SFA BILL ANALYSIS

Senate Fiscal Agency • Lansing, Michigan 48909 • (517) 373-5383

Senate Bill 469 (Substitute S-2 as passed by the Senate)
Senate Bill 470 (Substitute S-1 as passed by the Senate)
Senate Bill 471 (Substitute S-1 as passed by the Senate)
Sponsor: Senator John M. Engler
Committee: Health Policy

Date Completed: 7-30-90

RATIONALE

A recently developed procedure uses genetic information to identify people through the study of individual variations in their genetic material. Termed "DNA profiling" or "fingerprinting", the process involves a series of steps in which scientists extract a DNA sample from blood or other body tissue and produce a print that can be compared to other DNA prints. One of the many applications of DNA profiling is in the area of criminal investigations. Some people believe that law enforcement agencies should be authorized to collect certain body tissue samples from criminals, particularly those convicted of sexual offenses, as part of the development of a DNA data base that could be used to solve crimes in much the same way that fingerprint information now is used. (For more information about DNA profiling, see BACKGROUND.)

CONTENT

Senate Bill 469 (S-2) would create the "DNA Identification Profiling System Act" to require the State Police to develop by October 1, 1991, the capability of conducting DNA identification and genetic marker profiling; require the State Police by January 1, 1991, to promulgate rules for the collection of blood and saliva samples from persons convicted of certain criminal sexual conduct (CSC) offenses; require the State Police to retain a profile obtained pursuant to the bill; and, require that a DNA identification profile obtained in the course of a criminal investigation or prosecution be kept permanently by the State Police if a person were convicted of certain CSC offenses. The bill also would authorize the Governor to appoint, with the advice and consent of the Senate, a DNA advisory committee to advise the Legislature concerning coordination of regulations governing forensic DNA labs; recommendations to ensure that DNA testing by government labs was made available to law enforcement agencies, prosecutors, and counsel for indigent defendants; regulations that protected the privacy rights of individuals giving samples; and, recommended provisions for DNA labs to have proficiency testing systems.

Senate Bill 470 (S-1) would amend the Department of Corrections (DOC) Act to require the DOC to collect blood and saliva samples for DNA identification profiling prior to the release of persons convicted of certain criminal sexual conduct offenses, and to provide that a prisoner who was to be released, would not have to provide another sample of the same body fluid if the State Police already had a sample. The bill would take effect October 1, 1991.

Senate Bill 471 (S-1) would amend the Michigan Penal Code to require a person convicted of certain criminal sexual

conduct offenses to give the investigating law enforcement agency blood and saliva samples for chemical testing for DNA identification profiling or to determine the blood's genetic markers and the saliva's secretor status; provide that a person, at the time he or she was convicted, would not have to provide another sample of the same body fluid if the law enforcement agency or the State Police already had a sample; and, require an investigating law enforcement agency, prosecuting agency, or court to forward to the State Police a person's DNA identification profile at or before sentencing unless the State Police already had the person's profile. The bill would take effect October 1, 1991.

The bills are tie-barred to each other.

Senate Bill 469 (S-2)

Developing DNA Identification

The Department of State Police would be required to work with the Federal Bureau of Investigation (FBI) and other appropriate persons to develop by October 1, 1991, the capability of conducting DNA identification and genetic marker profiling at the State Police crime laboratories. ("DNA identification profiling" would mean a validated scientific method of analyzing components of deoxyribonucleic acid molecules for the purpose of identifying the pattern of the components' chemical structure that is unique to an individual.)

For this purpose, the Department would be required to acquire, adapt, or construct the appropriate facilities, acquire the necessary equipment and supplies, evaluate and select analytic techniques and validate the chosen techniques, and obtain training for State Police personnel.

DNA Identification Profiling System

By January 1, 1991, the Department of State Police would be required to promulgate rules to implement the proposed Act, including, but not limited to, rules governing all of the following:

-- The method of collecting blood and saliva samples, and the types and number of samples to be collected by the DOC from certain prisoners pursuant to Senate Bill 470 (S-1), and by law enforcement agencies from certain convicted offenders pursuant to Senate Bill 471 (S-1). The rules would have to provide for the taking of blood and saliva samples in a medically approved manner by qualified persons.
-- The distribution of blood specimen vials, mailing tubes, and labels, and of instructions for the collection of blood and saliva samples.
-- The storage and transmission to the State Police of the blood and saliva samples.
-- The DNA identification or genetic marker profiling of the blood and saliva samples and of other blood, saliva, or tissue samples submitted to the Department of State Police.
-- The development, in cooperation with the FBI and other appropriate persons, of a system of filing, cataloging, and retrieving, and comparing DNA identification profiles, and the computerization of this system. The system would have to be operational and computerized by October 1, 1991. ("DNA identification profile" would mean the results of the DNA identification profiling of a blood, saliva, or tissue sample taken from an individual.)
-- The protection of the privacy interests of individuals whose blood, saliva, or tissue samples were analyzed pursuant to the proposed Act.

Use of Samples

The State Police would be required to retain permanently a DNA identification profile obtained pursuant to the proposed Act. A DNA identification profile obtained from the analysis of an individual's blood, saliva, or tissue in the course of a criminal investigation or prosecution, that was in the State Police's possession or forwarded to the State Police would have to be retained permanently by the Department if that person were convicted of certain criminal sexual conduct offenses. Any other DNA identification profile obtained by the Department could be retained only as long as it was needed for a criminal investigation or

prosecution.

Advisory Committee

The Governor could appoint, with the advice and consent of the Senate, a DNA advisory committee that would consist of law enforcement officials, forensic scientists, defense attorneys, and members of the judiciary. The committee would be required to advise the Legislature concerning all of the following:

- Effective coordination of the rules and regulations governing forensic DNA laboratories with law enforcement agencies, courts, prosecutors, and defense counsel.
- Recommendations to ensure that reliable forensic DNA testing by governmental laboratories was made available to law enforcement agencies, prosecutors, and counsel for indigent defendants in criminal or civil proceedings.
- Regulations that protected the privacy rights of a person who had a blood or saliva sample collected by the Department of Corrections under Senate Bill 470 (S-1) or by a law enforcement agency under Senate Bill 471 (S-1).
- Recommendations of provisions for each forensic DNA laboratory to have external and internal proficiency testing systems to test regularly its methodologies and procedures.

Senate Bill 470 (S-1)

The bill provides that, if a prisoner were serving a sentence for a first, second, third, or fourth degree criminal sexual conduct violation or an attempted violation, for a second or subsequent CSC violation, or for an assault with intent to commit CSC, the prisoner could not be released on parole or released without parole until he or she had provided blood samples for chemical testing for DNA identification profiling or a determination of the blood's genetic markers and had provided samples of his or her saliva for chemical testing to determine the secretor status of the saliva. If at the time the prisoner was to be released the State Police already had a sample of the prisoner's blood or saliva that met the requirements of the rules promulgated under the proposed DNA Identification Profiling System Act, the prisoner would not be required to provide another sample of the same body fluid.

The blood or saliva samples would have to be collected by the DOC and transmitted by the Department to the Department of State Police in the manner prescribed by rules promulgated under the proposed Act.

Senate Bill 471 (S-1)

The bill would require a person convicted of a violation or an attempted violation of first, second, third, or fourth degree CSC, a second or subsequent CSC offense, or assault with intent to commit CSC to provide samples of his or her blood for chemical testing for DNA identification profiling or a determination of the blood's genetic markers and to provide samples of his or her saliva for chemical testing for a determination of the secretor status of the saliva. If at the time the person was convicted the law enforcement agency or the State Police already had a sample of the person's blood or saliva that met the requirements of the rules promulgated under the proposed DNA Identification Profiling System Act, the person would not be required to provide another sample of the same body fluid.

The investigating law enforcement agency would have to provide for the taking of samples in a medically approved manner by qualified persons using blood specimen vials and other supplies provided by the Department of State Police, and would have to forward those samples and any samples that already were in the agency's possession to the State Police, as required under rules promulgated pursuant to the proposed "DNA Identification Profiling System Act".

An investigating law enforcement agency, prosecuting agency, or court that possessed a DNA identification profile obtained from a sample of blood, saliva, or tissue of a person convicted of certain CSC offenses would be required to forward the DNA identification profile to the State Police at or before the time of sentencing of the person upon the conviction unless the State Police already had a DNA identification profile of the person.

Proposed MCL 791.233d (S.B. 470)
750.520m (S.B. 471)

BACKGROUND

Human cells that contain a nucleus, such as those cells found in hair and skin, hold chromosomes that contain an essential component of all living matter known as deoxyribonucleic acid (DNA). DNA is the complex molecule that houses genetic instructions and transmits hereditary patterns. The genetic code, found in a DNA molecule, is made up of long strands that transmit instructions for general human characteristics such as arms and legs, and shorter sequences that give instructions for characteristics that distinguish individuals from each other. Each person's genetic code is unique to that individual, except for identical twins who have the same DNA pattern.

The process of "DNA profiling" or "fingerprinting" involves a series of steps in which scientists extract a DNA sample from blood, hair, semen, or other body tissue and snip it into fragments with chemicals called restrictive enzymes. The fragments, which are negatively charged, are then suspended at one end of a slab of gelatin, and a positively charged electrode is placed at the other end. When the electrode is turned on, it attracts the charged fragments of DNA, causing them to drift through the gel. The lightest, smallest fragments travel farthest because they meet with only a small amount of resistance in the gel. The heavier fragments, or the longer sections of the DNA, are dragged more slowly through the gel and remain closer to their starting point. The unique pattern of lengths of DNA fragments is thereby captured in the gel as a kind of spectrum. To develop it into an image that can be seen and preserved, a nylon membrane is placed over the DNA fragments and then covered with paper towels (a procedure called "Southern blotting"). The towels sop the fragments directly upward into the nylon, where their distinctive pattern is preserved. The nylon then is rinsed with a solution of radioactive probes. When the nylon is exposed to x-ray film, the probes emit radiation that creates one or two dark, blurred bands on the film, representing one distinctive part of the person's DNA pattern. Additional probes are used to create more shadowy bands, until the DNA "fingerprint" is complete. The DNA print then can be compared to other DNA prints. Applications of this technique include establishing a child's paternity, determining certain genetic traits of a fetus, and identifying criminal suspects.

FISCAL IMPACT

Senate Bills 469 (S-2), 470 (S-1), and 471 (S-1), if enacted, would have the following fiscal impact on State and local governments:

1. The promulgation of rules would require an additional .5 FTE and $25,000 for one year.
2. Providing staff, equipment and laboratory supplies for the implementation of the computerized data base and the corresponding analysis of cases would require a first-year expenditure of $1,496,000 (8 FTEs and equipment), and annual continuation costs of nearly $850,000.
3. Local law enforcement agencies would incur a cost for collecting samples from the nearly 2,000 offenders convicted of criminal sexual conduct each year. The cost to the local agencies would depend on the fees charged by the local physicians, hospitals or labs that collected the blood samples.
4. There would be no additional costs incurred by the Department of Corrections.

ARGUMENTS

Supporting Argument

The bills would provide the statutory authorization needed to obtain DNA samples from convicted sex offenders and to develop a data base of DNA profiles for comparison to future forensic evidence in the event a released felon repeated his or her crime. DNA profiling has been hailed by law enforcement officials and forensic scientists as a major advancement toward the solution of violent crimes, especially sexual assaults. Integral to DNA profiling is the fact that DNA is found in every body cell that contains a nucleus, including hair, skin, semen, and blood cells. DNA profiling is popular among prosecutors because the biological material it depends on is more plentiful than conventional fingerprints at the scene of a crime. By the nature of many violent acts, especially rape, the perpetrators are likely to leave traces of themselves behind,

and DNA is more resilient than the proteins, enzymes, and antibodies that are the usual targets of blood and semen analyses. According to Federal Bureau of Justice statistics, the rate of recidivism is higher for prisoners who have been convicted of rape and sexual assault than for persons convicted of other crimes. Establishment of a computerized DNA profile, at the very most, could deter felons from repeating these crimes and, at the very least, could facilitate the identification, prosecution, and conviction of these persons. At least two other states, California and Colorado, now require convicted sex offenders to submit blood samples for DNA fingerprinting before leaving prison, according to an article in the January/February 1990 issue of The Sciences.

Supporting Argument

Under Senate Bill 469 (S-2), the Department of State Police would be required to work with the FBI to develop the capability of conducting DNA identification and genetic marker profiling at the State Police crime laboratories. By requiring that the State's efforts be coordinated with the FBI, the bill would aid in the development of standardized procedures for testing and data base retrieval that could contribute to a nationwide criminal data base of DNA profiles. According to the article in The Sciences, the FBI plans to train 120 laboratory technicians a year to work in state facilities, has established a national laboratory to refine the technique, and is building a computerized data base of genetic markers that eventually will be available to state and local law enforcement agencies around the nation.

Response: Although the principles underlying DNA identification technology are sound, safeguards should be instituted to provide for the validation and reliability of the procedures. In a report on individual identification by DNA analysis, an ad hoc committee of the American Society of Human Genetics recommended that any laboratory engaged in the use of DNA technology to establish human identity should participate in accreditation of the lab and certification of the lab's personnel. Although the FBI is seeking to develop a standard national classification system and is assisting states to develop the technology, some people are concerned that there has been no independent validation of the FBI's testing standards, protocols, or procedures, nor has there been any certification of personnel. Scientists also have recommended standardization of a small number of probes used in DNA profiling as the best way to facilitate comparison testing of samples. DNA profiling offers many advantages by providing a means of identifying the guilty and freeing the innocent, but there has been only a presumption that any standards are uniform and objective. To ensure this, there should be legislatively enacted protocols for labs and law enforcement agencies to follow. In light of these issues, the legislation should require the creation of an independent oversight body, rather than simply permit the appointment of an advisory committee.

Supporting Argument

In at least six states--Florida, Maryland, Minnesota, South Carolina, Texas, and Virginia--DNA fingerprinting has been held by an appellate court to be admissible in evidence, according to the Prosecuting Attorneys Association of Michigan. That is, these courts have found that the technique meets the "Frye test", under which a new scientific technique must be "sufficiently established to have gained general acceptance in the particular field in which it belongs" (Frye v United States, 293 F. 1013 (1923)). This test prevents prosecutors from introducing untested scientific evidence and precludes the possibility that jurors might be improperly influenced by expert-sounding testimony that contradicts the standards of accepted research. The Frye test was first applied in Michigan in People v Davis (343 Mich 348 (1955)) and is known as the "Davis-Frye" rule. Although the admissibility of DNA fingerprinting has not been ruled upon to date by an appellate court in Michigan, the technique has been found to meet the Davis-Frye rule at the circuit court level in several counties, including Oakland County.

Response: When forensic DNA fingerprinting is introduced at a Frye hearing, according to the article in The Sciences, its proponents argue that the tests are simply a new application of a widely accepted procedure, and they make exaggerated claims for the similarities between the forensic techniques and those of the biomedical community. In fact, academic geneticists would not accept as conclusive a so-called match based on only two DNA samples; they would repeat their experiments and dismiss any conclusion based

on a single observation. Their counterparts in the forensic world, however, may have no choice but to use all their material in the first test. Another problem arises because commercial DNA laboratories insist on keeping much of their work a trade secret. Yet the labs still make the incongruous assertion that the design of their techniques and data bases, known only to a few scientists in a few companies, has somehow been considered and approved by the wider community of their outside peers. Also troubling is the labs' collective reluctance to acknowledge reasonable concerns about their objectivity. In case after case, the "scientific" interpretation of a hazy series of fingerprint bands is made by technicians who are also informed about the conventional forensic evidence linking a suspect to a crime. And these technicians--consciously or not--seem to adjust their testimony accordingly.

Opposing Argument

Unfortunately, the DNA fingerprinting technology has been portrayed as foolproof, when it is not. Although no two people, other than identical twins, possess the same DNA pattern, the profile analyzes only a small portion of the DNA molecule. In addition, the significance attached to a DNA comparison depends on the statistical distribution of DNA types in the relevant population. The results of a match between a suspect's DNA material and that found at a crime scene also may not be accurate. Circumstances surrounding the acquisition and testing of a forensic sample can produce inconclusive or erroneous results in a DNA profile. For example, a sample that has been exposed to adverse environmental conditions can result in DNA that is so degraded that comparative studies are difficult to conduct. Laboratory tests also are prone to human error, such as sample mix-ups, which could yield a false positive result. Other potential problems involve what some have considered to be the subjective nature of the interpretation of the bands on the profile, the shifting of bands, and the variety of "matching rules" that are used to determine if there is a match between the DNA sample obtained in a lab and the evidence found at the crime scene. Some people believe that DNA analysis demands greater skill and care compared to fingerprint analysis. Furthermore, it has been argued that even an accurate match under ideal lab conditions would not necessarily offer proof of legal guilt. That depends on the context, the interpretation of motives and behavior, and whether correct court procedure was followed.

Opposing Argument

The development of DNA technology raises certain civil liberties concerns. Senate Bill 470 (S-1) would require the Department of Corrections to collect blood and saliva samples for DNA profiling from persons convicted of certain criminal sexual conduct offenses prior to their release. Senate Bill 471 (S-1) would require a person convicted of certain CSC offenses to give the investigating law enforcement agency blood and saliva samples for chemical testing and DNA profiling. Such forced surrender of samples to be used for DNA identification raises concerns of self-incrimination in light of the provision in the Fifth Amendment to the U.S. Constitution that prohibits a person from being "compelled in any criminal case to be a witness against himself". The collection of blood and saliva samples also raises questions of whether the Fourth Amendment's due process provisions would protect persons from this type of search and seizure. In addition, concern has been expressed about the provision in Senate Bill 470 (S-1) whereby the taking of a prisoner's blood sample would be a condition of his or her release, especially in cases in which the prisoner had completed the sentence.

Response: The bills would require the collection of samples from people whose civil liberties already are restricted by virtue of the individuals' conviction and incarceration.

Opposing Argument

Implementation of the bills could be expensive. In light of State budgetary constraints, there is concern about revenue sources to pay the implementation costs.

Legislative Analyst: L. Arasim
S. Margules
Fiscal Analyst: M. Hansen

A8990\S469A