STATE OF CALIFORNIA
LETHAL INJECTION PROTOCOL REVIEW

May 15, 2007

Arnold Schwarzenegger, Governor
State of California

James E. Tilton, Secretary
Department of Corrections and Rehabilitation

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California Department of Corrections and Rehabilitation
Lethal Injection Protocol Review Team

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Executive Summary

Since 1993, California law has authorized capital punishment by lethal injection. San Quentin State Prison Operational Procedure No. 0-770 (OP 770) is California's protocol governing executions by lethal injection. This protocol, like those used by the federal government and most other states, provides for lethal injection by way of three chemicals intravenously injected into the condemned inmate scheduled for execution. The three-chemical protocol includes using:

Sodium Thiopental–a barbiturate sedative, to induce unconsciousness;

Pancuronium Bromide–a neuromuscular blocking agent, to induce paralysis, and cause breathing to cease; and,

Potassium Chloride–to induce cardiac arrest.

On February 21, 2006, Michael Angelo Morales, the Plaintiff in *Morales v. Tilton,* was scheduled to be the twelfth inmate executed by lethal injection in California. Morales' execution was stayed because of his challenge to California's administration of its lethal injection protocol. Morales challenged the constitutionality of his execution, contending that San Quentin State Prison's OP 770, the current protocol for lethal injection, and the manner in which the California Department of Corrections and Rehabilitation (CDCR) implements it, would subject him to an unnecessary risk of excessive pain, thus violating the Eighth Amendment's command that cruel and unusual punishments not be inflicted.

After lengthy review and an evidentiary hearing, on December 15, 2006, Judge Fogel, United States District Court, Northern District of California, issued a Memorandum of Intended Decision; Request for Response from the Defendants, *Morales v. Tilton, et al.*, in which the court identified five deficiencies in California's lethal injection protocol. The specific deficiencies identified were:

1. Inconsistent and unreliable screening of execution team members;
2. A lack of meaningful training, supervision, and oversight of the execution team;
3. Inconsistent and unreliable record keeping;
4. Improper mixing, preparation, and administration of sodium thiopental by the execution team; and
5. Inadequate lighting, overcrowded conditions, and poorly designed facilities in which the execution team must work.

The Court also stated, "Defendants' implementation of lethal injection is broken, but it can be fixed." The Court also expressed its belief "that the Governor's Office is in the

best position to direct the changes needed to correct the deficiencies noted in the Court's Memorandum."

In response to the Memorandum of Intended Decision, and as directed by the Governor, the CDCR initiated a review of all aspects of the lethal injection protocol and its implementation. Following the review, the CDCR initiated action to address all of the identified deficiencies noted by the Court in its Memorandum of Intended Decision.

Finally, as an integral element of the review, the CDCR considered alternatives to the existing three-chemical protocol including a one-chemical protocol. Based upon the information considered, the CDCR has elected to substantially revise the three-chemical protocol used as California's method of execution.

The actions taken by the CDCR to address the specific deficiencies noted by the Court, coupled with other modifications to the procedure, will assure the condemned inmate is rendered unconscious by the sodium thiopental and remains unconscious during the injection of the pancuronium bromide and the potassium chloride. The revisions to California's Lethal Injection Protocol will result in the dignified end of life for the condemned inmate.

Introduction

Capital punishment has been an authorized punishment in California from the time of statehood. Over the years the laws governing capital punishment and the methods for its implementation have faced numerous legal challenges. Repeatedly, the voters of the State of California and the State Legislature have expressed their support for capital punishment.

Here, the method of execution is being challenged, and specific deficiencies in the Lethal Injection Protocol have been identified. The CDCR has been directed to take the actions necessary to address the deficiencies.

This report outlines the steps taken to address any deficiencies and ensure that the Lethal Injection Protocol meets constitutional standards.

Background

Evolution of Capital Punishment

> "The Framers of our Constitution were not far removed from a society in which condemned prisoners were put to death by being beheaded, drawn, and quartered. The Eighth Amendment was adopted in part as a response to such brutality, and it since has been construed by our Supreme Court to require that punishment for crimes comport with 'the evolving standards of decency that mark the progress of a maturing society'." *Roper v. Simmons*, 543 U.S. 551, 561 (2005) quoting *Trop v Dulles*, 356 U.S. 86, 100-01 (1958) (plurality opinion).
>
> "The use of lethal injection in executions represents an evolution from earlier methods such as hanging, electrocution, and lethal gas that now are viewed by most jurisdictions as unduly harsh." *Morales v. Tilton (Memorandum of Intended Decision–P.13, 16-19).*

History of Capital Punishment in California

The Criminal Practices Act of 1851 authorized legal executions to be carried out by the sheriff of each county in California. On February 14, 1872, capital punishment was incorporated into the California Penal Code, stating in part:

> *A judgment of death must be executed within the walls or yard of a jail or some convenient private place in the county. The Sheriff of the county must be present at the execution …*

Capital punishment continued on a county level until 1891 when the California State Legislature enacted an amendment to the Penal Code that provided:

> *A judgment of death must be executed within the walls of one of the State prisons designated by the court by which judgment is rendered.*

As a result of the 1891 statute, the warden of the prison replaced the sheriff as the person, who must be present at the execution, and an invitation to the attorney general, rather than to the district attorney, was required.

Executions by hanging were conducted at both San Quentin State Prison and Folsom State Prison. In August 1937, the California State Legislature replaced hanging as the method of capital punishment with the use of lethal gas. The gas chamber was installed at San Quentin State Prison in 1938, and on December 2, 1938, the first executions by lethal gas occurred at San Quentin State Prison.

Beginning in 1967, as a result of various State and United States Supreme Court decisions, there were no executions in California for a 25-year period. In 1972, the California Supreme Court found that the death penalty constituted cruel and unusual punishment under the California State Constitution and 107 condemned inmates were re-sentenced to terms of life with the possibility of parole, and removed from California's death row.

In 1972, the California electorate amended the State Constitution, and in 1973 enacted legislation making the death penalty mandatory in specified criminal cases. In 1976, the California Supreme Court held that the California death penalty statute was unconstitutional under the Federal Constitution because it did not allow mitigating circumstances to be admitted as evidence. In 1977, the California Legislature re-enacted the death penalty allowing for evidence in mitigation, and in 1978, California voters approved Proposition 7 reaffirming the death penalty in California. Although the death penalty was reinstated in California in 1978, executions did not resume in California until April 1992.

In 1993, California law changed to allow condemned inmates to choose either lethal gas or lethal injection as a method of execution. San Quentin State Prison developed lethal injection protocols based upon protocols from other jurisdictions.

In October 1995, a United States District Court ruled that the use of cyanide gas was considered cruel and unusual punishment. In February 1996, this ruling was upheld by the United States Ninth Circuit Court of Appeals, thus barring California from using the existing lethal gas protocol as a method of execution unless selected by the inmate.

The first execution by lethal injection in California occurred in February 1996. Since that date, eleven condemned inmates have been executed in California by lethal injection with the last execution occurring on January 17, 2006.

On February 21, 2006, Michael Angelo Morales, the Plaintiff in *Morales v. Tilton,* was scheduled to be the twelfth condemned inmate executed by lethal injection in California. Morales' execution was stayed as a result of his challenge to the administration of the lethal injection protocol.

Current Death Penalty Challenge

Morales challenged the constitutionality of his execution contending that San Quentin State Prison's OP 770, the protocol for lethal injection, then in effect, and the manner in which the CDCR implements it would subject him to an unnecessary risk of excessive pain, thus violating the Eighth Amendment's command that cruel and unusual punishments not be inflicted.

Memorandum of Intended Decision; Request for Response from Defendants

On December 15, 2006, Judge Fogel, United States District Court, Northern District of California, issued a Memorandum of Intended Decision; Request for Response from the Defendants (Memorandum). Judge Fogel framed the question presented in this case very narrowly:

> "does California's lethal-injection protocol—as actually administered in practice—create an undue and unnecessary risk that an inmate will suffer pain so extreme that it offends the Eighth Amendment?" *Morales v. Tilton (Memorandum of Intended Decision–P.2, 24-26).*

The Court concluded that absent effective remedial action by CDCR, it would be compelled to answer the question presented in the affirmative, stating:

> "Defendants' implementation of lethal injection is broken, but it can be fixed." *Morales v. Tilton (Memorandum of Intended Decision–P.3, 9-12).*

Operational Procedure No. 770

San Quentin State Prison Operational Procedure No. 0-770 (OP 770) is California's protocol governing executions by lethal injection. This protocol, like those used by the federal government and most other states, provides for lethal injection by way of three chemicals injected into the inmate being executed:

Sodium Thiopental–a barbiturate sedative, to induce unconsciousness;

Pancuronium Bromide–a neuromuscular blocking agent, to induce paralysis, cause breathing to cease; and,

Potassium Chloride–to induce cardiac arrest.

On January 13, 2006, Morales filed the present action contending that OP 770, and the manner in which it was implemented, would subject him to an unnecessary risk of excessive pain, thus violating the Eighth Amendment.

The Court reviewed, in detail, evidence from previous execution logs, and finding anomalies in six logs, stated that:

> "… inmates' breathing may not have ceased as expected in at least six out of thirteen executions by lethal injection in California." *Morales v. Tilton* (Memorandum *of Intended Decision–P.4, 16-18).*

This and other evidence raised concerns that condemned inmates may not have been unconscious when they were injected with pancuronium bromide and potassium chloride, chemicals that would cause an unconstitutional level of pain if injected into a conscious person.

The Court found:

> "…the amount of sodium thiopental to be given to the condemned person pursuant to OP 770 is sufficient to cause virtually all persons to become unconscious or even to cease breathing within one minute." *Morales v. Tilton (Memorandum of Intended Decision–P.9, 12-14).*
>
> "Accordingly, assuming that the sodium thiopental is delivered properly, there should be virtually no risk that an inmate will suffer an unconstitutional level of pain." *Morales v. Tilton (Memorandum of Intended Decision–P.9, 16-18).*

Therefore, the Court noted:

> "As it has from its inception, the resolution of this case turns on a single factual question: whether OP 770, as implemented, provides constitutionally adequate assurance that condemned inmates will be unconscious when they are injected with pancuronium bromide and potassium chloride." *Morales v. Tilton (Memorandum of Intended Decision–P.9, 6-9).*
>
> "…the record in this case … is replete with evidence that in actual practice OP 770 does not function as intended." *Morales v. Tilton (Memorandum of Intended Decision–P.9, 19-21).*
>
> "There can be no real doubt that Defendant's implementation of OP 770 has major flaws …" *Morales v. Tilton (Memorandum of Intended Decision –P.13, 4-5).*

Identified Deficiencies

In the Memorandum the Court noted:

> "The evidence shows that the protocol and Defendants' implementation of it suffer from a number of critical deficiencies, including:
>
> 1. Inconsistent and unreliable screening of execution team members.
> 2. A lack of meaningful training, supervision, and oversight of the execution team.
> 3. Inconsistent and unreliable record keeping.
> 4. Improper mixing, preparation, and administration of sodium thiopental by the execution team.
> 5. Inadequate lighting, overcrowded conditions, and poorly designed facilities in which the execution team must work." *Morales v. Tilton (Memorandum of Intended Decision–P. 9-11)"*
>
> "In light of the substantial questions raised by the records of previous executions, Defendant's actions and failures to act have resulted in an undue and unnecessary risk of an Eighth Amendment violation." *Morales v. Tilton (Memorandum of Intended Decision–P.13-14, 21-22; 1).*
>
> "Because the Court is prepared to find that the sequence of the three drugs described in OP 770, when properly administered will provide for a constitutionally adequate level of anesthesia, and given that the deficiencies in the implementation of the protocol appear to be correctable, a thorough, effective response to the issues raised in this memorandum likely will enable the Court to enter such a favorable judgment." *Morales v. Tilton (Memorandum of Intended Decision-P. 14-15, 23-25; 1-2).*

Lethal Injection Protocol Review

As contemplated by the Court, a review of the lethal-injection protocol must include:

> "…the manner in which the drugs are injected, the means used to determine when the person being executed has lost consciousness, and the quality of contemporaneous records of executions, such as execution logs and electrocardiograms." *Morales v. Tilton (Memorandum of Intended Decision–P.16, 2-5).*

To be meaningful, the Court said:

> "…such a review may require consultation with independent experts and with other jurisdictions, and it must be undertaken with an openness to the idea of making significant improvements in the 'infrastructure' of executions." *Morales v. Tilton (Memorandum of Intended Decision–P.16, 5-8).*

Additionally, the Court stated:

> "…because of the paralytic effect of the pancuronium bromide, a determination of the inmate's anesthetic depth after being injected with that drug is extremely difficult for anyone without substantial training and experience in anesthesia, the protocol must ensure that a sufficient dose of sodium thiopental or other anesthetic actually reaches the condemned inmate and that there are reliable means of monitoring and recording the inmate's vital signs throughout the execution process." *Morales v. Tilton (Memorandum of Intended Decision–P.16, 9-14).*
>
> "An adequate protocol also must include a means of providing additional anesthetic to the inmate should the need arise*." Morales v. Tilton (Memorandum of Intended Decision–P.16, 14-15).*

Finally, the Court noted:

> "Because an execution is not a medical procedure, and its purpose is not to keep the inmate alive but rather to end the inmate's life, the Court agrees with the Defendants that the Constitution does not necessarily require the attendance and participation of a medical professional. However, the need for a person with medical training would appear to be inversely related to the reliability and transparency of the means for ensuring that the inmate is properly anesthetized: the better the delivery system, the less the need for medical participation." *Morales v. Tilton (Memorandum of Intended Decision–P.16, 15-21).*
>
> "…because the constitutional issues presented by this case stem solely from the effects of pancuronium bromide and potassium chloride on a person who has not been properly anesthetized, removal of these drugs from the lethal-injection protocol, with the execution accomplished solely by an anesthetic, such as sodium pentobarbital, would eliminate any constitutional concerns, subject only to the implementation of adequate, verifiable procedures to ensure that the inmate actually receives a fatal dose of the anesthetic." *Morales v. Tilton (Memorandum of Intended Decision–P.16-17, 22-25; 1-2).*

The Court directed:

> "Accordingly, and good cause therefore appearing, within thirty days Defendants shall advise the Court and Plaintiffs of their response to this

memorandum, including specifically, whether Defendants and the Governor's Office intend to review and revise OP 770 further and, if so, how much additional time, if any, they believe they will need to complete the task." *Morales v. Tilton (Memorandum of Intended Decision–P.17, 6-9).*

Governor's Office Response to Memorandum of Intended Decision

On January 16, 2007, the Governor's Office submitted a response to the Court's December 15, 2006, Memorandum of Intended Decision stating, in part:

"Although the Governor is not a party to this case, he appreciates the Court's invitation to address the deficiencies in implementation of the lethal injection protocol identified in the Memorandum of Intended Decision filed December 15, 2006, (Memorandum) and the opportunity to review, evaluate, and revise the current lethal injection protocol." *Governor's Office Response to Memorandum of Intended Decision–P.1, 3-6.*

"The Court expressed its belief that the Governor's Office is in the best position to direct the changes needed to correct the deficiencies noted in the Court's Memorandum." *Governor's Office Response to Memorandum of Intended Decision–P.1, 21-22.*

"In response to the Court's December 15, 2006 Memorandum, the Governor's Office took immediate action. The next business day, the Governor directed his administration to correct the deficiencies identified by the Court." *Governor's Office Response to Memorandum of Intended Decision–P.1-2, 27-28; 1.*

"…the Governor directed his administration to:

1. establish a screening process for selection of execution team members and a periodic review process for team members;
2. establish a comprehensive training program for all execution team members;
3. develop standardized record keeping to ensure there are complete and reliable records of each execution;
4. recommend how to improve the death penalty facility at San Quentin Prison to ensure there is adequate equipment, lighting and space for the execution team; and
5. identify the best experts to provide advice on the lethal injection protocol and its implementation." *Governor's Office Response to Memorandum of Intended Decision–P.2, 2-9.*

Defendants' Response to Memorandum of Intended Decision

On January 16, 2007, the CDCR submitted a response to the Court's December 15, 2006, Memorandum of Intended Decision stating, in part:

> "The Defendants and the Governor's Office intend to review and revise OP 770 and to correct deficiencies in the implementation of the protocol." *Defendants' Response to Memorandum of Intended Decision–P.2, 17-18.*

> "To allow a thorough review and opportunity to take corrective action, Defendants will submit to the Court and Plaintiff a report setting forth a revision of OP 770 and identifying corrective actions addressing deficiencies in the implementation of lethal injection executions by May 15, 2007." *Defendants' Response to Memorandum of Intended Decision-P.2, 23-26.*

Review Methodology

Scope

The scope of the CDCR's review included, but was not limited by, the Memorandum. In addition to a review and revision of OP 770, with focused evaluation and effective responses addressing each of the five specified deficiencies, the CDCR sought to identify other improvements to the lethal injection protocol. The review included consultation with individual experts and site visits to other jurisdictions with the goal of improving all aspects of the lethal injection process.

Participation

The CDCR assembled a team to conduct the review. The team members were selected on the basis of their background, experience, and expertise. The staff selected had a variety of experience in line, supervisory, management, and administrative positions.

Some team members made site visits. Selected staff attended related training in another jurisdiction. The team members and selected staff reviewed schematics, prepared working documents, reviewed and drafted OP 770 and lesson plans, and drafted and reviewed final reports.

Document Review

The review began with the identification, collection and examination of relevant information. Volumes of information were reviewed including testimony of expert

witnesses related to the instant case as well as others. Information reviewed also included the Final Report with Findings and Recommendations completed on March 1, 2007, by *The Governor's Commission on Administration of Lethal Injection*, subsequent to the execution of Angel Diaz in the State of Florida on December 13, 2006 and the Tennessee Department of Correction, *Report on Administration of Death Sentences in Tennessee,* issued in April 2007.

Lethal Injection Survey

The CDCR prepared a lethal injection survey to gather relevant lethal injection protocol information. The survey included questions specific to the five deficiencies noted in the Memorandum. The survey was distributed to the 37 states and the federal government that utilize lethal injection as a method of execution. The CDCR received responses from 15 jurisdictions. The responses were reviewed, analyzed, and recorded. An assessment of the responses confirmed that all jurisdictions were using a similar combination of chemicals as those set forth in California's lethal injection protocol at the time of the *Morales v. Tilton* legal challenge. However, there was some notable degree of variance in the quantities used and methods of administration.

Site Visits

As an integral element of the review, physical site visits were made to other jurisdictions to examine both the implementation of the existing lethal injection protocols and the facilities in which executions were conducted.

Sites were selected after considering the content of the Memorandum, the results of the survey, recommendations from legal staff, and the willingness of the jurisdictions to participate. In all, site visits were made to four other jurisdictions, as well as multiple visits to San Quentin State Prison. The four site visits were: Virginia Department of Corrections, Greensville Correctional Facility; Oklahoma State Penitentiary, McAlester, Oklahoma; Indiana State Prison, Michigan City, Indiana; and The Federal Correctional Complex at Terre Haute, Indiana. All jurisdictions were helpful in discussing their protocols and allowing tours of their execution facilities. Each of the jurisdictions used the same three-chemical protocol, as is currently the protocol for California; however, each differed slightly in the quantity of chemicals and method of administration. Each jurisdiction also had a dedicated facility in which executions were conducted, and while each differed slightly from the others, there were basic similarities among them.

Expert Consultation

Considerable discussion surrounded the selection and consultation with experts in the subject of execution by lethal injection. In the instant case, the Court considered volumes of testimony and documentary evidence from experts on the subject. Much of

that information, including testimony and reports of Dr. Mark Heath, was made available and reviewed by team members and selected CDCR staff involved in this effort. Volumes of additional information, including testimony of experts on this subject in other cases nationwide was also obtained and reviewed.

The CDCR also obtained the services of a nationally renowned anesthesiology. The consultant reviewed several proposed revisions to the Lethal Injection Protocol and provided comments to the CDCR.

Barriers

In its Memorandum, the Court noted, that to be meaningful, the CDCR's review may require consultation with independent experts and with other jurisdictions. During the review, the absence of a protective order was found to limit access to one jurisdiction with considerable experience in execution by lethal injection. Other jurisdictions were reluctant to share written procedures. Nevertheless, the cooperation, information, and advice obtained from the jurisdictions responsive to the survey, and those who consented to site visits, was invaluable, not only to this review, but also in allowing California to make the improvements to its lethal injection protocols.

Improvements

The CDCR has taken the following steps to address the deficiencies noted by the Court in its Memorandum and to otherwise improve the lethal injection process.

1. Screening of Execution Team Members

The Court stated the CDCR's lethal injection process included inconsistent and unreliable screening of execution team members. To correct this deficiency, the CDCR has developed a formal process for selection of execution team members.

With the assistance of the Director, Division of Adult Institutions (DAI), the Warden will coordinate the recruitment and selection of Lethal Injection Team Members. The Lethal Injection Team will consist of a minimum of 20 members to be determined by the Warden. If necessary, the CDCR may contract with specialists to perform specific duties during the lethal injection process.

A panel of staff will be designated to review the qualifications of potential Lethal Injection Team Members. The Warden will chair an interview panel of at least three members, including the Associate Director, Reception Centers, to interview the candidates and make the selection of Lethal Injection Team Members based on the following established criteria. Each team member must:

- Volunteer.
- Have consistently demonstrated professional job performance and demeanor.
- Have a good attendance record.
- Have no prior stress claims.
- Have no history of Corrective Action within the preceding three years and no sustained disciplinary action during State employment.
- Have received annual performance evaluations that meet or exceed performance expectations during State employment.
- Not be on probation in his or her current position. (This criteria does not apply to promotions made subsequent to initial placement on the Lethal Injection Team).
- Not have been assigned to any condemned housing unit during the preceding twelve months.

The Warden will personally review the performance of Lethal Injection Team Members annually to ensure they continue to meet the initial screening criteria. Any Lethal Injection Team Member who no longer meets the screening criteria will be immediately removed from the Team.

2. Meaningful Training, Supervision, and Oversight of the Execution Team

The Court stated the CDCR's lethal injection process lacked meaningful training, supervision, and execution team oversight. To address the Court's noted deficiencies, the CDCR developed formalized training plans for all Lethal Injection Team Members and specialized team functions. The CDCR has also developed and will implement procedures for the execution team to be closely supervised and monitored.

Specifically, an Associate Warden will provide direct management oversight for the training of the Lethal Injection Team Members, including the Lethal Injection Team Leader. The Lethal Injection Team will train at least once per month for at least 8 hours, and will attend additional training as directed by the Lethal Injection Team Leader and approved by the Associate Warden. All Team Members must attend a minimum of six training sessions within the six-month period immediately preceding a scheduled execution. Any specialists contracted to perform specific duties during the lethal injection process will train, at least annually, with the Lethal Injection Team, and during each of the three days immediately prior to a scheduled execution. All Lethal Injection Team Members will attend all scheduled training unless on approved vacation or sick leave.

All training (with the exception of any specifically appropriate certification training and updating) will take place at the dedicated Lethal Injection Facility. Training is designed to provide each Lethal Injection Team Member with specific knowledge of all aspects of OP 770, duties of their specific assignments, recent executions in other jurisdictions,

current litigation, and potential problems with recommendations for avoidance or resolution.

To improve the content and quality of training to be provided to the Lethal Injection Team Members, during the week of April 16, 2007, the CDCR sent seven employees to attend training provided by the Federal Bureau of Prisons at Terre Haute, Indiana. During the training, the CDCR staff actively participated in exercises identical to the actual protocol for execution by lethal injection used by the Federal Bureau of Prisons. Following training, the CDCR staff, in consultation with staff from CDCR's Office of Training and Professional Development, constructed initial lesson plans for the Lethal Injection Team and for each of its specialized teams:

Lethal Injection Team

- Lethal Injection Security Team
- Lethal Injection Intravenous Team
- Lethal Injection Infusion Team
- Lethal Injection Record Keeping Team.

The training for all Lethal Injection Team Members will include, but not be limited to:

- Custody and care of the condemned inmate;
- Overview–Intravenous catheter application and vein access;
- Identification of chemicals used in the process, including:
    - Characteristics and effects of each chemical used;
    - Proper preparation and mixing of the chemicals;
- Infusion process;
- Security of the Lethal Injection Facility;
- Proper report writing and record keeping; and,
- Potential problems and recommendations for avoidance or resolution.

Additionally, all Lethal Injection Team Members assigned to specific functional areas will receive additional training relative to those functions.

Lethal Injection Security Team Members

Training will include, but not be limited to:

- Application of restraint equipment;
- Escort and transportation of condemned inmates;
- Inmate and staff relations;
- Effective communication;
- Departmental Use of Force Policy and use of force options; and,
- Potential problems and recommendations for avoidance or resolution.

Lethal Injection Intravenous Team Members

Training will include, but not be limited to:

- Training necessary to maintain a current certification and licensure for initiation and monitoring of intravenous catheters in peripheral veins;
- Training necessary to maintain current certification and licensure for placement of ECG leads and monitoring of ECG during the lethal injection process; and,
- Potential problems and recommendations for avoidance or resolution.

Lethal Injection Infusion Team Members

Training will include, but not be limited to:

- Proper mixing of chemical(s) used in the lethal injection process;
- Sequence and rate of infusion of the lethal injection chemicals;
- Proper handling and accountability of lethal injection chemicals; and,
- Potential problems and recommendations for avoidance or resolution.

Lethal Injection Record Keeping Team

Training will include, but not be limited to:

- Report writing;
- Accurate record keeping; and,
- Specific documentation required for the Lethal Injection Protocol.

In addition to the regularly scheduled monthly training for Lethal Injection Team Members, the Lethal Injection Team will be activated three days immediately prior to a scheduled execution. Daily training and preparedness exercises will be conducted throughout this period.

The training and certification of Lethal Injection Team Members will be documented by the Lethal Injection Team Leader under the direction of the assigned Associate Warden. Identity of Team Members will be confidential. Records will be maintained and properly secured, by the Associate Warden and reviewed by the Warden at least quarterly.

Additional Execution Team Oversight

Following an execution, the Warden and the Associate Warden will conduct a debriefing with all of the Lethal Injection Team Members. All documents and records concerning the execution will be collected by the Associate Warden and secured for follow-up review.

An Execution Report will be prepared immediately following each execution. The Lethal Injection Team Leader will complete a San Quentin State Prison Execution Report,

Part A, Summary. Each Team Member will complete an Execution Report, Part B, Supplemental Report. Identity of Team Members will be confidential.

The completed Execution Report will include all appropriate supplemental reports. Following review by the Associate Warden, the Execution Report will be routed through the Chief Deputy Warden for the Warden's review and signature. A copy of the Execution Report will be delivered through the Associate Director, Reception Centers to the Director, DAI, for review and follow-up as determined necessary. The original Execution Report will be maintained in the Execution File.

After Action Critique

Within 72 hours following an execution, the Warden will conduct an "After Action Critique" to evaluate the execution from all operational perspectives for compliance with OP 770. The critique will be documented for inclusion in the Master Execution File with other records of the execution.

3. Consistent, Reliable Record Keeping

The Court stated the CDCR's lethal injection process was flawed by inconsistent and unreliable record keeping. To address this deficiency, the CDCR developed a formal process, including the assignment of Lethal Injection Team Members specifically to the record keeping function.

The CDCR has developed specific forms, processes, and formats to ensure that complete and accurate record keeping is achieved. Specialized training will be provided to all Lethal Injection Team Members on the subject of report writing and proper record keeping. Selected Lethal Injection Team Members will be assigned to the Record Keeping Team to ensure proper documentation is achieved at each stage of the execution process. These selected Lethal Injection Team Members will receive focused training on the specific formats and records to be maintained for documenting an execution. During regularly assigned training, as the Lethal Injection Team rehearses for an actual execution, the Record Keeping Team will practice documenting the events with the established forms and report formats.

The forms and reports prepared by the Record Keeping Team during rehearsals will be reviewed and critiqued by the Lethal Injection Team Leader and the Associate Warden for accuracy and completeness. Additionally, each Lethal Injection Team Member will prepare an Execution Report, Part B Supplemental Report documenting his or her assignment and duties during the execution.

4. Proper Use of Sodium Thiopental by the Execution Team

The Court stated the CDCR's lethal injection process included improper mixing, preparation, and administration of sodium thiopental by the execution team. To address this deficiency, the CDCR developed training processes for proper mixing, preparation, and administration of sodium thiopental.

Of the three chemicals, only sodium thiopental requires mixing. The chemical is a powder that must be mixed with a liquid before it is administered. The chemical is available, pre-packaged, in a variety of quantities, containing the powder and the appropriate quantity of liquid to be mixed together to obtain optimal solution. From the review of literature, site visits, discussions with personnel from other jurisdictions and the consultant, the CDCR has determined that proper mixing of sodium thiopental can only be achieved by adhering strictly to the manufacturer's instructions.

Lethal Injection Team Members assigned to the Infusion Team will practice mixing sodium thiopental on an on-going basis during regularly scheduled training and rehearsal. The rehearsal will emulate the Lethal Injection Protocol actually used during an execution, and will include preparation of the syringes and administration of the lethal chemical(s) through intravenous lines in the manner used in the execution to the highest degree possible. The training and practice of the preparation, mixing, and administration of the chemical(s) will be conducted under the supervision of the Lethal Injection Team Leader with direct oversight by the Associate Warden. All training and practice will be fully documented in training files. Strict accountability of the issuance, use, and disposal of the chemicals will be maintained during all training and practice just as during an execution, by direct supervision of the Lethal Injection Team Leader, oversight by the Associate Warden, and use of the Chain of Custody form.

5. Lethal Injection Facility

The Court stated the CDCR's lethal injection chamber provided inadequate lighting, overcrowded conditions and poorly designed facilities in which the execution team must work.

To address these deficiencies, designated CDCR staff reviewed the Memorandum and visited the existing Execution Chamber at San Quentin State Prison. The existing Execution Chamber was originally constructed in 1938 to accommodate a change in the law authorizing capital punishment by lethal gas. The "Gas Chamber" was specifically designed for execution by lethal gas.

Following another change in the law in 1993, authorizing capital punishment by lethal injection, modifications were made to the gas chamber to allow executions by lethal injection to occur. Since the change in the law and the modification of the gas chamber, a total of eleven condemned inmates have been executed by lethal injection using the chamber.

Designated CDCR staff conducted an on-site evaluation of the existing execution chamber to determine whether additional modifications could be made to address the deficiencies identified by the Court. Because California law permits a prisoner to choose lethal gas as the means of execution, it was important that the structural integrity of the gas chamber not be irreversibly compromised. The assessment concluded that it was not practical to make additional modifications to address the noted deficiencies.

Current law requires that all executions be conducted within the walls of San Quentin State Prison. Therefore, assigned staff completed a tour of the grounds of San Quentin State Prison in an attempt to identify alternative sites that, with modification, could be converted to a dedicated Lethal Injection Facility. The tour identified an existing secure building. The building had enough floor space that, with modification, could be developed into a dedicated Lethal Injection Facility.

An additional review of the building by staff from the CDCR Office of Facilities Management was conducted. Following this review, it was concluded that modification to the building could be made to convert the building into a dedicated Lethal Injection Facility that would address the deficiencies identified by the Court.

The CDCR staff that conducted site visits and reviewed lethal injection protocols at other jurisdictions were also able to tour several dedicated lethal injection facilities at those sites. There were basic similarities, including a lethal injection room where the condemned inmate is executed in view of witnesses, and separate viewing rooms for official witnesses, members of the victim's families, and other witnesses. There were separations, either a curtain or a wall, between the condemned inmate and the infusion team. In addition, there were cells for the confinement of the condemned inmate immediately before an execution.

In years past, relocating the condemned population or at least a portion of it from San Quentin State Prison to other institutions within the CDCR had been considered. In addition, the need for a Lethal Injection Facility at the new locations was also considered. The Office of Facilities Management had previously prepared schematics for such a Lethal Injection Facility. In considering the feasibility of modifying the newly identified secure building at San Quentin State Prison these schematics were reviewed. (A schematic for the existing Execution Chamber and the new Lethal Injection Facility are attached to this report. In addition, digital virtual tours of the two facilities are available on the CDCR website at www.cdcr.ca.gov).

Based upon the assessments, the physical modifications of the building moved forward. However, after the physical modifications had begun, it became apparent the modifications would exceed authorized funding limits. Therefore, the modification of the facility was suspended pending authorization for additional funding. Funding for completion of the Lethal Injection Facility is included in the Governor's Budget for Fiscal Year 2007/08. (See May Revise released on May 14, 2007).

Upon completion, the new Lethal Injection Facility will address the structural deficiencies identified by the Court. The facility will be specifically designed for its intended purpose. Lighting will be more than adequate and sufficient space will be available to accommodate the needs of the Lethal Injection Team as well as the witnesses.

Additionally, the CDCR will prohibit observers in the area designated for the Lethal Injection Team to prevent overcrowding during an execution and maintain the dignity of the process.

6. The Lethal Injection Protocol

Review of OP 770 included consideration of the chemical(s) used and the method of administration.

A one-chemical protocol was considered. Five grams of sodium thiopental would be expected to cause death. The use of only one chemical, sodium thiopental, has the advantages of being simpler to administer and virtually eliminates the potential for pain. However, the use of only one chemical also has disadvantages. Since no other jurisdiction currently uses only one chemical, the protocol remains untested. The use of only a barbiturate would likely result in involuntary muscle movement, with unpredictable consequences. Finally, the execution may take an extended period of time.

The three-chemical protocol was also re-examined. The advantages to retaining a three-chemical protocol are:

- All jurisdictions that use lethal injection for executions use the same three-chemical combination in varying amounts, in the same sequence of administration, and have in most cases done so in the course of many executions conducted over many years.
- The lethality of the three-chemical combination is unquestioned, and when properly administered, the protocol will result in a pain free, dignified end of life for the condemned inmate.

The disadvantage is that unless the condemned inmate is rendered unconscious by the sodium thiopental prior to the administration of the pancuronium bromide and the potassium chloride, the inmate would suffer unnecessary pain.

There is no doubt that the amount of sodium thiopental given to the condemned inmates, as reflected in the last previous versions of OP 770, was sufficient to cause virtually all persons to become unconscious within less than one minute. The Court commented:

> "…the Court is satisfied that even one and one half grams of sodium thiopental, *if properly administered,* are sufficient to eliminate any unconstitutional risk that an inmate will be conscious when the pancuronium bromide and the potassium chloride are injected." *Morales v. Tilton (Memorandum of Intended Decision-P.9, footnote 6).*

However, the earlier versions of OP 770 made no provisions for any objective assessment of consciousness of the condemned inmate following administration of the sodium thiopental, and prior to the administration of the other chemicals. As noted by the Court:

> "…the Lethal Injection Team Members are too far away to permit effective observation of any unusual or unexpected movements by the condemned inmate, much less to determine whether the inmate is conscious…" *Morales v. Tilton (Memorandum of Intended Decision-P.11, 18-20).*

There are reliable, but relatively uncomplicated methods for effectively assessing consciousness that have been incorporated into the Lethal Injection Protocol. Among them are talking to and gently shaking the inmate, as well as lightly brushing the eyelash.

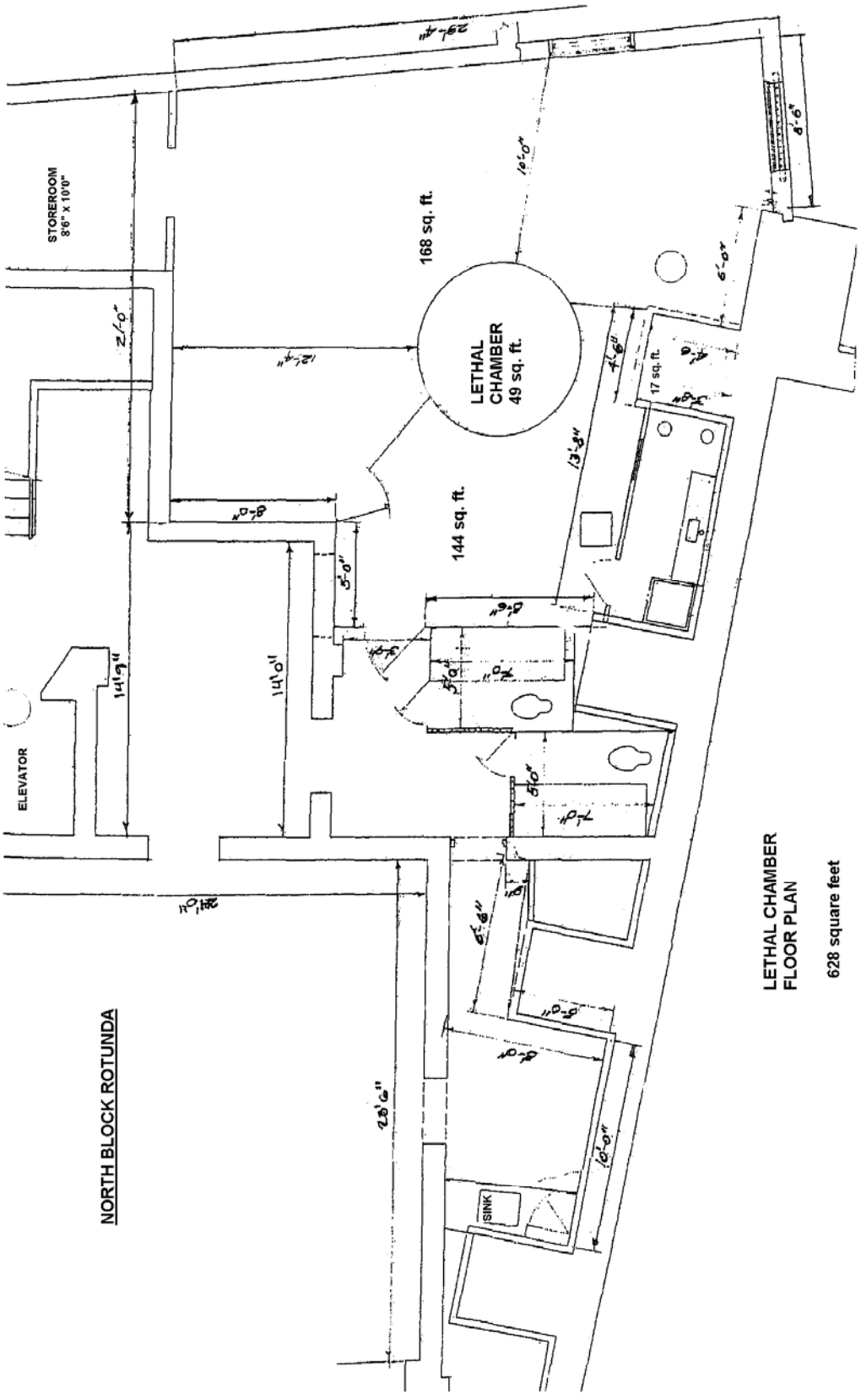
Changes were made to the protocol to place staff in close proximity to the condemned inmate throughout the execution to assess and confirm the condemned inmate is unconscious prior to and during the administration of the pancuronium bromide and the potassium chloride.

Considering this and other information from literature reviewed, as well as information from other jurisdictions and consultation with an expert, the CDCR elected to retain the three-chemical protocol as the method of execution by lethal Injection in California. An overview of the revised protocol is included as an attachment to this report.

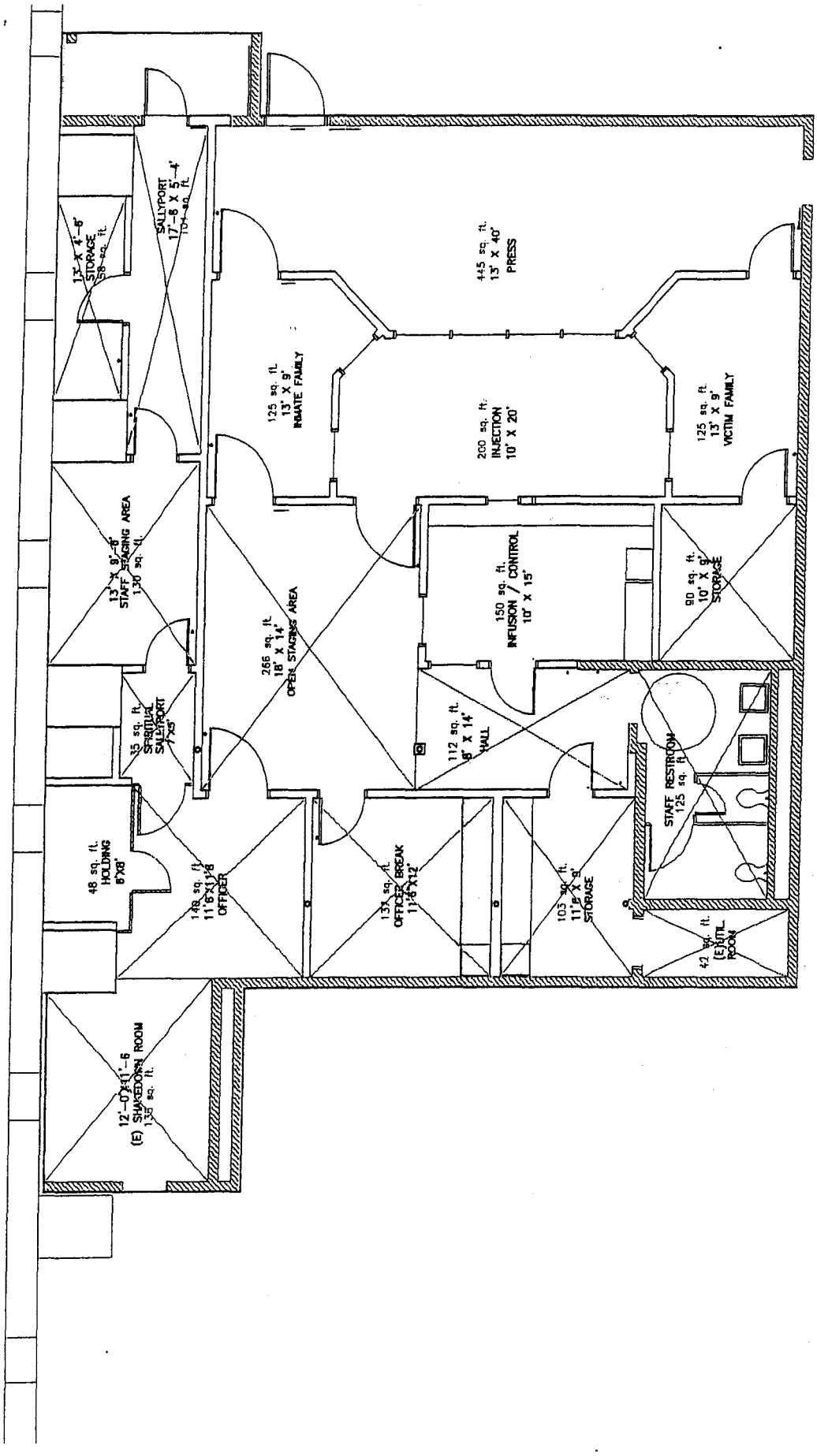
These improvements and others will ensure the Lethal Injection Protocol is followed and any unnecessary risk of excessive pain is eliminated. These changes will also instill an appropriate degree of care and professionalism in carrying out "the solemn task of executions in the State of California."

Attachment A

California Department of Corrections and Rehabilitation
San Quentin State Prison Execution Chamber



California Department of Corrections and Rehabilitation
San Quentin State Prison Proposed Lethal Injection Site



2570 square feet

Attachment C

California Department of Corrections and Rehabilitation
Revised Three-Chemical Lethal Injection Protocol

- Bilateral intravenous catheters will be initiated and maintained with saline drips.
  - One catheter is designated as primary to administer the lethal chemicals.
  - One catheter is designated as back up if the primary fails.
- The Warden will remain in the execution room to observe the condemned inmate throughout the execution.
- A member of the Intravenous Team will remain in the execution room in close proximity to the condemned inmate to observe the condemned inmate throughout the execution. The Intravenous Team Member will continuously monitor the patency of the intravenous catheters and assess the consciousness of the condemned inmate.

- The lethal chemicals will be administered as follows:
  - Two identical trays of lethal injection chemicals will be prepared:
    - Tray "A" color-coded red
    - Tray "B" color-coded blue
- Syringes will be colored-coded and labeled by content and sequence of administration:
  - Beginning with Tray "A"
    - **#1—60cc syringe: 1.5 grams sodium thiopental** will be administered, followed by an assessment of the condemned inmate; the Intravenous Team Member will brush the back of his/her hand over the condemned inmate's eyelashes, and speak to and gently shake the condemned inmate. Observations will be documented. If the condemned inmate is unresponsive, it will demonstrate that he is unconscious. Regardless, the Protocol will continue as follows:
    - **#2—60cc syringe: 1.5 grams sodium thiopental** will be administered.
    - **#3—60cc syringe: 50cc saline flush** will be administered, followed by another assessment of consciousness as outlined above. Observations will be documented. At this point if the condemned inmate is determined to be unconscious, the Warden will authorize the protocol to proceed in the following sequence:

    - **#4—60cc syringe: 50 mg pancuronium bromide**
    - **#5—60cc syringe: 50cc saline flush**
    - **#6—60cc syringe: 100 ml/Eq potassium chloride**
    - **#7—60cc syringe: 100 ml/Eq potassium chloride**
    - **#8—60cc syringe: 50cc saline flush**
- If, following the administration of syringe #2 and syringe #3, the assessment indicates the condemned inmate is not unconscious, the Warden will direct that the injection through the primary intravenous catheter, be discontinued and the entire sequence be re-initiated using chemicals on Tray B via the designated back-up intravenous catheter.
- Complete records will be made and retained of the exact sequence and quantities of the chemicals administered.
- Vital signs will be monitored via ECG.
- Death will be pronounced by a doctor.