

PERFORMANCE AUDIT
OF THE
FORENSIC SCIENCE DIVISION
MICHIGAN DEPARTMENT OF STATE POLICE
October 2003

“...The auditor general shall conduct post audits of financial transactions and accounts of the state and of all branches, departments, offices, boards, commissions, agencies, authorities and institutions of the state established by this constitution or by law, and performance post audits thereof.”

– Article IV, Section 53 of the Michigan Constitution

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Michigan
Office of the Auditor General
REPORT SUMMARY

Performance Audit

Report Number:
 55-160-02

Forensic Science Division

Michigan Department of State Police

Released:
 October 2003

The mission of the Forensic Science Division (FSD), Michigan Department of State Police (MSP), is to provide leadership, development, coordination, and delivery of "state of the art" forensic services to the criminal justice community.

Audit Objective:

To assess the effectiveness and efficiency of FSD in providing forensic science services to criminal justice agencies.

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Audit Conclusion:

We concluded that FSD was generally effective and efficient in providing most forensic science services to criminal justice agencies. However, because of statutory changes affecting deoxyribonucleic acid (DNA) processing and staffing levels that have remained constant, not all DNA forensic services were being completed in a timely manner.

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Noteworthy Accomplishments:

FSD has continuously maintained American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB) accreditation since first obtaining it in 1984. FSD's ASCLD/LAB accreditation was most recently renewed in October 2002. This accreditation is fundamental in ensuring the credibility of forensic science services.

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Reportable Condition:

The Combined DNA Index System (CODIS) database is incomplete and, therefore, not effectively fulfilling its purpose to provide assistance to law enforcement agencies in investigating and solving crimes. The effectiveness of CODIS was hindered because FSD did not have sufficient resources to process the DNA samples in a timely manner and law enforcement agencies were not submitting all required DNA samples.

As of December 31, 2002, MSP had a backlog of approximately 40,000 DNA samples that had not yet been processed and input into CODIS. In addition, a comparison of convicted offenders to FSD records disclosed that 5% of offenders during the period October 1998 through December 2001 had not been DNA profiled and 49% of offenders during the period January 2002 through July 2002 had not been DNA profiled. (Finding 1)

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Agency Response:

MSP agrees with the finding and recommendation.

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THOMAS H. MCTAVISH, C.P.A.
AUDITOR GENERAL

October 1, 2003

Colonel Tadarial J. Sturdivant, Director
Michigan Department of State Police
714 South Harrison Road
East Lansing, Michigan

Dear Colonel Sturdivant:

This is our report on the performance audit of the Forensic Science Division, Michigan Department of State Police.

This report contains our report summary; description of agency; audit objective, scope, and methodology and agency responses and prior audit follow-up; comment, finding, recommendation, and agency preliminary response; and a glossary of acronyms and terms.

The agency preliminary response was taken from the agency's response subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a formal response within 60 days after release of the audit report.

We appreciate the courtesy and cooperation extended to us during this audit.

AUDITOR GENERAL

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Description of Agency

The mission* of the Forensic Science Division (FSD), Michigan Department of State Police, is to provide leadership, development, coordination, and delivery of "state of the art" forensic services to the criminal justice community.

FSD services are provided through seven regional forensic laboratories* located in Bridgeport, Grand Rapids, Grayling, Lansing, Marquette, Northville, and Sterling Heights. Law enforcement agencies within the State of Michigan, including local police departments, State police posts and district offices, county sheriff departments, local fire departments, and county prosecutor offices, initiate requests for forensic assistance in investigating crimes. Also, FSD examiners provide expert witness* testimony concerning crime scene and science-based investigations at criminal proceedings. The following forensic science services are offered at the various laboratories around the State; however, not all services are available at every location:

a. Drug Analysis and Toxicology*

Drug analysis scientists evaluate suspected controlled substances using chemicals, microscopy, and microcrystalline techniques. The toxicology unit analyzes blood and urine for the presence of beverage alcohol and other drugs* of abuse for law enforcement agencies across the State and offers testimony regarding the effects of alcohol and drugs on the body.

b. Micro-Chemistry

Micro-chemistry analysts conduct casework that involves analysis of materials such as paint, glass, fibers, fire debris, explosive residue, and automobile headlamps, as well as comparisons and physical matches of footwear and tire tracks.

c. Latent Print Examination*

Latent print examiners use the advanced technology of the Automated Fingerprint Identification System to search for fingerprints in a computer database to solve crimes. Also, the examiners assist local law enforcement agencies at crime scenes and provide training through evidence technician courses and laboratory training.

* See glossary at end of report for definition.

d. Document Examination

Document examiners provide services such as examining handwriting, handprinting, obliterations, alterations, impressed writing, and typewriting; differentiating inks; comparing paper; and identifying use of various mechanical devices or photocopy machines for documents used as evidence in any type of case.

e. Polygraph* Testing

Polygraph examiners provide services to law enforcement agencies throughout the State with computerized instruments.

f. Firearms and Tool Mark Examination*

The firearms and tool mark unit conducts examinations of firearms, fired cartridge cases, fired bullets, open shooting cases, distance determinations, tool marks, and explosive devices.

g. Deoxyribonucleic Acid* (DNA) Analysis and Convicted Felon Database

Analysts are responsible for casework evidence processing of DNA samples* and profiling the information into the convicted felon DNA database, Combined DNA Index System* (CODIS).

During calendar year 2002, FSD personnel processed 123,475 cases. FSD also responded to 476 crime and bomb scenes and offered testimony in 806 court cases.

In 1990, the Federal Bureau of Investigation (FBI) began development of an integrated local/state/national law enforcement system of storing and comparing DNA records in the pursuit of prosecuting and deterring violent criminal behavior. This system, the Combined DNA Index System (CODIS), was fully implemented in fiscal year 1997-98. Of the seven regional forensic laboratories in Michigan, only the Lansing laboratory provides DNA identification profiling* and uploading into the national database. FSD electronically stores DNA profiles* in the national database for use in future investigations. As of September 30, 2002, FSD had obtained a total of 47,881 DNA samples for profiling.

FSD was appropriated and expended \$19.4 million for fiscal year 2001-02. The source of funding for this amount was the State's General Fund (93%), laboratory fees (4%), and federal revenue (3%). FSD had 209 employees as of December 31, 2002, and this number has remained virtually the same for the last three years.

* See glossary at end of report for definition.

Audit Objective, Scope, and Methodology and Agency Responses and Prior Audit Follow-Up

Audit Objective

The objective of our performance audit* of the Forensic Science Division (FSD), Michigan Department of State Police (MSP), was to assess the effectiveness* and efficiency* of FSD in providing forensic science services to criminal justice agencies.

Audit Scope

Our audit scope was to examine the program and other records of the Forensic Science Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Audit Methodology

Our audit procedures, conducted from July 2002 through February 2003, included examining FSD records and procedures for the period October 1, 1998 through September 30, 2002.

To accomplish our audit objective, we interviewed staff at FSD and various circuit courts. Also, we reviewed the FSD mission statement; applicable statutes and corresponding amendments; applicable policies and procedures; and various FSD reports. In addition, we obtained an understanding of FSD's internal control* over forensic science services to criminal justice agencies, researched and analyzed industry standards related to forensic science, and researched other states' reports to determine performance measures to use in evaluating the effectiveness of forensic science services.

We examined FSD records related to proficiency testing*, performance evaluations, DNA identification profiling, and forensic laboratory fees. Also, we compared conviction data as supplied by the Department of Corrections and MSP to the DNA samples received by FSD to determine if DNA samples were submitted as required. In addition, we visited circuit courts in five counties (Genesee, Kent, Midland, Oakland, and

* See glossary at end of report for definition.

Saginaw) to review the process for assessing laboratory fees applicable to FSD for criminal sexual conduct convictions and other cases worked on by FSD. We judgmentally selected the counties based on volume of fee collections compared to actual criminal sexual conduct convictions.

Agency Responses and Prior Audit Follow-Up

Our audit report includes one finding and corresponding recommendation. MSP's preliminary response indicated that it agrees with the finding and recommendation and will comply with the recommendation.

The agency preliminary response that follows the recommendation in our report was taken from the agency's written comments and oral discussion subsequent to our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and Department of Management and Budget Administrative Guide procedure 1280.02 require MSP to develop a formal response to our audit finding and recommendation within 60 days after release of the audit report.

FSD complied with 2 of the 4 recommendations included in the prior audit report. One recommendation was rewritten for inclusion in this report, and the other recommendation will be addressed in a subsequent report.

COMMENT, FINDING, RECOMMENDATION, AND AGENCY PRELIMINARY RESPONSE

EFFECTIVENESS AND EFFICIENCY OF FORENSIC SCIENCE SERVICES

COMMENT

Background: At the time of our audit, only the Forensic Science Division's (FSD's) deoxyribonucleic acid (DNA) unit in Lansing provided Combined DNA Index System (CODIS) identification profiling and uploading into the national database. As of December 2002, this unit had 16 staff. Staff time for this unit is prioritized between active criminal cases and inactive criminal cases for DNA identification profiling of convicted individuals. Profiling the DNA samples consists of performing lengthy tests and analysis on the samples to extract the DNA molecules in a form that will be compatible with CODIS. As of December 2002, this unit had two scientists and two technicians dedicated solely to CODIS profiling.

Fees have been statutorily established to provide financial support for forensic science services. However, a general review of the assessment and collection process disclosed that FSD has no control over the actual assessment or collection of the fees. The courts are responsible for assessing the fees. Collection activities vary, depending on the circumstances, and may involve local law enforcement agencies, courts, and the Department of Corrections (DOC). There are numerous fees and other costs assessed at the time of sentencing, including court costs, restitution, crime victims rights fees, and forensic laboratory fees. Fees assessed are statutorily ranked by priority for collection purposes, and the forensic laboratory fees are ranked as a low priority. Over the last three years, fee collections used to support all forensic science services have totaled less than \$1 million per year. Therefore, these fees have not been a viable resource for funding forensic science operations. Although fee collection improved from our prior audit, there are several reasons for the poor collection rates, such as the fee not being assessed at the time of sentencing or the inability of the offender to make payments because of other financial obligations. The process for ordering, collecting, and distributing fees related to felony* and specific misdemeanor* convictions is being audited and reported on separately from this audit.

* See glossary at end of report for definition.

Audit Objective: To assess the effectiveness and efficiency of FSD in providing forensic science services to criminal justice agencies.

Conclusion: We concluded that FSD was generally effective and efficient in providing most forensic science services to criminal justice agencies. However, because of statutory changes affecting DNA processing and staffing levels that have remained constant, not all DNA forensic services were being completed in a timely manner. Our audit disclosed one reportable condition*. The CODIS database is incomplete and, therefore, not effectively fulfilling its purpose to provide assistance to law enforcement agencies in investigating and solving crimes. The effectiveness of CODIS was hindered because FSD did not have sufficient resources to process samples and law enforcement agencies were not submitting all required DNA samples.

Noteworthy Accomplishments: FSD has continuously maintained American Society of Crime Laboratory Directors Laboratory Accreditation Board* (ASCLD/LAB) accreditation since first obtaining it in 1984. FSD's ASCLD/LAB accreditation was most recently renewed in October 2002. This accreditation is fundamental in ensuring the credibility of forensic science services.

FINDING

1. DNA Database

The CODIS database is incomplete and, therefore, not effectively fulfilling its purpose to provide assistance to law enforcement agencies in investigating and solving crimes. The effectiveness of CODIS was hindered because FSD did not have sufficient resources to process the DNA samples in a timely manner and law enforcement agencies were not submitting all required DNA samples.

Michigan Administrative Code R 28.5053 - 28.5055 and Sections 28.171 - 28.176 of the Michigan Compiled Laws (Act 250, P.A. 1990, as amended, known as the DNA Identification Profiling System Act) provide for the Michigan Department of State Police (MSP) to process DNA samples submitted by applicable law enforcement agencies. Processing the DNA samples includes profiling the DNA samples and uploading the profiles into CODIS. Profiling the DNA samples consists of performing lengthy tests and analysis on the samples to extract the DNA molecules in a form that will be compatible with CODIS. CODIS then allows

* See glossary at end of report for definition.

other law enforcement agencies to match or profile DNA samples with possible offenders.

Law enforcement agencies (local police, county sheriff, DOC, and the Family Independence Agency for juveniles) are required to collect and submit the samples of DNA to MSP within 45 days of conviction. If a sample is not obtained by the investigating law enforcement agency* prior to the offender's transfer to a State correctional facility, then DOC is responsible for the collection and submission of the sample before the offender is paroled.

Effective January 1, 2002, Sections 28.171 - 28.176 of the *Michigan Compiled Laws* were amended to require the collection of DNA samples for all felony convictions and certain predefined misdemeanors. This included offenders already incarcerated. As a result, DOC became responsible for collecting and submitting samples for offenders who were currently serving sentences in State correctional facilities but had not previously been required to provide DNA samples.

Our review disclosed the following weaknesses:

- a. As of December 31, 2002, MSP had a backlog of approximately 40,000 DNA samples that had not yet been processed and input into CODIS. The statutory amendment, effective January 1, 2002, resulted in MSP receiving more than 50,000 DNA samples in 2002, compared to only 2,443 in 2001. A large portion of the increase was from persons serving time in local or county jails or State correctional facilities. Once this backlog has been processed and input into CODIS, FSD expects to continue to receive approximately 3,000 DNA samples per month. This represents a significant annual increase in the number of samples to be processed when compared to prior years.

MSP prioritizes testing by processing DNA samples for open investigations and then processing samples from convicted persons in the order that they are received. FSD currently processes approximately 1,000 DNA samples per month. Based on our review of the current number of MSP staff and a comparison with federal and other state reviews, this level of processing is considered reasonable. Given that FSD expects to receive approximately 3,000 DNA samples per month, the current level of resources will not be

* See glossary at end of report for definition.

sufficient to process all of the DNA samples received in a timely manner. At the time of our review, FSD had profiled and uploaded to CODIS 7,371 (20%) of the 37,090 DNA samples received since January 1, 2002. With the current level of technology and manpower, it would take FSD approximately two and one-half years to process the backlog.

FSD staffing levels have remained constant and it uses "state of the art" equipment for processing DNA samples. Therefore, it is not realistic to expect the backlog to decrease and FSD to process an additional 3,000 samples per month with the current level of resources. FSD informed us that it has submitted several proposals to gain additional federal funding to outsource the processing of the backlog. FSD has outsourced DNA sampling in the past at a cost of approximately \$32 per sample. Our research showed that the cost to outsource the testing is about \$50 per sample. Therefore, it would cost approximately \$2 million to outsource the current backlog. In addition, FSD should also consider other avenues to minimize the risk associated with DNA samples not being processed in a timely manner, such as further prioritizing the backlog of DNA samples in a way that will most benefit law enforcement agencies.

- b. Conviction data, obtained from the DOC Management Information System and the MSP Law Enforcement Information Network (LEIN), showed that 18,777 individuals committed qualifying crimes between October 1, 1998 and July 31, 2002. We obtained this data to determine if investigating law enforcement agencies were submitting the required DNA samples. We compared random samples of convictions occurring before and after the change in statute with FSD records of processed DNA samples and noted:
 - (1) Nine (5%) of 174 offenders during the period October 1998 through December 2001 (before the statutory change) had not been DNA profiled. It is likely that these samples were never received from the local law enforcement agency or DOC.
 - (2) Ninety-eight (49%) of 201 offenders during the period January 2002 through July 2002 (after the statutory change) had not been DNA profiled. It is likely that these items are either included in FSD's backlog or have not been received from the local law enforcement agency or DOC.

Once the backlog has been eliminated, FSD could implement procedures such as requiring a periodic data match between FSD's records and convictions recorded in LEIN for qualifying offenses and notifying law enforcement agencies and DOC of potential outstanding samples. This may help to ensure that required samples are received from the law enforcement agencies and DOC.

Failure to obtain, process, and upload DNA samples into CODIS in a timely manner has several consequences. It may reduce the ability of law enforcement agencies to identify and prosecute offenders, which would result in crimes remaining unsolved and offenders remaining free to commit other crimes. It may also result in an inefficient use of law enforcement resources in investigating crimes, which would further strain the already limited resources of many law enforcement agencies. Finally, the inability to match a DNA sample may result in an innocent person being wrongly suspected of or charged with a crime. CODIS became fully operational in 1998; its potential effectiveness should increase significantly as more DNA profiles are processed and uploaded.

RECOMMENDATION

We recommend that FSD work with the appropriate parties to help ensure that the CODIS database is complete and effectively fulfilling its purpose to provide assistance to law enforcement agencies in investigating and solving crimes.

AGENCY PRELIMINARY RESPONSE

MSP agrees with the finding and recommendation. FSD is working with the National Institute of Justice participating in a DNA Outsourcing Program that will eliminate the convicted felon samples, creating one of the largest CODIS databases in the country.

Glossary of Acronyms and Terms

American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB)	ASCLD/LAB is responsible for accreditation of crime laboratories which demonstrate that their management, operations, personnel, procedures, equipment, physical plant, security, and health and safety procedures meet established standards.
Combined DNA Index System (CODIS)	A national computer-based system of storing and comparing DNA records.
deoxyribonucleic acid (DNA)	A component of human body cells.
DNA identification profiling	A validated scientific method of analyzing components of DNA molecules in a biological specimen to determine a match or a nonmatch between a reference sample and an evidentiary sample.
DNA profiles	Patterns of fragments of DNA used both to identify individuals and to study the relatedness of individuals.
DOC	Department of Corrections.
drug	A chemical substance, such as a narcotic or a hallucinogen, that affects the central nervous system, causing changes in behavior and, often, addiction.
effectiveness	Program success in achieving mission and goals.
efficiency	Achieving the most outputs and outcomes practical with the minimum amount of resources.
expert witness	A person who, by virtue of experience, training, or education, possesses scientific, technical, or other specialized

knowledge that will assist in investigating or in preparing for or presenting evidence in a court proceeding.

felony

A violation of law for which the offender may be punished by imprisonment for more than one year or an offense expressly designated by law to be a felony.

firearms and toolmark examination

Examination and comparison of evidence resulting from the discharge and/or use of firearms and comparison of marks made by various tools.

forensic laboratory

A laboratory that employs one or more full-time scientists whose principal function is the examination of physical evidence for law enforcement agencies in criminal matters and who provide opinion testimony with respect to such physical evidence to the criminal justice system.

FSD

Forensic Science Division.

internal control

A process, effected by management, designed to provide reasonable assurance regarding the reliability of financial reporting, effectiveness and efficiency of operations, and compliance with applicable laws and regulations.

investigating law enforcement agency

The law enforcement agency responsible for the investigation of the offense for which the person is convicted.

LEIN

Law Enforcement Information Network.

latent print examination

Comparison of latent print impressions regardless of method of development.

misdemeanor

An offense that is deemed to be less than a felony.

mission

The agency's main purpose or the reason that the agency was established.

MSP	Michigan Department of State Police.
performance audit	An economy or efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.
polygraph	An instrument that simultaneously records changes in such physiological processes as heart beat, blood pressure, and respiration; often referred to as a "lie detector."
proficiency testing	Testing to evaluate the competence of analysts and the quality performance of a laboratory.
reportable condition	A matter that, in the auditor's judgment, represents either an opportunity for improvement or a significant deficiency in management's ability to operate a program in an effective and efficient manner.
sample	A portion of an individual's blood, saliva, or tissue collected from the individual.
toxicology	Analysis of biological samples for the presence of drugs and other potentially toxic materials (e.g., alcohol in blood).