

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Medical Follow-up and Discharge of Individuals Receiving Electric Shock or Blunt Trauma from Non- Lethal Weapons: Guidelines

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Research Question

1. What are the evidence-based guidelines regarding medical follow-up and discharge of people who have received an electric shock from a conducted electrical weapon or blunt trauma from a projectile-based weapon?

Key Findings

Two evidence-based guidelines were identified regarding medical follow-up and discharge of people who have received an electric shock from a conducted electrical weapon or blunt trauma from a projectile-based weapon.

Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concept was non-lethal weapons. Search filters were applied to limit retrieval to health technology assessments and guidelines. The search was limited to English language documents. The search was not limited by date. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Individuals who have received electric shock from a conducted electrical weapon (e.g., Taser) or who have received blunt trauma from a non-lethal projectile-based weapon (e.g., bean bag pellets, wooden, rubber, or plastic bullets)
Intervention	Medical assessments or treatment following contact with non-lethal weapon
Comparator	Not applicable
Outcomes	Evidence-based guidelines
Study Designs	Evidence-based guidelines

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Normally, health technology assessment reports, systematic reviews, and meta-analyses are presented first; however, in reports where guidelines are primarily sought, the aforementioned evidence types are presented in the appendix.

Two evidence-based guidelines¹⁻² were identified regarding medical follow-up and discharge of people who have received an electric shock from a conducted electrical weapon or blunt trauma from a projectile-based weapon.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

A clinical guideline from the National Model Emergency Medical Service (EMS) service recommends medical follow up of persons who have been tasered if they received either the direct contact discharge or the distance two-barbed dart discharge of the conducted electrical weapon. They also recommend medical follow-up, if the person sustained a fall or physical confrontation trauma, if they may be under the influence of toxic substances, and/or may have underlying medical or psychiatric disorder.¹ The guideline further outlines the protocol for assessment and treatment of patients who have been tasered.¹

Another guideline from the American Academy of Emergency Medicine (AAEM) Clinical Practice Committee does not recommend the routine performance of lab tests, electrocardiography, or prolonged emergency department visits or hospitalization for ongoing cardiac monitoring post-taser exposure in persons who are asymptomatic and awake.² The guideline recommends testing for cardiac conduction or injury or other physiologic effects of tasers in individual cases based on medical history such as cardiac problems or symptoms like chest discomfort, shortness of breath, or palpitations suggestive of cardiac issues”, pain related to muscle contraction injuries, or prolonged taser exposure of more than 15 seconds. Additional evaluation and treatment by a physician should be sought out if the patient is intoxicated, struggling, has altered mental status, or has symptoms of excited delirium syndrome. For tasers that use dart penetration, patients should be screened for injuries related to the dart or surface burns due to taser use, as well as injuries related to falls and muscle contractions.² Among patients who were tasered in drive stun or touch stun mode, it is recommended that medical evaluation focus on the surface wounds or burns (i.e., signature marks).²

References Summarized

Guidelines and Recommendations

1. NASEMSO Medical Directors Council. National model EMS clinical guidelines. Falls Church (VA): National Association of State EMS Officials; 2019: <https://nasesmo.org/wp-content/uploads/National-Model-EMS-Clinical-Guidelines-2017-PDF-Version-2.2.pdf>. Accessed 2019 Aug 14.
See: Conducted Electrical Weapon Injury (e.g. TASER®), page 307

2. AAEM Clinical Practice Committee. What evaluations are needed in emergency department patients after a taser device activation? Milwaukee (WI): American Academy of Emergency Medicine; 2010:
https://www.aaem.org/UserFiles/file/taser_evaluations.pdf. Accessed 2019 Aug 14.

Appendix — Further Information

Previous CADTH Reports

3. Electric shocks from conducted electric weapons: long-term clinical effects and guidelines for medical follow-up. (*CADTH Rapid response report: summary of abstracts*). Ottawa (ON): CADTH; 2014:
<https://www.cadth.ca/electric-shocks-conducted-electric-weapons-long-term-clinical-effects-and-guidelines-medical-follow>. Accessed 2019 Aug 14.

Non-Randomized Studies

4. El Sayed M, El Tawil C, Tamim H, Mailhac A, Mann NC. Emergency medical services experience with barb removal after taser use by law enforcement: a descriptive national study. *Prehosp Disaster Med*. 2018;1-8. [Epub ahead of print]
[PubMed: PM30591087](https://pubmed.ncbi.nlm.nih.gov/30591087/)

Guidelines and Recommendations – Unspecified Methodology

5. Geneva guidelines on less-lethal weapons and related equipment in law enforcement: text for consultation. Geneva (CH): Geneva Academy of International Humanitarian Law and Human Rights; 2018;
https://geneva-academy.ch/joomlatools-files/docman-files/Geneva%20Guidelines%20on%20Less-Lethal%20Weapons%20and%20Related%20Equipment%20in%20Law%20Enforcement_1%20October%202018_CLEAN.pdf. Accessed 2019 Aug 14.
See: 5.6 Medical assistance
6. Payne-James J, Sheridan B. Recommendations – TASER®: clinical effects and management of those subjected to TASER® discharge. London (GB): Faculty of Forensic & Legal Medicine; 2018:
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<https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/gdlns-cndctv-nrg-wpns/index-en.aspx>. Accessed 2019 Aug 14.
8. Medford Police Department. TASER guidelines. 2011:
https://www.aclu.org/sites/default/files/field_document/30157-30162%20Taser%20Policy.pdf. Accessed 2019 Aug 14.
See: 309.5 Medical treatment, page 30160

Reviews

9. Kunz SN, Adamec J. A comparative brief on conducted electrical weapon safety. *Wien Med Wochenschr*. 2019;169(7-8):185-192.
[PubMed: PM29392503](https://pubmed.ncbi.nlm.nih.gov/29392503/)

10. Peel M. Assessment of people who have been tasered. *Emerg Nurse*. 2017;13;25(4):22-29.
[PubMed: PM28703047](#)
11. Vilke GM, Bozeman WP, Chan TC. Emergency department evaluation after conducted energy weapon use: review of the literature for the clinician. *J Emerg Med*. 2011;40(5):598-604.
[PubMed: PM21220194](#)
12. Biria M, Bommana S, Kroll M, Panescu D, Lakkireddy D. Multi-organ effects of conducted electrical weapons (CEW) -- a review. *Conf Proc IEEE Eng Med Biol Soc*. 2010;2010:1266-1270.
[PubMed: PM21095915](#)

Additional References

13. Scientific Advisory Committee on the Medical Implications of Less-Lethal Weapons (SACMILL). Statement on the medical implications of use of the TASER X2 conducted energy device system. 2016:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/595242/Medical_Statement_on_the_TASER_X2_system.pdf. Accessed 2019 Aug 14.