OKLAHOMA DEPARTMENT OF PUBLIC SAFETY

The Execution of Clayton D. Lockett

Case Number 14-0189SI

Department of Public Safety

Executive Summary

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I. BACKGROUND

The State of Oklahoma, through the Office of the Attorney General (OAG), filed an *Application for Execution Date* for Clayton Derrell Lockett on January 13, 2014. Lockett had been convicted of first degree murder for a 1999 case in Noble County and sentenced to death. On January 22, the Oklahoma Court of Criminal Appeals ordered the execution to be set for March 20. Motions were later filed on behalf of Lockett and another offender sentenced to death, Charles Warner, that challenged Oklahoma's execution-secrecy law and execution protocol. On March 18, the Court of Criminal Appeals vacated Lockett's execution date and it was reset for April 22. This order also rescheduled Warner's execution from March 27 to April 29.

On April 9, the Court of Criminal Appeals denied an application for stay made by both offenders. On April 21, the Oklahoma Supreme Court issued a stay of execution for Lockett and Warner. In response, Governor Mary Fallin issued Executive Order 2014-08, which granted a stay of Lockett's execution and rescheduled it for April 29, based on the Supreme Court not having constitutional authority to issue a stay. On April 23, the Supreme Court dissolved their stay. Between April 23 and April 29, an application for extraordinary relief was denied by the courts, as was another request for a stay.

On the morning of April 29, Oklahoma Department of Corrections (DOC) personnel began procedures to prepare for Lockett's and Warner's executions at the Oklahoma State Penitentiary (OSP) in McAlester, Oklahoma. Lockett's execution was scheduled to begin at 6:00 p.m. Lockett was removed from his cell that morning and taken to the Institutional Health Care Center (IHCC), located on prison grounds, for self-inflicted lacerations to the inside of his arms and his pre-execution medical examination. Lockett remained at IHCC until later that afternoon, when he was returned to H-Unit to await his execution.

Lockett was taken to the execution chamber, placed onto the table, and after failed attempts in other locations, an intravenous (IV) line was started in Lockett's right groin area. On the order of Warden Anita Trammell, the administration of execution drugs began. Several minutes into the process, it was determined there was a problem with the IV patency. The execution was stopped and Lockett later died in the execution chamber.

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On April 30, Governor Fallin issued Executive Order 2014-11, which appointed Secretary of Safety and Security and Department of Public Safety (DPS) Commissioner Michael Thompson to conduct an independent review of the events leading up to and during Lockett's execution. This order stated the review should include:

1. An inquiry into the cause of death by a forensic pathologist;
2. An inquiry into whether DOC correctly followed their current protocol for executions;
3. Recommendations to improve the execution protocol used by DOC. The order further directed that the Office of the Chief Medical Examiner (OCME) authorize the Southwestern Institute of Forensics Science (SWIFS) in Dallas, Texas to perform the autopsy, additional examination, and all other related testing of Lockett's remains.

In order to effectuate the examination, OCME was directed to transport Lockett's remains to and from SWIFS. OCME was also ordered to appropriately maintain Lockett's remains until they were released to his family. Commissioner Thompson assembled a team of DPS investigators to conduct this investigation and report its findings. This executive summary, along with its attachments and supporting documentation, are the result of the investigation conducted by this team.

II. INVESTIGATION

This investigation was conducted by a team of six investigators assigned full-time to the case. Nine investigators and a criminal intelligence analyst were also utilized part-time to assist with the case. All investigators were sworn, law enforcement members of the Oklahoma Highway Patrol (OHP) Division of DPS. A medical expert was also consulted during the investigation to assist the investigators in understanding the various technical aspects related to the medical procedures that were performed during the execution. The expert was a current, American Board of Surgery certified physician with more than 35 years of experience in the medical field. The remainder of this section outlines the methodology utilized by the team to complete this investigation.

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A. Autopsy of Clayton D. Lockett

On April 29, at 7:50 p.m., DOC released Lockett's body to the OCME designated transport contractor, Ray Francisco's Embalming Service, who transported the body to OCME in Tulsa, Oklahoma. On the morning of April 30, OCME pathologists began an external examination of the body. A portion of the superficial veins of the right and left arms were explored, photographed and removed. Personnel also obtained a blood sample from the left femoral artery/vein. Around 11:30 a.m., pathologists were notified to stop the examination pursuant to the aforementioned Executive Order. They had not started a posterior body inspection or internal examination. OCME staff sealed the body and evidence in a body bag and placed it in storage. Later that day, Lockett's body and evidence were transported by Ray Francisco's Embalming Service to SWIFS and the transport was monitored by a member of the investigation team.

On May 1, the autopsy of Lockett's body was conducted by Dr. Joni McClain and other SWIFS staff. A member of the investigation team observed the autopsy and evidence processing procedures. Dr. McClain completed the external and internal examinations of the body utilizing SWIFS' normal procedures and protocols. After the autopsy was complete, Lockett's body was released to Ray Francisco's Embalming Service and transported back to OCME in Tulsa.

During this investigation, the investigation team met with the SWIFS pathologists and staff to gain a better understanding of their autopsy process and its findings. The results of the autopsy and the toxicology tests that were completed are summarized in the *Findings* section of this report.

B. Tour of the Oklahoma State Penitentiary

On May 5, the investigation team met with Warden Trammell and several OSP staff members to prepare for a tour of H-Unit and IHCC. The team was escorted through H-Unit, where they viewed the holding cells, shower, execution chamber, executioners' room and medical room. The team also collected evidence during the tour. The team was then escorted to IHCC and viewed the area where Lockett was treated for his self-inflicted wounds and the cell where he was held, until being returned to H-Unit. After the tour, the team met with Warden Trammell and her staff to collect additional evidence and

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retrieve documents requested for the investigation. Several measurements and photographs were taken during the tour to document the execution facilities, which were later used to construct Diagram II.1.

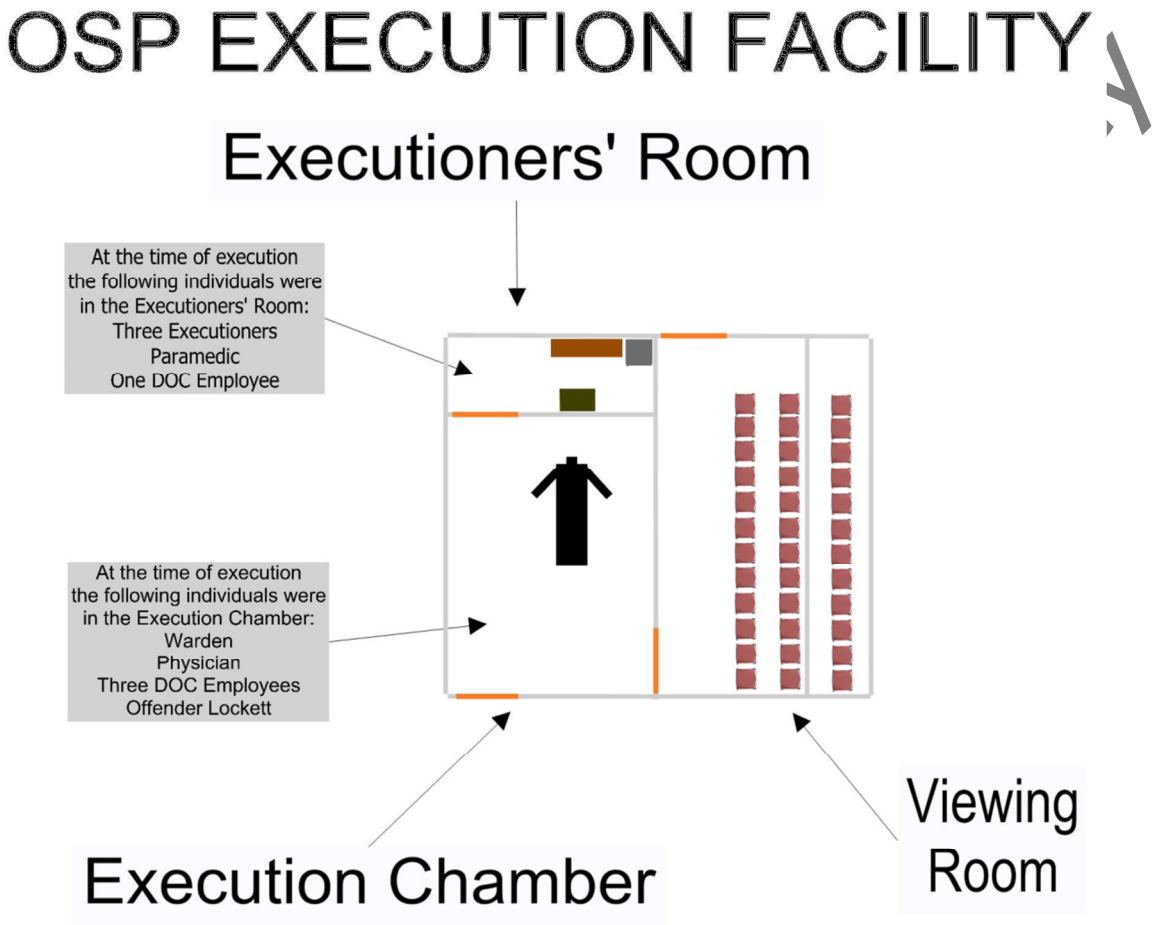

Diagram II.1

On June 30, members of the investigation team returned to OSP to gather additional information from the execution chamber. A team member was strapped to the execution table by two OSP strap-down team members who had strapped Lockett to the table. OSP staff observed the process to ensure that every strap was utilized in the same manner it was on the day of Lockett's execution. The team measured the ability for a person to move and their range of motion, once secured to the table, and took photographs from the viewing room to show the different perspectives from the various seating locations.

C. Collection of Evidence

Numerous items of evidence were collected and preserved during this investigation. This evidence included digital photographs, audio recordings, video recordings, documents and other items of physical evidence. The remainder of this section is a summary of the evidence collected.

During their examination, OCME staff collected a blood sample from Lockett's left femoral artery/vein. An aliquot of that sample was submitted by OCME to NMS Labs in Willow Grove, Pennsylvania, to test for the presence and concentration of midazolam and vecuronium bromide. On June 12, the investigation team obtained another aliquot of that sample and submitted it to ExperTox Laboratory in Deer Park, Texas, to test for the presence and concentration of potassium. In accordance with their normal procedure, OCME had not requested NMS Labs to test for the presence and concentration of potassium. The results of these examinations are included in the *Findings* section of this summary. The remainder of the sample is being stored by OCME.

On May 1, evidentiary items related to the administration of execution drugs to Lockett were released by SWIFS to the investigation team. These items were delivered by a team member to ExperTox. Evidence items that were inside Lockett's body bag and body are being maintained at SWIFS, the Oklahoma State Bureau of Investigation Laboratory or the OHP evidence storage facility. The team also collected the execution drugs and containers that were prescribed to offender Charles Warner. Custody was transferred from OSP personnel to a team member, who hand-delivered them to ExperTox for testing.

On May 5, approximately 200 items of evidence were collected at OSP, during the facility tour. They consisted of items from Lockett's cell, the execution chamber, the executioners' room and video footage from inside the facility prior to the execution. Executions are not recorded; therefore, there was no video footage of the actual execution. These items are being maintained at the OHP evidence storage facility.

D. Review of Surveillance and Camcorder Video

Thirty-two compact disks containing surveillance and camcorder video footage were collected and viewed. Following is a summary of this video provided by DOC:

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1. Video surveillance footage from OSP for April 29, from 5:15 a.m. to 5:22 p.m., that recorded Lockett's movements in H-Unit and IHCC;
2. Camcorder video footage for the planned use of force that showed the extraction of Lockett from his cell on the morning of April 29. The footage contained statements explaining the force, restraints to be used and each extraction team member's duties. The footage also captured his treatment at H-Unit medical, his transport to IHCC, his treatment at IHCC and his X-ray;
3. Camcorder video footage of Lockett refusing a meal on April 29. The footage captured Lockett refusing a meal and had a statement from DOC personnel that Lockett had refused all three meals that day.

E. Documentation Provided by Oklahoma Department of Corrections

Throughout this investigation, several hundred pages of documents were requested and obtained from DOC. This team requested any documentation related to Lockett and his execution, including but not limited to logs, incident reports, timelines and historical medical records. Following is a non-inclusive summary of those documents obtained from DOC.

1. Memorandums from Warden Trammel to OSP personnel;
2. Legal documentation related to Lockett's court proceedings;
3. Use-of-force documentation from April 29, including TASER training records;
4. Property inventory and log of items sent to Lockett's family;
5. Sequence of events, execution logs and execution timeline;
6. Lockett's historical medical records, mental health check information and case manager reports;
7. Execution drugs chain-of-custody forms;
8. Execution duties listed by department and training/practice logs;
9. Lockett's 30-day notification packets;
10. DOC execution procedures;
11. Various incident reports;
12. Affidavit of Warden Anita Trammell related to the execution drugs;
13. Diagram of the execution chamber;
14. Death warrant for Clayton Lockett;

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15. Execution debrief personnel log;
16. Execution chamber key log;
17. Interoffice memorandums, emails and training documents related to the execution duties of DOC personnel.

F. Interviews

During this investigation, 113 people were identified to interview. Of those, 108 were interviewed, four media witnesses who viewed the execution declined to interview and one OCME employee was on extended leave and not available to interview. Follow-up interviews of select witnesses were also conducted. Each interview, with the exception of four, was audio recorded and reduced to a typed report by a transcription service. The four interviews that were not recorded included the three executioners and the pharmacist. Below is a summary of those that were interviewed:

1. The physician, Warden Trammell and three additional DOC personnel that were in the execution chamber at the time of the execution;
2. The paramedic, one DOC employee and the three executioners that were in the executioners' room at the time of the execution;
3. Persons that viewed the execution from the viewing room or overflow area, including personnel from DOC, Office of the Attorney General, media outlets, Lockett's attorneys, members of the Neiman family, the Noble County District Attorney and Sheriff's offices, the Perry Police Department and the Secretary of Safety and Security;
4. Governor Fallin and eight members of her staff;
5. Members of DOC's administrative staff including the Director, Associate Director, District Manager, current and former members of DOC's General Counsel staff;
6. OSP corrections officers involved in different aspects of the execution, including staff who interacted with Lockett several days leading up to the execution;
7. DOC medical and mental health staff members;
8. OCME staff involved in the examination and chain-of-custody of Lockett's body and evidence;

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9. Employees of Ray Francisco's Embalming Service responsible for the transport of Lockett's body;
10. The pharmacist that filled the prescription of execution drugs.

III. FINDINGS

After reviewing and considering all interviews, documentation and evidence gathered during this investigation, this team has reached several conclusions regarding Lockett's execution. Some factors ultimately contributed to the issues that arose during the process, while others directly affected how those issues were handled by the personnel in the execution chamber. Each of this team's findings is listed below, along with a detailed timeline of events.

A. Timeline

The following is a timeline of events that occurred in regards to Lockett's execution. The approximate times associated with each event have been compiled utilizing witness accounts and documentation obtained during this investigation.

April 29, 2014

12:00-4:30 a.m.	DOC personnel conducted a unit check and count in H-Unit every 30 minutes. At 12:30 a.m., personnel conducted a welfare check of Lockett and no problems were noted or discovered.
4:30-5:05 a.m.	The Correctional Emergency Response Team (CERT) arrived at H-Unit and began preparations to remove Lockett from cell SW-3-JJ to escort him to IHCC for x-rays.
5:06 a.m.	CERT arrived at cell SW-3-JJ and Lockett refused to comply with orders. He was covered by a blanket and moving, but would not uncover or approach the cell door to be restrained.
5:09-5:50 a.m.	CERT exited the area of cell SW-3-JJ to prepare for cell entry and extraction. Blood was observed by DOC personnel inside cell SW-3-JJ. A use of force plan was established and approval was given by DOC administration to utilize a TASER.

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5:30 a.m.	DOC personnel performed another check and Lockett failed to comply with the order to approach the cell door and uncover himself.
5:50 a.m.	CERT arrived at cell SW-3-JJ for extraction and determined Lockett had attempted to jam the door. The door was forced open, Lockett refused to comply with verbal commands and a TASER was deployed. CERT members observed self-inflicted lacerations on Lockett's arms.
5:53 a.m.	Lockett was secured by CERT, removed from the cell, placed on a gurney and transported to H-Unit medical. A razor blade from an issued, disposable shaving razor was located inside the cell and confiscated.
5:53-6:45 a.m.	Lockett was medically evaluated at H-Unit medical.
6:35 a.m.	Lockett was transported from H-Unit medical to IHCC. He was placed in IHCC holding cell S2 and remained in handcuffs and leg irons.
6:45 a.m.	DOC personnel entered cell S2 and medical staff evaluated Lockett's lacerations.
7:00-8:15 a.m.	DOC personnel entered cell S2 every 15 minutes to check Lockett.
8:15 a.m.	Lockett was removed from cell S2 and taken to the IHCC emergency room to be examined by DOC medical staff.
8:40 a.m.	Lockett was returned to cell S2.
8:50-9:35 a.m.	DOC personnel entered cell S2 every 10-15 minutes to check Lockett.
9:15 a.m.	Lockett refused visits from his attorneys.
9:42 a.m.	Lockett refused a food tray.
9:55 a.m.	DOC personnel entered cell S2 to check Lockett.
10:15-10:30 a.m.	DOC personnel entered cell S2 to check Lockett every 15 minutes.
10:25 a.m.	Lockett confirmed his refusal to visit with his attorneys.
10:45 a.m.	DOC personnel entered cell S2 to check Lockett and adjust restraints.
11:11 a.m.	Lockett refused a food tray.

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11:20 a.m.	DOC personnel entered cell S2 to check Lockett and adjusted restraints.
11:35a.m.-3:55p.m.	DOC personnel entered cell S2 to check Lockett every 15-20 minutes.
3:35 p.m.	DOC personnel retrieved the execution drugs from refrigerated storage at OSP for transport to the execution chamber.
4:10 p.m.	DOC personnel entered cell S2 to adjust restraints, redress and prepare Lockett for transport from IHCC to H-Unit.
4:15 p.m.	DOC personnel placed the execution drugs in the executioners' room.
4:31 p.m.	The three executioners and paramedic entered the executioners' room and began preparation.
4:40 p.m.	Lockett was transported to H-Unit and placed into shower SW-4.
4:55-5:10 p.m.	Lockett visited with a DOC mental health staff member.
5:19 p.m.	The five strap-down team members and Warden Trammell entered the cell area to remove Lockett from shower SW-4.
5:21 p.m.	Lockett was removed from shower SW-4 and escorted to the execution chamber.
5:22 p.m.	Lockett was placed onto the execution table and strapped down.
5:26 p.m.	The strap-down team exited the execution chamber.
5:27-6:18 p.m.	The paramedic and physician attempted IV placement access in multiple locations and were unsuccessful. The physician believed he started an IV in Lockett's right groin area.
5:45-5:57 p.m.	Victim's witnesses, media personnel, and Lockett's attorneys were summoned to the viewing room and seated.
6:18 p.m.	The paramedic and physician determined the IV line was viable.
6:20 p.m.	The paramedic re-entered the executioners' room.
6:22 p.m.	DOC Director Robert Patton and selected officials were summoned and seated in the viewing room.

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6:23 p.m. Director Patton received approval from the Governor's Office to proceed with the execution. He then approved Warden Trammell to proceed. The blinds between the viewing room and execution chamber were raised and Lockett was asked if he wished to make a statement. He refused and Warden Trammell announced that the execution was to begin.

The full dose of midazolam and an appropriate saline flush were administered. A DOC employee began to keep time on a stopwatch.

6:30 p.m. The signal was given that five minutes had elapsed and the physician determined Lockett was conscious. DOC personnel began to keep additional time on a stopwatch.

6:33 p.m. The signal was given that two minutes had elapsed and the physician determined Lockett was unconscious. Warden Trammel signaled for the execution to continue. The full dose of vecuronium bromide, an appropriate saline flush and a majority of the potassium chloride were administered.

6:33-6:42 p.m. Lockett began to move and make sounds on the execution table. It should be noted that the interview statements of the witnesses regarding Lockett's movements and sounds were inconsistent.

The physician inspected the IV insertion site and determined there was an issue, which was relayed to Warden Trammell.

6:42 p.m. At the direction of Warden Trammell, the blinds were lowered. The executioner stopped administering the potassium chloride.

6:42-7:06 p.m. It should be noted that the interview statements of the individuals in the execution chamber were inconsistent. However, it was determined the following events did occur inside the execution chamber during this time period.

- The paramedic re-entered the execution chamber to assist the physician.
- The physician attempted IV access into Lockett's left, femoral vein. However, no access was completed.

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- When questioned by Warden Trammell, the physician initially believed that Lockett may not have received enough of the execution drugs to induce death. He also believed there were not enough execution drugs left to continue the execution.
- The physician and paramedic continued to monitor Lockett's heart rate utilizing an EKG machine. While attempting to gain the IV access, it was observed that Lockett's heart rate continued to decrease.
- The physician made the observation that the drugs appeared to be absorbing into Lockett's tissue.
- The physician and paramedic concluded that Lockett's heart rate had entered a state of bradycardia and eventually slowed to an observed six beats per minute.
- There were three different recollections of Lockett's movements during this period. Four reported that Lockett did not move, one reported he moved slightly and the last recalled a more aggressive movement.

The following events occurred outside the viewing room door in the H-Unit hallway.

- Director Patton, OAG representatives Tom Bates and John Hadden and Secretary Thompson removed themselves from the viewing room and discussed with the Governor's Office about how to proceed.

6:56 p.m. Director Patton halted/stopped the execution, which was relayed to the execution chamber.

6:57-7:06 p.m. Witnesses were escorted out of the viewing room.

7:06 p.m. The physician pronounced Lockett deceased.

7:50 p.m. After being unstrapped from the execution table, Lockett's body was removed from OSP and transferred to the Office of the Chief Medical Examiner transport.

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B. Autopsy Results for Clayton D. Lockett

Based on the autopsy, Lockett's cause of death was listed as *Judicial Execution by Lethal Injection*. The manner of death was listed as *Judicially Ordered Execution*. SWIFS pathologists concluded that Lockett died as the result of judicial execution by lethal injection. Following is a summary of the findings made by SWIFS personnel during their examination of Lockett's body and additional information obtained by the investigation team from SWIFS or through the investigation:

1. Judicial execution with:
    a. Execution protocol medications used: midazolam, vecuronium and potassium chloride.
    b. History of difficulty finding intravenous access sites resulting in numerous attempts to start an IV.
    c. Attempts in both antecubital fossa, both inguinal regions, left subclavian region, right foot and right jugular region.
2. Superficial incised wounds of the upper extremities consistent with history of self-inflicted incised wounds with a safety razor.
3. Contusions and abrasions of extremities.
4. Cardiac hypertrophy (480 grams)
5. Mild coronary artery atherosclerosis.
6. Hydroxyzine detected.
    a. Lockett was prescribed hydroxyzine, but the prescription had ended March 3. There were emails from DOC personnel alleging Lockett had been hoarding medication. SWIFS personnel stated there were higher than therapeutic levels of hydroxyzine present in Lockett's system and hydroxyzine should not have interfered with the execution drugs administered. They also could not determine when or how much of the hydroxyzine was taken.
7. No evidence of dehydration.
8. No Taser marks on the body.
9. Toxicology indicated elevated concentrations of midazolam in the tissue near the insertion site in the right groin area, which is indicative of it not being administered into the vein as prescribed in execution protocols. The presence of midazolam in the psoas muscle indicates midazolam was distributed

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throughout Lockett's body during the execution. According to SWIFS pathologists, the concentration of midazolam located in Lockett's blood was greater than the therapeutic level necessary to render an average person unconscious.

10. Vecuronium bromide was found in the femoral blood sample taken from Lockett's body. The presence of vecuronium bromide in the psoas muscle indicates vecuronium bromide was distributed throughout Lockett's body during the execution.
11. Potassium was found in the femoral blood sample taken from Lockett's body.

C. DOC Execution Protocols

Regarding whether DOC correctly followed their current execution protocols, it was determined there were minor deviations from specific requirements outlined in the protocol in effect on April 29. Despite those deviations, it was determined the protocol was substantially and correctly complied with throughout the entire process. None of the identified deviations contributed to the complications encountered during this execution.

D. IV Insertion, Viability and Administration of Execution Drugs

The physician and paramedic made several attempts to start a viable IV access point. They both believed the IV access was the major issue with this execution. This investigation concluded the viability of the IV access point was the single greatest factor that contributed to the difficulty in administering the execution drugs.

While exploring this issue, several DOC personnel made statements referencing Lockett purposefully dehydrating himself. Lockett made statements to the paramedic that he had been dehydrating himself for three days. However, SWIFS pathologists found no indication that Lockett was dehydrated at the time of his execution. SWIFS also concluded Lockett's blood loss from the self-inflicted wounds to his arms should not have caused issues with the IV access.

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Interviews and documentation indicated several vein checks had been performed by DOC medical personnel leading up to and on the day of the execution. Each check indicated that Lockett's veins were "good". At least three interviews of DOC medical personnel indicated they viewed Lockett's veins on the morning of the execution. Their observations concluded his veins were "good" and acceptable for IV access.

The IV insertion process was started by an emergency medical technician licensed as a paramedic. The paramedic had been licensed in emergency medical services for more than 40 years and as a paramedic for over 20 years. This person had also instructed at the intermediate level. The licenses possessed at the time of the execution were valid until 2015 and were from the Oklahoma State Department of Health and the National Registry of Emergency Medical Technicians. The paramedic provided the prison a copy of the above licenses in January or February 2014. The paramedic estimated he/she had been involved in every lethal injection execution in Oklahoma, except for two. His/her specific assignments were to start an IV, ensure a proper infusion of saline, attach a cardiac monitor to Lockett and during the execution, make sure the executioners did their part of the procedure aseptically, at the correct time and the correct speed.

The IV access was completed by a physician licensed as a medical doctor. The physician graduated medical school over 15 years ago, currently worked in emergency medicine and was certified in family medicine. His license expires July 1 of each year and was current at the time of the execution. He had not provided a current copy of his license to DOC prior to April 29, but days later was called and asked for a copy. This was his second execution with the first being four to five years earlier. The physician understood his duties were to assess Lockett to determine if he was unconscious and ultimately to pronounce his death. He was contacted two days prior to the execution date and asked to fill in for another physician that had a scheduling conflict.

Before Lockett was moved into the chamber, the paramedic prepared the IV lines and available execution tools. He/she also verified the drugs were properly labeled and were for Lockett. After Lockett was brought to the chamber and secured to the execution table, the paramedic began to assess his veins. The paramedic first attempted access in the left arm and found a vein with an 18-gauge needle/catheter and observed flashback, a condition sought during IV placement. The paramedic did not have adhesive tape on

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his/her person to secure the catheter. Before the tape was retrieved, the vein became unviable. The paramedic then attempted two additional IV insertions into the left arm using the same type needles/catheters, but never observed flashback.

After these attempts, the physician became involved and attempted IV access into Lockett's left, external jugular vein utilizing a 1¼ inch, 14-gauge needle/catheter. During his interview, the physician stated he penetrated this vein and obtained flashback. Seconds later, it became unviable and he was unable to continue with that vein. As the physician was attempting this access, the paramedic was attempting IV access into Lockett's right arm. After three attempts, the paramedic was unable to start a viable IV access point in this arm.

Next, the physician attempted to locate the subclavian vein on Lockett's left side utilizing a central venous catheritization kit. During the attempt, the physician observed a very small amount of flashback, but he was unable to repeat it. The physician believed the needle was penetrating through the vein. He noted during his interview he did not have access to an ultrasound machine, which is a commonly used tool to locate and penetrate veins.

As the physician attempted subclavian access, the paramedic attempted IV access in two separate locations on Lockett's right foot with 20 gauge needles/catheters. The paramedic said the veins rolled and disappeared during those attempts. The paramedic believed the needle penetrated the veins, but flashback was never observed. The paramedic did not attempt access into any other veins because the physician made the decision to attempt access into a femoral vein.

The physician requested a longer needle/catheter for the femoral access. The paramedic attempted to locate a 2 or 2½-inch, 14-gauge needle/catheter, but none were readily available. The physician also asked for an intraosseous infusion needle, but was told the prison did not have those either. Both agreed their preferred needle/catheter length would have been 1¾ to 2½ inches. The physician had never attempted femoral vein access with a 1¼ inch needle/catheter; however, it was the longest DOC had readily available. An additional central venous catheterization kit was available, but the physician did not think about utilizing one for femoral access.

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Lockett's scrub pants and underwear were cut in order to expose the femoral area. The physician located the femoral vein and believed the vein was penetrated because he observed good flashback. The paramedic taped the catheter to Lockett's body, and stated during his/her interview it became positional. The physician believed it was bending because of its length. He and the paramedic positioned the catheter where they were able to observe slow infusion of saline and secured it with adhesive tape. The autopsy did not conclude the femoral vein was punctured. However, SWIFS personnel indicated they only examined the portion of the femoral vein that had been dissected by OCME and not the entire vein.

The physician was asked about starting a second IV line. He stated he was not going to make another attempt. The physician and paramedic were comfortable with the IV placement and the infusion of saline through the line. This was not the first execution in Oklahoma where only one IV access point had been obtained and protocol allowed for only one access point.

Warden Trammell decided to cover Lockett's body with a sheet, including the IV insertion area, which, according to her, was normal in all executions. Another reason for her decision was to maintain Lockett's dignity and keep his genital area covered. From that time, no one had visual observation of the IV insertion point until it was determined there was an issue and the physician raised the sheet. Warden Trammell acknowledged it would be her normal duty to observe an IV insertion point for problems. She believed if the IV insertion point had been viewed, the issue would have been detected earlier. The physician added that an IV would normally be monitored by watching the flow of the IV line and the area around the insertion point for any signs of infiltration. This investigation found that neither of these observations occurred, which led to the issue being discovered several minutes after the execution began.

After the IV insertion was complete, the paramedic went into the executioners' room and the physician remained in the execution chamber. Once Warden Trammell announced it was time to begin the execution, the paramedic began the procedure to administer the drugs. The paramedic first used a hemostat to clamp the IV line above the access port, to stop the flow of execution drugs from going up the line. The IV drip was never reestablished after that point. The midazolam and the appropriate flushes were

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administered into the single access port by the executioners in the order they were presented by the paramedic. The paramedic and executioners were certain the drugs were pushed steady and in the proper manner because of their past experiences in performing the same roles. The DOC employee in the executioners' room then began to keep time using a stopwatch.

According to execution protocol, the vecuronium bromide shall not be administered until at least five minutes after the administration of midazolam. Prior to the execution, DOC administration determined if Lockett was not unconscious after five minutes, he would be checked every two minutes, until he was declared unconscious. Five minutes after the administration of midazolam, the physician determined Lockett was conscious. After an additional two minutes, the physician determined that Lockett was unconscious.

Warden Trammell signaled for the execution process to continue. The executioners, with assistance from the paramedic, began administering the vecuronium bromide, the potassium chloride and the appropriate saline flushes. Both syringes of the vecuronium bromide, appropriate saline flushes, the first full syringe of potassium chloride and a portion of the second syringe of potassium chloride were administered. At some point during the administration of these two drugs, Lockett began to move and the physician recognized there was a problem.

The physician approached Lockett and indicated to Warden Trammell that something was wrong. He looked under the sheet and recognized the IV had infiltrated. At this same time, Warden Trammell viewed what appeared to be a clear liquid and blood on Lockett's skin in the groin area. The physician observed an area of swelling underneath the skin and described it as smaller than a tennis ball, but larger than a golf ball. The physician believed the swelling would have been noticeable if the access point had been viewed during the process.

The execution process was stopped as one of the executioners was administering the second syringe of potassium chloride. The executioner immediately stopped pushing the syringe with approximately 10 milliliters of potassium chloride remaining. The remainder of the drug was later wasted into a bio-hazard bin by the paramedic.

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The blinds to the execution chamber were lowered and the paramedic exited the executioners' room to assist the physician. The physician told the paramedic the catheter dislodged. The paramedic observed the catheter was tilted to one side and believed it was no longer penetrating the vein. The physician decided to attempt IV insertion into the left-side femoral vein. The physician first penetrated Lockett's femoral artery and another access point into the vein was never completed because the physician believed the drugs were being absorbed into his tissue.

The physician and paramedic were unsure when the catheter became dislodged and how much of each drug had made it into Lockett's vein. The autopsy indicated elevated concentrations of midazolam in the tissue near the insertion site in the right groin area, which was indicative of the drugs not being administered into the vein as intended. Thus, the IV access was not viable as early as the administration of the midazolam.

E. Toxicology Results of Femoral Blood Sample: Clayton D. Lockett

On May 14 and May 19, OCME documented the toxicology results they received from NMS Labs on an aliquot of the femoral blood sample they obtained from Lockett's body on April 30. The results indicated a midazolam concentration of 0.57 mcg/mL and a vecuronium concentration of 320 ng/mL. On June 26, ExperTox completed toxicology testing of an aliquot of the same femoral blood sample. The results of this test indicated a potassium concentration of 0.74 mole/L. It should be noted that testing for the concentration of potassium after death can be problematic due to the body's natural processes, which cause an increase in the concentrations of potassium in the blood over time.

F. Toxicology Results of Execution Supplies: Clayton D. Lockett

On May 5, ExperTox completed testing of the execution supplies utilized during Lockett's execution. They analyzed the contents by liquid chromatography/triple quad mass spectrometry (LC/MSMS) and inductively coupled argon plasma-mass spectrometry (ICP-MS) for the detection and quantitation of midazolam, vecuronium bromide and potassium chloride. ExperTox reported the following:

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1. The two syringes labeled midazolam contained residues consistent with the listed label content of 5 mg/mL.
2. The two syringes labeled vecuronium bromide contained residues consistent with the listed label content of 1 mg/mL.
3. The two syringes labeled potassium chloride contained residues consistent with the listed label content of 2 meq/mL.
4. The IV Tubing connected to two 0.9% NaCl one liter IV bags contained sodium chloride, blood, residues of vecuronium bromide at the final concentration of 0.013 g/mL and residues of potassium chloride at the final concentration of 1.3 meq/mL.

G. Toxicology Results of Execution Drugs: Charles Warner

On May 5, ExperTox completed testing of the drugs intended for use during the execution of Charles Warner. They analyzed the contents by LC/MSMS and ICP-MS for the detection and quantitation of midazolam, vecuronium bromide and potassium chloride. These tests were also utilized to determine drug agent potency. ExperTox reported the following:

1. The two 0.9% NaCl injection USP 1 liter IV bags tested consistent with the listed contents.
2. The seven 0.9% NaCl 50 mL bags tested consistent with the listed contents.
3. The two syringes labeled midazolam tested consistent with the listed label content of 5 mg/mL.
4. The two syringes labeled vecuronium bromide tested consistent with the listed label content of 1 mg/mL.
5. The two syringes labeled potassium chloride tested consistent with the listed label content of 2 meq/mL.

H. Execution Protocol Training of Execution Team

This investigation determined that DOC personnel did conduct training sessions as required by the protocol in effect on April 29. The sessions were conducted during the weeks and days leading up to the execution and consisted of planning meetings, on-the-job training for each of the respective positions in the execution chamber and

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executioners' room and walk-through training sessions for all involved staff members. The paramedic, physician and the three executioners were not included in this training prior to the day of the execution. The final training session included DOC administrative staff reviewing the sequence of events with all parties in the execution chamber just prior to the execution.

Field Memorandum OSP-040301-01, *Procedure for the Execution of Offenders Sentenced to Death*, outlines the training requirements that should occur prior to an execution. The following is a summary of the training procedures that were conducted prior to Lockett's execution.

1. A deputy warden or designee was required to review the sequence of events inside the executioners' room with the executioners and paramedic prior to each execution. Documentation and interviews substantiated this requirement was completed on April 29 at 5:06 p.m.
2. The paramedic was required to give the following instructions to the executioners, "Administer the drugs at a steady flow without pulling back on the plunger of the syringe." The paramedic did not give this statement prior to this execution. However, the three involved executioners had been involved in multiple executions prior to Lockett's and each acknowledged their roles and duties. The paramedic also acknowledged his/her role to ensure the executioners did their job aseptically, at the correct time, speed and dosage.
3. The warden was required to review the sequence of events with the physician and other DOC personnel in the execution chamber prior to beginning the execution. Interviews and documentation indicated this occurred on April 29 at 5:15 p.m.
4. DOC protocol required the strap-down team to conduct a walk-through of the strap-down procedures no later than two weeks prior to the execution. There were multiple walk-through training sessions conducted prior to Lockett's execution. The last session was conducted within two weeks of Lockett's execution, as required by protocol.

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This investigation revealed areas of training that need to be addressed. It was noted there was no formal training process involving the paramedic, the physician or the executioners and their specific roles. They were not involved in any pre-execution training or exercises to ensure they understood the overall process. For those individuals, the current protocol had very minimal training requirements. The executioners only receive formal training from the paramedic on the day of the execution and informal training from previous executioners during actual executions.

Warden Trammell and Director Patton both acknowledged the training DOC personnel received prior to the execution was inadequate. Warden Trammell stated the only training she received was on-the-job training and that DOC had no formalized training procedures or processes concerning the duties of each specific position's responsibility. The warden and director both indicated DOC had no training protocols or contingency plans on how to proceed with an execution if complications occur during the process.

I. Contingency Planning for Executions

The DOC execution protocol in effect on April 29 had limited provisions for contingencies once the execution process began. One contingency allowed the physician to assist with initial IV access and the other concerned life-saving measures if a stay was granted. After it was determined that problems were present during Lockett's execution, personnel involved with the execution were unaware of how to proceed due to the lack of policies and/or protocols in place at that time. It was determined that no contingency actions were taken inside the chamber other than the physician attempting to locate the femoral vein on Lockett's left side, which was never completed prior to his death.

J. Cessation of Execution Protocols

When an issue with the administration of execution drugs was discovered, the blinds between the chamber and viewing room were lowered. Several conversations took place inside and outside the chamber regarding how to proceed. The conversation outside the chamber included whether to continue or how to stop the execution. The conversations inside the chamber included whether to provide life-saving measures.

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Outside the execution chamber, there were several conversations between Director Patton, Secretary Thompson, OAG representatives at the execution and General Counsel Steve Mullins with the Governor's Office. It was determined between Director Patton and General Counsel Mullins, who had conversed with the Governor, that the execution would be stopped. Director Patton then relayed to the witnesses and the personnel in the chamber that the execution was being stopped. In an additional conversation, General Counsel Mullins further told Director Patton that they would begin preparing a stay at the direction of the Governor. Lockett died prior to the order for a stay being relayed to the personnel inside the execution chamber. There was conversation inside the chamber about administering life-saving measures to Lockett, including transporting him to the emergency room, but no order was given.

K. Two Executions Scheduled on the Same Day

It was apparent the stress level at OSP was raised because two executions had been scheduled on the same day. This was the first time since 2000 two offenders were scheduled to be executed the same day. Four days prior to the execution, the protocol was revised to accommodate the logistics for two offenders.

Several comments were made about the feeling of extra stress. Warden Trammell believed this caused extra stress for all staff. The paramedic stated he/she felt stress and a sense of urgency in the air. This was based on him/her having been involved in numerous executions.

L. Maintenance of Daily Logs

In accordance with protocol, OSP staff maintained a daily log of events and occurrences related to Lockett. Protocol stated, "Seven days prior to the execution of an offender sentenced to death, a daily log will be kept regarding every aspect of the proceedings except names." This investigation determined the information recorded on the logs was incomplete.

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M. Use of Midazolam, Vecuronium Bromide and Potassium Chloride

The new three drug protocol utilized in this execution included the administration of midazolam, vecuronium bromide and potassium chloride. It was determined vecuronium bromide and potassium chloride had both been used in previous executions as the second and third drugs to be administered. This was the first Oklahoma execution where midazolam was used.

On April 14, midazolam was the newest drug added to the protocol after it was determined pentobarbital was not available. Pursuant to the death warrant, a dosage of 100 mg was ordered and administered to Lockett. According to protocol, vecuronium bromide was to be administered at a total quantity of 40 mg and the potassium chloride at a total quantity of 200 meq. These dosages were equivalent to the quantities used in other Oklahoma three-drug methods dating back to at least 2011.

This investigation could not make a determination as to the effectiveness of the drugs at the specified concentration and volume. They were independently tested and found to be the appropriate potency as prescribed. The IV failure complicated the ability to determine the effectiveness of the drugs.

On the day of the execution, OAG representatives presented an affidavit to Warden Trammell related to the execution drugs. The warden signed the affidavit and attested that the drugs had been obtained legally from a licensed pharmacy and had been handled appropriately, since their acquisition. Interviews of DOC and OAG staff revealed this type of affidavit had been signed in the past, but never on the day of an execution. According to OAG representatives, the affidavit was executed on the day of the execution, due to ongoing litigation concerns regarding the drugs.

N. Historical Incident Reports and Medical Records

The investigation team obtained historical incident reports, emails and medical records from OSP regarding Lockett. The incident reports included approximately 42 instances where Lockett was disciplined for behavioral issues and for contraband located or suspected by DOC personnel. Examples include:

1. A cellular telephone was discovered in Lockett's cell several months prior to the execution;

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2. DOC personnel suspected Lockett had been hoarding Vistaril (hydroxyzine) from a prescription that ended March 3;
3. A homemade rope was discovered on the floor of Lockett's cell during his extraction on the day of the execution;
4. A razor blade from an issued, disposable shaving razor was discovered in Lockett's cell on the day of the execution.

The review of Lockett's medical records by a medical professional indicated that he had no past medical conditions or factors that would be considered problematic for IV insertion or drug administration.

O. Lockett's Movements and Sounds after Drug Administration

The description of Lockett's movements and sounds varied among the witnesses. The movement descriptions ranged from quivering to thrashing, but most agreed Lockett's head did rise off the table. There were differing recollections regarding whether Lockett's eyes opened after he was deemed unconscious. The sound descriptions varied from mumbling to Lockett making statements. The recollections varied greatly; therefore it was difficult to determine what was said, if anything.

Several conclusions were made pursuant to the execution table assessment. While strapped to the table, the team member made attempts to move all parts of his body. He was able to rotate his feet inward and outward, move his shoulders slightly and his head had a full range of motion. He was not able to bend or move his knees and had minimal movement in his hips as he attempted to move from side to side. He could not move his hips up and down. The hands had no movement and the arms had minimal movement due to the elbow having limited motion. Based on what was observed, witnesses would have a different perspective of the amount of movement depending on where they were seated. Due to the restrictiveness of the straps, the movements were minimal to non-existent with the exception of the head and feet.

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IV. RECOMMENDATIONS

Based on the findings, the following recommendations are made for future lethal injection executions in Oklahoma. DOC, the Office of the Attorney General and any other entity or individual responsible for execution protocols in this state are urged to thoroughly research, review and deliberate these recommendations prior to their implementation. Further, DOC should review and consider policies and protocols from other states responsible for executions. Any changes to the current policies and protocols should comply with Oklahoma and federal law.

A. Observation of IV Insertion Point(s) and Infusion

1. The IV catheter insertion point(s) should remain visible during all phases of the execution and continuously observed by a person with proper medical training in assessing the ongoing viability of an IV. This person should remain inside the execution chamber during the entire process.
2. Once the appropriate saline infusion has started, it should not be stopped, except for the times that execution drugs are being administered. It should be continuously monitored to assist in ensuring IV viability in accordance with current medical practices and standards;
3. After one hour of unsuccessful IV attempts, DOC should contact the Governor to advise the status and potentially request a postponement of the execution.

B. Training and Maintenance of Execution Log for Condemned Offenders

1. Conduct formal, specific training related to information documented on all execution logs.
2. The information to be recorded on execution logs should include, but not be limited to:
    a. all statements or behaviors that could be detrimental to completing an execution;
    b. all meals provided to an offender and what portions of the meals the offender consumed or refused;

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c. all medication provided to an offender and the observations made by personnel as to whether the offender ingested the medication as prescribed;
d. all liquids consumed by the offender.

C. Additional Execution Supplies

DOC should maintain and provide their own equipment and supplies ensuring their operability prior to each execution.

1. DOC should obtain from the selected pharmacist, one complete, additional set of each execution drug being utilized for an execution to be used in the event an issue arises with the primary set.
2. DOC should consult with appropriate medical personnel to determine any and all supplies or equipment necessary including, but not limited to the following:
    a. Heart monitoring equipment;
    b. Venous ultrasound equipment;
    c. Appropriate needle/catheters to coincide with the IV access options listed in protocol.

D. Contingency Plans in Protocols/Policy

DOC should evaluate and establish protocols and training for possible contingencies if an issue arises during the execution procedure. DOC should consider planning for contingencies including, but not limited to:

1. Issues with execution equipment or supplies;
2. Issues with offender IV access, including obtaining alternate IV access site(s);
3. The offender is not rendered unconscious after execution drug administration;
4. A combative offender;
5. Unanticipated medical or other issues concerning the offender or an execution team member;
6. Issues regarding order, security or facilities at OSP.

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E. Formal and Continuing Training Program for Execution Personnel

DOC should establish formal and continual training programs for all personnel involved in the execution process. They should explore successful training procedures used by other correctional institutions and implement accordingly.

F. Formal After-Action Review of the Execution Processes

At the conclusion of each execution, all personnel with assigned execution duties should attend an after-action review. The review should be completed within five business days and conducted by the director or his designee. The events that occurred during the execution should be discussed in detail and each involved person should discuss their responsibilities and observations. The review should serve as an opportunity for all involved personnel to voice their opinions, concerns and/or recommendations in order for continuous improvement to the process. The review should be formally documented and retained for future reference.

G. Defined Execution Terminology

It was apparent during this investigation that specific terminology should be clearly defined so they are understood by all personnel involved in the execution process. This will allow DOC, OAG and Governor's Office personnel to have a common understanding of how each term affects the execution process and the actions that should take place, if such terms are used. Defined terms should include, but are not limited to "stop," "stay," and "halt".

H. Completion of One Execution per Seven Calendar Days

Due to manpower and facility concerns, executions should not be scheduled within seven calendar days of each other.

I. Updated Methods of Communication

The current communication methods used during the execution process are antiquated and require unnecessary multi-tasking from key personnel in the execution chamber. DOC should explore options on how to update the following:

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1. Communication between the execution chamber and executioners' room.
    a. DOC should research and implement modern methods that allow personnel in these two areas to communicate clearly.
    b. The current processes, including the use of color pencils and hand signals, could be used as a contingency if other modern methods fail.
2. Communication between DOC and the Governor's Office.
    a. DOC should research and implement methods to modernize the communication link that would allow direct, constant contact between the personnel in the execution chamber and the Governor's Office.

J. Disposition of Executed Offender's Property

DOC should explore maintaining an executed offender's personal property and any items removed from his/her cell until the autopsy report is completed. This would allow DOC administrative personnel time to determine if such property should be maintained for an additional period of time, if appropriate circumstances exist. In any event, no property should be released until it has been properly searched and inventoried.

K. Execution Witness Briefing

As a result of the changing execution protocols and procedures, DOC should conduct a prepared pre-execution briefing with all attending witnesses. This briefing should include, but not be limited to the following:

1. An overview of the events the witnesses will view during the execution process, including an explanation that witnesses will not be allowed to view all aspects of the execution;
2. Requirements regarding the conduct of witnesses throughout the process.

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