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Survey of DNA Crime Laboratories, 1998

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As of December 1997, 69% of publicly operated forensic crime labs across the Nation reported a DNA analyses backlog totaling 6,800 subject cases and 287,000 convicted offender samples. To address this backlog, 44% of the labs had hired additional staff since 1997, 34% were using overtime, and 13% were contracting with private labs.

These findings come from the initial survey of publicly operated forensic crime labs that perform DNA testing. Data were obtained from 108 labs of the approximately 120 known — including all statewide labs.

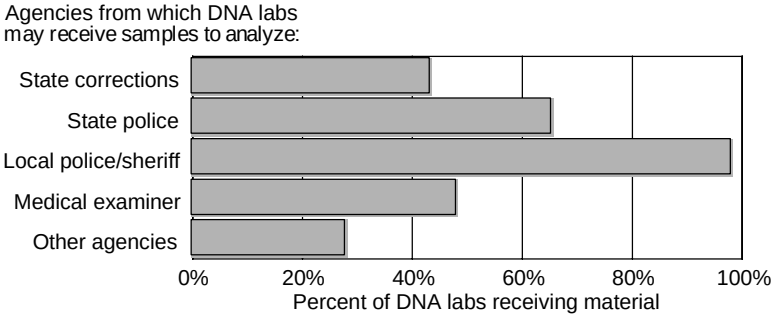
The 1994 Crime Act* included provisions establishing the FBI's Combined DNA Index System (CODIS), a national DNA database program. As of June 1998, all 50 States require the collection of DNA samples, primarily from convicted sex offenders. Some State statutes and legislation also include collection of DNA from persons convicted of murder, manslaughter, assault, robbery, carjacking, home invasion, stalking, and endangering children.

As part of their DNA Laboratory Improvement Program, the National Institute of Justice (NIJ) funded the survey to help identify workload and technology issues.

*Violent Crime Control and Law Enforcement Act of 1994, Public Law 103-322, September 13, 1994, 108 Stat. 1796.

Highlights

98% of publicly operated DNA crime laboratories analyzed material from local law enforcement agencies



- At the end of 1997, 69% of DNA labs had a backlog of 6,800 known and unknown subject cases and 287,000 convicted offender samples.
- To alleviate case backlogs 44% of the labs had hired additional staff, 34% were using overtime, 13% were contracting with private labs, and 28% were using other methods.
- The number of full-time staff in DNA labs ranged from 1 to 47, with a median staff size of 5. Three quarters of labs had fewer than 10 full-time staff.
- Almost all DNA labs (98%) received cases for analysis from local police and sheriffs' offices. Sixty-five percent of DNA labs received cases from State police, 48% from medical examiners, and 43% from State corrections.
- In 1997 labs received about 21,000 known or unknown subject cases, up from 15,000 in 1996. Known subject cases in both years accounted for over 75% of the total.
- In 1997 labs analyzed about 14,000 known or unknown cases received, an increase from 10,000 in 1996.
- The median number of cases received by a lab in 1997 was 221; the median number analyzed, 130. During the previous year half of the labs received at least 192 cases and analyzed 122 or more.
- In 1997 the median number of cases received by labs with less than 10 full-time staff members was 201. Labs with 10 or more full-time staff had a median of 320 cases. The median backlog in 1997 was 50 cases for the smaller labs and 77 cases for the rest.
- Labs received 116,000 convicted offender samples for analysis in 1997 and 72,000 in 1996. Less than half were analyzed: 45,000 in 1997 and 37,000 in 1996.
- Labs in 17 States indicated their state criminal history records specify whether a DNA sample has been collected. In 5 states the DNA identification is also attached to the records.

Forensic Laboratory Survey

While the technology available for analyzing deoxyribonucleic acid (DNA) has been progressing rapidly, the U.S. Department of Justice has undertaken several initiatives to assist forensic laboratories in improving their DNA analysis capabilities. This survey is intended to provide baseline information about publicly funded forensic crime laboratories across the Nation that were performing DNA testing in 1997 and 1998.

This survey was sent to approximately 140 laboratories, and 126 responses were received from individual labs and headquarters for statewide forensic crime lab systems. The responses included 108 publicly funded forensic laboratories that perform DNA testing in 43 States.

For most of these forensic crime labs, DNA analysis was just one of several forensic analyses the labs performed. Three-quarters or more of the forensic labs also were responsible for controlled substance analysis, firearms/toolmark/footwear/tireprint examination, and trace analysis. About two-thirds of the labs also performed crime scene investigation and fire debris analysis (table 1).

About half of these laboratories (55%) were part of a Statewide laboratory system. The laboratories were located in a variety of government agencies.

Table 1. Forensic crime laboratory responsibilities, 1998

Areas of analysis	Crime laboratories Number	Percent
Total	125	100%
Firearms/toolmark/ footwear/tireprint	102	82
Trace analysis	94	75
Latent prints	76	61
Fire debris	82	66
Explosive residue	53	42
Controlled substance	107	86
Conventional serology	79	63
Toxicology	51	41
Blood alcohol	69	55
Questioned documents	59	47
Computer crime investigation	11	9
Crime scene	83	66
Other	19	15

Note: Details do not add to total because of multiple responses.

U.S. Department of Justice laboratory support programs

National Institute of Justice (NIJ) — Forensic DNA Laboratory Improvement Program

Authorized by the DNA Identification Act of 1994 (Public Law 103-322), the Forensic DNA Laboratory Improvement Program was created to improve the capabilities and capacity of State and local forensic DNA laboratories to support the investigation and prosecution of violent crime. NIJ's successes in this program include —

- The development or establishment of forensic DNA testing capabilities in state and local forensic laboratories to conduct DNA testing.
- Improvements in the abilities of State DNA labs to meet national standards for DNA quality assurance and proficiency testing.
- Fostering cooperation and mutual assistance among forensic DNA laboratories by funding laboratory compliance with the FBI's CODIS. (See page 8 for more detail about CODIS.)

The laboratory improvement program is authorized to award grants through fiscal year 2000 and has received applications for funding beyond the available appropriations. NIJ has proposed several programs to continue support of forensic laboratories, DNA testing, research, and development. For more information about NIJ programs see their website at www.ojp.usdoj.gov/nij/.

Bureau of Justice Assistance (BJA) — State Identification Systems (SIS) Program

The State Identification Systems (SIS) Program is a formula grant program administered by BJA with funding from the FBI. The SIS Program enhances the capability of State and local governments to identify and prosecute offenders by establishing or upgrading information systems and DNA analysis capabilities. One intended use of these grants is to improve the ability to analyze DNA in ways that are compatible and integrated with the FBI's CODIS.

For answers to questions and technical assistance in completing and submitting a SIS application call the U.S. Department of Justice Response Center at (800) 421-6770.

NIJ — National Commission on the Future of DNA Evidence

The Attorney General directed NIJ to establish a commission to provide her with recommendations on the use of current and future DNA methods applications and technologies in the operation of the criminal justice system, from the crime scene to the courtroom.

The commission addressed 5 specific issues:

(1) the use of DNA in post-conviction relief cases
(2) legal concerns including Daubert challenges and the scope of discovery in DNA cases
(3) criteria for training and technical assistance for criminal justice professionals involved in the identification, collection, and preservation of DNA evidence at the crime scene
(4) essential laboratory capabilities in the face of emerging technologies
(5) the impact of future technological developments on the use of DNA in the criminal justice system.

For more information see www.ojp.usdoj.gov/nij/dna/.

Table 2. Agencies responsible for DNA laboratories, 1998

Government agency	Labs performing DNA analyses: Number	Percent
Total	106	100%
State police	44	42%
Local police/sheriff	27	25
Prosecutor's office	3	3
Other	35	33

Note: Detail do not add to total because of multiple responses.

Most frequently the State police (42%) operated the DNA labs; another 25% of labs were part of a local police or sheriff's department. The remaining labs operated under a variety of government agencies such as public health and safety and prosecutors' offices (table 2).

An important aspect of the laboratories' ability to perform accurate, consistent analyses and then to have those analyses used and defended in court is the adherence to accepted procedures and guidelines. One indication that a lab successfully follows the forensic community's standards is accreditation by a recognized forensic organization.

At the start of 1998, 56% of the labs were accredited by an official organization, and 18% had applied for accreditation or had undergone a pre-accreditation inspection by an accredited lab. Almost all of the accredited labs (93%) had been accredited by the American Society of Crime Lab Directors-Laboratory Accreditation Board (ASCLD-LAB) (table 3).

Standards for performing DNA testing involve the selection of markers, the number of tests required, and what procedures should be followed. Such standards have been developed through the Technical Working Group on DNA Analysis and Methodology (TWGDAM). The TWGDAM includes representatives from the Office of Law Enforcement Standards at the National Institute of Standards and Technology and State and Federal crime labs.

Another source of laboratory standards is the DNA Advisory Board (DAB). The FBI established the DAB to develop benchmarks for labs doing forensic DNA analyses. The final DAB report was completed in February 1997 and was forwarded to the Director of the FBI for review and implementation.

Every lab responding to the survey reported following some standard procedural guidelines. Ninety-nine percent of the labs follow the guidelines developed by the DAB or the TWGDAM or both.

Procedural standards	Labs reported using standards
DAB	27
TWGDAM	13
DAB and TWGDAM	63
DAB, TWGDAM and other	3
Other	1

All labs required their examiner/analysts to perform proficiency testing and follow the TWGDAM established guidelines of testing every 180 days or less. Eighty-six percent of the labs required the technical leader or manager to undergo proficiency testing, and 33% required the technicians to do so.

Although a few labs required technical leaders and technicians to perform proficiency testing only about once a year, most labs that required the testing also tested every 180 days or fewer. Ten percent of labs required certification or completed proficiency testing at the time of hiring for DNA technical positions.

Nearly all labs, 97%, used a second examiner to interpret DNA typing results.

Budget

The laboratories ranged in staff size and budget. In fiscal year 1997 the reported budgets for entire forensic laboratories ranged from $15,000 to $14.3 million. In fiscal year 1998 they ranged from $30,000 to $16.9 million. Forty-three percent of forensic labs indicated they could identify the portion of their budgets used strictly for DNA analyses. Of the labs that reported budget amounts for DNA work, the annual DNA budget ranged from $5,000 to $3.9 million in fiscal year 1997 and $2,000 to $4.1 million in fiscal year 1998 (table 4).

Table 3. DNA laboratory accreditations, 1998

	Labs performing DNA analyses: Number	Percent of labs
Laboratory accredited	60	56%
ASCLD-LAB	56	52
NSFTC	3	3
Other	3	3
Applied for accreditation	13	12%
Pre-accreditation inspection	6	6%
None	29	27%

Note: Percentages do not add to 100% because of rounding. Labs my report multiple accreditations.

Table 4. Annual budgets for forensic laboratories and for DNA laboratories, 1997-98

	Number of budgets reported	Annual laboratory budgets: Mean	Minimum	Maximum
Total forensic laboratory				
1997	79	$2,608,000	$15,000	$14,300,000
1998	82	2,889,000	30,000	16,900,000
DNA laboratory				
1997	41	$556,000	$5,000	$3,954,000
1998	45	654,000	2,000	4,106,000

Table 5. Sources of funding for DNA laboratories, 1997-98

	Number of reported budgets	Percentage of budget, 1997			Number of reported budgets	Percentage of budget, 1998		
		Mean	Minimum	Maximum		Mean	Minimum	Maximum
State	74	43%	0%	100%	75	43%	0%	100%
County	74	22	0	100	75	21	0	100
City	74	17	0	100	75	14	0	100
Grants	74	14	0	100	75	18	0	100
Other	74	4	0	90	75	3	0	75

In both fiscal years some labs received all their funding from the State, all their funding from the county, or all their funding from the city. The main source of funding of DNA labs was State governments, providing an average 43% of the reported budgets (table 5).

On average, just over half of DNA laboratory budgets were allocated for personnel costs in both fiscal year 1997 and 1998 (table 6). The next largest expenditure in each fiscal year was supplies, approximately a quarter of the budget.

Staffing

Ninety-eight laboratories reported their DNA staff size (table 7). The DNA labs full-time staffs ranged from 1 full-time employee to 47 full-time employees. The 98 DNA labs employed a total of 672 full-time and 85 part-time personnel.

Salaries

About three-quarters of the labs used a salary schedule for the DNA technical staff, and about half used a schedule for administrative staff. Of labs using salary schedules, the starting annual salaries for examiners ranged from $23,650 to $58,000 with a median starting salary of $34,831 (table 8). Technical leader/manager starting salaries ranged from $28,000 to $66,400 with a median starting salary of $45,000. The median starting salary for an administrative manager was $49,431 with a top starting salary of $84,000.

Educational requirements

Nearly all labs reported having minimum educational requirements for technical staff. Of the labs reporting their specific requirements, 64% required a master's degree and 35% required a bachelor's degree to be a technical leader or technical manager. Examiners and analysts needed a bachelor's degree in 97% of the labs and a master's degree in 3%.

Laboratory directors

While some forensic crime labs with multiple areas of analysis may have a director or supervisor responsible for just the DNA section, in many labs the director of the entire forensic crime laboratory is considered the director or supervisor of the DNA laboratory. The median annual salary for a DNA lab director was $55,000.

Of the laboratories reporting educational and experience requirements for their DNA lab director, about 50% of labs required the director to have a bachelor's degree, and another 36% required a graduate degree. The median required years of experience for a DNA lab director was 5 years.

Table 6. Expenditures by DNA laboratories, 1997-98

	Number of DNA labs reporting	Percentage of expenditures		
		Mean	Minimum	Maximum
1997				
Personnel	50	56%	0%	90%
Equipment	50	12	0	80
Supplies	50	24	4	100
Training	50	2	0	15
Travel	50	2	0	8
Other	50	4	0	45
1998				
Personnel	51	58%	0%	87%
Equipment	51	12	0	60
Supplies	51	24	5	100
Training	51	2	0	10
Travel	51	2	0	8
Other	51	2	0	17

Table 7. Number of full-time staff members for DNA laboratories, by type of position, 1998

Staff	Number of DNA labs reporting	Full-time staff members		
		Total	Median	Maximum
Total	98	672	5	47
Administration				
Admin. manager	98	42	—	2
CODIS manager	98	14	—	1
Support staff	98	20	—	4
Technical staff				
Manager/leader	98	73	1	5
Examiner/analyst	98	408	3	16
Technician	98	82	—	16
Lab support	98	33	—	7

— More than half the labs reported none.

Table 8. Starting salaries in DNA laboratories, by type of position, 1998

	Number of DNA laboratories reporting	DNA laboratory staff starting salaries		
		Median	Minimum	Maximum
Administration				
Administrative manager	50	$49,431	$24,864	$83,976
CODIS manager	16	39,596	24,000	66,400
Support staff	9	19,548	16,000	50,000
Technical staff				
Manager/leader	49	$45,000	$28,000	$66,400
Examiner/analyst	73	34,831	23,650	58,000
Technician	37	24,677	15,400	37,343
Lab support	19	22,000	18,000	28,548

Workload

Laboratories receive DNA samples for analysis from several different sources. Almost all DNA labs (98%) reported receiving DNA samples from local police and sheriffs' offices. Sixty-five percent of DNA labs received cases from State police, 48% from medical examiners, and 43% from State corrections (table 9).

A single crime incident can involve one or more victims, one or more offenders, multiple pieces of evidence, and multiple biological samples for testing. A single incident can have just a few to hundreds of possible samples for testing. Therefore, labs use different ways to measure workload, such as by —

- case, a single criminal incident or event
- piece of evidence, possibly multiple pieces of evidence for a single case
- sample, possibly multiple samples for each piece of evidence.

While almost every lab (97%) reported counting the workload by the case, about 20% also used pieces of evidence, samples analyzed, or other measures to count their workload.

Unit for counting	Labs performing DNA analyses Number	Percent
Total	103	100%
Case	100	97%
Evidence	7	7
Sample	11	11
Other	6	6

Details do not add to total because of multiple responses.

Table 9. Agencies or organizations submitting DNA samples to laboratories for analysis, 1998

Submitting agency	Labs receiving DNA cases/samples Number	Percent
State police	68	65%
Local police/sheriff	102	98
State corrections	45	43
Medical examiner	50	48
Other agencies	29	27

Note: Multiple responses were possible.

Table 10. Status of case workloads in DNA laboratories, by type of case, 1996-97

Year and type of case	Labs reporting	Cases received Total*	Cases received Median	Cases analyzed Total*	Cases analyzed Median	Backlog of cases Total*	Backlog of cases Median
1996							
Known subject cases	58	11,479	138	8,812	100	‡	‡
Unknown subject cases	49	3,663	22	1,339	10	‡	‡
Convicted offender	66	71,926	—	36,893	—	‡	‡
1997							
Known subject cases	75	15,595	126	12,095	99	2,738	—
Unknown subject cases	62	5,198	30	2,194	7	4,062	36
Convicted offender	69	115,681	—	44,810	—	286,819	—

‡Backlogs not reported for 1996.
—More than half reported none.
*Totals include State-level responses not used in calculating medians.

Types of DNA work received by forensic crime labs

Forensic crime laboratories receive biological samples for DNA analysis from a variety of sources for different types of analyses. For purposes of this study, the DNA analyses that crime labs perform are categorized into two general types: casework and convicted offender samples.

Casework

Casework refers to cases received by a forensic crime lab which involve a criminal incident under investigation. Each case may involve multiple pieces of evidence retrieved from a crime scene, and each piece of evidence may have multiple samples for testing. Casework may involve many different types of biological samples (such as blood, semen, saliva, and hair) that must be identified, selected for analysis, and sampled from crime scene evidence. Casework is generally more difficult and time consuming than analysis of convicted offender samples.

Because each case may or may not also have a subject or subjects identified as suspects, casework can be further divided into “suspect cases” and “nonsuspect cases.” This distinction can change. For example, if testing eliminates all suspects, the case can be recategorized as a “nonsuspect case.” For the purposes of this study, suspect and nonsuspect cases refer to whether there where any suspects at the time the case was originally received.

Convicted offender samples

Convicted offender samples are DNA samples collected from persons convicted of a crime, normally a violent crime or felony, that are to be analyzed and included in a DNA database.

The DNA Identification Act of 1994 (42 U.S.C. § 14132) authorizes the FBI to establish DNA indexes for —

- persons convicted of crimes
- samples recovered from crime scenes
- samples recovered from unidentified human remains.

As of June 1998, legislation had passed requiring convicted offenders to provide samples for DNA databases in all 50 States and the District of Columbia. By October 1998 the FBI estimated that States had collected approximately 600,000 DNA samples and analyzed more than 250,000.

Convicted offender samples are normally blood or saliva collected from an identified offender. Ninety percent of DNA labs that receive convicted offender samples receive samples of offenders’ blood, and 18% receive offenders' saliva.

In 1997 DNA labs received about 21,000 known and unknown subject cases, up from 15,000 in 1996 (table 10). Known subject cases in both years accounted for over 75% of the total casework. In 1997 the DNA labs analyzed about 14,000 of the cases received, an increase from 10,000 in 1996.

DNA labs also received 116,000 convicted offender samples in 1997 and analyzed about 45,000, less than half the number received. That was an increase from 72,000 received and 37,000 convicted offender samples analyzed in 1996.

The median number of known and unknown subject cases received by all labs in 1997 was 221; the median number of cases analyzed was 130. During the previous year half of the labs received 192 or more cases and analyzed 122 or more of those cases.

The number of cases received and analyzed varied by the size of the lab. In 1997 the number of known and unknown subject cases received by labs with less than 10 full-time staff members was 201. These smaller labs had a median backlog in 1997 of 50 cases. DNA labs with more than 10 full-time staff received a median of 320 known and unknown subject cases with a backlog 77 cases to be analyzed.

Case backlog

Sixty-nine percent of DNA labs reported having a backlog at the end of 1997 that totaled 6,800 known and unknown subject cases and 287,000 convicted offender samples. To alleviate case backlogs 44% of the labs had hired additional staff, 34% were using overtime, 13% were contracting with private labs, and 28% were using various other methods.

Initiatives	Labs reporting on casework backlogs: Number	Percent
Total	110	100%
Hired additional staff	48	44%
Used overtime	37	34
Contracted with private labs	14	13
Other	31	28

Details do not add to total because of multiple responses.

The DNA labs that hired private labs to do DNA testing in 1996 and 1997 used the private labs mainly for convicted offender testing. Public labs sent almost 400 known and unknown subject cases and 17,700 convicted offender samples to private labs for analysis in 1997, an increase from about 330 cases and 5,500 convicted offender samples in 1996 (table 11).

Table 11. DNA analysis cases contracted to private laboratories, by type of case, 1996-97

Year and type of case	Number of labs	Total cases	Median number of DNA cases
Cases contracted in 1996			
Known subject	21	30	—
Unknown subject	21	293	6
Convicted offender	21	5,571	—
Cases contracted in 1997			
Known subject	26	68	—
Unknown subject	26	321	5
Convicted offender	26	17,740	—
Backlog of contracted cases at the end of 1997			
Known subject	3	1	—
Unknown subject	3	7	2
Convicted offender	3	9,593	492

— More than half the labs reported none.

Table 12. Forensic laboratory policies for acceptance of DNA submissions, 1998

Policies	Labs receiving DNA cases/samples: Number	Percent
Had an acceptance policy for DNA submissions	72	69%
Types of cases accepted		
All criminal	69	66%
Known subject		
All	16	15
Certain	31	29
Unknown subject		
All	21	20
Certain	30	29

Note: Multiple responses reported.

Data processing

After completing casework analyses, 63% of DNA labs reported their results to the agency or office that submitted the case for analysis. Fifty-seven percent of DNA labs regularly reported the results to prosecutors' offices and 40% regularly reported to the investigating office.

For convicted offender samples nearly all labs reported their results to a CODIS office. (See the discussion of CODIS on page 8.) One lab regularly reported convicted offender results to a sexual offender database, and two regularly reported to a State identification system.

Policies and procedures for case processing

To help control the flow of cases through DNA labs, a majority of labs had policies for the acceptance and processing of casework. Sixty-nine percent of labs reported having a policy for acceptance of DNA submissions. While two-thirds of the labs said they would accept any criminal cases, nearly 30% of the labs had some restrictions on the known subject cases and unknown subject cases they would accept (table 12).

Table 13. Forensic laboratory criteria for assigning or starting DNA cases, 1998

System for prioritizing cases	Labs receiving DNA cases/samples Number	Percent
Had a priority system for starting DNA cases	98	92%
Criteria for starting cases		
Date evidence is received	38	36%
Court date	87	81
Prison release date	3	3
Prosecutor's request	54	50
Other	31	29

Note: Multiple responses reported.

Table 14. Forensic laboratory programs to review inactive, closed, or previously analyzed DNA cases, 1998

	Labs receiving DNA cases/samples Number	Percent
Had a program to review DNA cases	70	65%
Reasons cases were reviewed		
Requested by submitting agency	53	49%
DNA not tested before	32	30
DNA test with earlier technique	21	19
Other	7	6

Note: Multiple responses reported.

Table 15. DNA laboratory sample receipt and case processing, 1998

	Total responses	Analyze DNA cases/samples Number	Percent
Convicted offender samples			
Receive blood	28	25	89%
Receive saliva	28	5	18
Receive other samples	28	2	7
Casework evidence			
Policy to minimize samples taken per case	106	35	33%
Test adjacent cutting	107	53	50
Notify when all material used up	108	64	59
Save sample for retesting	108	92	85

Note: Multiple responses reported.

Nearly all labs (92%) reported having a system for prioritizing how cases are assigned for analysis. Eighty-one percent of labs assigned cases for analysis according to the cases' court dates. Half of labs started cases based on prosecutor requests and just over a third of the labs used the date cases were received (table 13).

A majority, 65%, of DNA labs also had a program for looking at inactive, closed, or previously analyzed cases (table 14). Nearly half the labs that analyzed these types of old cases did so when requested by the agency submitting the case's evidence. Thirty percent of labs that reanalyzed cases had a program that analyzed cases when DNA testing was not previously done.

For casework evidence, a third of DNA labs reported a policy to minimize the number of samples taken per case, such as taking only the most probative samples (table 15). Half of labs took adjacent cuttings to act as a substrate control, and 85% of labs saved DNA samples for possible retesting.

Fifty-nine percent of labs attempted to notify someone, such as the agency that submitted the evidence, when retesting would not be possible because the original analysis would use all available material.

Storage of DNA

Most labs store samples of DNA in case there is a need to reanalyze the DNA evidence in the future. The most common forms in which labs stored DNA for retesting were extracted DNA, used by 88% of labs that stored DNA, and cuttings and swabs stored by 82% of those labs (not shown in a table). Eighty-six percent of labs that stored DNA stored it frozen, and 22% stored it ultra-frozen.

The labs' capacities to store DNA ranged from 500 to 250,000 samples. On average 52% of their storage capacity was being used. Of DNA labs that saved DNA samples, about 80% stored the samples indefinitely, and the remaining labs reported storing DNA samples from 2 to 84 months. The median time DNA samples were stored by those labs was 24 months.

Equipment and supplies

Laboratories reported owning a total of 292 thermocyclers, mainly Perkin-Elmer models. The median number of thermocyclers for a DNA lab was two.

The DNA labs reported owning a total of 183 analyzers. The most commonly owned analyzer was the ABI310, making up two thirds of all the analyzers. The next most common analyzers were the Hitachi/FMBIO (17%) and the ABI377 (11%). Each DNA lab owned from 0 to 10 analyzers with the median number of analyzers per lab being 1.

While 30 labs reported that they planned to use robotics or some type of automated processing in their DNA analyses, 6 labs reported that they were currently using automation. Five of those labs reported using automation in the extraction of DNA ; five used it in separation and analysis. Four of the labs used automation in spotting or aliquoting, and two labs used it for PCR reaction set up.

The forensic community is moving away from Restricted Fragment Length Polymorphism (RFLP) testing toward the newer technology of Polymerase

Chain Reaction (PCR). Even so, 43 DNA labs reported using RFLP for casework, and 14 labs reported using it for convicted offender samples.

The DQ Alpha test kit was reported by 73 labs for casework, followed closely by Polymarker, used by 67 labs. Casework was also done by 44 labs using Profiler Plus and by 41 labs with D1S80. For convicted offender samples, 17 labs reported using Profiler Plus, and 13 labs used Cofiler.

FBI — Combined DNA Index System (CODIS)

CODIS enables State and local law enforcement crime laboratories to exchange and compare DNA information electronically.

All 50 states and the District of Columbia have passed legislation requiring offenders convicted of certain crimes, determined by each State, to provide DNA samples. Analysis of those samples reveals a set of genetic characteristics, a DNA profile, unique to each individual. Those DNA profiles are entered into the convicted offender index of CODIS.

DNA profiles developed from crime scene evidence, such as semen stains or blood spatters, are entered into the forensic index of CODIS.

CODIS uses the two indexes to generate investigative leads in crimes from which biological evidence is recovered. CODIS software searches the two indexes for matching DNA profiles.

The FBI provides CODIS software, installation, training, and user support, free of charge to any State or local law enforcement lab performing DNA analysis.

For more information about the FBI and the CODIS program visit the FBI website at www.fbi.gov.

This report, survey questionnaire, and other materials from the Bureau of Justice Statistics are available through the Internet —

http://www.ojp.usdoj.gov/bjs/

The Bureau of Justice Statistics is the statistical agency of the U.S. Department of Justice. Jan M. Chaiken, Ph.D., is director.

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Greg W. Steadman wrote this report under the supervision of Steven K. Smith. Marika Litras provided statistical assistance and review. Tom Hester and Tina Dorsey edited the report. Jayne Robinson prepared the report for publication.

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