Arrest-Related Death: Evidence Collection

1. Highly Perishable Evidence (some items repeated later)

a. **AED/Cardiac Monitor Downloads:** Get the AED (Automated External Defibrillator) or cardiac monitor downloads (including rhythm strips, electronic data downloads, and technical operational downloads). This is often erased or deleted when the next paramedic shift starts. This information can eliminate "electrocution" by the TASER CEW (Conducted Electrical Weapon) 95% of the time.[1] However, it is erased 80% of the time. Note that there can be 4 or more defibrillators/heart monitors: (1) Squad car, (2) Paramedics, (3) Ambulance, and (4) Hospital.

b. **Person's Clothing:** Acquire and handle as perishable evidence the person's clothing, especially any clothing where a CEW probe may have struck, punctured or attached.

c. **CEW Wires/Probes/Cartridges:** ***Maintain as evidence the CEW wires, probes, and cartridges!*** Microscopic analysis of the probes and wires can often show that no electrical current was delivered (as a probe missed) and eliminate the TASER CEW as a factor.[2] DNA analysis of the probes may show who (if anyone) had a probe insertion. Do NOT let anyone put the probes/wires into "sharps" container. These are valuable evidence.

d. **Probe Impact, Attach, or Penetrate:** Carefully acquire all data regarding probes and where and if they impacted, attached, or penetrated clothing or skin. Millimeters matter, thus, very carefully acquire this information and fully document (with complete annotations).

e. **CEW Spark Tests/Cartridge Removed Discharges:** Carefully determine and document any CEW spark tests or cartridge removals, including "3-point" deployments or drive stun after cartridge removal, and drive stun with deployed cartridge remaining in place on the CEW.

f. **Core (rectal or liver) body temperatures:** Taken as close as possible to time of collapse. Not always important by Emergency Medical Services (EMS) or Emergency Department (ED) staff for therapy but may be important for Excited Delirium diagnosis ***so politely ask for it!***[3,4]

g. **Pulse Oximeter:** Paramedic pulse oximeter recording if available.

h. **Antemortem (pre-death) blood sample(s):** from ED grey-top vacutainer tubes for "quantitative" analysis – not just "qualitative" analysis. The 'grey-tops" contain sodium fluoride which will prevent the breakdown of cocaine. Note that the subject is a "patient" up until death is pronounced and only then becomes a body for the coroner/ME investigation. The ED is doing you a big favor if they will share a 10 ml antemortem blood sample.

i. **Postmortem blood sample(s):** get several blood samples (especially peripheral samples) and place in "grey top" tubes tube for quantitative analysis. Be sure to fully document where blood was taken from and time of sample acquisition. Be extra nice here. Law enforcement has a right to evidence to help the coroner/ME investigation but the ED staff does not *have* to take these blood sample for you either.

j. Urine samples

2. Important Requests for ME (Medical Examiner)

a. Hair sample and chronic drug use analysis ($75). At least save a sufficient head hair sample (pencil thick when twisted) and a pubic hair sample.[5-7]
b. Dr. Deborah Mash Miami brain test ($400). (1-800-UM-BRAIN and www.exciteddelirium.org)[8-10] Must be properly collected, prepped, and frozen usually within 24 hours of death. Ideally frozen in dry ice. Otherwise collect coronal slices flat in bags and freeze in normal freezer. (-4° F or -20° C)
c. If cocaine is suspected, request analysis of brain for it and its metabolite.
d. Due to the importance of the hair and brain test, the LEA (Law Enforcement Agency) should offer to pay for them. The $475 is nothing compared to the typical $1 million settlement, or $100,000s in attorneys fees, for an ARD (arrest-related death).
e. Save the heart (histologic heart blocks may be very important). Heart tissue slides can be critical in establishing myocarditis which is a very common cause of exertional sudden-death in young men.[11-13]
f. If any TASER CEW probes were within 5 cm (2 inches) of the heart, ME should measure the exact distance (in millimeters) from the tip of the probe to the outer surface of the heart.[14,15] Document all probe locations. Fully document what tissues a probe penetrated (entered) and perforated (went through) starting at the outside of the skin and moving closer to the heart (including, but not limited to: epidermis, dermis, dermal fat layer, skeletal muscle, intercostal muscle, pericardial sac). Document if probe was in bone. Document if bone (including sternum) was between the CEW probe and the heart. *Have a histological section taken of all probe marks.*
g. Save blood sample for genetic testing for "long QT" syndrome.
h. The entire gastric content should be submitted for drug analysis and the total amount of drug remaining in the stomach should be quantified
i. Test for the classical drugs (heroin, methamphetamine, MDMA, LSD, and cocaine). Also, test for THC as this is being increasingly linked to unexpected death.[16,17] Also request testing for newer dangerous synthetics such as K2/Spice, bath salts, and JWH-018 (found in fake marijuana).[18-23] **See section 4b.**
j. Test premortem, postmortem, vitreous, and urine samples.
k. There is no need to interfere with organ and tissue donation prior to autopsy unless the ME cannot examine the body before procurement. Protocols have been established to allow the ME to examine the body prior to procurement of organs. The ME has the authority to restrict the taking of certain organs or tissues depending on the circumstances of death, but a blanket denial is not justified. This issue has been thoroughly addressed by the National Association of Medical Examiners and published as a position paper several years ago. It is about to be revised but blanket denials will still be unjustified in the update. Note, however, that in areas where there is no ME or Forensic Pathologist, then a blanket denial may be justified. Hopefully, that would be a rare occurrence in the U.S. The main thing is to be sure the ME is apprised of the circumstances of death and has the ability to examine the body prior to organ procurement (virtually all tissues can be obtained after autopsy).
l. If the victim is African-American or of African descent, request a hemoglobin electrophoresis. This is the best method to determine sickle cell trait.

3. Acute Medical Information.

a. Body Core (rectal or liver) temperature at time of death and as close to collapse as possible.[3,4,24,25]
b. (Premortem) Collect 10 ml (milliliters) of blood as soon as possible after ED arrival for later quantitative drug testing.
c. Document (ideally photograph) all TASER CEW probe and wound locations and marks. Be sure to photograph for context – including inch or cm rulers and body landmarks. Record if they removed the probes or subject arrived without. Millimeters matter, thus, it is very important to carefully document exact locations of probes, marks, etc.
d. Within 24 (preferably less than 12) hours of collapse, brain samples must be properly collected and frozen. Call 1-800-UM BRAIN **(**also **www.exciteddelirium.org)** for shipping instructions.
e. In suspected cocaine, methamphetamine, PCP, LSD, THC, etc. smoking cases, swabs of mouth and bronchial tree are helpful for chemical analysis.
f. Politely remind treating physicians to keep documentation objective and do not speculate or write or document about things they do not understand. Occasionally hospital records will include statements about a "TASER" wound even though there was no TASER CEW used near that specific location.
g. Preemptively stop anyone from attempting to or harvesting any organs or body materials for transplant or other purposes prior to autopsy.

4. Chronic Medical Information.

a. Obtaining hair and toe-nail samples.[5-7] Twist strands of longest head hair available like a lock, about as thick as a pencil lead, hold together to keep strands aligned. Try to include the hair root so the time of drug ingestion can be estimated. Transfer lock to tin foil or paper, fold (to hold together), and secure. Collect similar samples from longest pubic or groin hair.
b. Collect 3 "gray top" tubes of peripheral blood (or cardiac if necessary) for possible later testing of synthetic drugs such as 'bath salts" etc. Note that the normal toxicology laboratory used by your medical examiner is probably not equipped to do these tests.[26,27]
c. Obtain all available past medical records.
d. Obtain all psychological/psychiatric records.[3,4]
e. Obtain printouts from pharmacies used by suspect for past 2 years.
f. Obtain all rehabilitation and treatment records.

5. Circumstances Regarding Arrest.

a. Create highly detailed fully annotated timeline of event, clearly noting those times which are beyond dispute (e.g. dispatch records with dispatch time stamping tied to Internet time)
b. Distance CEW deployed (fired), probe spread, ***probe locations***, number of cycles, timing of cycles, and duration of cycles.
c. Download CEW as soon as reasonably possible after event. Carefully set internal clock (as necessary) to determine clock drift.
d. TASER CEW effects (such as change in behavior).
e. Subject's influence (drugs, alcohol, emotionally disturbed).
f. Any other use of force employed?
g. Was an AED, defibrillator, or cardiac monitor used? (note ownership, manufacturer, model, serial number, all recent maintenance records)

h. Did the AED report a shockable rhythm? (very important to determine which type of shockable rhythm). Did the AED or defibrillator operator manually trigger a defibrillation shock?
i. Expeditiously acquire clean printout (download), electronic data download and maintenance download from the AED or cardiac monitor.
j. How long between the CEW exposure and the subject's collapse? Specifically detailed chronicle of all witnessed behaviors, actions, inactions, physiological status, etc. Plaintiff's lawyers will try to confuse postural collapse (falling down) with cardiovascular collapse (cardiac arrest). Do not add to this confusion.
k. Was the subject walking, fighting, talking, moaning, groaning, or breathing after the CEW exposure? And, for how long – ***do not guess***, be as precise as possible. Normal breathing ceases within 12-60 seconds of cardiac arrest. [28,29]
l. Carefully document all signs of life including pulse (where on body taken, for how long, and by whom.), breathing, moving, moaning, and groaning, and carefully include in fully annotated event timeline.
m. Collect all clothing and treat as evidence: especially any clothing where a CEW probe may have landed, penetrated, punctured, or attached.
n. ME contact info or supporting info from medical attendants and ED.
o. Hospital exam information (if conducted).

6. Interviews.

a. First, expeditiously create KNOWN timeline – dispatch times, CEW downloads (with clock drift corrections), video/audio recordings, AED/cardiac monitor downloads, hospital emergency records, ambulance/fire dispatch and action times. Then, use the interviews to carefully fill in and document the time line – with full annotations.
b. ***Treat the EMTs (Emergency Medical Technicians) and Paramedics at the scene like any other witnesses.*** Get complete readable, detailed, time chronological statements from them about what they observed and what interventions they made. EMTs do not always perfectly document the event. However, they can make medical observations that the LEOs (Law Enforcement Officers) might not realize are important but they will have forgotten by the time their depositions are taken 2 or 3 years later. Where did the probes land? *Don't assume that their standard report has enough information — it does not.*
c. Try to get eyewitness statements that address the rapidity with which the subject went from screaming, struggling, and yelling to unconscious, not breathing and pulseless.[1]
d. Get statements that include whether or not the subject could be heard to be breathing, screaming, yelling, or moaning throughout their confrontation against LEOs efforts to capture, control, and restrain. Screaming and yelling require that air is moving over the vocal cords and demonstrates that at

[1] Remember a respiratory death takes minutes whereas a cardiac death takes only a few seconds. Try to specifically determine the time sequence as clearly and carefully as possible in the early phase of the investigation. Advise LEOs to collect as much information about the passage from activity to unconsciousness as possible. The sequence of events for a sudden cardiac-arrest death as opposed to a respiratory death are markedly different and chronicling exactly what happened, how fast, when, and whether there was resistance, exertion, struggling, or fighting until "all of a sudden" or like a "light switch" things changed can be most important information.

least some degree of ventilation had to take place. How much yelling and screaming?

e. Debrief LEOs and witnesses regarding words and actions manifested by subject. Get details of patterns of walking, talking, gestures, facial expressions, breathing, pulse, etc. Ask interviewees to replay their memory with attention to DUI (Driving Under the Influence)/DRE (Drug Recognition Expert) type details. Sounds, even grunts, growls, and snarls, can be important. Get collaborative reports.
    i. Was suspect growling? How?
    ii. Keening or wailing?
    iii. What words could you make out?
    iv. Huffing and puffing?
    v. Sweating?
    vi. Drooling?
    vii. Eye movements?
    viii. Balance?
f. If subject is only injured and survives, debrief as soon as possible about subjective feelings, thoughts and drug effects. They were the only ones inside their bodies and looking out so ask how they saw and heard the world. Don't translate anything into your own words but describe mannerisms and expressions accompanying their descriptions.
g. SOUNDS: Ask all witnesses to describe any unusual sounds they heard. If they describe sounds like "arcing" or "electrical short" there was probably a connection break and the suspect was not getting current delivered at that time. Even "clicking" heard in a noisy situation or from > 10 ft, in a quiet situation, is indicative of a broken connection. Like a car or refrigerator, when the TASER CEW is making noise, there is usually something wrong. Adverse witnesses love to go on about hearing the electrical noise, thinking they are hurting the police when the opposite is true.
h. Blue lights or lighting: Determine whether anyone saw "blue lights" or "lightning" in the LEO's hand. This indicates that the CEW is arcing at the CEW and not delivering an electrical charge to the person.

7. Evidence Collection.

a. Photos, including contextual, of wounds, marks, etc. and CEW probe or drive-stun impacts with ruler.
b. Photos showing distance of probe or drive-stun spread (i.e. with ruler).
c. Keep the original CEW battery in the CEW (***do not remove***). This will maintain the integrity of the internal clock.
d. Do not discard probes or wires (treat them as evidence). Do not let EMS place probes in "sharps" container as information can be gathered from the probes and wires as to whether or not they actually delivered current.
e. Download CEW data as expeditiously as reasonable (at least within 48 hours) of the event and maintain evidentiary copy of download (including time drift and time drift correction)
f. Collect 2–3 AFID (Anti-Felon Identification) tags and note their location; this will be helpful if multiple CEWs or cartridges were deployed.
g. Collect all audio recordings. Computer analysis can differentiate between the "crackling" sound of a missed (or broken) connection and the "clicking" sound of a good connection. These recording sources may include:
    i. Dash cameras
    ii. TASER CAM

iii. TASER Axon
iv. Tactical radio
v. 911 recordings
vi. Witness mobile phones

8. Medical/Autopsy Data and Tissues

a. All treatment records
    i. EMS
    ii. Emergency department
b. Autopsy report
c. Autopsy microscopic slides (if any were prepared)
d. Autopsy gross tissues (if any were retained)
    i. Heart is especially useful
e. Autopsy photos (it is just as important to determine that there is no mark or sign of injury on the body as it is to show what injuries did occur)

9. If the CEW Did Not Perform as Expected:

a. What was the failure or challenge?
b. What was the subject wearing (especially multiple or thick layers or loose clothing)
c. Was the CEW dropped or subject to a high-moisture environment?
d. What were the operating conditions?
e. Did the CEW fire?
f. Did LEOs hear loud arcing – especially across the front of the CEW?
g. Drive-stun or probe deployment?
h. When was a last successful download or spark test done?

Contact Information:

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