does not support "excited delirium" or "excited delirium syndrome" as a medical diagnosis and opposes the use of the terms until a clear set of diagnostic criteria are validated;

   2. Is concerned about law enforcement officer use of force accompanying "excited delirium" that leads to disproportionately high mortality among communities of color, particularly among Black men, and denounces "excited delirium" solely as a justification for the use of force by law enforcement officers.

   3. Opposes the use of sedative/hypnotic agents, including ketamine, to chemically restrain an individual solely for a law enforcement purpose;

   4. Recognizes that drugs for chemical restraint used outside of a hospital setting by non-physicians have significant risks intrinsically, in the context of underlying medical conditions, and also related to potential drug-drug interactions with agents the individual may have taken;

   5. Calls for comprehensive reviews, performed by independent investigators including appropriate medical and behavioral health professionals, of law enforcement agencies and emergency medical service agencies to:
      a. Investigate any cases labeled as "excited delirium" for disproportionate application of the term, including prevalence of its use by race, ethnicity, gender, age, and other demographic factors;
      b. Evaluate the prevalence of ketamine use in the field in unmonitored individuals;
      c. Assess that training and guidelines have been properly established by supervising medical and behavioral health specialists, are appropriate, and include de-escalation training; and
      d. Assess, on an ongoing basis, that personnel are conducting themselves according to guidelines and training to ensure patient safety; and

   6. Urges law enforcement and emergency medical service personnel to participate in appropriate training that minimally includes de-escalation techniques and the appropriate use of drugs used to restrain individuals; and

   7. Urges medical and behavioral health specialists, not law enforcement, to serve as first responders and decision makers in medical and mental health emergencies in local communities and that administration of any pharmacological treatments in a non-hospital setting be done equitably, in an evidence-based, anti-racist, and stigma-free way.
   (New HOD Policy)

2. That Policy H-65.954, "Policing Reform," which recognizes police brutality as a manifestation of structural racism which disproportionately impacts Black, Indigenous, and other people of color, notes AMA's willingness to work with interested national, state, and local medical societies in a public health effort to support the elimination of excessive use of force by law enforcement officers, states that AMA will advocate against the utilization of racial and discriminatory profiling by law enforcement through appropriate anti-bias training, individual monitoring, and other measures, and will advocate for legislation and regulations which promote trauma-informed, community-based safety practices, be reaffirmed. (Reaffirm Current AMA Policy)

3. That Policy H-345.972, "Mental Health Crisis Interventions," which supports jail diversion and community based treatment options for mental illness, implementation of law enforcement-based crisis intervention training programs for assisting those individuals with a mental illness, such as the Crisis Intervention Team model programs, federal funding to encourage increased community and law enforcement participation in crisis intervention training programs, and legislation and federal funding for evidence-based training programs by qualified mental health professionals aimed at educating corrections officers in effectively interacting with people with mental health and other behavioral issues in all detention and correction facilities, be reaffirmed. (Reaffirm Current AMA Policy)

Fiscal Note: Less than $1000

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