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Use of Biometric Technology to Reduce
Fraud in the Food Stamp Program

**USE OF BIOMETRIC IDENTIFICATION TECHNOLOGY
TO REDUCE FRAUD IN THE FOOD STAMP PROGRAM:
FINAL REPORT**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	vii
1. INTRODUCTION	1
1.1 Increasing the Integrity of the Food Stamp Program.....	1
1.2 Biometric Identification in Social Services.....	2
Expansion of Biometric Identification.....	3
Assistance Programs Subject to Biometric Requirements.....	5
1.3 Organization of This Report.....	5
2. STATE INTERVIEWS.....	9
2.1 State Selection and Data Collection Methods.....	9
2.2 Interview Results: Planning and Implementation.....	10
Impetus and Technology Selection	10
State Planning Activities.....	10
Implementation	12
Modifications to State Systems.....	14
Organization and Staffing.....	15
Vendor Role	15
Staff Preparation and Training.....	16
Informing Clients and the General Public.....	17
2.3 Interview Results: Policy and Procedure	17
Mandatory Participants and Exemptions.....	18
Match Response.....	20
Binning and Filtering.....	21
2.4 Interview Results: Ongoing Operations	22
Types of Matches and Investigations	22
Office and Client Burden.....	22
Technical Problems	23
3. IMPACT OF FINGER IMAGING	25
3.1 Detected Fraud	26
3.2 Refusals to Comply with Finger-image Requirements.....	28
3.3 Reduction in Applications or Caseload.....	31
3.4 Summary	33

4. DETERRENT EFFECTS OF FINGER IMAGING ON ELIGIBLE INDIVIDUALS	35
4.1 Client Reactions.....	35
4.2 Former Client Interviews.....	37
4.3 Client Advocate Opinions	37
4.4 Summary	39
5. COST ANALYSIS OF FINGER IMAGING IN THE FSP.....	41
5.1 Review of State Costs Estimates	41
5.2 Elements of Implementation and Operating Cost.....	43
5.3 Quantifying the Benefits of Finger Imaging	45
5.4 Summary	46
6. SUMMARY, CONCLUSIONS, AND DISCUSSION.....	49
6.1 Summary of Findings	49
6.2 Biometric Technology, Welfare Reform and Assessment of Duplicate Participation	50
6.3 Future Developments.....	52
REFERENCES	53
APPENDIX A. STATE STAFF INTERVIEW GUIDE.....	A-1
APPENDIX B. PROFILES OF STATE FINGER-IMAGING SYSTEMS.....	B-1
APPENDIX C. REPORT OF CLIENT ADVOCATE INTERVIEWS.....	C-1
APPENDIX D. CLIENT ADVOCATE INTERVIEW PROTOCOL	D-1

List of Tables

Table 1. Enabling Legislation for Biometric Systems	11
Table 2. Start-Up and Implementation Description	13
Table 3. Mandatory Participants by Assistance Program and Allowable Exemptions	19
Table 4. Match Response Time.....	21

Table 5. Finger-image Matches Attributed to Fraud	27
Table 6. Refusals of Existing Cases to Participate in Finger Imaging	29
Table 7. Summary of Client Survey Results	36
Table 8. Three-Year Cost Estimates for Finger Imaging	42
Table 9. Cost Elements Included in State Estimates	44

List of Figures

Figure 1. Current and planned biometric identification systems in the U.S. (November 1998).....	7
Figure 2. Food Stamp and TANF/AFDC households, 1993-1997	32

EXECUTIVE SUMMARY

Biometric identification technology provides automated methods to identify a person based on physical characteristics—such as fingerprints, hand shape, and characteristics of the eyes and face—as well as behavioral characteristics—including signatures and voice patterns. Although used in law enforcement and defense for several years, it has recently been used in civilian applications and shows some promise to reduce the number of duplicate cases in the Food Stamp Program (FSP) and other assistance programs (GAO, 1995).

Biometric identification systems are currently operational at some level in Arizona, California (under county initiative, first by Los Angeles County), Connecticut, Illinois, Massachusetts, New Jersey, New York, and Texas. Finger imaging is the principal form of technology used in all eight States, though alternative technologies have simultaneously undergone trials in Massachusetts (facial recognition) and Illinois (retinal scanning). By the end of 2000, new systems are expected to be in place in California (statewide unified system), Delaware, and North Carolina. Other States are currently in the initial planning stages, including Florida, Maryland, Michigan, Mississippi, Pennsylvania, and South Carolina. However, there is little information available at this point regarding the specific course and trajectory these States will follow in terms of system types, implementation schedules, and the benefit programs in which they will implement the new requirement.

This report provides an overview of the experience of nine States with biometric identification technologies as of September 1999 and discusses some of the major policy and operational issues encountered during implementation and testing. The report also synthesizes available information on the effectiveness of the technology in reducing duplicate participation and provides a discussion of measurement complexities and issues on the horizon as use of the technology continues to expand. A companion report (Sticha & Ford, 1999) contains an overview of biometric identification technology, examining the functional capabilities, performance, and applications of the various technologies with a particular focus on finger imaging, the most commonly used and well known.

Telephone interviews of 1-2 hours in duration were conducted in May-June 1998 with representatives of human service agencies in Arizona, California, Connecticut, Illinois, Massachusetts, New Jersey, New York, and Pennsylvania. As part of an earlier task of this study, we conducted site visits to San Antonio, Texas to observe the Lone Star Image System (LSIS) demonstration and to interview State and county agency staff. Information on Texas is based on those visits and interviews. The States interviewed, with the exception of Pennsylvania, have installed biometric identification systems and are requiring applicants to federal and State benefit programs to submit to the new procedures during the eligibility determination process.

The purpose of the interviews was to explore State experiences with biometric identification systems, including factors in the decision-making and planning processes, the dynamics of system start-up and implementation, issues and problems related to system and agency operations, and perceptions regarding the impact of biometric identification procedures on the application and eligibility determination processes. Each of the States participating in the

study was asked to provide a description of the critical early events that occurred during the planning phases of their respective projects. In addition, those States that had already implemented systems were asked to describe their implementation experiences.

Results of State Interviews

When finger-imaging technology was first applied to reduce multiple participation fraud in assistance programs, there were many concerns about the performance and reliability of the technology in a social service application, as well as about the potential stigma that a finger-image requirement would place on potential clients. The experience of the eight States that have incorporated finger imaging into the process of applying for welfare assistance suggests that many of these fears were unfounded. Finger imaging has been readily integrated into the human services programs of the affected states. However, despite the positive reaction to finger imaging from the State officials we interviewed, there is still uncertainty regarding the extent to which this technology can reduce multiple participation fraud.

The States planned for implementation of their biometric identification systems in response to a wide variety of factors and considerations idiosyncratic to each State environment. Some States reported that their respective legislative mandates, which prescribed specific dates by which biometric systems were required to be in place, allowed insufficient time for development and planning. The States developed and followed implementation schedules in accordance with internal priorities and considerations. The States uniformly described their implementation processes as largely uneventful, though they encountered a variety of minor implementation issues, most of which were associated with the logistical difficulties of mobilizing and managing such a complex initiative.

Preparing staff for the implementation of the biometric systems, both philosophically and operationally, took different forms, priorities, and levels of effort in the States. At implementation, advance notification to clients and/or the general public about new biometric client identification procedures was considered important by all State representatives. The objective of providing advance notification was to inform and prepare clients for the additional application or recertification step (i.e., to explain the requirement and who is required to submit, and to address client concerns), as well as to accelerate enrollment of the existing caseload. All States prepared informational mailings to clients advising them of the new requirement. Some States reported developing additional outreach media including multilingual (English and Spanish) videos, posters, and brochures for viewing and distribution in the local office. Most of the States also identified various outlets in the community through which they informed the general public in advance about the implementation of biometric client identification procedures.

The States with operating systems reported that implementation of new biometric client identification procedures had a negligible impact on operations at the local office level. In general, States also reported that the problems and obstacles encountered in operating their respective projects are not unlike those encountered in demonstrating any new technology or procedural modification. These States also reported that their systems and procedures were implemented without unexpected difficulty and were rapidly institutionalized. All the States confronted a range of basic physical space and logistical issues, including where to situate the new

equipment, how to appropriately alter job descriptions, who to reassign or hire to handle the new procedures, and how to adjust the flow of clients and paperwork most efficiently. However, none reported any particularly noteworthy difficulties. States reported that clients have been cooperative and accepting of the technology.

Finger Imaging and Fraud Reduction

Assessing the ability of finger imaging to reduce fraud is difficult because the amount of fraud caused by duplicate participation in welfare programs is unknown, and because changes in caseload after the introduction of finger imaging cannot be interpreted unambiguously as reduction of fraud. The evaluations of finger imaging systems conducted by six States have produced the following findings.

- A small number of duplicate applications (approximately 1 duplicate for every 5,000 cases) have been detected by finger imaging systems. Finger-imaging systems appear to detect more fraud in statewide implementations than in regional pilot systems. Additional matches have been found by interstate comparisons of finger-image data.
- Institution of a finger-imaging requirement can produce a significant, short-term reduction in caseload, because some existing clients refuse to comply with the requirement. The number of refusals depends on the implementation procedures and appears to be lower when finger imaging is incorporated into the recertification process.
- The most carefully controlled estimate of non-compliance among existing clients suggests that introduction of a finger-imaging requirement reduces participation by approximately 1.3%. However, this estimate reflects both reduced fraud and deterrence of eligible individuals and households.

Finger Imaging as a Deterrent to Legitimate Participants

Clients do have some concerns about finger imaging. Roughly 15% expressed concerns in the State surveys and interviews conducted to evaluate finger-imaging programs. These concerns center on issues of privacy, unjust treatment of poor people, inconvenience, and fear of interagency sharing.

There is little data on which to estimate the size of the deterrence effect. Based on the results from client surveys in five States, a substantial majority of clients had no objection to finger imaging and thought it was a good idea.

There was little evidence that clients discontinued benefits because they were intimidated by the finger-image requirement. Interviews with former clients in Texas found that only two of the 78 former food stamp recipients (both of whom had refused to be imaged) attributed their loss of benefits to finger imaging. Similar interviews in Los Angeles County found that, of those former clients interviewed, no one who refused to be finger imaged expressed a concern with the process.

Cost and Effectiveness of Finger Imaging

Since there is no reliable estimate of the magnitude of duplicate participation in the FSP, there is uncertainty regarding the cost effectiveness of finger imaging. Available data are inadequate to make precise estimates of either the costs or benefits of finger imaging for the FSP. Calculations using the data that are available, supplemented by a number of assumptions, suggest that reduction in caseload covers the costs of finger imaging technology. However, the percentage of the caseload reduction due to decreased multiple participation is unclear.

The analysis makes no assumption about how costs or benefits are allocated among Federal or State agencies. In addition, it does not include the cost required to modify existing software to make it compatible with the finger-imaging system. Finally, it does not take into account that certain cost elements, such as the cost for infrastructure or centralized equipment, may be independent of caseload fluctuation.

1. INTRODUCTION

This report provides an overview of the experiences of nine States with biometric identification as of September 1999, and discusses some of the major policy and operational issues encountered during implementation and testing. The report also synthesizes available information on the effectiveness of the technology in reducing duplicate participation and provides a discussion of measurement complexities and issues on the horizon as the use of this technology continues to expand. A companion report contains an overview of biometric identification techniques, examining the functional capabilities, performance, and applications of the various technologies with a particular focus on finger imaging, the most commonly used and well known (Sticha and Ford, 1999).

1.1 Increasing the Integrity of the Food Stamp Program

The Food Stamp Program (FSP) provided more than \$16.9 billion in benefits to over 19 million individuals in 1998. As part of its ongoing effort to increase program integrity, the Food and Nutrition Service (FNS) monitors the level of food stamp overpayments and has developed and promoted procedures to prevent households from obtaining benefits to which they are not entitled.

The overall level of food stamp overpayment is estimated by FNS in its annual quality control review. Summarizing these reviews, the General Accounting Office (GAO, 1997, 1998a) reported that households receive more benefits than they are entitled to in approximately 15% of all food stamp *cases*; these overpayments represent 7% of the *benefits* that are issued. Approximately one-quarter of these overpayments were judged to be caused by intentional program violations by clients (GAO, 1994). The report enumerates four potential sources of fraud, waste, and abuse in the FSP: (1) The eligibility and benefit determination process, (2) the use of benefits for nonfood purposes, (3) counterfeiting of food stamp coupons or their use by unauthorized individuals, and (4) theft or loss of coupons in the mail.

Until recently, investigation of questionable information given by an applicant for food stamps was a labor-intensive activity that often severely taxed the capabilities of local welfare offices (GAO, 1997). Furthermore, the resulting information—based on interviews with employers, landlords, friends and neighbors of the applicant—was often of limited reliability.

Recent technological advances have provided tools that can be used to make fraud more difficult to commit and easier to detect. For example, the Income Eligibility Verification System (IEVS), established in 1986, required that case records be matched with six external data bases. Relevant data bases may contain information about wages, income taxes, unemployment insurance benefits, or other information that can be used to verify the income or assets of a recipient or applicant household. A study sponsored by FNS established the cost-effectiveness of IEVS when appropriate targeting methods were used (Maxfield & Allin, 1995). GAO (1997, 1998b) has suggested other data bases that can be used to verify the legitimacy of an application for food stamp aid. These data bases include death records maintained by the Social Security Administration (GAO, 1998b) and records of prison inmates (GAO, 1997). Comparison of case

records to the information in these data bases can help ensure that ineligible individuals are not included as members of the recipient or applicant household.

The Food Stamp Act as amended [7 CFR 272.4(f)(1)] requires each State agency to establish a system to assure that no individual participates in the FSP more than once a month, in more than one jurisdiction, or in more than one household within the State. The system established to identify such individuals must use identifiers such as names and social security numbers at a minimum, and may use other identifiers, as the State agency deems appropriate. Under 7 CFR 272.4(f), the use of finger images and other non-intrusive biometric identifiers is permissible in fulfilling this requirement.

There are many ways an individual can commit program fraud using duplication of identity. An individual can apply for and receive concurrent benefits from more than one program when, in fact, he or she is ineligible or would be eligible for a lower benefit amount, for example. More specifically, a recipient of benefits under the Temporary Assistance to Needy Families (TANF) program who is eligible for a fairly low food stamp benefit may apply for food stamps under another identity, thus fraudulently obtaining the full TANF benefit and the full FSP benefit.¹ To create a fictitious identity, one needs a false birth certificate—created with a fictitious name—to obtain secondary identification documents from issuing agencies. With these documents, a person has sufficient identification to obtain assistance concurrently in multiple cases without fear of detection.

Recent developments in biometric identification technology have potential to provide positive identification of applicants and recipients of food stamp benefits, and consequently reduce the level of fraud in the program. This technology provides automated methods to identify a person based on physical characteristics—such as fingerprints, hand shape, and characteristics of the eyes and face—as well as behavioral characteristics—including signatures and voice patterns. Although these technologies have been used in law enforcement and defense for several years, they have recently been used in civilian applications and show some promise to reduce fraud in the FSP and other assistance programs (GAO, 1995). This technology has the potential to identify individuals who attempt to apply for benefits on more than one case, or who attempt to obtain benefits belonging to someone else.

1.2 Biometric Identification in Social Services

Following a 1983 California Superior Court ruling that prohibited human services agencies in Los Angeles County from denying aid to applicants without identification, the Los Angeles County Department of Public Social Services (DPSS) began exploring the use of biometric identification technology to confront and eradicate the potential for duplicate case fraud

¹ Passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) in 1996 dismantled the old Aid to Families with Dependent Children (AFDC) program and replaced it with a time-limited cash assistance program called Temporary Assistance for Needy Families (TANF). The effect of the legislation was to revoke the entitlement status of the old AFDC program and return administrative control of basic welfare services to the States, which are now free to design services within broad, federal parameters. AFDC is used in this report to reference cash assistance prior to implementation of TANF.

(DePompa 1997). In 1991, embarking on the first demonstration of its kind in a non-law enforcement environment, DPSS, in cooperation with Electronic Data Systems (EDS), implemented the Automated Fingerprint Image Reporting and Match (AFIRM) system and began fingerprinting all applicants to the county's General Relief (GR) program, which dispenses financial assistance to families ineligible for federal or State assistance programs.

Under an agreement with the California Department of Social Services, and with matching funds from the U.S. Department of Health and Human Services (DHHS), a three-year project beginning in April 1994 expanded the requirement to the Aid to Families with Dependent Children program. A review of the AFIRM project conducted by the department's Office of the Inspector General (OIG) in 1996 found that the system generated considerable savings that were attributed to the discontinuance of AFDC and food stamp benefits to a large number of cases in LA County. The county estimated its total savings to be \$86 million (accounting for operating costs), with net savings estimated to be \$66 million. The OIG report indicates that the AFIRM system also had benefits in the detection of other types of welfare fraud. While investigating a sample of 137 cases in which persons for whom fingerprinting was required failed to show, the county found evidence of non-multiple case fraud in 63 cases (46% of the cases). These forms of fraud included concealing income and misrepresenting household composition (DHHS OIG, 1996).

Expansion of Biometric Identification

Since the Los Angeles County experiment, the technological landscape has become more complex and competitive with the emergence and continuing refinement of alternative biometric applications, including hand geometry, iris recognition and retinal scanning, voice recognition, and facial imaging (Lazar, 1997). Encouraged by the performance of the AFIRM system, a number of other States began exploring the feasibility of finger imaging as well as alternative systems, pursued enabling legislation, selected systems, and began implementing selected systems in accordance with legislative mandate.² In the wake of the AFIRM experiment, seven States implemented biometric identification systems, chronologically as follows:

- The *New York Department of Social Services*, under contract with Sagem-Morpho, implemented its Automated Finger Imaging System (AFIS) in 38 counties in June 1995, began an expansion throughout the rest of the State in August 1995, and had a statewide finger imaging system in place by January 1996.
- The *New Jersey Department of Human Services*, under contract to The National Registry, followed in July 1995 with implementation of its Recipient Identification Program (RIP), which is currently operating in an experimental phase in portions of the northern tier of the State.

² The State of California functions under a State-administered, county-operated system in which six counties followed LA County and implemented biometric systems independently, with State approval. However, interviews for this study were conducted only at the state level; this report, therefore, does not include information specific to each of California's seven counties that currently have independently operating systems.

- The *Connecticut Department of Social Services* implemented its Digital Imaging System in January 1996, under contract to the Polaroid Corporation (formerly NBS Imaging Systems) and The National Registry, and completed a statewide roll-out the following September.
- The *Massachusetts Department of Transitional Assistance* implemented finger imaging and facial recognition technology in April 1996, under contract to Viisage Technology, with a subcontract to The National Registry specifically for the finger imaging component, and currently is the only State experimenting with a dual platform system.
- The *Illinois Department of Human Services* implemented its Retinal Identification System (ISCAN) in May 1996 (discontinued in March 1998), and its Automated Identification and Match System (AIMS), a finger imaging system, in February 1997, under contract to Printrak International.
- The *Texas Department of Human Services* implemented its Lone Star Image System (LSIS) in October 1996, under contract to Sagem-Morpho, as a two-county demonstration in the San Antonio metropolitan area (Bexar and Guadalupe). Statewide implementation of the system was completed in August 1999.
- The *Arizona Department of Economic Security* implemented the Arizona Fingerprint Imaging Program (AFIP) in January 1998, under contract to Sagem-Morpho, and completed a rapid statewide roll-out by July 1998.

As of September 1999, two States were in the very late planning stages and were preparing for implementation, including:

- In California—a State-administered, county-operated State in which seven counties implemented biometric systems independently with State approval since 1991—the *California Department of Social Services* awarded a contract to implement a statewide, unified finger imaging system covering all 225 counties in September 1999. Contract award had been delayed after the request for proposals (RFP) was released in 1997, recalled, and reissued in 1998.
- The *Pennsylvania Department of Public Welfare*, which released its original request for proposals in January 1997 and encountered legal challenges, now expects to release a new RFP for the Pennsylvania Automated Recipient Identification System (PARIS), a finger imaging system, by January 2001.

As of September 1999, five States had biometric identification systems operating statewide, including Arizona, Connecticut, New York, and Texas, which have finger imaging systems, and Massachusetts, which has a statewide facial matching system in operation. California, Illinois, and New Jersey currently have systems operating at a pilot capacity in a limited number of jurisdictions.

Other States are currently in the initial planning stages, including Delaware, Florida, Maryland, Michigan, Mississippi, North Carolina, and South Carolina; however, there is little information available at this point regarding the specific course and trajectory these States will follow in terms of system types, implementation schedules, and the benefit programs in which they will impose the new requirement. This report focuses on the experiences to date of, and the current activity underway in, a number of front-running States. The current status of biometric identification systems in food and income assistance programs in the U.S. is presented in Figure 1.

Assistance Programs Subject to Biometric Requirements

Only in Massachusetts (facial matching only) and certain demonstration counties in California are applicants to each of the major federal and State food and income assistance programs—the Food Stamp, TANF, and General Assistance programs—currently subject to new biometric client identification procedures.

Food Stamp Program: As of September 1999, applicants for food stamps in five States with biometric identification systems in operation at some level—Arizona, California (LA County as well as six other counties with county-operated systems), Massachusetts, New York, and Texas—were required to submit to new client identification procedures. Food stamp applicants in Connecticut, Illinois, and New Jersey are not currently required to comply. Both California (as it assimilates all of its counties under one unified statewide system) and Pennsylvania plan to require food stamp applicants to submit to finger imaging procedures when those systems become operational.

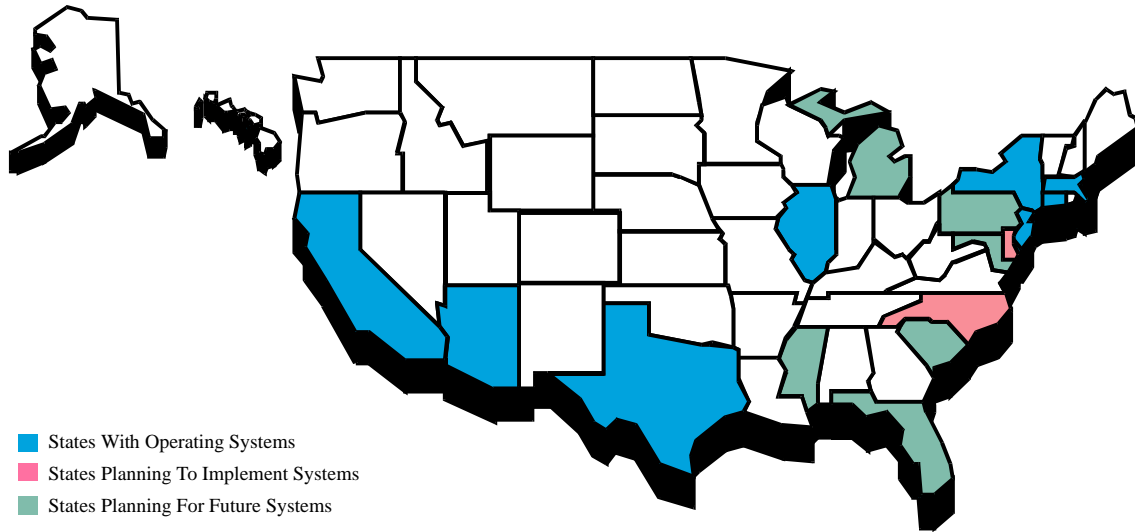
TANF and General Assistance: Applicants for cash assistance under the Temporary Assistance for Needy Families (TANF) program are required to submit to new client identification procedures in seven States with systems in operation, including Arizona, California, Connecticut, Illinois, Massachusetts, New York, and Texas; only TANF applicants in New Jersey currently are not. Applicants for General Assistance (GA) are required to submit to new identification procedures in five States, including California, Connecticut, Massachusetts, New Jersey, and New York; applicants for general assistance in Arizona, Illinois, and Texas are not required to comply.

1.3 Organization of This Report

The remainder of this report summarizes the information obtained from the States and synthesizes it to assess three issues that are important in determining the effectiveness of finger-imaging technology to reduce duplicate participation fraud in the FSP. It begins with a summary of the State interview results, highlighting the activities involved in planning and implementation of the systems, the policies and procedures governing their use, and their impact on the ongoing operation of the affected assistance programs. The report then addresses three effectiveness issues, including the ability of finger-imaging technology to reduce duplicate participation fraud, the extent to which the technology may deter participation by eligible households, and the costs required to implement and operate such systems. The discussion of these issues is based primarily on supporting documentation provided by the States in conjunction with the interviews. The report concludes with a discussion of measurement complexities and issues on the horizon as the technology continues to proliferate. Several appendices present supporting information, including

interview guides, profiles of the biometric systems planned or in use in the nine States from which information was obtained, and details of interviews that were conducted with client advocates regarding the LSIS pilot in Texas.

FIGURE 1
CURRENT AND PLANNED BIOMETRIC IDENTIFICATION SYSTEMS IN THE U.S.
(SEPTEMBER 1999)



- States With Operating Systems
- States Planning To Implement Systems
- States Planning For Future Systems

STATES PLANNING TO IMPLEMENT SYSTEMS IN FY00 (as of September 1999)
California (statewide system)
Delaware
North Carolina

STATES PLANNING FOR FUTURE BIOMETRIC IDENTIFICATION SYSTEMS (as of September 1999)
Florida
Maryland
Michigan
Mississippi
Pennsylvania
South Carolina

STATES WITH OPERATING BIOMETRIC IDENTIFICATION SYSTEMS (as of September 1999)					
STATE	SYSTEM TYPE	START UP	STATUS	VENDOR	BENEFIT PROGRAM
Arizona	Finger Imaging	January 1998	Statewide	SAGEM-MORPHO	TANF, FSP
California* LA County	Finger Imaging	April 1991	County-wide	Electronic Data Systems	TANF, FSP, GR
Connecticut	Finger Imaging	January 1996	Statewide	NBS Imaging National Registry	TANF, GA
Illinois	Finger Imaging Retinal Scanning	February 1997 Discontinued	Pilot —	PRINTRAK Eye Identify	TANF
Massachusetts	Facial Recognition Finger Imaging	April 1996 April 1996	Statewide Pilot	VIISAGE National Registry	TANF, FSP, GA
New Jersey	Finger Imaging	July 1995	Pilot	National Registry	GA
New York	Finger Imaging	June 1995	Statewide	SAGEM-MORPHO	TANF, FSP, GA
Texas	Finger Imaging	October 1996	Statewide	SAGEM-MORPHO	TANF, FSP

* Use of biometric identification systems in California began under county initiative in Los Angeles County; six other counties have since followed, including Alameda, Contra Costa, Orange, Sacramento, San Diego, and San Francisco counties. A unified, statewide system is expected in FY01.

2. STATE INTERVIEWS

This study was designed to include three principal components: (1) Evaluation support for the Lone Star Image System (LSIS) demonstration in Texas, (2) Interviews with technology vendors to focus on capabilities and applications of biometric identification technology to the Food Stamp Program, and (3) Interviews with a sample of State agency representatives in the lead in experimentation and testing of these technologies, with a focus on implementation and operational issues. The project team conducted site visits to offices of the Texas Department of Human Services in Austin, as well as to the demonstration offices in San Antonio, in December 1996 and June 1997. The purpose of the visits was to observe LSIS and to conduct interviews and focus groups with operators, eligibility workers, and supervisors, and where possible, with staff in the investigative divisions of the local offices. Interviews with technology vendors were conducted in 1997, the results of which were published in a companion report in April 1998 (Sticha and Ford, 1999).

2.1 State Selection and Data Collection Methods

As the study began, FNS had been tracking State activity regarding use of biometric identification technology in their human services programs; that information served as the starting point for selecting States to participate in the State agency interviews. Other candidate States were identified from multiple sources, including technology conferences, as well as the Biometrics in Human Services User Group (BHSUG) Newsletter. Nine states were originally selected to participate. One state (North Carolina) declined to participate, because, at the time the invitation was extended, the State was in a very early planning stage and believed its potential contribution would be limited.

Following the first visit to observe LSIS in San Antonio, the project team began developing an interview guide to collect systematic information from States selected to participate in the study. Telephone interviews of 1-2 hours in duration were arranged and conducted in May-June 1998 with State-level staff in Arizona, Connecticut, Illinois, Massachusetts, New York, New Jersey, California, and Pennsylvania. Similar information requested from these States by telephone was collected during site visits to Austin and San Antonio; information on Texas contained in this report is based on those visits. The interview guide to which all other States responded appears in Appendix A.

The purpose of interviews was to explore State experiences with biometric identification systems, including forces in the decision-making and planning processes, the dynamics of system start-up and implementation, issues and problems related to system and agency operations, and perceptions regarding the impact of biometric identification procedures on the application and eligibility determination processes. It is important to point out that each State's situation is unique. Four of the States interviewed have systems currently in operation statewide, while others continue to operate at a pilot level; two States included in the study are in the late planning stages. In addition, State staff play different roles vis-à-vis their respective vendors. Information available and provided by the States during interviews reflects conditions and circumstances specific to each State environment. With that in mind, this summary presents a discussion of the

more critical issues that apply across all participating States and around which meaningful summary observations are possible. Individual State profiles, appearing in Appendix B, present more detailed information about each State's specific status and circumstances.

2.2 Interview Results: Planning and Implementation

Each of the States participating in the study was asked to provide a description of the critical early events that occurred during the planning phases of their respective projects. In addition, those States that had already implemented systems were asked to describe their implementation experiences.

Impetus and Technology Selection

State law mandated biometric identification systems in each of the States in the study. Finger imaging was selected in each of the States, either alone or as one of two selected systems.³ Not all States passed legislation mandating finger imaging specifically. Connecticut's Department of Social Services, for example, was charged with reviewing existing technology, and, to the greatest extent possible, selecting a system compatible with systems in place in-State and in surrounding States. On the other hand, Illinois' legislation was very specific and required finger imaging.

The States reported that finger imaging technology was selected because of its long track record in other applications, its relative cost-effectiveness, and its accuracy. Table 1 identifies Web sites available for the State agencies in the study, some of which contain text of the enabling legislation.

State Planning Activities

The States planned for implementation of their biometric identification systems in response to a wide variety of factors and considerations specific to each State environment. A number of States reported that their respective legislative mandates, which prescribed dates by which biometric systems were required to be in place, allowed for insufficient time for development and planning.

In New Jersey, the planning process was initiated in March 1994 when the Department of Human Services formed a work group—constituted of various members within the Division of Family Development—to assemble a request for proposal (RFP) and to select a vendor. The RFP was released in September 1994, followed by a bidder's conference in November 1994. The department considered bids from four vendors, from which it selected the three lowest bidders to conduct a benchmark test that would serve as the basis for a final selection. The benchmark allowed the department to observe the performance of each bidder,

³ Illinois elected to test retinal scanning in addition to finger imaging, while Massachusetts elected to test facial matching simultaneously with finger imaging.

Table 1
Enabling Legislation for Biometric Systems

STATE	ENABLING LEGISLATION	STATE LEGISLATION WEB SITE	AGENCY WEB SITE
Arizona	Title 46, Section 217 Title 46, Section 218	http://www.azleg.state.az.us/ars/ars.htm	Http://www.de.state.az.us
California	Welfare and Institutions Code, Section 10830	http://www.leginfo.ca.gov/calaw.html	Http://www.dss.cahwnet.gov/
Connecticut	PA 96-176	http://www.cslnet.ctstateu.edu/psindx96/psind017.htm#I1	Http://www.dss.state.ct.us/digital.htm
Illinois	PA 88-554 PA 90-017	http://www.legis.state.il.us (No bill text presently available online.)	Http://www.state.il.us/agency/dhs
Massachusetts	Chapter 5, Section 115 (Acts of 1995)	http://www.magnet.state.ma.us/legis/laws/mgl/index.htm	Http://www.state.ma.us/eohhs/agencies/dta.htm
New Jersey	P.L. 1947, c.156 P.L. 1983, c.85	http://www.njleg.state.nj.us	Http://www.state.nj.us/humanservices/DFD.html#GA
New York	Chapter 55, Article 5, Title 1, Section 139-a	http://assembly.state.ny.us/cgi-bin/claws?law=108&art=23	Http://www.dfa.state.ny.us/
Pennsylvania	Act 1994-49, Section 414; Act 1995-20, Section 414 (amended)	http://www.pasen.gov (No bill text presently available online.)	Http://www.state.pa.us/PA_Exec/Public_Welfare/overview.html
Texas	H. R. Code, Chapter 31, Title 2, Subtitle C, Section 31.0325	http://www.capitol.state.tx.us/statutes/codes/HR000007.html	Http://www.dhs.state.tx.us/

as demonstrated by response speed and accuracy, on a sample of 100 “cards,” or sample clients. A final decision was rendered on both performance and cost considerations.

In Connecticut, legislation passed in 1995 specifically required the Commissioner of Social Services to examine available biometric identifier systems—defined as any system which allows for recognition of an individual through retinal scanning, finger imaging, hand geometry, or facial recognition—and, to the greatest extent possible, select a system that is compatible with the systems in surrounding States. During this exploratory phase, the Department of Social Services (DSS) invited vendors in for demonstrations, while also conducting visits to New York and New Jersey to observe field operations and to consult with State personnel. Finger imaging was found to be accurate, clean, and quick. The commissioner was also authorized in the legislation “to enter into a memorandum of understanding with the State’s Department of Motor Vehicles (DMV), permitting the DMV to provide the hardware, software, equipment maintenance, technical training, and other necessary resources. DSS and DMV, which had a vendor under contract at the time for licensing services, amended the vendor’s contract to enable it to develop a similar technical platform for DSS.

In Arizona, following passage of enabling legislation in 1994, the accounting firm of Ernst & Young (which conducted an evaluation of the Los Angeles County AFIRM demonstration) was commissioned to conduct a cost-benefit analysis of using biometric technology. Predictive models were developed under three scenarios, including conditions under which the biometric platform is: (1) owned in its entirety by the State, (2) jointly owned by the State and by a vendor, and (3) owned in its entirety by the vendor. Within Arizona’s Department of Economic Security, the planning process included three principal components, including an analysis of in-State operations (particularly a review of finger imaging as it existed at the time in the State’s Department of Public Safety), a review of activities in other jurisdictions (e.g., New York, Los Angeles County, Pennsylvania, and Washington), and an examination of all previous studies on the issue of welfare fraud in Arizona.

Implementation

The States uniformly described their implementation processes as largely uneventful, though they encountered a variety of minor implementation issues, most of which were associated with the logistical difficulties of mobilizing and managing such a complex initiative. Table 2 provides a brief summary of startup and implementation activities. In New York, vendor staff had to learn quickly to understand the State’s social services environment, with which it was previously unfamiliar. States conducting mass call-ins to enroll their existing caseloads as quickly as possible, such as New York and Texas, faced the problems of scheduling and the difficulties associated with overflow in the local offices. Some States, including New York, Texas, and New Jersey, identified image quality control as a particularly important issue in the initial months of implementation. In New York, where 400,000 clients were imaged in a period of three months, the Department of Social Services reported that it had to conduct additional training for operators to increase image quality control.

Table 2			
Start-Up and Implementation Description			
STATE	CURRENT STATUS	INITIAL START-UP	IMPLEMENTATION DESCRIPTION
Arizona	Statewide	January 1998	3-month pilot began in 10 offices in three counties (La Paz, Mojave, and Yuma) in rural District IV. System operational in one-third of State by May 1998; system completely rolled out by July 1998.
California*	Systems implemented at county initiative with State approval. The State of California is currently planning for a unified, Statewide system	Los Angeles County started the AFIRM system in 1991, followed by six other counties	Alameda – finger imaging Contra Costa – finger imaging Los Angeles – finger imaging Orange – finger imaging Sacramento – hand geometry San Diego – finger imaging San Francisco - finger imaging
Connecticut	Statewide	January 1996	State's five regional offices were divided over three implementation phases, beginning in the North Central Region. In first two months, workstations and communications with the central site were established in 16 DSS offices and 20 general assistance sites.
Illinois	Pilot (finger imaging)	February 1997	AIMS, the State's finger imaging system, began in DuPage, Western, and West Suburban offices. ISCAN, the State's retinal scanning system, began in Alton and Granite City (Madison County); ISCAN has since been discontinued.
Massachusetts	Pilot (Finger) Statewide (Facial)	April 1996	Finger imaging pilot began in three offices, two in Springfield and one in Lawrence. Facial matching began in 39 offices within first 30 days; now statewide.
New Jersey	Pilot	July 1995	Pilot began in northern tier of the State, including the Trenton area. A statewide rollout has been funded, but not yet initiated.
New York	Statewide	June 1995	Two-county demonstration began in 1992. Legislation expanded to 12-county demonstration, giving other counties the option of joining. In June 1995, began with 38 of 58 counties (including New York City), with a statewide rollout completed in January 1996.
Pennsylvania	Planning	Unknown	
Texas	Pilot	October 1996	Pilot began in Bexar and Guadalupe counties in the San Antonio area. The area was selected because of its proximity to DHS headquarters, its mix of urban and rural counties, its record of performance in past initiatives, and the implementation of other pilots in alternative areas. The San Antonio area was affected by some other initiatives including a demonstration of AFDC time limits in Bexar County in May 1996. Statewide rollout of LSIS, originally scheduled for October 1997, was postponed and was not completed until August 1999.

* Information for this study was supplied by State-level staff; it was not possible to interview each county in California. Source for county-level information in California: Connecticut Department of Social Services (1998).

Modifications to State Systems

A number of implementation issues arose in each State regarding the automated systems on which case management functions depend. Whether and precisely how to modify the State automated case management systems was the basic issue to be resolved. First, should the biometric system database stand alone—leaving the agency at risk for data entry errors and the burdens of a routine reconciliation process—or should the State bear the expense and time required to interface or to integrate with the State's automated case management system? All States answered similarly in the pilot stages by making the biometric efforts "stand-alone" databases. Connecticut has since interfaced its finger imaging system with the rest of the welfare database. Illinois, Massachusetts, New Jersey, and Texas also plan to interface, if not fully integrate, their systems at some point in the future. As of November 1998, Arizona and New York intended to continue with stand-alone systems, while California and Pennsylvania planned to maintain stand-alone databases when their biometric identification systems become operational in FY99.

Second, should biometric information or other statewide demographic information be accessible? Should it be possible to purge information from each terminal? Because of the stand-alone nature of most biometric systems and concern about errors in updating or deleting demographic information, the general practice is to permit viewing of certain State information, but to allow fundamental case changes in the State's database to be made only through the central site in the State. Specific practices range from the strictest in Illinois and Arizona to a more relaxed practice in New Jersey. At least until any future rollout, Illinois does not allow client information to be changed once it has been entered from any site other than the central site in Springfield. Arizona also permits deletions only from the central site. New Jersey, on the other hand, permits updating, modification, and deletion of biometric records, but only at the site where the record originated. Within this continuum is New York, which allows deletions to be made at a single site, but allows updates from multiple terminals.

Third, what security features should exist? To maintain the security of sensitive information at a local or central office, the States follow a number of policies and procedures to keep client data secure. New Jersey is a good example of the ideal kinds of safeguards controlling access to biometric systems. In order to enter New Jersey's system, one has to be an enrolled user at that particular work station, has to have the correct individual password and security code, and must be positively identified with a finger image. One must be finger imaged during the staff enrollment process and this finger image is the final step in the opening of a client application. Additionally, there is an audit trail for every transaction. It records the site, time, and operator for every transaction. As New Jersey's system is currently configured, the only information in the system is case number, name, Social Security Number, sex, and date of birth. There is no benefit information attached to the records. Other States, including Arizona, Illinois, and Massachusetts, use various basic security features such as firewalls, Windows NT security, and password protections.

Organization and Staffing

States were asked to describe any organization and staffing changes—either at the level of the State bureaucracy or at the local office level—that were necessary to accommodate the implementation and operation of their respective biometric identification systems. Among the States with systems in operation statewide, approaches to supplying necessary staff varied.

In Arizona, for example, six existing State staff were transferred to provide management and oversight of the Arizona Fingerprint Imaging Program, while at the local level, all functions were absorbed by existing staff. New York use existing staff and dedicated them to the project, though some areas, including New York City, used system operators supplied by the vendor. Illinois and New Jersey also reported relying wholly on existing staff.

In contrast, the Connecticut Department of Social Services determined that administrative functions associated with its AFIS system could not be adequately absorbed by existing staff. Instead, DSS hired 40-50 new enrollment operators, drawn from candidates identified by a temporary services agency as well as qualified public assistance recipients identified by DSS staff. In California, several State-level positions were created for oversight and management of the project. Once its statewide system becomes operational, counties will be given the responsibility for securing operators and support personnel at the local office level, as well as the discretion to determine whether to draw from existing staff, hire new county employees, or contract out. Finally, in Texas and New Jersey, the need for temporary staff during the implementation was filled by participants of the Job Opportunities and Basic Skills (JOBS) program.

Vendor Role

The division of labor between the contractor and the State has run along similar lines for all States in the study. Beginning with informing the client population and the public, before the biometric system actually is in place, and continuing through training and the actual biometric imaging, the vendor and State serve relatively discrete functions, though overlap is sometimes inevitable. For example, the States have performed much of the public information function, although sometimes the contractor demonstration was a part of the acquaintance process. The contractors have been used to provide much of the training (see Training), although follow-up training may be initiated by the State.

The division of labor for the actual imaging process begins with the operators who perform the biometric imaging. The county or the State generally hires and employs the operators, but the vendor supplies human examiners (in the form of "minutiae experts") to analyze suspect finger prints, retinal scans, or facial matches, and to testify in court, if necessary.⁴ The vendor staffs the central site and processing unit and a help desk in Arizona, New Jersey, New York, Texas, and California, planned). The central processing unit (CPU) is typically found in the

⁴ "Minutiae" refer to the unique characteristics of the ridges that make up a fingerprint. Two finger images match if a sufficient number of corresponding minutiae can be identified on the two images. Human examiners, or minutiae experts, are trained to make these determinations. For additional detail, see the companion report (Sticha and Ford, 1999).

State capital, although the vendor located Arizona's CPU in the same office in Austin, Texas which managed the Lone Star Image System demonstration.

The States reported that their respective vendors are responsive by and large to occasional system problems and disabilities and have established records for providing adequate and timely on-site technical assistance, as necessary. The Illinois Department of Human Services, however, terminated its retinal scanning project in 1998, citing the complexity of the system, the time required to secure biometric records, and the declining responsiveness of its vendor to the department's needs and issues.

Staff Preparation and Training

Preparing staff for the implementation of the biometric systems differed across the States. New York and Illinois used policy memos to ease the way into implementation. New York also conducted regional information sessions. Pennsylvania had the additional task of clearing matters with the relevant unions. Connecticut may have laid the most groundwork when it formed a statewide Digital Imaging Workshop with representation from each of the DSS regional offices, all major departments within DSS's administrative organization, and from some of the General Assistance programs in the State's 169 towns. Connecticut also used a department newsletter—4 in the first 6 months, then once every 2 months—to share information and to discuss potential operational impacts with department staff.

California has exhibited a similar amount of effort up front. Regional meetings were initially held with county staff to describe the planned system, the activities surrounding the implementation of the system, the needs and expectations of the system, and to provide the counties with the opportunity to ask questions. At the time interviews were conducted, the State welfare programs staff were meeting regularly with county staff on the development of procedures and regulations. The State also keeps counties updated with regular written information notices to county welfare directors and Statewide Fingerprint Imaging System (SFIS) representatives assigned in each county.

To help in the operational transition, the vendor provided general training. As an example of significant pre-implementation training, the Arizona Department of Economic Security and its vendor employed formal classroom sessions with overviews and presentations, computer-based training (a training course at any computer with a test at the end), and 8-hour hands-on-training for operators. In Texas, extensive training was provided to office staff in its two demonstration counties by both DHS staff and the vendor. Connecticut and Illinois staff received a 4-hour training session (less so for Illinois' discontinued retinal scanning) at the outset.

Collecting biometric information from applicants at a technically acceptable threshold is an issue for all State systems, which, in general, are configured to reject images of insufficient quality, returning a message to that effect immediately to the work station. Most States indicated that operator error or insufficient training is a principal reason why client information of sufficient quality may not be obtained, and the need for follow-up training to improve image capture and to reduce client processing time was not uncommon across the States.

Informing Clients and the General Public

At implementation, advance notification to clients and/or the general public about new biometric client identification procedures was considered important by all State representatives. The objective of providing advance notification was to inform and prepare clients for the additional application or recertification step (i.e., to explain the requirement and who is required to submit, and to address client concerns), as well as to accelerate enrollment of the existing caseload. All States, with exception of California and Pennsylvania, which remain in a pre-implementation phase, prepared informational mailings to clients advising them of the new requirement. Some States, particularly Arizona and Texas, reported developing additional outreach media including bilingual (English and Spanish) videos, posters, and brochures for viewing and distribution in the local office.

Most of the States also identified various outlets in the community through which they informed the general public in advance about the implementation of biometric client identification procedures. In Arizona, for example, staff used local councils of government as conduits for information to interested parties and interest groups across the State, while also making presentations to the local United Way, schools, and hunger councils in and around La Paz, Mojave, and Yuma Counties, the three jurisdictions selected to pilot the system. The Texas Department of Human Services used a similar approach in the San Antonio and south-central Texas area, where it organized discussions with a regional coalition representing immigrant interests. In Pennsylvania, where client outreach will be a vendor responsibility as the State prepares to implement its system, staff expect to mobilize an informational campaign specifically targeted to client advocacy groups across the State. Most of the States, particularly Connecticut and Texas, emphasized that public information is essential to minimizing uncertainty and anxiety about this technology and that open and unrestricted dialogue ought to be encouraged.

In addition to providing information, Connecticut deployed portable workstations in the community during its initial implementation and throughout its statewide roll-out. For the convenience of clients, State staff set up enrollment workstations in locations such as a former State hospital, an office building, and various non-profit facilities. These stations helped to get the system up quickly, while also relieving the logistical and scheduling burdens within the local offices themselves.

2.3 Interview Results: Policy and Procedure

As new biometric identification systems were installed, State agencies informed current recipients or new applicants of the biometric identification procedure and the need to follow the procedure as a step in the recertification or application process. Though there may be variations across States, the following describes a basic process for an incoming new applicant:

A new applicant completes the application by supplying the required demographic, household, income, resource, and expense data, and submits it, generally in person, to the local office. Once submitted, a clerk informs each applicant about the biometric requirement, and the State's policy on other family members who are also required to comply (see Mandatory

Participants, below). Once a determination is made regarding expedited processing, clerks schedule applicants for intake appointments with eligibility workers.

On the day of and just prior to the intake interview, an applicant is referred to the biometric identification specialist, who first conducts a system inquiry to determine whether the individual has already undergone the procedure and whether the biometric information (e.g., finger or facial image, retina scan) is therefore already on record. If the specialist determines that the applicant's biometric information is not on record, the specialist will enter demographic information for the applicant and will collect the biometric information. The information is then transmitted to a central system for matching. If the applicant and any other family member who is also required to comply with the requirement refuse to do so, the entire application is either officially pended or processing is terminated, unless an exemption is granted.

Households eligible for expedited processing are subject to different procedures. In Texas, for example, only household members present at the time of application are required to be imaged. The image requirement is handled like any other postponed verification for absent household members who are required to be imaged. If postponed, the absent household members must be imaged prior to release of the held benefits.

Mandatory Participants and Exemptions

All adults (over the age of 18) applying for food stamp, TANF, and State general assistance benefits must submit to the new biometric identification requirements, including adult household members (see Table 3). In most States, minor heads of households and minor parents (individuals under age 18 who are not heads of households) are also required to comply.

In all States, case processing continues in the event of a temporary exemption. The inability to obtain a finger image by itself, therefore, is not the basis for delaying issuance of benefits beyond federal and State processing time standards. However, there are important differences in the stipulated conditions under which an exemption may be permitted. As a matter of policy, most States observe some established set of conditions under which exemptions are granted. Most relate to the capacity of the individual to supply the necessary physical information at the moment of application or recertification.

Where finger imaging is used, States tend to grant temporary exemptions to individuals with injuries to the index fingers and permanent exemptions in cases where individuals are missing index fingers. In Illinois, where retinal scanning was tested, persons with bandaged eyes were granted temporary exemptions, while blind individuals were granted permanent exemptions. In all States, exemptions are temporarily granted in the case of system failure or scheduled downtime, in which case applicants and recipients are scheduled to appear at a later date. Massachusetts grants exemptions to those individuals for whom the procedure is inconsistent with religious beliefs; Pennsylvania, when its system becomes operational, also expects to grant a religious exemption. Texas granted a religious exemption in its pilot, but discontinued this exemption when the system was implemented statewide. New York provides

Table 3
Mandatory Participants by Assistance Program and Allowable Exemptions

STATE	MANDATORY PARTICIPANTS	EXEMPTION POLICY
Arizona	FSP: All adult household members (18 years or older) TANF: All adults (18 years or older) and minor parents	No written policy identifying specific exemptions. In practice, household members with missing fingers or arthritis. A temporary exemption is granted for illness.
California (plan for unified, statewide system)	FSP: All adult household members (18 years or older) and minor heads of household TANF and GR: All adults (18 years or older)	Household members with missing fingers or with a medically verified physical condition.
Connecticut	TANF and GA: All adults (18 years or older)	No written policy identifying specific exemptions. Exemptions are possible at the discretion of the DSS commissioner, however, who has since extended authority to the State's Regional Managers.
Illinois	TANF: All adult applicants and recipients (including second and minor parents) and non-aided payees	Permanent exemptions for household members who are blind (ISCAN) or missing fingers (AIMS). Temporary exemptions for household members with both eyes bandaged (ISCAN) or injured fingers (AIMS).
Massachusetts	FSP: All adult household members (18 years or older) TANF and GA: All grantees (18 years or older), including teen parents	Household members with both fingers missing or for whom the procedure is inconsistent with religious beliefs. Temporary exemption granted to household members with documented illness.
New Jersey	GA: All adults (18 years or older)	No permanent exemptions. Temporary exemptions granted for injuries, but only for 2 months. In cases of missing fingers, facial image taken.
New York	TANF and GA: All adults (18 years or older), minor parents, and minor heads of household Age for Medicaid cases is 21	At county discretion, and upon State approval, the homebound may be exempted. A general "good cause" exemption may also be granted.
Pennsylvania	FSP: All adults (18 years or older); considering minor heads of household TANF: All adults (18 years or older); considering emancipated minors and minor parents	For TANF benefits, no exemptions. For food stamp benefits, will allow religious exemption.
Texas	FSP: All adults (18 years or older) and minor heads of household TANF: All adults (18 years or older) and teen parents	Exemption is granted if the household member appeals the requirement, is certified out of the office, and/or is unable to have at least one finger imaged. Religious exemption was granted in pilot, but dropped for statewide implementation.

for exemptions to the homebound, and a general “good cause” exemption may also be granted, though the specific circumstances under which it has been or can be invoked are unclear. Three States—Arizona, Connecticut, and New Jersey—have no formal policy that identifies specific exempt conditions, though exemptions are possible and have been granted in practice.

In Connecticut, exemptions were possible only at the discretion of the commissioner of the Department of Social Services, as originally authorized in the 1995 enabling legislation. Authority to grant exemptions was recently extended to the State’s regional managers. Connecticut credits its more restrictive policy to an extremely limited number of exemptions pursued by clients in the first year of operations, and recommends that States not set themselves up for significant exemption claims by publicizing those conditions under which an exemption might be granted.

Biometric images can also be technically inadequate for reasons related to the client. The States reported that the quality of an image may be inadequate if an individual has very fine or worn ridge lines, which most commonly occurs among women of Asian descent, the elderly, and individuals who perform physical work, such as construction workers. In such cases, offices have no real choice but to grant an exemption, though these cases represent an extremely small proportion of the overall caseload. The use of a second biometric in some States and digitized photos in many States can sometimes compensate for any of the aforementioned issues related to the technology, operators, or clients.

Match Response

Once individual biometric information is collected and transmitted from the local office enrollment workstation to the central processing unit, State systems are configured to quickly generate and supply information on potential matches. States reported that the rapid turnaround time has not been a critical factor since the biometric requirement is only one step in a multi-step eligibility determination process that may require several days to several weeks to complete. The speed with which the central system accepts individual biometric information and returns a match-no match disposition to the local office, therefore, turns out not to be of practical significance. States reported that cases are virtually never pending, and benefit issuance never delayed, solely because the biometric identification step has not been completed or match results have not been received.

A summary of estimated response times for each of the State systems appears in Table 4. Most of the State systems operate on an “instant” response, ranging from a period of 90 seconds in New Jersey and within 5 minutes in Connecticut, Illinois, New York, Pennsylvania (according to its plan), and Texas. In other States, including Arizona, for example, batch processing for potential matches is conducted each evening, with match information generated the following morning. California (when its statewide system becomes operational) plans a 60-minute turnaround time for priority searches—expected to account for 40% of the workload—and batch processing on non-priority searches to be received by 7:00 a.m. the following day.

Table 4 Match Response Time	
STATE	RESPONSE TIME
Arizona	Up to 24 <i>hours</i> (at will of batch processor)
California	Up to 1 <i>hour</i>
Connecticut	5 <i>minutes</i>
Illinois	5 <i>minutes</i>
Massachusetts	Within 24 <i>hours</i>
New Jersey	1.5 <i>minutes</i>
New York	5 <i>minutes</i>
Pennsylvania	5 <i>minutes</i>
Texas	5 <i>minutes</i>

With the exception of Texas, match information is not transmitted directly to the local offices. Rather, cases of potential duplicate matches are first routed from the central processing unit to a claims investigative office, where they enter the investigative queue along with other suspect cases (e.g., cases flagged by eligibility workers and referred because of questionable information supplied during application or recertification, cases reported over hotlines for suspicion of fraud). There, each case is reviewed to determine whether a match can be legitimately attributed to a State administrative error (SAE) or an inadvertent household error (IHE), or whether sufficient cause is present to assert that an intentional program violation (IPV) was attempted or perpetrated. In addition to examining information contained in case files, the investigation might include a visit to the home for additional information or for information verification purposes.

Binning and Filtering

Because finger images must be compared to a large database of enrolled individuals, two procedures, termed binning and filtering, are commonly used to reduce the number of comparisons required. Binning places images into categories based on their characteristics, such as classification type, ridge count, or some other characteristic of the finger image. Filtering partitions images based on exogenous characteristics, such as gender or the identification of the finger that was imaged. The matching algorithm will then be applied only to images in the same bin or filter category. Binning and filtering can substantially decrease the time required to complete the matching algorithm. It also decreases the likelihood of a false match. However,

because there may be errors in the assignment of images to bins or filter categories, use of binning or filtering increases the likelihood of a false non-match.⁵

Most of the States with finger imaging systems in operation use either binning or filtering, thereby speeding match response by reducing the number of comparisons required. In New Jersey, for example, records are separated in several ways to speed response time, including by gender and by left/right image. In addition, the database of images is divided and stored in one-fifth portions in five separate HP 712 computers, which are searched simultaneously. A similar process is used in New York, where images are both binned (by classification type) and filtered (by gender, left/right image), meaning that only approximately 25-35% of the database is penetrated at one time. In Arizona, conversely, where response time was not considered a policy priority, images are stored solely by gender.

2.4 Interview Results: Ongoing Operations

The States with operating systems reported that implementation of new biometric client identification procedures has had a negligible impact on operations at the local office level. In general, States also reported that the problems and obstacles encountered in operating their respective projects are not unlike those encountered in demonstrating any new technology or procedural modification.

Types of Matches and Investigations

None of the States participating in this study developed unique procedures or standards for handling suspected fraud due to duplicate participation. Once a fraud determination is made—which has occurred in insignificant numbers across the States—the local eligibility worker is informed by the investigative office and takes the appropriate action. The applicant or recipient is notified in writing and is entitled to those protections available to individuals suspected of criminal violation of other program rules, including the right to appeal any decision in an administrative hearing. Most of the actual “matches” found in the States can be characterized as errors of an administrative nature (e.g., client applies for benefits in a new jurisdiction while having an open case in another jurisdiction that should have been closed, staff inadvertently enters erroneous social security number into system).

Office and Client Burden

Those States with biometric systems in operation consistently reported that their systems and procedures were implemented without unexpected difficulty and were rapidly institutionalized. All the States confronted a range of basic physical space and logistical issues, including where to situate the new equipment, how to appropriately alter job descriptions, whom to reassign or hire to handle the new procedures, and how to adjust the flow of clients and paperwork most efficiently. However, none reported any particularly noteworthy difficulties. States report that clients have been cooperative and accepting of the technology and suggest that an experienced operator can process an applicant in approximately 2-2½ minutes, though the total

⁵ See companion report (Sticha and Ford, 1999) for additional detail.

extra time the client spends in the office may be longer depending on the volume of clients and the number of open work stations.

Technical Problems

The States were generally pleased with the performances of their finger-imaging systems, though they also reported experiencing a number of minor technical problems. These included occasional telephone, computer (e.g., hard drive, downloading), printer, and camera problems. For example, the Connecticut Department of Social Services described a situation in which one of its enrollment centers could not be connected to the server, requiring the re-enrollment of nearly 500 clients. In addition, Illinois experienced problems with the reliability of the retinal scanning system, the principal reason leading to its termination. Technology failures, while perhaps not routine enough to be described as a significant problem, still warrant an exemption from the biometric procedure that all States permit (i.e., one is temporarily exempted from the finger imaging requirement if the image cannot be taken due to technological failure).

3. IMPACT OF FINGER IMAGING

One of the most important questions regarding the effectiveness of finger imaging technology, and one of the most difficult to answer, is concerned with the extent to which the technology reduces duplicate participation fraud in the FSP. Answering this question is difficult for three reasons: (1) The baseline rate of duplicate participation fraud in the FSP is unknown; (2) There are no measures that unambiguously assess the extent to which fraud is reduced; and (3) There is little data that specifically addresses finger imaging in the FSP.

The first difficulty in evaluating the capability of finger imaging technology to reduce duplicate participation fraud arises because there is no good estimate of the magnitude of the problem. Much of the evidence regarding this type of fraud is anecdotal, and consequently, it is difficult to assess how prevalent the problem is in the FSP. For example, Mintie (1998) reported that a single individual received more than \$450,000 in welfare benefits over 6 years using as many as 15 different identities. Similarly, Ernst and Young (1995a) identified 36 instances of duplicate participation fraud in California over a 10-year period that led to overpayments of over \$1.0 million. Although these cases indicate that multiple participation in welfare programs can lead to substantial losses, they do not indicate how common this type of fraud is or what its total cost to the welfare system might be.

The second problem in assessing the effectiveness of finger imaging technology in reducing fraud is that there are no measures that unambiguously assess the extent to which fraud is reduced. Some measures (e.g., detected fraud) only capture a portion of the reduction. In other potential measures, fraud reduction is confounded with reduction in participation due to other reasons, such as changes in economic conditions, changes in eligibility requirements, or resistance of legitimate clients to finger imaging.

Finally, the available evaluation data come primarily from TANF or General Assistance programs rather than the FSP. There is a risk that generalizations from one program to another will not be accurate because of differences between the program requirements, the benefits provided, or the client populations. The substantial overlap between the FSP population and those receiving other types of assistance suggests that this risk would not be very large, although some differences between the programs would not be surprising. Evaluation data from Texas, which implemented a finger imaging pilot for both TANF and the FSP, indicate an agreement on the effects of the pilot on the two programs, as well as differences in a number of details (Schexnayder, Olson, O'Shea, Norris, Schroeder, & King, 1997). Specifically, overall changes in caseload that occurred when finger imaging was implemented were comparable between the two programs. However, a more detailed analysis of caseload flows identified differences between the two programs suggesting that finger imaging increased the time required to process food stamp cases, but not TANF cases. These differences indicate that care should be taken in applying existing results to the FSP.

Six of the States that we interviewed (Connecticut, Illinois, New Jersey, New York, Texas, and counties in California) conducted evaluations to assess the ability of their systems to reduce fraud. The evaluations measured fraud reduction based on detected fraud, refusals to be

finger imaged, or caseload reduction. This section summarizes the results of these evaluations and attempts to give an overall assessment regarding the effectiveness of the technology.

3.1 Detected Fraud

There is little doubt that finger imaging has the technical capability to detect individuals who try to obtain duplicate food stamp benefits using false identification. A recent evaluation of the performance of finger-imaging systems conducted by the National Biometric Test Center (Wayman, 1997) provides both an assessment of system performance under standard conditions (verification of a single comparison) and a procedure to predict performance in other conditions (e.g., one-to-many matching). Using these data and procedures, Sticha and Ford (1999, pp. 20-21) estimated the system false match and false non-match error rates making assumptions representative of the finger-imaging systems used by States in their assistance programs.⁶ Based on these assumptions and on the performance data reported by Wayman (1997), Sticha and Ford estimated the system false match rate to be 0.5% for each 1 million individuals in the data base. Thus, in a situation in which 2 million individuals were represented in a finger-image data base, 1% of legitimate new applicants (not in the data base) would incorrectly be judged by the system to match existing finger images. In most States, these false matches would be reduced to near zero by the use of human minutiae analysts. The system false non-match rate does not depend upon the size of the data base, but it does depend on the number of fingers that are imaged and the criterion for declaring a match. Based on the previously stated assumptions and data, Sticha and Ford estimated a system false non-match rate of approximately 4%. These calculations indicate that finger-imaging technology has the potential to detect approximately 96% of attempted duplicate identity fraud while producing a false match for less than 1% of legitimate applicants.

Detected attempts at duplicate participation were rare in all State implementations for which we have data. However, the detection rate may be reduced for those States that implemented pilot programs in a limited geographical region. Attempts to match finger images across State lines have produced more matches than within state comparisons, but reported data were insufficient to calculate a match rate for interstate comparisons. Table 5 shows the number of finger-image matches attributed to fraud by the six States that have conducted evaluations. The number of matches varies from one match per 25,000 cases to one match per 1,800 cases and has a median of 1 match per 5,000 cases.

These results are consistent with claim that main benefit of finger imaging is to prevent duplicate participation from occurring, rather than to detect attempts at this type of welfare fraud

⁶ They assumed that two fingers were imaged for each individual, and that a match was declared if both of these fingers matched corresponding fingers in the data base; otherwise, a non-match was declared. They further assumed that applicants were categorized by gender, and that right and left fingers were distinguished. The effect of possible errors in this categorization was not considered. Finally, they assumed that fingerprint type was not used to place images into bins to reduce the number of images searched. Binning would have decreased the false match rate and increased the false non-match rate.

Table 5
Finger-image Matches Attributed to Fraud

STATE/ LOCALITY	NUMBER OF CASES	TIME PERIOD	NUMBER OF MATCHES	DUPLICATE DETECTION RATE
California Alameda County	10,825	February 1993 – April 1995	2	.02%
LA County	280,000	April 1994 - May 31, 1995	11 fraudulent; 3 under investigation	.005%
San Francisco County	14,400	March 1994 – November 1995	8 within county, 31 with other counties	.06% (within county)
Connecticut statewide	148,784	February 1, 1996 - February 28, 1998	12 prosecuted; 20 under investigation	.02%
Illinois Chicago suburbs	21,000 (finger image and retinal scan)	May 20, 1996 – December 1, 1997	1	.005%
New Jersey northern counties	46,000 (as of 3/1998)	July 10, 1995 - April 1999	<12	.03%
New York statewide	904,746 (as of 3/14/1997)	August 1995 – December 1996	221 fraud; 92 under investigation	.03%
Texas Bexar & Guadalupe Counties	110,000 (as of 3/1998)	October 24, 1996 – September 16, 1997	1	.001%

Sources: Data for Alameda and San Francisco Counties, California, from Ernst & Young (1995b). Los Angeles County, California, data from Department of Health and Human Services, Office of Inspector General (1996). Connecticut data and caseload estimates from New Jersey and Texas from Connecticut Department of Social Services (1998). Illinois data from Illinois Department of Human Services (1997). New Jersey match data from State interviews. New York data from Nawrot (1997). Texas match data from personal communication, Herb Kneisley, Texas DHS, Sept. 16, 1997.

when they occur. In addition, some of the implementations, especially the pilot programs, were in small geographical areas. For these programs, it would be relatively easy for an individual attempting to obtain duplicate benefits to apply at nearby offices that did not require finger imaging. The data from the States seem to support this notion. Geographically limited pilot programs, such as those in Texas and Illinois, tended to have low detection rates, while the statewide operational systems in New York and Connecticut had higher detection rates.

Connecticut, New Jersey and New York have reported cross-State comparisons of finger-image data; neighboring counties in California also compared data. These interjurisdictional comparisons often produce more matches than comparisons within a State or county. For example, examination of 137 cases involving AFDC recipients who refused to provide a finger

image for the AFIRM system in Los Angeles County uncovered 8 confirmed (and 23 suspected) instances of multiple-case fraud. All of the confirmed instances involved one case within the county and another outside of the county (DHHS, OIG, 1996). In addition, in 31 of the 39 matches involving cases in San Francisco County, the second case was in a neighboring county (Ernst & Young, 1995b). The Connecticut Department of Social Services (1998) reported that the first attempt to match finger images between Connecticut and New Jersey identified 53 matches that were referred for investigation. Only 32 matches that warranted referral for investigation were found in more than 2 years of operation of finger imaging within Connecticut.

In evaluating the impact of identity matches made by finger image comparison, it is important to recognize that some matches could be made based on name and Social Security Number (SSN) only. For example, the GAO (1998a) recently compared the 1996 FSP roles for California, Florida, New York, and Texas, and identified over 20,000 SSN matches between cases in these States. With one exception, State evaluations did not indicate whether duplicate participation identified by finger imaging could also have been found using applicant name or SSN. The exception is the single fraudulent match found in Illinois; the applicant in this situation used the same name and SSN in both cases (Illinois DHS, 1997). Consequently, that match could have been found without finger imaging.

In summary, attempted duplicate-participation fraud detected by finger imaging represents only a very small percentage of total caseload. Statewide implementations of finger imaging tend to have a slightly higher detection rate than pilots in a limited geographical area. Interjurisdictional comparisons of finger-image data can identify additional fraud, but State evaluation data are insufficient to calculate a match rate for these comparisons.

3.2 Refusals to Comply with Finger-image Requirements

One potential indicator of the number of duplicate cases in the FSP or other assistance program is the number of existing clients who refuse to provide the required finger image at the time of recertification. It is assumed that given the high likelihood of being caught, an individual with multiple cases will almost certainly refuse to comply with the finger-imaging requirement for all but one case. However, there may be other reasons that clients do not comply with the requirement. Some of these reasons may be related to other types of client fraud; for example, the client may have misrepresented household size (which can sometimes be detected by finger imaging) or income (which cannot be detected) and may be concerned that the fraud would be detected during the finger-imaging process. Other clients may have moved out of the area or may be no longer qualified for assistance. In addition, some qualified clients may have concerns about the legality or fairness of the finger-image requirement, or may decide that continuing their benefits is not worth the extra effort of providing the required finger image. Finally, administrative delays while waiting for household members to provide a finger image may be incorrectly reported as refusals if they extend an application beyond the end of a reporting period. Because there are many reasons that individuals may refuse to comply with the finger-image requirement, the rate of refusals for existing clients overestimates the duplicate-participation fraud rate.

Despite the ambiguous relationship between refusals and duplicate participation, this measure has figured prominently in State evaluations of the ability of biometric systems to reduce fraud. Since benefits are denied to those who refuse to provide a finger image, refusals are often the primary factor in the cost justification for these systems, as well. The refusal rate is used by these States to estimate the amount of fraud present before the introduction of the biometric system. Attempts are made to adjust the refusal rate so that only those refusals indicating fraud are considered.

Table 6 shows the number and percentage of existing cases that were cancelled or otherwise sanctioned because of refusal to comply with a finger image requirement as reported by the five States for which data were available.⁷ The data cover the same time periods as shown in Table 5. Numbers include only those who refused to comply with the requirement and do not include cases that were closed for other reasons when the finger image requirement was instituted. Two refusal percentages are shown, the raw refusal rate, and the refusal rate adjusted for recidivism. Recidivism refers to those clients whose benefits are canceled because they refuse to comply with the finger-image requirement, but who later comply and return to the rolls.

Table 6				
Refusals of Existing Cases to Participate in Finger Imaging				
STATE	CASELOAD	REFUSALS	REFUSAL PERCENTAGE	
			RAW	ADJUSTED
California (Los Angeles County)	24,334 (experimental group)	914	3.7%	2.7% (8-month)
Connecticut	54,616 (TANF)	3,541	6.4%	3.7% (14-month)
Illinois	10,384	2	.02%	NA
New York	552,358	42,372	7.7%	5.4%
Texas	66,025	266	.4%	.2% (1-month)

Sources: Los Angeles County data from Ernst & Young (1995a). Connecticut data from Connecticut Department of Social Services (1998). Illinois Data from Illinois DHS (1997). New York Data from Nawrot (1997). Texas data from Texas DHS (1997).

⁷ Data from Connecticut include only TANF refusals that were sanctioned during 1996. Before implementation of finger imaging, the GA program was administered by 169 local organizations, often without any automated record of GA clients. When finger imaging was introduced, 7,568 of the 22,198 existing GA clients (34%) failed to register during 1996. While this number is impressive, it is impossible to determine what percentage of the reduction reflects client reactions to finger imaging, and what percentage reflects the condition of local records regarding GA clients. In 1997, the TANF and GA programs were combined under State control. During that year, an additional 1,072 cases in one of these programs were sanctioned. Since finger imaging had already been introduced by this time, these cases appear to reflect new, rather than existing clients. Similarly, the 449 refusals reported by Arizona Department of Economic Security (1999) combine new and existing clients.

Since the canceled cases that are later reopened cannot represent duplicate cases, subtracting them from the total number of refusals reduces the extent to which refusals overestimate actual duplicate participation fraud. Different States reported recidivism over different time periods, as noted in the table. Since recidivism is cumulative, longer time periods produce greater recidivism as well as a more accurate measure of fraud. However, the results from Texas, in which 61% of those who refused to provide a finger image in one month returned the following month, illustrate that substantial number of clients may return to the FSP or TANF rolls in a short time.

Examination of the refusal percentages in Table 6 shows two States, Illinois and Texas, with very low refusal rates, substantially less than 1%, while the other three States have rates in the range from 3% to 5%. This difference may be associated with differences in how the finger-image requirement was implemented in the States. In the three programs with higher refusal rates, existing clients were scheduled for appointments for the purpose of providing a finger image. If a client missed this appointment, then procedures to terminate benefits for that client were started. For example, in Los Angeles County, a client who failed to show up for finger imaging was sent Notice of Action that stated the payments would stop in 10 days, and eligibility would be reassessed (Ernst & Young, 1995a). If client came in for a meeting and was finger imaged, then benefits were maintained. If the client came in and refused to be finger imaged, the client would be taken off the case, although benefits for children would continue. If client did not show up for the meeting, the entire case was terminated.

In contrast, for both Illinois and Texas, conversion was linked to the recertification process. In Illinois, current recipients were notified that finger imaging would be required at their next recertification appointment. In Texas, clients were given earlier appointments, but were not required to provide finger images until their continuing eligibility was recertified. In these States, it would be possible for a client with multiple cases to wait until the time to recertify eligibility, let his or her benefits lapse, and not be counted as a refusal (although this action would reduce overall caseload). Consequently, for these two States, the refusal rate is likely to miss some cases of actual fraud, adding another source of error and making the rates more difficult to interpret.

The evaluation of the AFIRM system was designed to provide the most accurate measure of fraud reduction based on refusals. In this evaluation, existing AFDC cases at sites in which finger imaging was implemented were randomly assigned to experimental and control groups. Finger images were not required for clients in the control group until after the end of the evaluation. This experimental design controls for differences between sites as well as the natural attrition in the assisted population that occurs over time. Ernst & Young (1995b) report that the decrease in participation of clients in the experimental group was 1.3% greater than the decrease in the control group. Because most confounding factors were controlled in this study, the reduction is due primarily to two factors – reduced duplicate participation and deterrence of eligible clients by their concerns about finger imaging. The data do not provide information that could be used to allocate the reduction between these two factors.

The relationship between refusals and fraud is more ambiguous for new applicants for assistance than it is for existing applicants. Individuals with more than one *existing* case have two options regarding how they react to a finger-imaging requirement – they can refuse to comply with the requirement, or they can comply and have a high probability of being detected.

Depending on the option they choose, their response will be recorded as either a detection or a refusal.⁸ On the other hand, individuals seeking to open a *new* case, either a fraudulent duplicate case or a legitimate one, have a third possible response to a finger-imaging requirement – they can be deterred from applying. The refusal rate for new applicants does not capture the proportion of potential applicants who take this third course. Consequently, it does not provide a good basis for estimating either the prevalence of fraud among applicants or the effectiveness of finger imaging to reduce it.

When refusals to participate in finger imaging were reported for new applicants, they had a much smaller impact on caseload than refusals of existing recipients. Illinois had a single case in which an applicant failed to appear to provide a finger image. New York found that 0.2% of new applicants refused to provide finger images. Because of the small magnitude of these numbers and because of the problem with interpreting new applicant refusals, the implication of these numbers on the amount of fraud is unclear.

In summary, refusals to comply with finger-image requirements provide an imperfect estimate of the amount of duplicate participation fraud that depends on the way that the finger-imaging requirement is implemented. Adjusting the refusal rate for recidivism improves the estimate, but does not remove all sources of error. In particular, eligible individuals who refuse to provide a finger image because of their concerns with the process cannot be distinguished from fraudulent individuals who do so. Despite these concerns, the refusal rate provides a useful indicator of the possible upper bound for an estimate of the amount of duplicate participation fraud.

3.3 Reduction in Applications or Caseload

Evaluations based on refusals to comply with a finger-image requirement have focused primarily on the existing caseload and provide limited information about the effects of biometric technology on new cases. Also, the refusal rates appeared to be affected by the policies and procedures used to implement finger imaging. The total number of applications or caseload (both existing and new households) provides the most complete measure of the effects of biometrics on fraud reduction. Two States, Illinois and Texas, have reported overall changes in applications or caseload. However, interpreting these changes is difficult for the following two reasons.

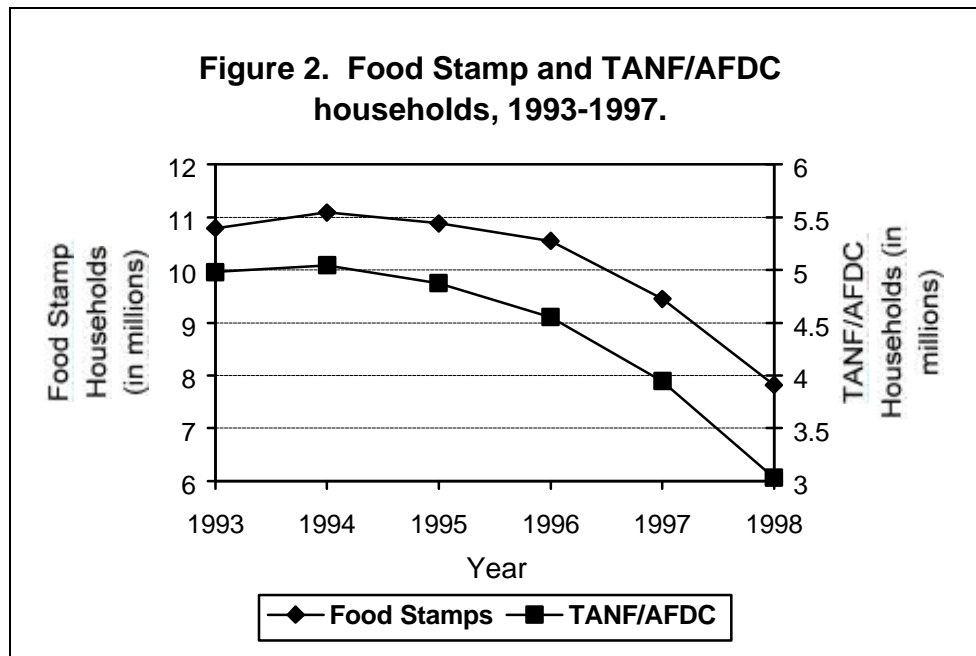
First, there are many possible causes of changes in caseload, including changes in local economic conditions, effects of other welfare reform initiatives, and other factors. For example, Figure 2 shows that nationally, participation in the FSP has declined 26% from 1994 to 1998,⁹ and participation in TANF/AFDC has declined 33% in the same period.¹⁰ The implication of the changing environment on evaluation of biometric systems is that it is necessary to have

⁸ As our previous discussion indicated, an estimated 4% of duplicate cases would not be detected by the system.

⁹ Source: Data for 1993-1997 from Cody & Castner (1999); data for 1998 from FNS Budgeting Division, Data Base Monitoring Branch (1998).

¹⁰ Source: U.S. Department of Health and Human Services, Administration for Children and Families (1998). Households for 1993-1997 represent average monthly values; 1998 households represents the month of June.

appropriate control regions against which to compare caseload changes that occur when biometric requirements are implemented.



Second, determining appropriate comparison groups is often a difficult process, especially when potential comparison regions may be participating in other experiments with their welfare system. It is not feasible to split the entire population into experimental and control groups, as was done for existing cases by Los Angeles County. Consequently, comparisons must be made between regions, adding undesired variability to results.

Illinois compared the number of applications for assistance in the pilot sites to applications in adjacent regions. They based their assessment on the ratio of applications in the pilot region to the comparable number in the adjacent regions. They found that this ratio decreased roughly 5-6% for TANF-cash applications for retinal scanning, but only 1% for finger imaging. A similar 5-6% decline was found in TANF-medical applications for both finger imaging and retinal scanning. No difference was found for Food Stamp applications. The Illinois report presents detailed data for TANF-cash applications only, since that was the only program directly affected by the finger-image requirement. These data illustrate the difficulty in interpreting reductions in applications in times when the total welfare system is changing in many ways. Applications in the pilot sites decreased 24% from the previous year. However, applications in the adjacent sites decreased 23% in the same period, leading to a 1% net effect for finger imaging. This difference is consistent with what has been found with refusal data, but was not considered to be significant because the sample size was much smaller and the experimental design confounded reductions with site differences.

The Texas evaluation of caseload changes included a more careful selection of comparison sites, based on several demographic and program characteristics. Each pilot site was matched with a similar comparison site. Caseload data were collected for the year prior to the pilot, as well as for the first seven months of the pilot program. The analysis of caseloads also accounted

for differences between pilot and comparison sites. Nevertheless, the overall results indicated that there were no differences between the comparison and pilot sites, and consequently, no reduction in caseload that could be accounted for by the introduction of the biometric system.

3.4 Summary

Assessing the ability of finger imaging to reduce fraud in the FSP is difficult because the amount of fraud caused by duplicate participation is unknown, and because changes in caseload after the introduction of finger imaging cannot be interpreted unambiguously as reduction of fraud. In addition, because little data specifically address the FSP, effects on that program must be inferred by extrapolating from other assistance programs, such as TANF and GA. The evaluations of finger imaging systems conducted by six States have produced the following findings.

- A very small number of attempts at duplicate participation have been detected by finger imaging systems. Finger-imaging systems appear to detect more fraud when the area of coverage is larger. Additional matches have been found by interstate comparisons of finger-image data.
- Institution of a finger-imaging requirement can produce a significant, short-term reduction in caseload, because some existing clients refuse to comply with the requirement. The number of refusals depends on the implementation procedures and appears to be lower when finger imaging is incorporated into the recertification process.
- The most carefully controlled estimate of non-compliance among existing clients, based on participation rates for experimental and control groups in the AFIRM system, suggests that introduction of a finger-imaging requirement reduces participation by approximately 1.3%. However, this estimate reflects both reduced fraud and deterrence of eligible individuals and households.
- Attempts to compare caseload trends at sites at which finger imaging is introduced to sites without finger imaging have found no differences, due, in part, to the large reduction in caseload that occurred in all sites.

4. DETERRENT EFFECTS OF FINGER IMAGING ON ELIGIBLE INDIVIDUALS

One of the persistent concerns regarding biometric identification systems has been whether the given system complies with standards of individual liberty, privacy, and due process. In a survey funded by The National Registry, Inc., a biometric system vendor, Westin (1996) assessed the opinions of a national probability sample of adults regarding the use of finger imaging in government benefits programs. Most survey respondents had positive opinions about finger imaging; 75% would be comfortable if a finger-imaging process were used to identify them in a government benefits program, and 81% thought that finger imaging was an appropriate method to screen applicants for government benefits. However, the survey sample represents the adult population in general, not necessarily the population of likely FSP clients. Such information can best be obtained directly from clients.

Client data can also provide information regarding the reasons households leave assistance programs when biometric requirements are established. This information can indicate the extent to which eligible households are deterred from applying for assistance because of concerns with the finger-imaging requirement. States have obtained client data using surveys or interviews with current clients, former clients, and community leaders or other individuals representing client concerns.

4.1 Client Reactions

Five States in our sample conducted interviews or surveys with current welfare clients to ascertain their reactions to finger imaging. Since this information was obtained from clients who complied with the finger-image requirement, it doesn't indicate the reasons individuals refuse to comply. Nevertheless, it can show the degree of discomfort that clients have with finger imaging. The results of these surveys, summarized in Table 7, show that client responses to finger imaging have been predominantly positive. Although different States asked different questions, some common issues were addressed.

In New York, 77% of the respondents perceived a need for finger imaging. Clients in Texas were asked a similar question both in interviews conducted with a small sample of clients immediately after they were finger imaged, and on a satisfaction card given to a larger sample of clients. In interviews, 96% of the clients said that they thought that finger imaging was a good idea. Approximately 90% of these clients who filled out the client satisfaction card thought that it was a good idea.

Clients were also relatively confident about the effectiveness of finger imaging in reducing fraud. In the evaluation of the AFIRM system in Los Angeles County, 92% of clients surveyed thought that finger imaging would help prevent people from cheating in order to obtain benefits. Similar questions asked in Connecticut and Texas produced similar results (87% and 88% agreement, respectively). Responses to a slightly different question included in interviews conducted in Texas were somewhat less positive; 70% of clients interviewed thought that finger imaging would keep people from getting benefits that they should not get. The Illinois Department of Human Services asked whether others in the community would be less likely to

apply for aid because of finger imaging. Nearly 40% of clients responding were uncertain regarding this question. Approximately three-quarters of the remaining clients (47% of the total) thought that others would be less likely to apply, although the reasons they might not apply were not ascertained.

Table 7 Summary of Client Survey Results		
STATE	SELECTED QUESTION	CLIENT AGREEMENT PERCENTAGE
California/ LA County	Have you been inconvenienced ... because of the fingerprinting program? How do you feel about having to be fingerprinted in order to receive AFDC? Do you think fingerprinting will help prevent people from cheating in order to receive AFDC?	94% No 25% positive, 5% negative 92% yes
Connecticut	Have you been inconvenienced ... because of the finger imaging process? How do you feel about being finger imaged in order to receive benefits? Do you think finger imaging will help prevent people from cheating in order to receive benefits? Do you know of anyone ... prevented from cheating because of finger imaging? Do you like the new client identification card?	88% No 85% did not object 87% Yes 0.6% Yes (2 respondents) 88% Yes
Illinois	Is electronic fingerprint imaging acceptable to you? Was the process easy for you? Are others in your community less likely to apply because of fingerprinting? Is the attitude of the general public positive toward electronic fingerprinting?	82% Yes 97% Yes 47% Yes, 15% No 61% Yes, 9% No
New York	Concern regarding provision of finger images (did they feel stigmatized?). Perceived need for finger imaging requirement.	80% No 77% felt requirement needed
Texas (Interviews)	Do you think finger imaging is a good idea, bad idea, or neither good nor bad? Do you think finger imaging will keep people from getting benefits they should not get?	96% good, 2% bad 70% Yes, 11% No
Texas (Satisfaction Cards)	What do you think about finger imaging? Do you think finger imaging will help people be more honest when applying for benefits?	90% good idea, 2% bad idea 88% Yes, 4% No

Sources: Los Angeles County data from Ernst & Young (1995a). Connecticut data from Connecticut Department of Social Services (1998). Illinois Data from Illinois DHS (1997). New York Data from Nawrot (1997). Texas data from Texas DHS (1997).

Clients reported little inconvenience related to finger imaging. Approximately 94% of clients in Los Angeles County and 88% of clients in Connecticut stated that they were not inconvenienced by the finger-image process. In Illinois, 97% of clients surveyed thought that the process was easy for them.

Four States asked a general question to assess how clients felt about the finger-imaging process. The purpose of these questions was to determine whether clients had any personal, safety, health, religious, or cultural reasons for objecting to finger imaging. Results were most positive in California; only 5% of respondents expressed negative impressions regarding finger imaging. Results in the other three States were similar. Between 80% and 85% of clients surveyed in these States had no objection to finger imaging.

4.2 Former Client Interviews

Evaluations in California and Texas included interviews with former clients who either refused to be imaged or did not apply for recertification when finger imaging was introduced. The goals of these interviews were to determine the reasons that these clients left the program, as well as to find out their opinions about finger imaging.

In their evaluation of the AFIRM system in Los Angeles County, Ernst and Young (1995b) contacted individuals from 86 cases that were terminated for failure to comply with finger imaging requirements. For a substantial majority of the cases (88%), benefits were terminated because the clients started working, moved, or requested termination of aid. None of the individuals who were contacted indicated that they were intimidated by the finger-imaging program.

Interviews conducted in Texas (Schexnayder et al., 1997) compared the opinions of former clients in the area covered by the pilot finger imaging system with those of former clients in matched comparison regions. Both former FSP and former TANF recipients were asked an open-ended question about why they had stopped receiving benefits. The primary reasons cited were increased earnings, other client choices, and agency errors. Increased earnings were cited more frequently in pilot than in comparison regions, while client choices and agency errors were cited more frequently in comparison regions. Client choices, which were a factor in one-third of FSP exits and over one-quarter of TANF exits, include reasons that could reflect a deterrent effect, such as a feeling that “benefits were not worth the effort.” Although none of the former TANF clients identified finger imaging as the reason the discontinued benefits, two of the 78 former Food Stamp clients (3%) attributed their loss of benefits to finger imaging. Both of these individuals had refused to be imaged. In another question, former clients were asked directly whether their benefits, or the benefits of anyone they knew, had been affected by finger imaging. Three additional individuals (4%) associated their reduction in benefits with finger imaging, although Schexnayder et al. indicated that other factors played a role, as well.

4.3 Client Advocate Opinions

Client advocates and other community leaders may provide information regarding opinions of participants and eligible non-participants that would be difficult to obtain directly. Their

position in the community gives them access to information and the opinions of many individuals. They may be more willing to express client criticisms and concerns regarding finger imaging than the clients would. Finally, they may have access to eligible individuals who were deterred from applying by the finger-image requirement.

The State of Texas surveyed the opinions of community leaders shortly after the introduction of their finger image pilot. They sent a three-question survey to 104 leaders in the two counties participating in the finger-imaging pilot to collect community opinions about the pilot program. Community leaders included “State legislators, city council members, and [directors of] non-governmental, community-based agencies that serve public assistance clients (including neighborhood centers and religious and non-sectarian social services)” (p. E-1, Texas Department of Human Services, 1997). The three questions assessed the responses these leaders have heard from their constituents and their personal opinions regarding finger imaging.

Over four-fifths of the 41 community leaders who responded to the survey indicated that they had received little or no response from their constituents regarding finger imaging during the first three months of its use. Of those who had received some response, nearly half of the responses were neutral regarding the requirement, while those expressing opinions were slightly more likely to be positive than negative. Nearly two-thirds of the respondents thought that finger imaging would help keep ineligible people from getting benefits, while only 5% thought that it would not.

We conducted follow-up interviews with nine community leaders who might represent the concerns of food stamp recipients and applicants in Texas. The client advocate interviews emphasized advocate and client concerns about finger imaging and the LSIS pilot program. A detailed description of the interviews and results is presented in Appendix C.

We selected the interview participants from the mailing list of 104 government and non-government leaders who received the survey given by the State of Texas. To get a wide range of opinions, we supplemented this list with suggestions given by an outspoken critic of finger imaging. We selected nine candidates from the non-government leaders on the expanded list.

Even one year after the LSIS pilot project had been in place, some client advocates had not heard much about the project. Along with the limited knowledge that some individuals had about the project were misconceptions about the nature of the finger-imaging requirement. Four of the persons interviewed thought that finger imaging was used at the point-of-sale. Two advocates didn't realize that finger imaging had begun.

Seven individuals had heard some concerns about finger imaging from either clients or other sources such as colleagues or the media. Four of the nine had clients with concerns about finger imaging in the Food Stamp program. The types of concerns most frequently voiced by clients to their advocates fall into three categories: unjust treatment of poor people, cost and inconvenience of being finger imaged, and fears of interagency sharing, especially with the INS. Some advocates indicated that clients associate finger imaging with criminality and may be embarrassed about giving their finger image. Others consider the finger-imaging requirement to be degrading and as unjust treatment of poor people. The cost and inconvenience of going to the

food stamp office is a concern for some who must make child care arrangements or pay for transportation to the office or take time off from work. With finger imaging, more individuals must make trips to the food stamp office, increasing the cost or inconvenience to household members. Further, there was a concern that delays in getting all members of a household imaged could result in delays in receiving benefits. Finally, some client advocates reported client concerns about sharing information with other agencies, especially the INS. These fears stem from a lack of information about the INS process, leading to uncertainty about the status of immigration cases, according to client advocates.

Five of the leaders personally thought that finger imaging in the FSP was a bad idea and focused on negative aspects of finger imaging. One of these respondents noted that finger imaging, per se, is not a bad idea. He believed that there are appropriate applications for the use of biometrics, such as law enforcement. However, he deemed the use of finger imaging in a food and nutrition program as inappropriate. The other four interviewees thought finger imaging was a good idea and generally focused on its use in the prevention of fraud and consequent saving of money in the FSP.

4.4 Summary

Clients do have some concerns about finger imaging. Roughly 15% expressed concerns in the State surveys and interviews conducted to evaluate finger-imaging programs. These concerns center on issues of privacy, unjust treatment of poor people, inconvenience, and fear of interagency sharing. Despite these concerns, the overall client reaction to finger imaging is decidedly favorable. A substantial majority of clients had no objection to finger imaging and thought it was a good idea.

There is little evidence that many clients discontinue benefits because they are intimidated by the finger-image requirement. Although there is little data on which to estimate the size of the deterrence effect, interviews of former clients in Texas found that roughly 3% of closed FSP cases may be due to concerns with finger imaging. An additional 4% of former FSP clients perceived that finger imaging led to a reduction in their benefits. Similar interviews in Los Angeles County found no one who refused to be finger imaged expressed a concern with the process.

5. COST ANALYSIS OF FINGER IMAGING IN THE FSP

Several factors limited our ability to establish the cost to implement finger imaging. The cost of implementing a finger-imaging system depends on how the program is implemented, whether equipment is purchased or leased, whether other agencies share the cost of the system, the role of the contractor in providing transitional staff, and the time period over which the system is introduced. The material we received from the States typically did not include the detail required to determine the specific implementation procedures. Furthermore, the material often did not specify the internal costs to the State, in addition to the costs paid to the vendor.

Because of these difficulties, it was impossible to estimate the costs of finger imaging precisely. Nevertheless, it was possible to describe the kinds of costs involved and their approximate magnitudes, based on the experiences of the States that have reported costs. In addition, we were able to quantify some of the benefits in monetary terms, although we could not quantify the increased program integrity that may be brought about by the introduction of finger imaging.

As biometric technology has matured and the market for these devices expanded, costs have decreased substantially. Thus, cost estimates from States that have implemented finger imaging in one of their assistance programs may not accurately represent current prices or predict future ones.

5.1 Review of State Costs Estimates

Estimates of the cost of finger imaging were obtained from Arizona, Los Angeles County, Connecticut, Illinois, Massachusetts, New Jersey, and Texas. The estimates varied greatly in the level of detail provided and the time period over which the analysis was conducted. Four States—Arizona, California (for the AFIRM system in Los Angeles County), Connecticut, and Illinois—provided sufficient detail for us to calculate total cost for implementation and operation over a three-year period. Table 8 shows these costs, both as a three-year total, and as an annual cost per case. The average annual cost per case for these four systems was slightly less than \$14.00. The most recent estimates, those for statewide implementation of finger imaging in Arizona and Illinois, are also the lowest and are substantially less than the actual experience of Los Angeles County. Although the bulk of this difference is probably due to reduced technology costs, some part of the difference may be due to differences in estimation methods or specific program characteristics. For example, Illinois did not consider the cost of temporary staff in their estimate. Considering this factor would increase the estimate for Illinois by about 10%, based on the experience of Los Angeles County. In addition, in the Arizona system, the vendor retained ownership of the equipment and software.

Most of the available cost estimates are based on pilot programs or programs implemented in a limited area. Statewide implementations benefit from economies of scale that make them proportionately less costly than more limited implementations. On the other hand, vendors may offer especially attractive costs of pilot programs in hopes of obtaining future profits on a statewide implementation. For example, the Illinois DHS (1997) reports that the finger-imaging

vendor that they selected reduced its bid by 70% in order to secure the contract for the pilot implementation. Because vendors set prices based on number of factors, they could not provide us general formulas for estimating cost, as was indicated by Sticha and Ford (1999).

In reporting the costs shown in Table 8, adjustments in the values reported by the States were made to improve comparability. The caseload represents the actual or estimated caseload at the time of implementation.¹¹ The costs for Los Angeles County exclude costs for programming changes to an existing information system, site preparation, and security guards. The remaining costs represent 97% of the total costs reported by Ernst & Young (1995a). The values for Illinois are estimates based on the costs of a smaller pilot implementation, while the other estimates are based on actual contracted costs. Finally, Texas conducted a detailed cost analysis for their pilot, but did not estimate the cost for a statewide implementation (Schexnayder et al., 1997). Consequently, we could not develop a three-year estimate based on their data.

Table 8					
Three-Year Cost Estimates for Finger Imaging					
STATE	DATE	COST	CASELOAD	COST/CASE/ YEAR	NOTES
Arizona	3/1999	\$2,985,399	104,956	\$9.48	Includes 6-month development cost and 2.5 years of fixed annual fee. Vendor retains ownership of equipment and software.
California/LA County	4/1994	\$19,467,232	311,001	\$20.86	Includes technology vendor, temporary staff, and project staff
Connecticut	2/1996	\$3,989,095	76,814	\$17.31	Excludes GA database. Includes hardware, software, maintenance, temporary staff, and card production
Illinois	12/1997	\$4,742,400	200,000	\$7.90	Includes operating system, supporting hardware, and three-year maintenance. Temporary staff not included.

Sources: Arizona cost data from Arizona Department of Economic Security (1999); caseload data from State interviews reflect December 1998 caseload. Los Angeles County data from Ernst & Young (1995a). Connecticut data from Connecticut Department of Social Services (1998). Illinois Data from Illinois DHS (1997).

We used the average annual cost per case of approximately \$14.00 as a benchmark to compare to the benefits of finger imaging. Two things should be noted about this estimate. First, although the estimate covers costs for implementation, operation, and maintenance of a finger-imaging system over a three-year period, it does not include the cost for integrating finger

¹¹ This assumption leads to a considerably higher estimate of cost per case than was reported by Connecticut, who based their estimate on the total number of cases over a three-year period. Although Connecticut's assumption is valid, it was not consistent with the assumptions made by the other States.

imaging with the existing information system. Although this cost may be substantial, the data were not provided to us by any of the States interviewed. In addition, they will vary considerably between States. Second, this estimate amortizes development costs over three years. Use of such a short period produces a larger cost estimate than would be obtained if a longer period were used.

5.2 Elements of Implementation and Operating Cost

The documentation received from the States identified specific cost elements that were considered in planning for the implementation and operation of their finger-imaging system. Table 9 summarizes and organizes these cost elements. The implementation cost elements represent the one-time expenses required for planning, procuring, and installing the system, and for initial enrollment of existing cases. Ongoing operations and maintenance includes those costs required to operate the system on an ongoing basis. The organization of cost elements does not distinguish either the source of the funds or the organization performing the activities that incur costs. Finger imaging systems are supported by a combination of Federal and State funds. The mix of these two sources varies between projects, and the documentation received from the States did not allow us separate funding sources. Similarly, many activities can be performed either by State or contractor personnel. States varied regarding which activities they performed themselves, and which they assigned to contractors. Although we received some general information regarding the allocation of effort to State and contractor staff, there was not sufficient detail to fully describe either the process that was used to make the allocations or its results.

In their feasibility study for the State of Arizona, Ernst and Young (1995b) describe several factors that can drive the system cost. Several system requirements play a critical role in determining the cost, including the functions that the system will provide, as well as the required response time, reliability, and/or backup capabilities. Infrastructure modifications, especially any required development or modification of the central site and establishment of a communication network, can have substantial cost implications. Finally, implementation of finger imaging may require additional staff, either on a short- or a long-term basis.

State staff functions were compiled from the feasibility study conducted for Arizona (Ernst & Young, 1995b) and supplemented by information obtained by our State interviews and Texas site visits. States varied substantially in the specific positions in their program management team. Some of the staff functions, such as training development and evaluation, were performed by the system vendor or by other contractors in some of the State systems.

The cost of telecommunication, necessary to transmit finger-image information to a central site for matching, may be substantial, depending on the facilities that are already available to the States. For example, Texas was able to use an existing statewide network with minimal additional cost. On the other hand, Illinois required the installation of new telecommunications lines at a cost estimated to be \$134,000, with an annual operating cost estimated to be over

**Table 9
Cost Elements Included in State Estimates**

<p>Implementation Costs</p> <p>Personnel</p> <ul style="list-style-type: none"> State Staff (Salary and fringe benefits) <ul style="list-style-type: none"> Program manager Information specialist Program specialist Financial services Data processing General services Contracts Purchasing Appeals Outreach Regional attorney Evaluation Training development Regional Staff <ul style="list-style-type: none"> Supervisor Security Local Staff <ul style="list-style-type: none"> Training Extra hours during implementation Temporary Staff <ul style="list-style-type: none"> Finger image operators Security guards Infrastructure <ul style="list-style-type: none"> Central Site Modifications Local Site Modifications Communication Lines Hardware <ul style="list-style-type: none"> Workstations Image Scanners Cameras Central Processing and Storage 	<p>Software</p> <ul style="list-style-type: none"> Image Analysis Image Matching Changes to Existing Caseload Information System Communication/Networking (communication lines included in infrastructure) <ul style="list-style-type: none"> Routers Network Applications Other Activities, Materials, and Supplies <ul style="list-style-type: none"> Client Mailings Other Outreach Activities Training Materials Ongoing Operations and Maintenance Personnel <ul style="list-style-type: none"> State Staff Regional Staff Local Staff Infrastructure <ul style="list-style-type: none"> Central site lease Communication lines Vendor Costs <ul style="list-style-type: none"> Help Desk Central System operation Hardware Maintenance Minutiae Analyst Project Management System Upgrades
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\$13,000 (Illinois DHS, 1997). The costs for telecommunication will depend on the capabilities that are already available, as well as on the possibility of sharing costs with other State agencies.

Site preparation, security, and training are other costs that should be considered. Costs for site preparation and security were about 3% of the total costs for Los Angeles County (Ernst & Young, 1995b). Training is often provided by the vendor, and consequently, may not need to be considered. However, some States may decide, as Texas did, to develop and deliver some of its own training, especially training focused on the policies and procedures rather than hardware operation.

The evaluation of the Texas system conducted by Shexnayder et al (1997) shows that costs in addition to contract costs must be considered when evaluating the cost effectiveness of biometric systems. In their analysis, vendor cost represented only 13% of the total costs for the pilot project. Other major cost drivers were the following:

- System software development. This cost represents time spent by the State information system department to modify legacy software to work with the biometric system. The time required to perform these activities can be significant and should be considered in addition to the cost when planning for the implementation of a finger-imaging system. To reduce both cost and time, Texas limited the integration between the finger-imaging system and the State information system. Connecticut deferred the integration until after the initial implementation of finger imaging.
- State office costs. The costs in the State office to manage the project, conduct client outreach, and develop training materials can be substantial. In Texas, it was slightly greater than the vendor costs (State office costs include overhead).

5.3 Quantifying the Benefits of Finger Imaging

Benefits from finger imaging vary with respect to the ease with which they can be quantified. It is relatively easy to assign a value to a benefit that can be tied directly to a caseload reduction. The value of other benefits is much more difficult to assess. This section considers three benefits, reduction of duplicate participation fraud, caseload reduction from other sources, and enhanced program integrity.

The best controlled estimate of caseload reduction due to reduced duplicate participation is the 1.3% reduction found by comparing experimental and control groups of AFDC clients in Los Angeles County (Ernst & Young, 1995b). Our estimate extrapolated this value to the FSP population and adjusted it so that it did not reflect eligible households that might be deterred from applying for benefits because of finger imaging. The adjusted estimate of a 1% decline in caseload reflects a 23% deterrence rate, substantially greater than the rate indicated by the former client interviews conducted in Texas (Schexnayder et al., 1997). Making this relatively large adjustment produces a conservative estimated of the fraud reduction rate. However, there is uncertainty in the estimate, because it is based on limited available data.

An estimated 1% reduction in caseload, if due to the elimination of duplicate participation fraud, would represent a permanent savings to the FSP; consequently, the savings is assumed to be constant over the three-year analysis period. Based on the average monthly household food stamp benefit for FY 1998 of \$172 (FNS, 1998) and a 1% reduction in caseload, the benefit of finger imaging due to reduced duplicate participation fraud equates to \$1.72/case/month, or \$20.64/case/year. This savings is greater than the \$14.00/case/year average cost estimated from Table 8, and comparable to the cost experienced in Los Angeles County. The relationship between the savings and the cost indicates that finger imaging is a cost-effective method to reduce fraud in the FSP. According to these estimates, one dollar expended in implementation, operation, and maintenance of finger imaging will produce \$1.47 in savings, over a three-year period.

The estimates of cost and savings are based on several key assumptions. First, the savings are based on the FSP only. If finger imaging is applied to other assistance programs, the savings will be greater, enhancing the cost-effectiveness of finger imaging. Second, cost estimates do not include several sources of cost, most notably the costs required to modify existing software to work with the finger-imaging system. Including these costs could reduce the cost-effectiveness of finger-imaging substantially. For example, if costs were increased by 50%, then the estimated savings over a three-year period would no longer be sufficient to justify the technology. Finally, the estimates assume a linear relationship between cost and caseload. This assumption is clearly a simplification. Certain cost elements, such as the cost for infrastructure or centralized equipment, may be relatively independent of caseload. Considering these differences would make smaller systems less cost-effective than larger ones.

Temporary reductions in caseload may also occur when finger imaging is introduced. These reductions encompass both reduced undeserved benefits and deterrence or delay of legitimate requests. Consequently, only some of these reductions should be considered to be a benefit of finger imaging. These reductions vary considerably between States, and there is insufficient information to determine what percentage of them reflects true benefits of finger imaging. Where they are found, these benefits should be considered transitional benefits occurring over the first few months of implementation, and should be given a value that reflects their ephemeral nature by incorporating estimates of recidivism to limit the amount of savings that they imply.

Some of the benefits from finger imaging cannot be easily quantified. For example, the Texas DHS (1997) describes the benefits of finger imaging in allowing clients to take an active role in fraud prevention, enhancing the integrity of assistance programs, and enabling cross State matches to further reduce fraud. These benefits may reduce cost, but existing data are not sufficient to determine the extent of the reduction.

5.4 Summary

Since there is no reliable estimate of the magnitude of duplicate participation in the FSP, there is uncertainty regarding the cost effectiveness of finger imaging. Available data are inadequate to make precise estimates of either the costs or benefits of finger imaging for the FSP. Calculations using the data that are available, supplemented by a number of assumptions, suggest

that reduction in caseload covers the costs of finger imaging technology. However, the percentage of the caseload reduction due to decreased multiple participation is unclear.

The analysis makes no assumption about how costs or benefits are allocated among Federal or State agencies. In addition, it does not include the cost required to modify existing software to make it compatible with the finger-imaging system. Finally, it does not take into account that certain cost elements, such as the cost for infrastructure or centralized equipment, may be independent of caseload fluctuation.

6. SUMMARY, CONCLUSIONS, AND DISCUSSION

When finger-imaging technology was first applied to reduce multiple participation fraud in assistance programs, there were many concerns about the performance and reliability of the technology in a social service application, as well as about the potential stigma that a finger-image requirement would place on potential clients. The experience of eight States that have implemented finger imaging into the process of applying for welfare assistance suggests that many of these fears were unfounded. Finger imaging has been readily integrated into the human services programs of the affected states. However, despite the positive reaction to finger imaging from the State officials we interviewed, there is still uncertainty regarding the extent to which this technology can reduce multiple participation fraud.

6.1 Summary of Findings

The information obtained from the states and the results of our analysis have brought to light several factors that are important to consider in planning for, implementing, and operating a finger-imaging system to reduce the potential for duplicate participation in the FSP. These factors cover the planing and implementation process, policy and procedures, and cost-effectiveness issues.

- State representatives uniformly stressed the importance of involving regional and local staff in the planning process. Activities that were conducted included informational meetings, newsletters, and training in both the new policies and procedures and in the operation of the finger-imaging hardware. Some states, such as Texas, gave regional and local staff considerable freedom to determine how best to integrate finger imaging into the application process. State representatives who involved local staff in the planning process thought that these activities eased the transition to finger imaging and improved acceptance of the technology.
- All states conducted outreach to clients and community leaders to ensure that information about finger imaging was disseminated and client concerns were addressed. These activities were viewed as critical to the acceptance of the system. The facts that reaction of clients has been predominantly positive, and that few clients have stopped receiving benefits because of any fear or stigma associated with finger imaging is seen a demonstration of the success of initial outreach efforts. Some concerns about finger imaging remain, especially among client advocates, but in general, clients have a positive impression of the technology and think that it helps to ensure the integrity of the welfare system.
- Integration of the finger-imaging system with the State automated case management system represents a major consideration in planning and implementation. The effort and time required to integrate the two systems was too great for the States to complete in their initial implementations of finger imaging. In fact, as of September 1999, only Connecticut had integrated finger imaging with its case management system. As a result, for other States, the largely manual interface between the two systems led to a substantial

proportion of the operational problems, errors, and staff complaints regarding finger imaging. In addition, entering data and reconciling differences between the two systems had a substantial impact on staff workload.

- States reported that the rapid turnaround time has not been a critical factor since the biometric requirement is only one step in a multi-step eligibility determination process that may require several days to several weeks to complete. The speed with which the central system accepts individual biometric information and returns a match-no match disposition to the local office, therefore, turns out not to be of practical significance. A less stringent turnaround requirement can decrease system cost.
- States uniformly report that the implementation of finger imaging was uneventful and that the technology had little impact on the operation of local offices. The ease of implementation speaks well for the States' planning processes, which were often conducted under severe time constraints imposed by their respective legislatures. The technology vendors played an active role in producing a smooth transition to use of the technology.
- There are substantial differences among States regarding exemptions from the finger-image requirement. The general opinion of the State representatives seems to be that more restrictive policies regarding exemptions reduce the number of exemptions that are requested. For example, in Connecticut, exemptions were possible only at the discretion of the commissioner of the Department of Social Services. Connecticut credits its more restrictive policy to an extremely limited number of exemptions pursued by clients in the first year of operations, and recommends that States not set themselves up for significant exemption claims by publicizing—via an explicit written policy—those conditions under which an exemption might be granted.
- There is no clear picture regarding how much duplicate participation fraud can be reduced by finger imaging. Reduction in existing caseload due to refusals to be imaged varies from almost none to more than 7%. Other measures give similar, conflicting results. Our analysis used an estimate of fraud reduction based on the evaluation with the greatest experimental controls, conducted for the AFIRM system in Los Angeles County. Based on this estimate of approximately 1%, finger imaging appears to be a cost-effective way to reduce duplicate participation fraud. However, there are several sources of uncertainty in the estimates of both cost and savings.

6.2 Biometric Technology, Welfare Reform and Assessment of Duplicate Participation

While there is widespread agreement that duplicate participation exists to some degree—a reality that is occasionally punctuated by the news of extraordinary cases—it is a peculiar form of fraud that defies precise measurement and quantification. Because there are no reliable national estimates, the magnitude of duplicate case fraud and its ensuing costs has been a subject of unresolved debate.

The introduction of biometric identification technology is occurring in an environment with many changes; in such an environment, it is difficult to determine the effect of any single change. Some of the following changes may confound attempts to measure the effectiveness of biometric technology.

- The traditional distribution of responsibility for the design and management of welfare, or cash assistance, programs has shifted from the federal to the State level.
- The nature of State reform initiatives has become increasingly complex and ambitious and included combinations of components including time limits, family caps, changes in asset rules and definitions of work and work-related activities, behavioral contracts, and provisions regarding child immunizations and school attendance (Center for Law and Social Policy 1996). States have been transforming the culture within their welfare offices from “check-writing” operations to employment-focused centers.
- In addition to significantly overhauling the old AFDC program, the Personal Responsibility and Work Opportunities Reconciliation Act (PRWORA) has had a considerable impact across the spectrum of support programs for low-income families, including the Food Stamp Program and Medicaid, as well as health, nutrition, and child care programs. For example, PRWORA established a new time limit on food stamp benefits that has been referred to as the “3-in-36” rule (Super 1997a, Super 1997b). Under this provision, food stamp recipients between the ages of 18 and 50 considered to be “Able-Bodied Adults Without Dependents” are now subject to a new work requirement.
- PRWORA also immediately rendered ineligible for food stamps a considerable number of legal immigrants not covered by the law’s few exemptions (Super 1997c).¹²
- Over this same period during which substantial changes in the welfare system were first tested by States, then eventually implemented on a broad scale, unemployment indicators have been exceptionally low by recent standards, and the overall economy has performed with a remarkable capacity to absorb new workers. Both of these factors are combining to create substantial downward pressure on welfare caseloads.

Thus, States began and continue to experiment with biometric identification technology in their welfare programs during an exceedingly complex moment. Among the States that are testing and evaluating biometric applications, this ongoing program and caseload volatility further complicates the natural difficulties of definitively measuring this form of fraud. Meanwhile, while States begin to enjoy more authority over programs and services, they are simultaneously saddled with ultimate responsibility for their performance. With uncertainty over future funding, naturally

¹² Upon the signing of PRWORA in 1996, the Clinton administration promised to move to excise from the new law these provisions against legal immigrants. On June 23, 1998, the President signed Public Law 105-185, the Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA), which restored eligibility to some qualified aliens.

States are concerned with tightening and refining operations, conserving resources—in part, by reserving them for legitimately needy families—and maximizing program integrity.

6.3 Future Developments

States are likely to expand the role of finger imaging within States and increase sharing of information between States. Arizona, Connecticut, New York, and Texas have implemented finger imaging statewide, and other States are planning to develop statewide systems in the next year. Statewide implementation of finger imaging will make it much more difficult for individuals to obtain duplicate benefits by applying at a nearby office

States that have shared finger-image data, such as Connecticut and New Jersey, have found matches indicating attempts to obtain benefits in multiple jurisdictions. These States have been able to share finger-image data because both used the same vendor. In general, sharing information between systems from different vendors requires compatibility between the data formats used by the vendors (as pointed out in our companion report, Sticha & Ford, 1999). Vendors are currently developing standards for fingerprint data structures that allow communication between systems from different vendors, but do not reveal propriety matching algorithms. These data structures will facilitate interstate comparisons, which are likely to reduce duplicate participation fraud further.

REFERENCES

- Arizona Department of Economic Security (1999). *Arizona Fingerprint Imaging Program: Report to the Legislature 1999*. Phoenix, AZ: Author.
- Center for Law and Social Policy (May 1996). Updated Waiver Information. Washington, DC: Author.
- Center on Budget and Policy Priorities (1996). The Depth of the Food Stamp Cuts in the Final Welfare Bill.
- Cody, S. & Castner, L. (1999). *Characteristics of Food Stamp Households: Fiscal Year 1997*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.
- Connecticut Department of Social Services. (1996). *Connecticut Survey of Clients Who Have Just Been Digitally Imaged for AFDC* [On-line]. Available: <http://www.dss.state.ct.us/faq/disurvey.htm>.
- Connecticut Department of Social Services (March 1998). An Overview of the DSS Digital Imaging Project Implementation and First Year Results (Report to the General Assembly). Hartford, CT: Author.
- DePompa, Barbara (1997). Fingerprint System Points Out Welfare Fraud.
- Ernst & Young (1995a). Los Angeles County DPSS AFDC AFIRM Program: Annual Progress Report, May 1, 1994-April 30, 1995.
- Ernst & Young, (1995b). Fingerprint/Hand Imaging System Feasibility Study Final Report.
- Illinois Department of Human Services (December 1997). Evaluation Report: Biometric Identification Demonstrations.
- Maxfield, M., & Allin, S. (April 1995). *The Income and Eligibility Verification System (IEVS) Targeting Demonstration: Findings and Guidelines for State Food Stamp IEVS Programs, Final Report*. Washington, DC: Mathematica Policy Research, Inc.
- Mintie, D. (May 1998). The U.S. Human Services Eight State Biometric Tour. *Biometrics in Human Services User Group*, 2(2), 20-25.
- Nawrot, R. (September 1997). New York State Department of Social Services Automated Fingerprint Imaging System (AFIS). *Biometrics in Human Services User Group*, 1(5), 2-6.
- Schexnayder, D., Olson, J., O'Shea, D., Norris, D., Schroeder, D., & King, C. (1997). *Lone Star Image System evaluation: Final report*. Austin, TX: Center for the Study of Human Resources.

- Sticha, P. J., & Ford, J. P. (1999). Introduction to Biometric Identification Technology: Capabilities and Applications to the Food Stamp Program. Arlington, VA: R. Lewis & Co., Inc.
- Super, David (1997a). Overview of the Food Stamp Time Limits for People Between Ages 18 and 50. Center on Budget and Policy Priorities.
- Super, David (1997b). Who Will Lose Food Stamps Under the Three-Month Cut-Off. Center on Budget and Policy Priorities.
- Super, David (1997c). Legal Immigrants' Eligibility for Welfare, Medicaid, SSI, and Food Stamps Under the New Welfare Law. Center on Budget and Policy Priorities
- Texas Department of Human Services. (1997). *Evaluation of the Lone Star Image System*.
- U.S. Department of Health and Human Services, Office of Inspector General (May, 1996). Review of the Ongoing Los Angeles County Fingerprinting Demonstration Project (Report A-09-95-00054).
- U.S. Department of Health and Human Services, Administration for Children and Families (1998, August). Welfare Caseloads: Families and Recipients, 1936-1997. Available at Internet site <http://www.acf.dhhs.gov/news/press/1998/3697.htm> (accessed March 3, 1999).
- U.S. Food and Nutrition Service (1998, October). *Nutrition Program Facts: Food Stamp Program*. Available at Internet site <http://www.usda.gov/fcs/stamps/fspfor~1.htm> (accessed March 3, 1999).
- U.S. Food and Nutrition Service, Data Base Monitoring Branch (1998, November 25). Preliminary Summary of Food Assistance Program Results for September 1998. Available at Internet site <http://www.usda.gov/fcs/pid/birdsep.txt> (accessed March 3, 1999).
- United States General Accounting Office (1994). *Food assistance: Potential Impacts of Alternative Systems for Delivering Food Stamp Program Benefits* (GAO/RCED-95-13). Washington, DC: Author.
- United States General Accounting Office (1995). *Electronic Benefits Transfer: Use of Biometrics to Deter Fraud in the Nationwide EBT Program* (GAO/OSI-95-20). Washington, DC: Author.
- United States General Accounting Office (1997). *Food Stamps: Substantial Overpayments Result from Prisoners Counted as Household Members* (GAO/RCED-97-54). Washington, DC: Author.
- United States General Accounting Office (1998a). *Food Stamp Overpayments: Households in Different States Collect Benefits for the Same Individuals* (GAO/RCED-98-53). Washington, DC: Author.

United States General Accounting Office (1998b). *Food Stamp Overpayments: Thousands of Deceased Individuals Are Being Counted as Household Members* (GAO/RCED-98-53). Washington, DC: Author.

U.S. Public Law 104-193 (1996). 104th Congress, 2nd Session, August. Washington, DC: United States Congress.

Wayman, J. L. (September 1997). Large-scale Civilian Biometric Systems—Issues and Feasibility. In *CTST '97: The art of implementation* (conference proceedings). Bethesda, MD: CardTech/SecurTech, Inc.

Westin, A. F. (1996). *Public Attitudes Toward the Use of Finger Imaging Technology for Personal Identification in Commercial and Government Programs*. Available at Internet site <http://www.nrid.com/privacy>.

APPENDIX A. STATE STAFF INTERVIEW GUIDE

Name: _____ State: _____ County: _____

Position: _____ Interviewer: _____ Date: _____

Introduction

Hi, my name is _____ and I represent Caliber Associates, a public policy research firm in Fairfax, Virginia. We are currently gathering information for the U.S. Food and Consumer Service from a number of states which are planning to use or are currently using biometric technology as a method for reducing client fraud in their human services programs.

_____, our project manager, has spoken with _____, of your state office about what we hope to accomplish. S/he agreed to work with us and has referred me to you to respond to a series of questions which we are asking of all states. We're anticipating about one to not more than two hours to complete the interview. Is this a convenient time, or would you rather schedule a time in the next several days?

I. BACKGROUND

29. What type(s) of biometric technology is your state planning, implementing, or currently using?
30. In what program environment is the system to be/being implemented (AFDC, food stamps, both)?
31. Please describe the history and current status of your planning and implementation process. What activities were undertaken or are anticipated (i.e., trace major milestones, what stage is your state currently in, number of jurisdictions)? Who/what agencies are involved?

32. Please describe the rationale and impetus for using biometric technology (e.g., pressure from state legislature, etc.).
33. For what reasons was *[form of technology]* selected over other types of biometric technology? What other types were considered? In choosing *[form of technology]*, what are/were your expectations regarding the following:
 - 33.a. Expected time required for *[form of technology]* to generate a match/non-match (turnaround time)?
 - 33.b. Expectations regarding the need for human examiners required?
 - 33.c. Expected false positive and/or false negative rate of *[form of technology]*?
 - 33.d. Expected disability/failure rate of *[form of technology]*?
34. What were/are the costs of acquiring the technology? Are these the full costs (**issue:** Is the state under a temporary special arrangement with the vendor, as in Texas)?

The following questions explore design, operations, impact, and evaluation issues. Continue with participating states as appropriate.

II. PROJECT DESIGN

29. What process was/will be used to prepare staff for the implementation of *[form of technology]* in your State, both philosophically as well as operationally?
30. What kinds of advance outreach to clients did/will you undertake (e.g., client letter, promotional material in office, video)?
31. What procedures are you planning/using to administer the technology to clients (i.e., where, when, how, who)?
32. Is there a policy for exempting clients? Please describe policies and procedures?
33. Please describe procedures for ensuring client due process (i.e., investigation, disqualification).
34. How is the *[form of technology]* interfaced with other management information systems? How would you describe the extent of technical changes that were required for interface? What flexibility is there to expand the system to accommodate future needs?
35. What planning or implementation problems have been encountered and how have they been resolved?

III. PROJECT OPERATIONS

29. What organization and staffing changes have become necessary to accommodate the project, if any (new positions created, staff relocations, etc.)? Do you expect these to be permanent changes?
30. What are your staff reactions to the new technology?
31. What kinds of staff training have been provided (who provided, amount of training, subjects covered, problems encountered, cost/burden)?
32. How have clients reacted to the system?
33. Is your policy for exempting clients working as intended? Do you suspect any misuse/abuse of the established exemption policy?
34. Have client due process procedures yet been tested? Please describe any problems encountered.
35. How has the [*form of technology*] performed thus far? What operational problems have been encountered? How have these problems been resolved?
36. Are you anticipating any upcoming changes in the administrative/legal/legislative environment that might affect project operations?

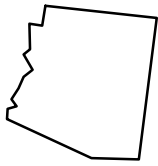
IV. PROJECT OUTCOMES AND IMPACT

29. Are you aware of what your current “hit” rate is (during last full quarter, for example)? What proportion of hits are attributed to client fraud versus administrative error?
30. Is there any available data on the reliability and/or failure rate of [*form of technology*]?
31. What impact is the project having on the average length of time required to process and monitor cases?
32. What impact is the project having on general office operations at this point? Is there any known collateral impact on related operations?
33. Are the initial results of the project meeting your expectations? How so?
34. What, if any, course corrections or alternative approaches are being considered?
35. What should other jurisdictions which may be planning or implementing [*form of technology*] be prepared to encounter?

V. EVALUATION AND TRANSITION ISSUES

29. Is an evaluation of the system planned/underway? Please describe methodology (in general terms).
30. Is a cost analysis anticipated? How are you accounting for project costs and benefits? How is the analytical model constructed?
31. What were the most difficult research design issues that you faced in developing an evaluation approach?
32. In what period of time do you expect the evaluation to generate meaningful results? In what ways do you anticipate the power of the evaluation will be limited?
33. What do you see as the major issues to be addressed in transitioning from demonstration status to permanent operation of the system in the future?

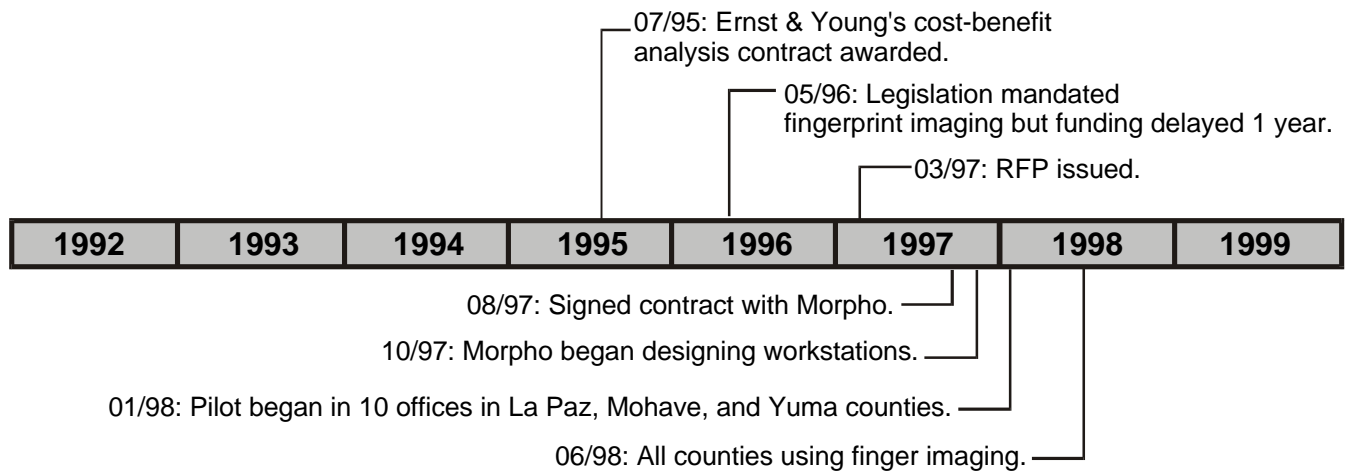
APPENDIX B. PROFILES OF STATE FINGER-IMAGING SYSTEMS



OVERVIEW

Administering Agency	The Department of Economic Security (DES) administers the Arizona Fingerprint Imaging Program (AFIP).
Biometric Technology	Fingerprint imaging
Contractor(s)	North American Morpho Systems, Inc. (Morpho)
Current Status	Food Stamp, General Assistance, and TANF program recipients are imaged statewide. The programs are state-administered.

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

In 1995, the Arizona Department of Economic Security contracted with Ernst & Young to conduct a cost-benefit analysis of an early and continuing fraud detection program utilizing computerized fingerprinting or hand imaging systems in the Aid to Families with Dependent Children (AFDC) program. The Ernst & Young study consisted of four principal components: 1) a literature search and survey of other states using fingerprinting technology, 2) exploration of legal issues associated with such technology, 3) interviews with DES employees to assess the

current AFDC eligibility process, and 4) collection of cost data on other fingerprinting systems and from vendors. Enabling legislation followed in May 1996.

Implementation

Morpho began designing workstations in October 1997 and established its central unit in Austin, Texas, co-located with Morpho's Texas operations. Implementation began in January 1998 with a three-month pilot in 10 offices located in District IV, a rural district on the State's western border with California, beginning with La Paz, Mohave, and Yuma counties. It took approximately 30 days to prepare and 4 days to bring the system on line. Implementation in Maricopa County was completed in April 1998, followed by Pima County in early May 1998. The State's 88 local offices were operational by June 1998 under a system that included 89 enrollment stations, 3 investigative workstations, and 92 portable workstations.

Staffing

At the State office level, six existing employees were transferred to AFIP under special two-year transfers. At the local office level, no new operators were hired; fingerprinting responsibilities were absorbed by existing positions.

POLICIES AND PROCEDURES

Administering Procedures

All adults receiving benefits must be imaged, including minor parents. For TANF, recertification occurs every six months.

Exemption Policy

No formal statement of exemption, but illness, arthritis, or the absence of any imageable fingers can result in a temporary or permanent exemption.

Investigation and Due Process

In the event of a potentially fraudulent match, the local office or the caseworkers are not notified until after Morpho's minutiae experts have sent a match to the Office of Special Investigation (OSI) and OSI validates the fraud. No fraud matches have yet been found with finger imaging. If fraud were to be alleged, the client would receive standard administrative due process. Under existing standards, OSI examines a case file, conducts a visit to the home, and notifies the client of a right to a hearing.

PROJECT OPERATIONS

Staff reported experiencing operating problems within the normal range (e.g., some problems downloading from portable/phone lines), concluding that the fingerprinting technology has performed well. Morpho maintained two technical support staff on site to assist with such

problems. Interviewed during their roll-out process, staff also reported that the intent of their pilot was not to “prove” anything, but only to identify and correct operating bugs. The State purchased a complete, proven system from Morpho and staff are, therefore, able to concentrate their energies on installing the workstations and training staff. Assured that the State is not sharing biometric information with other agencies or States, clients are reportedly accepting of the technology. As in Texas as well as some other States, terminals are positioned such that clients can observe the imaging process, which tends to have a calming effect.

PROJECT OUTCOMES AND IMPACT

Office Operations

Minimal impact because the turnkey system of Morpho rolls out quickly.

Clients

Positive impact. The monitor is often turned around during the process for the client to see the system work. Assurances of no information sharing help those imaged to focus on the benefits of positive identification, such as the removal of certain social stigma.

Caseload

Presently 75,000 records in the database (with room for another "free" 525,000). The State has closed at least ten cases because of failure to comply with the imaging requirement.

Operating Costs

No cost impact information available.

FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

The cost analysis is still incomplete. Breaking even should be relatively easy since a low 1.3% savings goal was used to calculate the break-even figure. Since \$300 to \$400 million are disbursed per year in Arizona, saving or cost-avoiding a little over 1% may not be difficult in today's welfare environment.

Long-term Issues and Actions

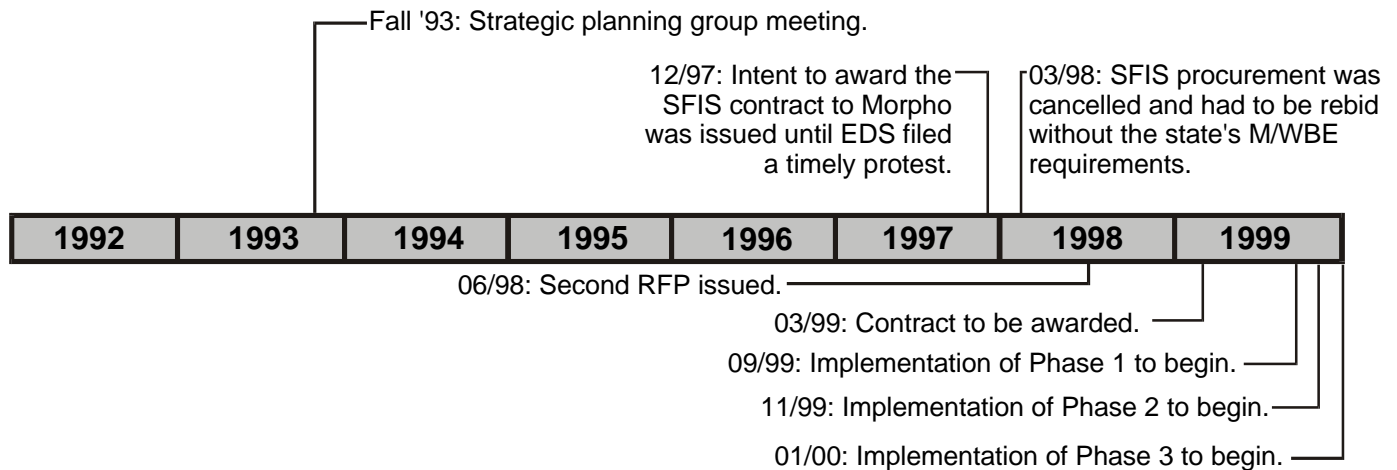
While the State of Arizona has an EBT pilot in the works, no links presently exist, or are planned, between the finger imaging programs and EBT, or, for that matter, with any point-of-sale efforts.



OVERVIEW

Administering Agency	The California Department of Social Services (CDSS) administers the Statewide Fingerprint Imaging System (SFIS).
Biometric Technology	Fingerprint imaging
Contractor(s)	Not yet chosen.
Current Status	Food Stamp, General Assistance (at the county's option), and TANF (CalWORKs) program recipients are imaged in several county offices. The programs are state-supervised and county-administered.

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

SB 1780 requires fingerprint imaging to deter and detect multiple-aid welfare fraud. Fingerprint imaging technology was selected based on the demonstrated results of AFIRM in Los Angeles County, as well as known and recognized properties of the technology, including its maturity, cost, and accuracy.

Information Gathering

California has a number of expectations of a qualified vendor. The vendor must be able to provide expert fingerprint examiners who are capable of providing testimony in a legal proceeding. These examiners will be responsible for verifying every open-search “hit” and every closed-search “miss” before the match/no match results are forwarded to the originating county office. The State has also established specific performance thresholds for a qualified vendor. For example, for a two-finger open search (two corresponding records exist), the system must be able to produce a correct “hit” indication at least 96% of the time; where no corresponding records exist, the system must be able to produce a “no candidates found” indication at least 80% of the time (other 20% includes a group of close matches).

Implementation

California has encountered legal challenges that continue unresolved. When the State is ready to proceed with implementation, SFIS is expected to be implemented in three phases over a five-month period. Phase I will include approximately 10 percent of county sites and will operate for two months prior to the beginning of Phase II. Phase II will add an additional 30 percent of county sites (bringing total to approximately 40%) and will operate for two months prior to the beginning of Phase III. Phase III will complete the statewide roll-out. SFIS will absorb the systems currently operating independently in seven other counties.

Staffing

Several positions were created at the state level to provide oversight and management of the project. The counties will be responsible for securing operators to take the fingerprint images of the clients and support personnel; counties will have flexibility in obtaining staff (e.g., existing staff, new county employees, contract staff). The State will reimburse the counties for operator and support personnel costs based on caseload. The contractor will be responsible for providing staff to operate the central site system, perform validation, and operate a help desk.

POLICIES AND PROCEDURES

Administering Procedures

All adults receiving benefits must be finger imaged. The policy on when to be finger imaged varies. Existing clients will be added to the SFIS via a call-in. For TANF, the existing clients will be fingerprint imaged during the eligibility process within 6 months of the county coming on-line with SFIS. For Food Stamps, clients will be imaged prior to issuance of food stamps, within twelve months of the county coming on-line with SFIS. For those exempt from the process in either program, the household is certified by an out-of-office interview. However, attempts to obtain fingerprint images are made when a household member is in the office for any reason.

Exemption Policy

Proposed Food Stamp regulations exempt a household member who has no fingers, who has a medically verified physical condition which renders him/her unable to comply, or who has not reached the age of 18, unless applying for Food Stamps as his/her own household. Proposed TANF regulations *temporarily* exempt persons with both hands damaged and persons with other medically verified physical conditions which preclude them from coming into the office. Proposed TANF regulations *permanently* exempt persons missing all ten fingers. Exemptions in the GA program are left to every county's option.

Investigation and Due Process

In the event of a potentially fraudulent match, the local office or the caseworkers are not notified until after the Contractor's minutiae experts have verified any open-search "hit" or any closed-search "miss." If necessary, the SFIS Contractor will be responsible for providing expert fingerprint examiners to testify in court. If fraud were to be alleged, the client would receive standard administrative due process. These investigation and due process procedures, regarding finger imaging in particular, are still under development.

PROJECT OPERATIONS

The system is not yet operational; no data available.

PROJECT OUTCOMES AND IMPACT

Office Operations

The impact of finger imaging on pilot office operations has been positive. Since the technology has been in use for several years in some California counties, all indications are that county welfare directors, as well as state level staff, are impressed and confident in fingerprint imaging.

Clients

No client impact information available.

Caseload

No caseload impact information available.

Operating Costs

No cost impact information available.

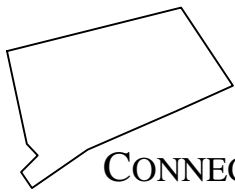
FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

California's largest concern is selecting a vendor and rolling out the finger imaging program to all counties. SFIS will be implemented statewide in three phases over a five month period. Phase 1 will consist of approximately 10% of county sites and will operate for two months prior to Phase 2. Phase 2 will add an additional 30% of county sites (bringing the total to approximately 40%) and will operate for two months prior to Phase 3. Phase 3 will complete the statewide rollout.

Long-term Issues and Actions

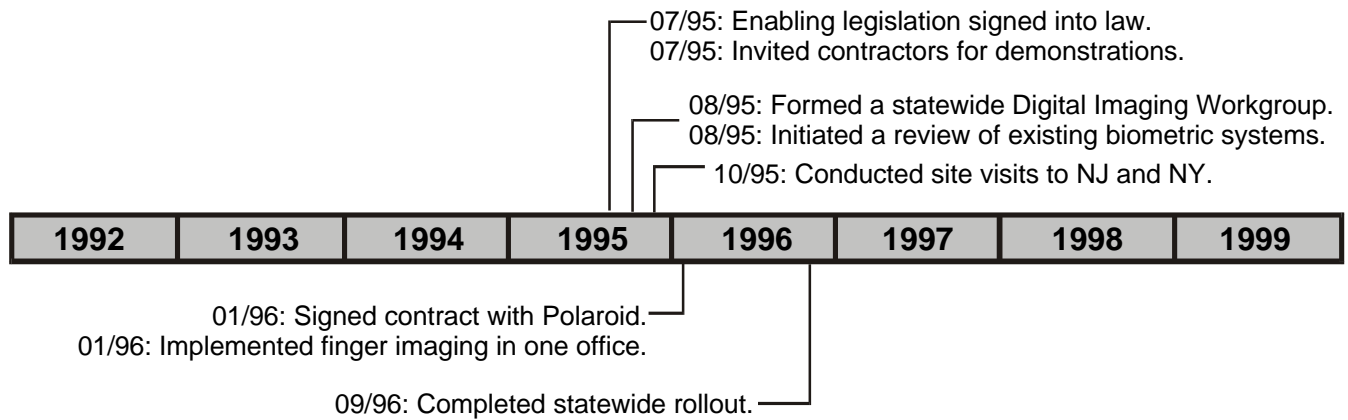
No long term issues at this point.



OVERVIEW

Administering Agency	The Department of Social Services (DSS) administers the Digital Imaging System.
Biometric Technology	Finger imaging
Contractor(s)	Polaroid Corporation (formerly NBS Imaging Systems, Inc.) and SAFlink Corporation (a subsidiary of the National Registry, Inc.)
Current Status	General Assistance and TANF (Connecticut's Temporary Family Assistance, or, TFA) program recipients are imaged statewide. The programs are state-administered.

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

Legislation (Substitute House Bill 7010) was signed in July 1995 requiring DSS to implement a “biometric identifier system” with the following stipulations: 1) review existing technology and to the greatest extent possible, select a system that is compatible with systems in place in surrounding states, 2) DSS commissioner authorized to enter into memorandum of understanding with commissioner of DMV. Connecticut was “looking to kill two birds with one stone:” 1) to deter fraud and, therefore, reduce General Assistance expenditures, and 2) to establish a single,

statewide automated database to house all data (manual or automated) on the GA caseload, with a uniform identification system.

Information Gathering

In addition to finger imaging, DSS looked at voice verification, hand geometry, and retina scanning; did not look at signature verification. Tested voice verification, but demonstrations did not work. Invited a number of vendors in for demonstration (Morpho, Printrak, National Registry, Iriscan). DSS also looked at New York and New Jersey, where they observed field operations and talked with State personnel. Finger imaging was found to be accurate, clean, and quick. An important consideration to DSS was the desirability of human examiners to certify results.

NBSI was under contract with the state Department of Motor Vehicles at the time. DSS piggybacked on the contract so that, while upgrading DMV's hardware and software, NBSI would create a similar platform for DSS. DSS and DMV negotiated an amendment to DMV's contract with NBSI, which included a three-year agreement to operate the DSS system and attain technological compatibility with the DMV digital license system.

Implementation

DSS attempted to build internal support within the agency first, in recognition of the difficulties of building external support without it. DSS then formed a statewide Digital Imaging Workshop with representation from each of the DSS regional offices, all major departments within DSS's administrative organization, and from some of the State's 169 towns.

The State's five regional offices were divided into 3 phases for enrollments. Implementation began with the North Central Region DSS office. Within the first two months, permanent workstations and communications with the central site were established in 16 DSS offices and 20 General Assistance sites. As in Texas, DSS conducted a mass call-in to bring in the existing caseload for enrollment, while also using portable equipment in some towns.

DSS implemented the system with no connection to Legacy, primarily due to a combination of the fact that DSS had only 6 months to implement and that such interfacing is typically labor intensive and would consumed more time than was available. The most significant implementation problem was the logistics and and planning that were necessary to set up and operate the mass enrollment centers across the State's 169 towns. Each office was given latitude to incorporate the new procedures within their own office routines.

For the convenience of clients, and to get the system up as quickly as possible, DSS set up temporary workstations in various locations, including an empty state hospital and office building. The portable workstations were relatively convenient, and fold up in a suitcase.

Staffing

DSS hired 40-50 new enrollment operators, drawn from candidates identified by a temporary agency, as well as qualified AFDC recipients identified by DSS staff. No new titles or bureaucratic changes were required. The finger imaging requirement created the need for an additional person in some of the local offices because staff would otherwise have been taken away from other important functions.

POLICIES AND PROCEDURES

Administering Procedures

Both index fingers imaged and photo taken. No challenges to compliance by recipients. The system is closed; operators image themselves to log onto the system.

Exemption Policy

No specific exemption policies. At the discretion of the regional managers. Two exemptions in two years. Had only one or two recipients ask for a religious exemption.

Investigation and Due Process

Have human examiners. Potential matches of fraud are referred to DSS's fraud unit for a fair hearing. Since the inception of the program, 32 cases have been referred to the unit for review.

PROJECT OPERATIONS

DSS encountered standard and expected operating problems initially. The system has had minimal impact on office operations and was institutionalized quickly. It perhaps adds approximately 15 minutes to the application process.

PROJECT OUTCOMES AND IMPACT

Office Operations

Minimal impact as the new process only adds 15 minutes to the typical application process. Institutionalized quickly. Although DSS hired approximately 40-50 enrollment operators, it did not engage in any title or bureaucratic changes. Mixed reaction from staff. Fraud staff very enthusiastic.

Clients

To measure clients' satisfaction with the new system, DSS conducted a survey of 327 GA and TFA clients. 88.4% felt that they had not been inconvenienced by the new system. 85.1% did not object to the process, and 87.1% felt that the system would help prevent cheating.

Additionally, 0.6% said they knew of someone who was prevented from cheating by finger imaging.

Caseload

GA and TFA caseloads declined by 7,568 and 6,359, respectively in 1996. To date (as of February 1998 interview), 1,206 total "hits," of which 708 were administrative error, 467 non-fraud, and 31 fraud referrals (of which 2.6% attributed to fraud, or, 8 cases).

Operating Costs

In 1997, combined savings on both programs were estimated at \$6.0 million. In addition, the State estimates that the initial start-up costs for the Digital Imaging System and GA database were \$5.1 million for three years. Savings may have been realized in the first year.

FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

After two years of statewide operation, Connecticut is looking at "dual" or "layered" biometrics as another possibility for client identification. Specifically, the state is considering the use of facial imaging to better identify clients who are difficult to fingerprint.

Long-term Issues and Actions

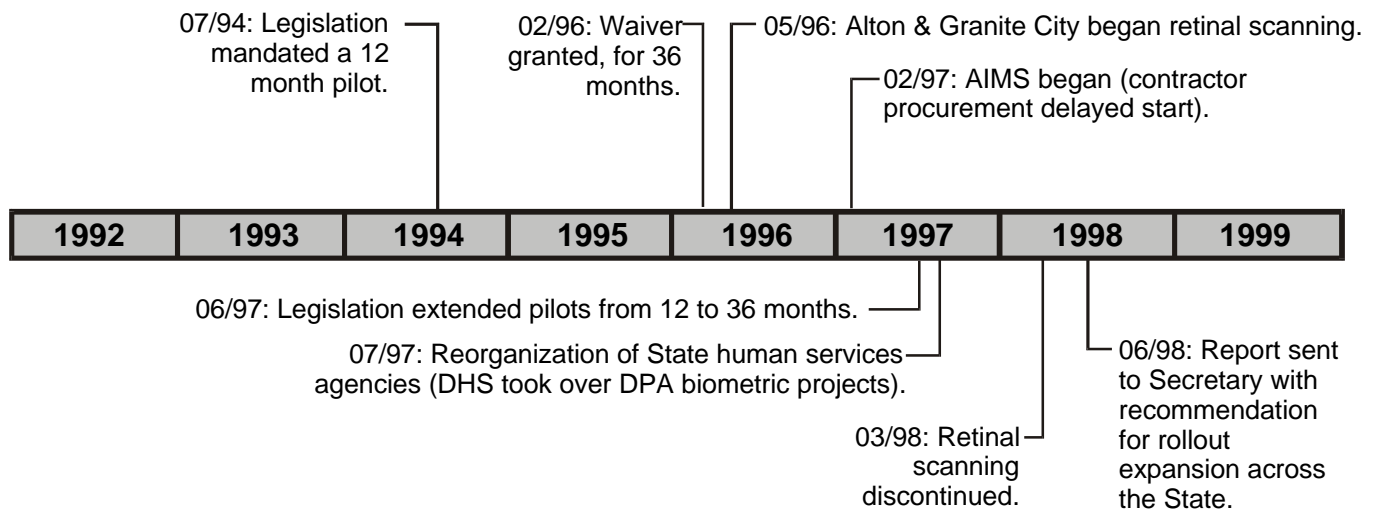
No long-term issues at this time.



OVERVIEW

Administering Agency	The Department of Human Services (DHS) administers finger imaging's Automated Identification and Match System (AIMS) and the Illinois Retinal Identification System (ISCAN).
Biometric Technology	Retinal scanning (recently discontinued) and finger imaging
Contractor(s)	Printrak International, Inc., for finger imaging, and EyeIdentify, Inc. for retinal scanning
Current Status	Finger imaging presently used on TANF program recipients only, in three offices. Retinal scanning discontinued. TANF is state-administered.

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

In August 1994, the Illinois General Assembly passed Public Act 88-554, which required the Department of Public Aid to implement a 12-month project to determine the cost effectiveness of electronic fingerprint imaging in detecting and deterring multiple case fraud. The Automated

Identification and Match System (AIMS) was designed to test electronic fingerprint imaging in three metropolitan Chicago offices, including DuPage, Western, and West Suburban, which were prescribed by the law based on county population size. The Act also allowed for the testing of retinal scanning identification (ISCAN), which was operated in East Alton and Granite City, two Madison County local offices.

Information Gathering

In its March 1998 report on the AIMS and ISCAN projects, Illinois reported that it had uncovered 36 cases of multiple case fraud, costing taxpayers more than \$326,000 in illegally obtained welfare benefits. Extrapolating from a 1993 estimate of the national cost of fraudulent welfare schemes, Illinois estimated (based on caseload size) that its share of the loss could be in excess of \$1 billion per year.

Implementation

The AIMS and ISCAN projects were implemented in metropolitan Chicago and in Madison County, respectively, as described earlier. In February 1996, a waiver of federal regulation was granted to permit Illinois to proceed with the projects, but with the stipulation that the projects continue for a period of three years, rather than only 12 months.

Staffing

No new positions were created or staff hired to support either the AIMS and ISCAN projects; new functions were added to existing positions.

POLICIES AND PROCEDURES

Administering Procedures

The general policy for who must be finger imaged or retinal scanned is that all adult TANF applicants and recipients (including second and minor parents) must be finger imaged. The policy on when to be finger imaged or scanned coincides with the standard redetermination period. TANF clients come in face-to-face at least once a year and are at least finger imaged then. If clients are at the six-month point when a mail-in redetermination usually suffices, they are also asked to go to a DHS office for biometric processing.

Exemption Policy

Exemptions differ in the finger imaging and retinal scanning programs. Temporary exemptions apply in *finger imaging* when the system is not working or the client has bandages on the fingers. A permanent exemption is recognized for those missing fingers. Temporary exemptions apply in *retinal scanning* when the system is not working or the client has eye sickness. A permanent exemption is recognized for those who are blind or diabetic.

Investigation and Due Process

In the event of a potentially fraudulent match, the local office or the caseworkers are not notified until after the Contractor's secondary examiners have verified the match. Administrative matches sometimes occur because a case number is incorrectly keyed the first time a person is scanned or because a person has more than one case. After the administrative matches, there has been only one match so far. In that case though, the client may not have been trying to defraud and may have lacked the required "intent." If fraud were to be alleged, the client would receive the standard administrative due process of 15-day notice and a hearing.

PROJECT OUTCOMES AND IMPACT

Office Operations

Retinal scanning has been discontinued. Because it was slower and less reliable than finger imaging, the pilot was halted after about one year. Finger imaging has had a minimal impact on office operations. Staff have been receptive due to being on the cutting edge of welfare fraud.

Clients

Clients have been receptive, too. In client surveys, 82% of clients think requiring a print is acceptable.

Caseload

No caseload impact information available.

Operating Costs

Retinal scanning was discontinued because it takes three times as long to do a retinal scan versus a fingerprint image (personnel cost-wise). Personnel costs for retinal scanning would have increased by \$.75M if rolled out across the State. Any financial impact because of either biometric will be difficult to predict since multiple enrollments constitute less than one percent of the TANF caseload in Illinois. New hire legislation confounds any conclusions because it has cut down the fraud figure, too.

FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

The full rollout of finger imaging across the State is likely and would probably take one year from RFP issuance through completion, since just a small workstation needs to be added to many of the offices. Cook County, with 60% of the caseload probably would be rolled out first. The

Food Stamp program will very likely join the finger imaging effort at some point during or shortly after the TANF rollout.

Long-term Issues and Actions

No long-term issues at this time.



OVERVIEW

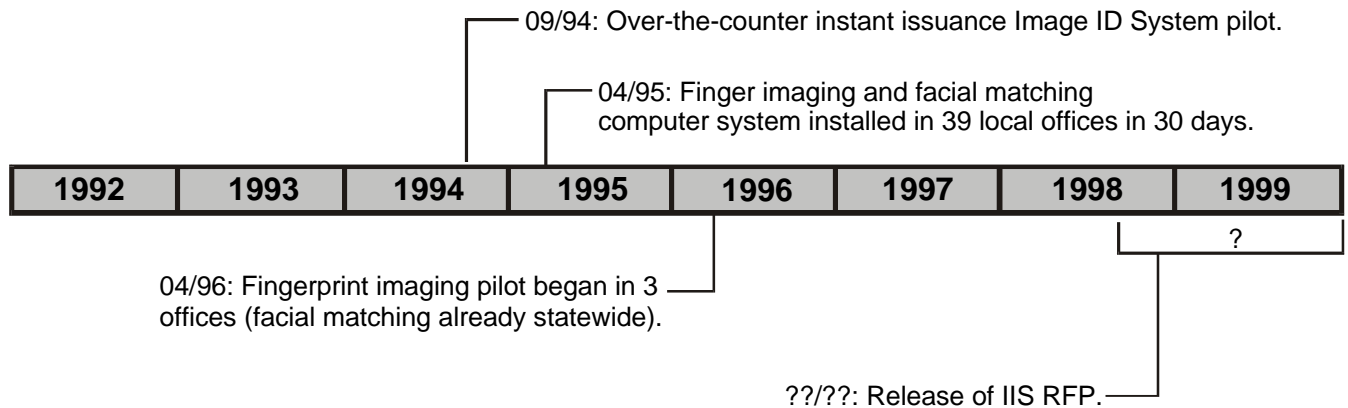
Administering Agency The Department of Transitional Assistance (DTA) administers the Image Identification System (IIS).

Biometric Technology Finger imaging and facial matching

Contractor(s) The contractor for both technologies is Viisage Technology (formerly Lau Technologies). The National Registry, Inc., is also a subcontractor for the finger imaging project.

Current Status Finger imaging is used on TANF program recipients only. Facial matching is used in conjunction with the TANF program, too, as well as the Food Stamp and General Assistance programs. The assistance programs are state-administered. The biometric systems are both in the test phase in three offices.

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

The fingerprint imaging demonstration was mandated by the Massachusetts legislature. A demonstration of the facial imaging technology was proposed by the vendor, which was offered to the Department of Transitional Assistance at a reasonable cost.

Implementation

The facial/finger image computer system was installed in the local offices beginning in April 1995. Installation was completed in all 39 local offices on a staggered basis in a 30-day period, at which point the facial imaging component was available statewide. The Massachusetts legislature also selected three offices—Springfield/State, Springfield/Liberty, and Lawrence—to pilot test the finger imaging system, which continues in a pilot stage.

Staffing

Each of the 39 offices has an ID operator and one or more back-up operators. Office operations are supported by a number of EDP coordinators, who are available to address technical matters. The objective is to eventually have one EDP coordinator per office.

POLICIES AND PROCEDURES

Administering Procedures

All adults receiving benefits must comply including minor parents.

Exemption Policy

For fingerprint imaging, a temporary exemption exists for a documented illness, but that exemption ultimately expires. An exemption for a documented inconsistency with religious beliefs also exists. No exemptions have been granted in fingerprint imaging to date. Facial matching has these exemptions as well as an SSI exemption for the elderly.

Investigation and Due Process

So far there has been only one referral to the Bureau of Special Investigation (BSI) in which a multiple locations suspect disappeared. If fraud were to be alleged, the client would receive standard administrative due process.

PROJECT OUTCOMES AND IMPACT

Office Operations

In an independent evaluation that was done for both biometrics, staff gave a positive reaction because of not having to confront recipients when fraud is alleged.

Clients

Client advocates came out against finger imaging. Facial matching has been an easier sell (one client advocate clearly favors facial). Have had photo IDs since 1982, so facial matching is

"business as usual" for the client. The fact that images are being used in a new way (matching) is completely behind the scenes and transparent to the operators.

Caseload

No caseload impact information available.

Operating Costs

No cost impact information available.

FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

Facial matching may not be as far along in accuracy as contractors are suggesting. Massachusetts is considering two biometrics to have 100% accuracy.

Long-term Issues and Actions

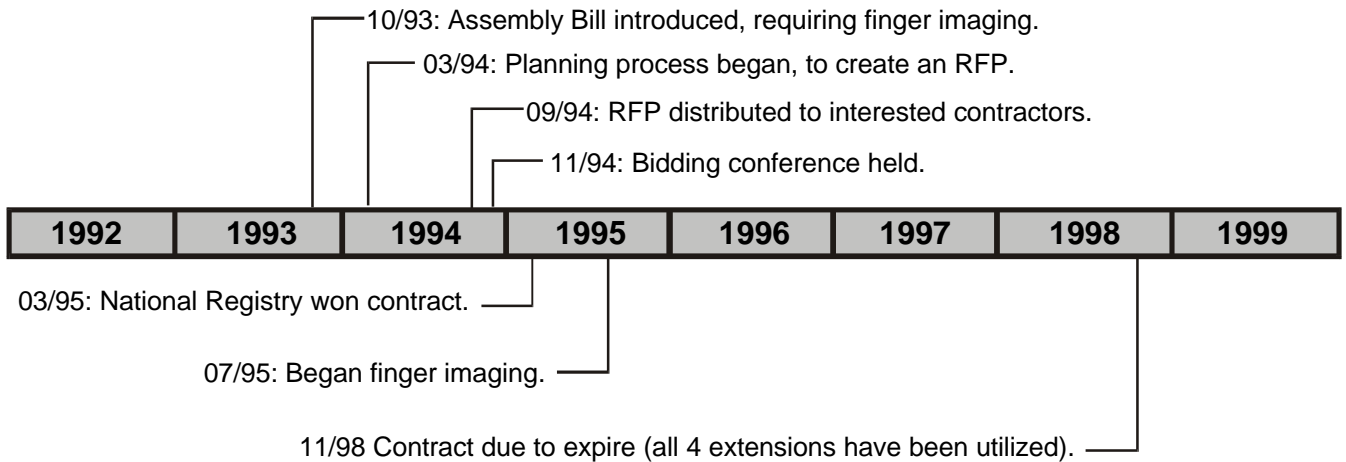
Both programs are offshoots of on-site EBT cards. While the EBT and biometric systems are presently separate, a link will ultimately be created between the biometric eligibility system and the demographic information on the EBT cards.



OVERVIEW

Administering Agency	The Department of Human Services, Division of Family Development, administers the Recipient Identification Program (RIP).
Biometric Technology	Finger imaging
Contractor(s)	SAFlink Corporation (a subsidiary of the National Registry, Inc.)
Current Status	General Assistance program recipients in 104 municipalities are finger imaged. General Assistance is state-supervised and county-administered.

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

Assembly Bill No. 2953 was introduced in October 1993, which required high technology finger imaging identification of public assistance recipients. The New Jersey Department of Human Services, Division of Family Development, was mandated through language contained in the Appropriations Committee Budget to issue a Request for Proposal for a pilot project to test the

feasibility of fingerprinting recipients of General Assistance (GA) in order to positively identify applicants and prevent the fraudulent duplication of benefits or other misuse of the GA program.

Information Gathering

The information gathering process began in March 1994 with the creation of a work group with representation from various areas of the division. An RFP was finalized to which four vendors responded. The three lowest bidders were selected to complete a benchmark test, during which 100 cards were examined by each vendor. Performance on the test was evaluated on the basis of both response time and match parameters.

Implementation

The pilot area consists of 104 municipalities within approximately 15 miles of Newark, New Jersey, representing approximately 50 percent of the State's GA population. Of the 104 municipalities, 14 were deemed automated offices and 90 were deemed manual offices, which have very small caseloads. The manual offices take prints (3 of each finger) using non-staining ink pads and photographs with polaroid cameras. The prints and photos are sent to Trenton State office, where they are scanned into the system. The system determines the quality of the prints, selecting the best of the three.

Staffing

The Trenton State office is staffed by a project leader, an administrative assistant, and a computer repair technician. A remote site is also maintained in Newark. Back-up staff provide database support from an office in Tampa, Florida, from which they can manipulate the system remotely.

POLICIES AND PROCEDURES

Administering Procedures

All adults receiving benefits must comply including minor parents. Clients will need to be finger imaged every three months, as that is when the GA checks are mailed from the counties.

Exemption Policy

The general policy for who must be finger imaged is that there are no exemptions. If the client is homebound, a manual imager visits the home. If fingers are bandaged and cannot be imaged, that is acceptable for two months, but the client is taken off the rolls after two months if the bandage is not removed. If the client is an amputee, the General Assistance office will keep a facial image on file, to be used for matching purposes.

Investigation and Due Process

In the event of a potentially fraudulent match, the municipality where the client attempts to obtain benefits will initiate an inquiry. Once they are compared and believed to be a match with another municipality, the contractor is called. The contractor then informs the municipality where the client's prints were first taken. Manual sites call Trenton and then Trenton in turn calls the municipality where the client may already be receiving benefits. Disqualification is determined after an investigation. Less than a dozen matches since implementation on July 10, 1995 have been attributed to client fraud attempts, however. If fraud is alleged, the decision as to who confronts the client with match information is left to county-level supervisors. As a result, some offices like immediate confrontation, particularly those with on-site investigators, while others do not. The client receives standard administrative due process, and can request a Fair Hearing.

PROJECT OUTCOMES AND IMPACT

Office Operations

According to the contractor, finger imaging has had no impact on general office operations. While no hard data is available, all directors from the agencies involved were in favor of its implementation, and no adverse problems have resulted from the use of finger imaging. Processing takes very little time and has not affected the processing and monitoring of cases. It takes about 2-3 minutes for an experienced operator to process a client, assuming the client is cooperative.

Clients

Likewise, no hard data is available on client reaction to the technology. The closest real evidence to client acceptance is the fact that of 5,173 images obtained in five working days at one point, only 3 did not want to be imaged (2 because their hair was not "right" for the accompanying photo). Acceptance seems to be the norm, in part, because imaging removes the stigma of receiving benefits.

Caseload

The initial use of the system was, of course, to stop "double dippers." The number of clients dropped from the rolls because of this technology has not been measured, but New Jersey believes the benefits of imaging can be addressed on its deterrent factor and its positive identification of the clients.

Operating Costs

When the 18,000 on the rolls of the finger imaging pilot were matched with those of New York State, 338 hits resulted. To date, investigation of these hits has resulted in roughly \$8,300 in annual savings and a caseload reduction of approximately 20.

FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

The largest problem in the near future is moving from issuing the RFP to rolling out statewide.

Long-term Issues and Actions

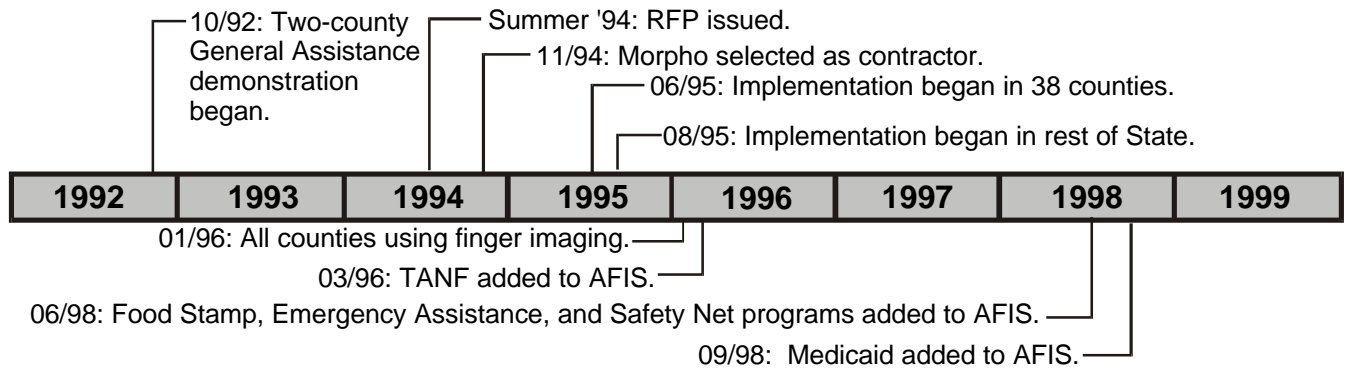
The State definitely plans to expand to TANF and food stamps, though that expansion is likely to wait until the State converts to county control, and other welfare reform changes can be implemented. New Jersey may also put finger imaging in its Unemployment Insurance program to facilitate matches of employment records with welfare program participation records (i.e., when a person has a job and when not).



OVERVIEW

Administering Agency	The Department of Social Services (DSS) administers the Automated Finger Imaging System (AFIS).
Biometric Technology	Finger imaging
Contractor(s)	North American Morpho Systems, Inc. (Morpho)
Current Status	Food Stamp, Emergency Assistance, General Assistance, Medicaid, TANF, and Safety Net program recipients are imaged statewide. The programs are state-supervised and county-administered, except Safety Net (a program unique to New York State).

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

Legislation was passed in 1992 establishing a two-county demonstration, which ran from October 1992 through March 1994. Subsequent legislation expanded the demonstration to include 12 counties of the State's 58 total counties. When the State named the 12 counties that were selected to participate, it also gave the remaining counties the option to join; 26 other counties did so, bringing the total participating counties to 38.

Implementation

A Request for Proposal was issued in June 1994, the vendor was selected in November 1994, and a contract was executed and approved in March 1995. Implementation in these 38 counties began in June 1995 and was completed in August. The governor mandated that the system be expanded statewide, and by January 1996 all counties were operational.

The fingerimaging project began with the State's General Assistance program in 1995 and expanded to include AFDC cases in March 1996. In June 1998, the project expanded to include food stamp only cases, emergency assistance, as well as the State's Safety Net program for legal immigrants. By September 1998, Medicaid cases were expected to be incorporated into the system.

Staffing

No new staff were added to support the project at the local level; utilized existing staff and dedicated them to the project.

POLICIES AND PROCEDURES

Administering Procedures

One must be fingerprint imaged if 18 years of age or older or if less than 18 and the head of household (minor parent). The cutoff for Medicaid is currently 21, but that age limit may come down in the near future.

Exemption Policy

There are exemptions to imaging at county option and state approval. Exemptions exist for the homebound and for general good cause. Because of the portable fingerprint equipment at some locations though, few, if any, homebound exemptions have been granted. Likewise, not too many good cause exemptions have been granted, but four unsuccessful religious exemption lawsuits have been filed.

Investigation and Due Process

In the event of fraud, standard administrative due process includes investigation, client notice, and administrative hearings.

PROJECT OUTCOMES AND IMPACT

Office Operations

The impact on office operations has been minimal since imaging adds only two minutes to the in-office experience.

Clients

The impact on clients has been positive overall, as evidenced by an independent client attitudinal survey. (Of 4,700 randomly sampled, the majority expressed comfort with the imaging.)

Caseload

The caseloads have dropped due to any number of factors in today's changing welfare environment, including imaging, possibly. New York State has closed 46,000 cases in recent history.

Operating Costs

The impact on the costs should be released in a cost-benefit analysis soon (second half of an ongoing study). Benefit-cost analysis generated a 20 to 1 ratio of benefits to costs (\$274 million in savings, \$13 million in expenditures).

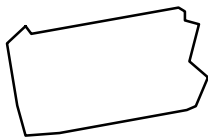
FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

In the short-term, imaging information has been shared with New Jersey already (once only so far). After processing Connecticut's tapes, the State will decide if information sharing will occur quarterly or semiannually. (A monthly demographic match is already made with all contiguous states to catch some double dippers.)

Long-term Issues and Actions

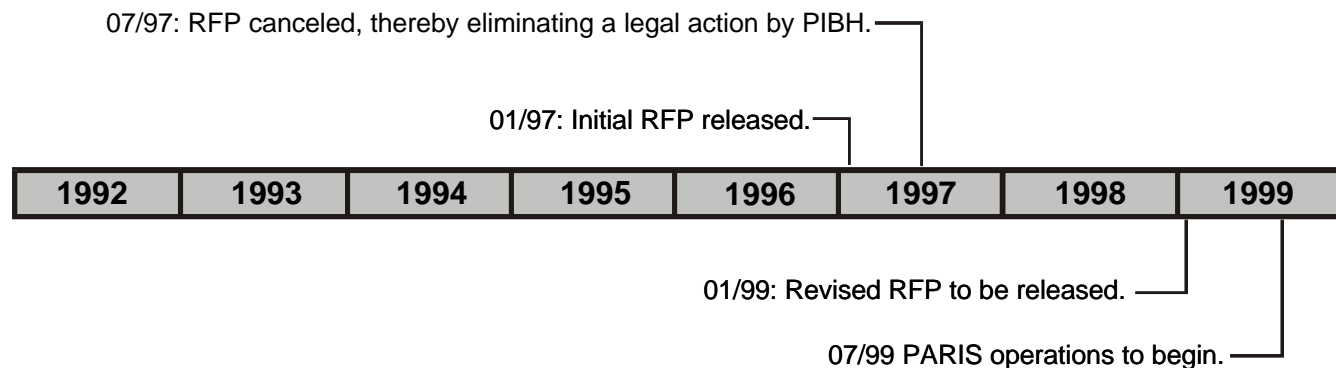
In the long-term, New York is pursuing legislation to match images against a separate database of fugitive felons and parole violators. Presently, by law, imaging information cannot be used in any criminal proceeding or shared with outside agencies. The State is also actively pursuing legislation to use fingerprint images for EBT (in lieu of a PIN) for approving medical services at the point of service. Finally, a secondary biometric for individuals with poor fingerprints, e.g., the elderly, is also being sought.



OVERVIEW

Administering Agency	The Department of Public Welfare (DPW) administers the Pennsylvania Automated Recipient Identification System (PARIS).
Biometric Technology	Finger imaging
Contractor(s)	Not yet chosen.
Current Status	Food Stamp, General Assistance, medical benefits, and TANF program recipients will be imaged, starting in July 1999. The programs are state-administered.

PROJECT TIMELINE



PLANNING AND IMPLEMENTATION

Impetus

In 1994, Act 1994-49 amended the Pennsylvania Public Welfare Code by adding Section 414, which authorized the Department of Public Welfare to create a Pennsylvania Assistance Recipient Identification System (PARIS) in three geographic areas. The demonstration, however, never occurred due to passage of Act 20 in 1995, which added the stipulation that the system be implemented in areas where it is “cost effective.”

Implementation

The original request for proposals was released in January 1997. However, Pennsylvania experienced legal challenges pertaining to State Use law that have delayed implementation of both PARIS as well as the State's EBT system, which were envisioned as a joint operation because of the economies such an arrangement offers. As a consequence of legal action, the Department of Public Welfare canceled the RFP in July 1997. The EBT project was eventually separated from the fingerprinting component and proceeded independently; EBT is now in Phase 6 of its implementation. A revised RFP is anticipated for January 1999, with implementation expected to follow by July 1999.

PROJECT OPERATIONS

The vendor is expected to operate from a state hospital campus, while the central processing unit will be established in a departmental computer facility, both in Harrisburg.

If a match is determined by a vendor minutiae examiner, the information will be forwarded to a front-end investigator in the Office of the Inspector General (OIG), where the case will be handled in accordance with existing procedures.

POLICIES AND PROCEDURES

Administering Procedures

All adults receiving benefits must comply, including emancipated minors and minor parents. PARIS will take clients as they come in for new certification or when come in to recertify, so a one-year rollout will be necessary to image everyone.

Exemption Policy

Food Stamp exemptions include an exemption "for religious reasons." The medical assistance program recognizes exemptions only if the recipient is over 65. In TANF, there are no exemptions.

Investigation and Due Process

No specific investigation or due process information available.

PROJECT OUTCOMES AND IMPACT

Office Operations

No office impact information available.

Clients

No client impact information available.

Caseload

No caseload impact information available.

Operating Costs

No cost impact information available.

FUTURE ISSUES AND DIRECTIONS**Anticipated Short-term Actions**

No short-term issues at this time.

Long-term Issues and Actions

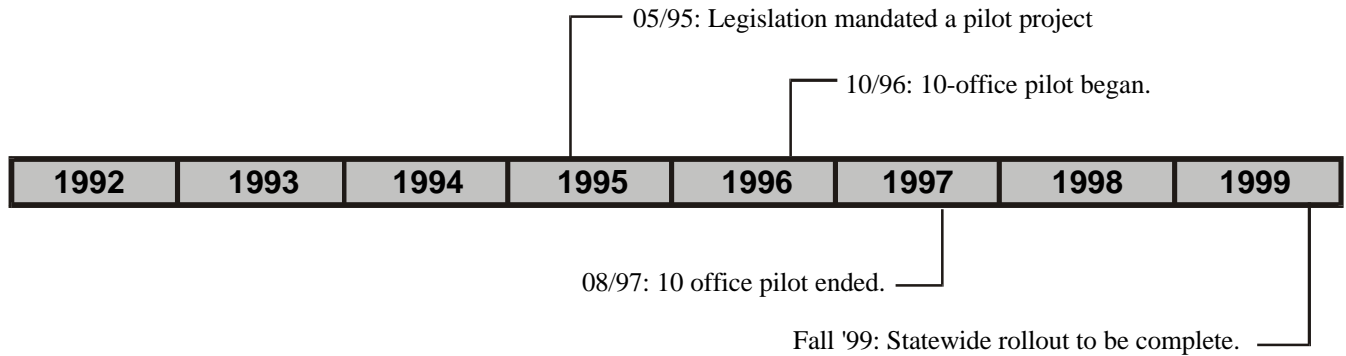
Not interested in using biometrics at the point-of-sale.



OVERVIEW

Administering Agency	The Texas Department of Human Services (TDHS) administers the Lone Star Imaging System (LSIS).
Biometric Technology	Finger imaging
Contractor(s)	North American Morpho Systems, Inc. (Morpho)
Current Status	Approximately 33% of Food Stamp and TANF program recipients are imaged. The programs are state- administered.

PROJECT TIMELINE



POLICIES AND PROCEDURES

Administering Procedures

Household members in both programs must have a finger image code (and photo) on file or provide a finger image at the time of application or review/recertification, if they are 18 years of age or older on the day of the interview. In the Food Stamp program, this includes a minor who is head of the household. For TANF, a minor parent with a dependent child on the same case must be imaged.

Exemption Policy

Exemptions in both programs include those certified "out of the office" (e.g., physically homebound or residing in a treatment center), those physically unable to have at least one finger imaged, those exempted for religious reasons, and those who cannot be imaged because of

equipment failure. The Food Stamp program also exempts ineligible students and boarders for whom the household is not receiving benefits. TANF's special exemptees include SSI recipients and non-parental payees.

Investigation and Due Process

In the event of fraud, standard administrative due process includes investigation by DHS's Office of the Inspector General, client notice, and administrative hearings.

PROJECT OUTCOMES AND IMPACT

Office Operations

No office impact information available.

Clients

As in the other eight States, Texas clients overwhelmingly favored the use of finger imaging to reduce fraud in their assistance programs.

Caseload

A 1997 evaluation by the University of Texas could not find any significant reduction in caseload due to finger imaging.

Operating Costs

Additionally, the UT study could not identify any savings in benefit payments attributable to deterring duplicate benefits through finger imaging.

FUTURE ISSUES AND DIRECTIONS

Anticipated Short-term Actions

A pilot integrating finger imaging and EBT cards will be launched in the near future.

Long-term Issues and Actions

Texas has no long-term issues at this time.

APPENDIX C. REPORT OF CLIENT ADVOCATE INTERVIEWS

Introduction

The 74th Texas Legislature directed the use of finger imaging to help detect and deter duplicate participation in the Food Stamp and Temporary Assistance to Needy Families (TANF) programs in Texas. On October 24, 1996, the Texas Department of Human Services (DHS) implemented the Lone Star Image System (LSIS) pilot project. The pilot project involved ten DHS offices in 2 of 254 counties in Texas—Bexar and Guadalupe counties. All adults and minor heads of household receiving food stamp benefits in the pilot counties were required to be finger imaged (Texas Department of Human Services, 1997).

This report includes the results of client advocate interviews conducted--as part of an evaluation of the food stamp portion of the LSIS project--by R. Lewis and Company for the Food and Nutrition Services (FNS) of the U.S. Department of Agriculture. There is a brief overview of the Texas DHS evaluation of the LSIS pilot project. We compare results from the client advocate interviews and the DHS client and community leader surveys. In addition, we present some recommendations based on the client advocate interviews.

Background: DHS Process Evaluation

The Texas DHS conducted a process evaluation of the first three months of the LSIS pilot project (October 24, 1996 through January 23, 1997; Texas Department of Human Services, 1997). The evaluation included surveys and interviews of staff, clients, and community leaders.

DHS Community Leader Survey. DHS sent a three-question survey to 104 community leaders in Bexar and Guadalupe counties on January 2, 1997 to collect community opinions about the LSIS pilot program. Community leaders included “state legislators, city council members, and [directors of] non-governmental, community-based agencies that serve public assistance clients (including neighborhood centers and religious and non-sectarian social services)” (p. E-1, Texas Department of Human Services, 1997). Forty-two surveys were returned by February 1, 1997.

The three questions asked by DHS were:

1. How would you compare the response you have received since finger imaging started to the response you receive on other issues?
2. Overall, how have these people viewed finger imaging?
3. Do you think finger imaging will help keep people from getting benefits they should not receive?

LSIS Client Interviews. DHS conducted client interviews with 49 food stamp and TANF recipients and applicants. Approximately five interviews at each of the ten DHS sites were conducted. Interviews were conducted from November 25, 1996 through January 6, 1997. Interviewers asked five questions:

1. Did you receive this letter [Form 1089, finger image notification letter] in the mail?
2. Did you hear about finger imaging any other way?
3. Do you think finger imaging is a good idea, bad idea, or neither good nor bad idea?
4. Do you think finger imaging will keep people from getting benefits they should not get?
5. Is there anything else you would like to say about finger imaging?

LSIS Client Satisfaction Cards. DHS distributed 2,600 client satisfaction cards in the DHS offices participating in the LSIS pilot program. Cards were distributed between January 9, 1997 and February 10, 1997. Cards were returned in special reply boxes in each office; 2,378 cards were completed. Clients were asked two questions:

1. What do you think about finger imaging?
2. Do you think finger imaging will help people be more honest when applying for benefits?

Method

We conducted an evaluation of the food stamp portion of the Texas LSIS program for the FNS. As part of the evaluation, we interviewed client advocates of food stamp recipients and applicants in Texas. Nine client advocates from San Antonio (n=7) and Austin (n=2), Texas were interviewed by phone, using a 20-question interview protocol (Appendix D). We conducted the interviews from October 17 to October 28, 1997, approximately one year after the LSIS pilot project began. Finger imaging was still in effect in Bexar and Guadalupe counties at the time of data collection. The client advocate interviews emphasized advocate and client concerns about finger imaging and the LSIS pilot program.

The Texas DHS provided us with their LSIS community leaders mailing list of 104 government and non-government leaders. We asked DHS to identify 9 non-government leaders for interviews. Seven of the nine community leaders we interviewed were from that list. We added the name of a community leader who was an outspoken critic of the finger-imaging requirement. He provided two additional names for potential interviews. We interviewed one of those persons. Although we did not ask participants if they had previously completed a survey about the LSIS pilot project, one respondent noted that she had completed a survey received in the mail.

Client Advocate Interview Results

Results of the nine client advocate interviews are reported in this section. Reflecting the emphasis of the interview questions, the results identify advocate and client concerns with finger imaging. In addition, responses indicated that there are some misunderstandings about the use of finger imaging in the Food Stamp program.

Misunderstanding the LSIS pilot project. Five of the nine leaders had some misunderstanding of the finger-imaging requirement. Several of those interviewed thought the program required a finger image at the point-of-sale. They believed that the finger-imaging requirement would prevent people from using another person's lone star card or from stealing lone star cards. One participant indicated that his clients wonder if only the head of the household will be able to use the food stamp card. Some of the leaders had heard very little of the program. One person said that he had heard that people were required to give a "thumbprint image." Another participant suggested a need for positive public announcements about the finger-imaging requirement; "they have not publicized [the program] enough....I hope to hear more about it." Some did not realize that the finger-imaging pilot project had begun. Results of the interviews should be interpreted with the knowledge that misconceptions and misunderstandings of the nature of the food stamp finger-imaging requirement may influence some answers.

Client advocates' open-ended comments on LSIS. Following introductions, we asked client advocates to tell us what they had heard about finger imaging in Texas. The responses were open-ended and unprompted. Comments were categorized as positive, negative, neutral, and misunderstandings about finger imaging in the Food Stamp program.

As is often the case in interviews or surveys, individuals with negative comments were more vocal than individuals with positive comments. Thus, there were fewer positive comments than negative responses. Two positive issues were cited--prevention of fraud and saving taxpayer dollars. A variety of negative issues associated with finger imaging were reported, including: finger imaging is seen as a degrading or demeaning process, finger imaging is identified with criminal activity, the cost and inconvenience of finger imaging outweigh catching fraudulent applicants, the LSIS pilot project has resulted in false matches and uncovered few cases of fraud, some applicants have religious objections to being imaged, and clients are mad and upset. Some comments were neutral, including haven't heard much about the finger-imaging program, saw a program on television, and the media tries to portray finger imaging objectively.

Client advocates had heard and reported a variety of concerns and issues about finger imaging and the food stamp finger-imaging pilot project. We followed the open-ended, unprompted questions with a series of prompted questions to identify specific concerns associated with finger imaging.

Is Finger Imaging in the Food Stamp Program a Good or Bad Idea? Five of the leaders thought finger imaging in the Food Stamp program was a bad idea and focused on negative aspects of finger imaging. One of these respondents noted that finger imaging, per se, is not a bad idea. He believed that there are appropriate applications for the use of biometrics, such as law enforcement. However, he deemed the use of finger imaging in a food and nutrition program as inappropriate. The other four interviewees thought finger imaging was a good idea and generally focused on its use in the prevention of fraud and consequent saving of money in the Food Stamp program.

Concerns About Finger Imaging. We asked all participants if they had heard any of 14 different concerns about finger imaging from any source (e.g., clients, colleagues, and media). Two had not heard any concerns. The others had heard from 1 to 12 different concerns. The

most cited objections about finger imaging included the unjust treatment of poor people and their invasion of privacy. The inconvenience of making extra trips to the food stamp office, the association of finger imaging with criminality, and fears of information sharing with the INS were also at the top of the list. Other concerns added to the list included the cost of the finger-imaging program, a degrading process, and religious objections to imaging. Table 1 shows the number of interviews, out of nine, in which community leaders had heard each of the objections or concerns.

Unjust treatment of poor people	6
Invasion of privacy	6
Inconvenience of extra trips to the Food stamp Office	6
Fears of the Immigration and Naturalization Service (INS)	5
Discomfort about associations with criminality	5
Inconvenience of appearing in food stamp office	5
Cost of extra trips to the food stamp office	4
Unnecessary withholding of benefits	4
Fears of interagency sharing	3
Cost of appearing in food stamp office	3
Potential embarrassment in front of family members	2
Potential embarrassment in front of friends/neighbors	2
Time required at application	1
Time required at recertification	1
Other: Cost of finger-imaging program	1
Other: Degrading process	1
Other: Religious objection	1

We also asked respondents if they had heard the same list of concerns from their clients. More than half (five) had not heard concerns from their clients. The four who had heard client objections, noted concerns about unjust treatment of poor people and assumption of criminal behavior among poor people. Other concerns on the minds of clients include fears of information sharing with the INS and other agencies and embarrassment of providing a finger image. Table 2 shows how many leaders indicated hearing specific concerns from their clients.

Respondents elaborated on some of the concerns that they or their clients had about finger imaging in general and finger imaging used in the Food Stamp program. One of the community advocates voiced a recurring concern, that finger imaging makes a person feel like a criminal and presumes that the person is a criminal. One comment was actually a series of questions, “Is there fraud [in the Food Stamp program]?” If so, “How is it being perpetrated?” and “Is finger imaging the way to detect or deter [the fraud]?” A common thread among those who were against the food stamp finger-imaging requirement was the belief that there was little fraud in the Food Stamp program. Following this line of thought, was a concern about the cost of the finger- imaging

Table 2. Number of Community Leaders Who Heard Specific Concerns About Finger Imaging from Clients

Discomfort about associations with criminality	4
Unjust treatment of poor people	4
Fears of the Immigration and Naturalization Service (INS)	3
Fears of interagency sharing	3
Cost of extra trips to the food stamp office	3
Potential embarrassment in front of family members	3
Potential embarrassment in front of friends/neighbors	3
Invasion of privacy	2
Cost of appearing in food stamp office	2
Inconvenience of appearing in food stamp office	2
Inconvenience of extra trips to the food stamp office	2
Unnecessary withholding of benefits	2
Time required at recertification	1
Other: Cost of the finger-imaging program	1
Other: Religious objection	1
Time required at application	0
Other: Degrading process	0

program and the belief that the money could be spent for other programs, such as outreach or job training. One respondent indicated that the finger-imaging program was costing a lot of money to implement, but it wasn't finding duplicate applicants. Further, he believed that the benefits of finger imaging were not worth the cost, since finger imaging conveys an attitude of distrust and slows down the production of the food stamp office. Another participant had similar comments, saying that the cost of establishing and running the finger-imaging program and the inconvenience to the food stamp recipients and applicants outweigh the catching of fraudulent applicants.

A community leader indicated that unjust treatment of poor people has always been an issue, and the finger-imaging program is no different than the general treatment of people in this population. Some immigrants, even legal aliens, are concerned that their finger image could be shared with authorities in their native country or that their legal status in the United States might be affected if they refuse to have their finger image taken at the food stamp office.

Favorable Comments About Finger Imaging. The majority of the questions asked during the interview addressed concerns and negative issues about finger imaging. However, we did ask individuals if they had heard favorable things about finger imaging, what they had heard, and if they thought finger imaging was a good or bad idea. We received far more negative comments and concerns than positive comments about the food stamp finger-imaging program. One respondent praised finger imaging and any other programs that can reduce illegal use of benefits and save taxpayer money. Another praised the program, saying that it "should have been done a long time ago." And another said that with the finger-imaging requirement she wouldn't

see food stamp recipients driving Cadillacs anymore. A number of individuals said that they had heard, from public officials and the media, that finger imaging is supposed to prevent fraud.

We asked the client advocates if they had heard favorable things about the finger-imaging process in the state and what were some of those things. We used an unprompted check list, including finger imaging will keep food stamps going to the right people, finger imaging will prevent cheating, finger imaging will prevent double-dipping, finger imaging will keep people honest, finger imaging will prevent fraud, finger imaging is no big deal, and other. We counted all favorable comments mentioned in each interview. The results are displayed in Table 3.

Table 3. Number of Community Leaders who Heard Favorable Comments about Finger Imaging	
Total Favorable comments	9
Keep food stamps going to the right people	0
Prevent cheating	1
Prevent double-dipping	1
Keep people honest	0
Prevent fraud	5
Finger imaging is just no big deal	0
Other: Prevent people from using another's card	2

We found that seven of nine respondents said that they thought finger imaging would keep people from getting food stamps on more than one case. Nobody knew any clients who would not apply for food stamps because of the finger-imaging requirement. One client advocate said that he had heard of people, but not clients, who would not apply for food stamps if they had to give their finger image. One commented that only those who have something to hide wouldn't apply for food stamps.

Comparison of Client Advocate Interview Results to DHS Survey Results.

Comparisons of the client advocate interview results and the DHS community leader survey, client interviews, and client comment cards are presented in this section. The client advocate interviews were conducted approximately nine months after the DHS surveys and interviews. Questions asked and response options provided were not identical, but in many cases were comparable.

Community Leaders. Only three months after finger imaging began, it might be expected that some community leaders had not yet heard about the finger-imaging requirement. Comments from three DHS survey respondents revealed several individuals who had not heard of the program. One respondent said, “We are not aware of anything having to do with finger imaging” and another said “I have not heard anything about it.”

Each of the client advocates interviewed one year after the LSIS pilot project began had heard something about finger imaging and the Food Stamp program. However, we heard a

number of misconceptions about how the program worked (e.g., a point-of-sale program) and individuals who did not think that the finger-imaging program had started.

Of the 41 respondents to the DHS community leader survey, more than half (n=25) had not heard anything from their clients or constituents about the finger-imaging requirement and five had not heard any opinions about finger imaging from their clients. Of those who had heard opinions from their clients or constituents (n=11), five had heard positive comments about the program and three had heard negative comments. Three had heard neither good nor bad comments. In the client advocate interviews, seven of the nine participants had heard concerns about finger imaging from any source, including media reports. However, only four of the client advocates had heard concerns or negative comments about finger imaging from their clients.

Of the 41 DHS respondents, 27 believed that finger imaging would keep people from getting benefits they should not receive. Only two respondents believed that finger imaging would not prevent people from getting benefits they should not receive. Twelve respondents said, "I don't know" in response to the question. In the client advocate interviews, we asked a slightly different question--"Do you think finger imaging will keep people from getting food stamp benefits on more than one case?" Seven of nine client advocates thought that finger imaging would keep people from getting benefits on two or more cases.

The DHS community leader survey results from three months after the start of the LSIS pilot project are similar to our client advocate interview results from one year after the implementation of finger imaging. Clients and constituents had mostly positive opinions about finger imaging and most community leaders believed that finger imaging could prevent the issuance of duplicate food stamp benefits.

Clients. Our evaluation did not include client interviews. However, in the client advocate interviews we asked the advocates to provide information about client concerns. Four of the nine client advocates had heard negative comments about finger imaging from clients. Further, as might be expected, the clients had fewer concerns than the client advocates did. In the DHS client interviews, clients were positive about finger imaging. All but two clients believed that finger imaging was a good idea. Most clients (33 of 47) believed that finger imaging would reduce fraud.

Consistent with the DHS client interview results, the DHS client comment cards indicate that most clients are positive about finger imaging. Most think finger imaging is a good idea (90%) and will help people be more honest when applying for benefits (88%). Similarly, 88% of clients in the Connecticut Digital Imaging system (for TANF) felt they had not been inconvenienced and 87% thought that finger imaging would help prevent cheating (Connecticut Department of Social Services, 1996).

Client responses were overwhelmingly positive. In the client advocate interviews, we did not measure client opinion directly. However, five of the nine advocates reported no client concerns with finger imaging. And, although client advocates voiced numerous concerns with finger imaging, most thought that it was a good idea. Our interview results are consistent with the DHS client interview and comment card results.

Summary

Client Advocate and Client Concerns: Differences. Results of the client advocate interviews show that there are differences in the level of concern of clients and client advocates. In the role of advocates, community leaders focus on the potential problems and disadvantages versus the benefits of finger imaging to a greater extent than clients do. In the client advocate interviews, seven of the nine advocates had heard some concerns about finger imaging from either clients or other sources such as colleagues or the media. Only four of the nine advocates had clients with concerns about finger imaging in the Food Stamp program.

Misunderstandings of the LSIS Pilot Project. Even one year after the LSIS pilot project had been in place, some client advocates had not heard much about the project. Along with the limited knowledge that some individuals had about the project were misconceptions about the nature of the finger-imaging requirement. Four of nine client advocates thought that finger imaging was used at the point-of-sale. Two advocates didn't realize that finger imaging had begun.

Concerns About Finger Imaging. The types of concerns most frequently voiced by clients and their advocates fall into three categories: unjust treatment of poor people, cost and inconvenience of being finger imaged, and fears of interagency sharing, especially with the INS. Some clients associate finger imaging with criminality and clients may be embarrassed about giving their finger image. The finger-imaging requirement is considered degrading and as unjust treatment of poor people.

For the program to work, all adult members of a household are required to be finger imaged. The cost and inconvenience of going to the food stamp office is a concern for some who must make child care arrangements or pay for transportation to the office or take time off from work. With finger imaging, more individuals must make trips to the food stamp office, increasing the cost or inconvenience to household members. Further, delays in getting all members of a household imaged may result in delays in receiving benefits.

Some clients expressed concerns about sharing information with other agencies, especially the INS. These fears stem from a lack of information about the INS process, leading to uncertainty about the status of immigration cases, according to client advocates.

Recommendations. In the client advocate interviews, we asked how could the finger-imaging program be improved or promoted to provide better service to clients. Recommendations included public relations and increased access to finger-imaging units for clients. Given the misunderstandings about the finger-imaging requirement, it might be useful to develop a public relations campaign addressed to community leaders and provide a fact sheet of information to educate and inform community leaders about the LSIS pilot project. The campaign should clarify the use of finger imaging at application and not at the point-of-sale. With the facts readily available, client advocates can correctly address client concerns without perpetuating some of the misunderstandings that currently exist. Another recommendation addresses the cost and inconvenience of trips to the food stamp office. An advocate suggested

providing mobile finger- imaging units that can be used in the community centers and other locations throughout the community to increase access for household members.

References

Connecticut Department of Social Services. (1996). *Connecticut survey of clients who have just been digitally imaged for AFDC* [On-line]. Available: <http://www.dss.state.ct.us/faq/disurvey.htm>.

Texas Department of Human Services. (1997). *Evaluation of the Lone Star Image System*.

APPENDIX D. CLIENT ADVOCATE INTERVIEW PROTOCOL

Introduction

Hello, my name is _____ and I am from R. Lewis & Co. Inc., a research company in Alexandria, Virginia. We are conducting a study of Finger Imaging for the United States Department of Agriculture's Food Stamp Program.

As part of that study, we are talking to community leaders about the new finger-imaging requirements and their clients' feelings about the changes.

We received your name from the Texas Department of Human Services. DHS let us know that you represent the community affected by the new regulations.

This interview will take about 15 minutes. If you agree to participate, we can guarantee that your name will not be connected with your answers, and your responses will not affect your clients in any way. You don't have to answer any questions you don't want to answer.

Do you have any questions about our study?

May I ask you the questions now? I'll be taking notes as you answer the questions.

- 1. For our records, can you describe for me in general terms, your link to people who receive food stamps?**

- 2. Can you tell us in your own words, but as specifically as possible, what you hear about finger imaging in the state?**

3. **Would you say that finger imaging is an important issue or one that is not so important?**

- Important
- Not so important
- Other (please specify): _____

4. **Others in Texas and the nation at large have raised some concerns about finger imaging. Have you personally heard any objections regarding:** *[Mark "Y" for yes; "N" for no.]*

- Fears of the Immigration and Naturalization Service (INS)
- Fears of interagency information sharing (e.g. identification of outstanding traffic violations)
- Discomfort about associations with criminality
- Unjust treatment of poor people
- Invasion of privacy
- Cost of appearing in food stamp office
- Cost of extra trips to the Food stamp Office
- Inconvenience of appearing in food stamp office
- Inconvenience of extra trips to the Food stamp Office
- Time required at application
- Time required at recertification
- Unnecessary withholding of benefits
- Potential embarrassment in front of family members
- Potential embarrassment in front of friends/neighbors
- Other

5. Have you heard those concerns from your own clients?

- Yes
- No

6. Which concerns have your clients addressed?

- Fears of the Immigration and Naturalization Service (INS)
- Fears of interagency information sharing (i.e. identification of outstanding traffic violations)
- Discomfort about associations with criminality
- Unjust treatment of poor people
- Invasion of privacy
- Cost of appearing in food stamp office
- Cost of extra trips to the Food stamp Office
- Inconvenience of appearing in food stamp office
- Inconvenience of extra trips to the Food stamp Office
- Time required at application
- Time required at recertification
- Unnecessary withholding of benefits
- Potential embarrassment in front of family members
- Potential embarrassment in front of friends/neighbors
- Other

**7. About how many of your clients specifically raised those issues with you?
(Mark estimates)**

- ___ Fears of the Immigration and Naturalization Service (INS)
- ___ Fears of interagency information sharing (i.e. identification of outstanding traffic violations)
- ___ Discomfort about associations with criminality
- ___ Unjust treatment of poor people
- ___ Invasion of privacy
- ___ Cost of appearing in food stamp office
- ___ Cost of extra trips to the food stamp office
- ___ Inconvenience of appearing in food stamp office
- ___ Inconvenience of extra trips to the Food stamp Office
- ___ Time required at application
- ___ Time required at recertification
- ___ Unnecessary withholding of benefits
- ___ Potential embarrassment in front of family members
- ___ Potential embarrassment in front of friends/neighbors
- ___ Other

**8. Can you clarify for us what your clients specifically said about that issue
(those issues)?**

9. So we can be even more clear about your client concerns, can you explain for us how their concern (concerns) would materialize?

[Continue writing on back, if necessary)

10. Have you also heard favorable things about the finger imaging process in the state?

Yes

No

11. What were some of those things?

Finger imaging will keep food stamps going to the right people

Finger imaging will prevent cheating

Finger imaging will prevent double-dipping

Finger imaging will keep people honest

Finger imaging will prevent fraud

Finger imaging is just no big deal

Other

12. Do you have a personal feeling about finger imaging?

- Yes
- No
- Don't Know

13. Do you think finger imaging is a:

- Good idea?
- Bad idea?
- Neither good nor bad idea?

14. Why?

15. Do you think finger imaging will keep people from getting food stamp benefits on more than one case?

- Yes
- No
- Don't Know

16. Could you please tell me a little about why you feel that way?

17. Do you personally know of clients who would not apply for food stamp benefits because of the finger-imaging requirement?

Yes

No

18. Can you tell me anything about why they would not apply?

19. How do you think the finger-imaging program can be improved or promoted to provide clients with better service?

20. Is there anything else you would like to say about finger imaging?