APPENDIX 1.1

**Sample Free and Reduced-Price Lunch
Applications, Letter to Parents, and
Press Release**

Dear Parent/Guardian:

_____ School participates in the National School Lunch Program/School Breakfast Program. Nutritious meals are served every school day. Students may buy lunch for ____ and breakfast for ____.

Children from households that meet Federal income guidelines are eligible for free meals or reduced price meals at ____ for lunch and ____ for breakfast. To apply for free or reduced price meals, complete the enclosed application as soon as possible, sign it and return it to the school.

FOOD STAMP/AFDC HOUSEHOLDS: If you currently receive Food Stamps or "Aid to Families with Dependent Children" for your child, you only have to list your child's name and food stamp or AFDC case number, print your name, and sign the application. Since you have already given income information to the welfare office, the school can confirm your eligibility.

ALL OTHER HOUSEHOLDS: If your household income is at or below the level shown on the enclosed scale, your child is eligible for either free or reduced price meals. To apply for meal benefits, you must provide the following information or your application cannot be approved.

- HOUSEHOLD MEMBERS: List the names of everyone who lives in your household. Include parents, grandparents, all children, other relatives and unrelated people who live in your household.

- SOCIAL SECURITY NUMBERS: List the social security number of each adult age 21 or older. If an adult does not have a social security number print "None."

- MONTHLY INCOME: List total monthly income AND the amount of income (BEFORE deductions for taxes, social security, etc.) each person received last month and where it is from, such as wages, retirement, or welfare. If you have a household member for whom last month's income was higher or lower than usual, list that person's expected average monthly income.

- SIGNATURE: An adult household member must sign the application.

VERIFICATION: The information on the application may be checked by school officials at any time during the school year.

REPORTING CHANGES: If you list income information and your child is approved for meal benefits, you must tell the school when your household income increases by $50 or more per month ($600 per year) or when your household size decreases. If you list a food stamp case number or AFDC number, you must tell the school when you no longer receive food stamps or AFDC for your child.

FOSTER CHILD: Your foster child may be eligible for meal benefits. If you wish to apply for meal benefits for a foster child, contact the school for help with the application.

NONDISCRIMINATION: Children who receive free or reduced price meal benefits are treated the same as children who pay for meals. In the operation of child feeding programs, no child will be discriminated against because of race, sex, color, national origin, age, or handicap. If you believe you have been discriminated against, write immediately to the Secretary of Agriculture, Washington, D.C. 20250.

FAIR HEARING: If you do not agree with the school's decision on your application or the result of verification, you may wish to discuss it with the school. You also have the right to a fair hearing. This can be done by calling or writing the following official:

_____

(Name, Address, Telephone Number of Hearing Official)

CONFIDENTIALITY: The information you provide will be treated confidentially and will be used only for eligibility determinations and verification of data.

REAPPLICATION: You may apply for benefits any time during the school year. If you are not eligible now but have a decrease in household income, an increase in household size, or become unemployed, fill out an application at that time.

You will be notified when the application is approved or denied.

Sincerely,

APPLICATION FOR FREE AND REDUCED PRICE SCHOOL MEALS

TO APPLY FOR FREE AND REDUCED PRICE MEALS FOR YOUR CHILD, CAREFULLY COMPLETE, SIGN AND RETURN THIS
APPLICATION TO THE SCHOOL. IF YOU NEED HELP WITH THIS FORM, PLEASE CALL THIS TELEPHONE NUMBER: _____

NAME OF CHILD	SCHOOL	GRADE

☐ FOSTER CHILD   In certain cases foster children are eligible for benefits regardless of your household income. If you are
applying for a foster child, contact the school for instructions.

PART 1 - HOUSEHOLDS RECEIVING FOOD STAMPS OR AID TO FAMILIES WITH DEPENDENT CHILDREN

If you are NOW receiving food stamps or AFDC for THIS child, you may give your food stamp case number or AFDC number.
Do not complete PART 2, but go on to PART 3. The application MUST have the printed name and signature of an adult.

☐ YES, I received food stamps or AFDC for this
child this month and want school meals.

FOOD STAMP CASE NUMBER _____
OR
AFDC CASE NUMBER _____

PART 2 - ALL OTHER HOUSEHOLDS

If you did not give a food stamp case number or AFDC number, you MUST complete the following information and sign the
application or your application cannot be approved.

HOUSEHOLD MEMBERS: List the names of everyone living in your household; include yourself and the child listed above. If you
need more space, use a separate sheet of paper.

SOCIAL SECURITY NUMBER: Print the social security number of each adult age 21 or older. If an adult does not have a
social security number, print "none" next to their name.

INCOME: List all income received last month on the same line with the person who received it. You must list gross
income BEFORE deductions for taxes, social security, etc. List each amount under the correct title and list
total monthly income.

LIST ALL HOUSEHOLD MEMBERS

MONTHLY INCOME

	Name (Last, First)	Age	Social Security Number	Monthly Earnings from Work (Before Deductions)	Monthly Welfare Payments Child Support Alimony	Monthly Payments from Pensions Retirement Social Security	All Other Income Received Last Month
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

TOTAL MONTHLY INCOME: _____

PART 3 - ALL HOUSEHOLDS

RACE: Please check the racial or ethnic identity
of your child. You are not required to answer
this question. We need this information to be
sure that everyone receives benefits on a
fair basis.

☐ WHITE, NOT OF HISPANIC ORIGIN
☐ BLACK, NOT OF HISPANIC ORIGIN
☐ HISPANIC
☐ ASIAN OR PACIFIC ISLANDER
☐ AMERICAN INDIAN OR ALASKAN NATIVE

No child will be discriminated
against because of race, sex, color,
national origin, age or handicap.

PENALTIES FOR MISREPRESENTATION: I certify that all of the above information is true and correct and that all income is reported. I understand
that this information is being given for the receipt of Federal funds; that school officials may verify
the information on the application; and that deliberate misrepresentation of the information may subject
me to prosecution under applicable State and Federal laws. An adult must sign the application before it
can be approved.

SIGNATURE: _____

SIGNATURE OF ADULT

HOME ADDRESS

PRINTED NAME OF ADULT   DATE SIGNED   HOME TELEPHONE   WORK TELEPHONE

If you did not give a food stamp or AFDC case number, Federal Law (PL 97-35) requires you to list social security numbers of all household members before your child may
receive free or reduced price meals. You do not have to give social security numbers, but if you refuse your child cannot receive free or reduced price meals. The social
security numbers may be used to identify you for verifying the information you report on this application. Verification may include audits, investigations, contacting the State
employment security office, food stamp or welfare office, and employers, and checking the written information provided by the household to confirm the information received. If
incorrect information is discovered, a loss of benefits or legal action may occur. These facts must be told to all household members whose social security numbers are reported
on this form.

INCOME ELIGIBILITY GUIDELINES

FOR FREE OR REDUCED PRICE MEALS.

If your household income is at or below the level shown on this scale, your child is eligible for either free or reduced price meals.

(Effective From July 1, 1987 to June 30, 1988)

Household size	Year	Month	Week
1......................	10,175	848	196
2......................	13,690	1,141	264
3......................	17,205	1,434	331
4......................	20,720	1,727	399
5......................	24,235	2,020	467
6......................	27,750	2,313	534
7......................	31,265	2,606	602
8......................	34,780	2,899	669
For each additional family member add..	+3,515	+293	+68

HELP WITH MONTHLY INCOME:

To determine monthly income:

If you receive the income every week, multiply the total gross income by 4.33

If you receive the income every 2 weeks, multiply the total gross income by 2.15

If you receive the income twice a month, multiply the total gross income by 2

Remember, you must report the total income amount before taxes, social security, health benefits, union dues, or other deductions are made.

FOR SCHOOL USE ONLY — DO NOT WRITE BELOW THIS LINE

ELIGIBILITY

Total Household Size:_____ Total Income: $_____ ☐ Monthly ☐ Annual OR ☐ Food Stamp Household

Eligibility Determination: ☐ Approved Free ☐ Approved Reduced Price ☐ Denied ☐ AFDC Household

Reason for Denial: ☐ Income Too High ☐ Incomplete Application ☐ Other (Reason) _____

Date Notice Sent: _____ Signature of Determining Official: _____ Date: _____

VERIFICATION

Date Selected For Verification _____	☐ Food Stamp /AFDC Eligibility	☐ Income	Sample Selection	Verification Result: ☐ No Change ☐ Ineligible ☐ Free to Reduced ☐ Reduced Price to Free
	☐ Not Confirmed	$_____		
Response Due From Household _____	Confirmed	☐ Monthly ☐ Yearly	☐ Random	Reason For Eligibility Change ☐ Income ☐ Household Size ☐ Refused to Cooperate
	☐ Food Stamp /AFDC Office	☐ Wage Stubs	☐ Focused	
		☐ Written Documents	☐ 100%	
Second Notice Sent _____	☐ Notice of Eligibility	☐ Collateral Contact	☐ Other	☐ Other _____
	☐ AID Card Issued monthly (not III card w/ expiration date)	☐ Agency Records		Date Adverse Notice Sent _____ Date of change: _____
		☐ Other _____		Signature of Verifying Official _____ Date

Space for notes about the Eligibility/Verification below

NOTIFICATION LETTER FOR SCHOOL MEALS

Dear _____:

Your application for free and reduced price meals for your child(ren) has been:

_____ Approved for free meals.

_____ Approved for reduced price meals at _____ cents for lunch
and _____ cents for breakfast.

_____ Denied for the following reason(s):

_____ Income over the allowable amount.

_____ Incomplete application. The following information is
missing: _____

_____

_____ Other: _____

If you do not agree with the decision, you may discuss it with the school official
and you have a right to a fair hearing. This can be done by calling or writing the
following official:

Name: _____
Address:_____
Phone:_____

If your child is approved for meal benefits, you must tell the school when your
household income increases by more than $50 per month ($600 per year) or when
household size decreases. If your child is approved for meal benefits based on
eligibility for food stamps of AFDC, you must tell the school when you no longer
receive food stamps or AFDC for your child.

You may reapply for benefits at any time during the school year. If you are not
eligible now but have a decrease in household income, become unemployed, or have an
increase in household size, you may fill out another application at that time.

Sincerely,

_____   _____   _____
(Name)   (Title)   (Date)

In the operation of child feeding programs, no child will be discriminated
against because of race, sex, color, national origin, age or handicap. If
you believe you have been discriminated against, write to the Secretary of
Agriculture, Washington, D.C. 20250.

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SAMPLE PUBLIC RELEASE FOR FREE AND REDUCED PRICE MEALS

(Make appropriate changes as applicable to reflect the programs operated)

This is the public release that we will send to (names of news media outlets and major employers contemplating layoffs) on ___(date)___. These groups must be advised of program availability, new programs or changes in existing programs.

(Local school food authority) today announced its policy for free and reduced price meals for children unable to pay the full price of meals served under the (Insert National School Lunch Program, and/or School Breakfast Program). Each school and the office of the (central office) has a copy of the policy, which may be reviewed by any interested party.

The following household size and income criteria will be used for determining eligibility: (Insert income eligibility criteria as announced by USDA for free and reduced price meals). Children from households whose income is at or below the levels shown are eligible for free or reduced price meals.

Application forms are being sent to all homes with a letter to parents or guardians. To apply for free or reduced price meals, households should fill out the application and return it to the school. Additional copies are available at the principal's office in each school. The information provided on the application will be used for the purpose of determining eligibility and may be verified at any time during the school year by school or other program officials.

For school officials to determine eligibility, households receiving food stamps or AFDC must list the child's name, their food stamp or AFDC case number and the signature and name of an adult household member. Households not receiving food stamps or AFDC must list: names of all household members; social security numbers of all adult household members or a statement that the household member does not possess one; total household income and the amount and source of the income received by each household member; and the signature of an adult household member certifying that the information provided is correct.

Applications may be submitted at any time during the year.

Under the provisions of the free and reduced price policy (title of determining officials) will review applications and determine eligibility. Parents or guardians dissatisfied with the ruling of the official may wish to discuss the decision with the determining official on an informal basis. Parents wishing to make a formal appeal may make a request either orally or in writing to (name, address, phone of the hearing official) for a hearing on the decision.

Households that list a food stamp or AFDC case number must report when the household no longer receives these benefits. Other households approved for benefits are required to report Increases In household Income of over $50 per month or $600 per year and decreases In household size. Also, If a household member becomes unemployed or If the household size Increases the household should contact the school. Such changes may make the children of the household eligible for benefits If the household's Income falls at or below the levels shown above.

In certain cases foster children are also eligible for school meal benefits. If a household wishes to apply for benefits for foster children living with them, the household should contact the school for more Information.

The Information provided by the household Is confidential and will be used only for purposes of determining eligibility and verifying data.

In the operation of child feeding programs administered by the U.S. Department of Agriculture, no child will be discriminated against because of race, color, sex, national origin, age or handicap. If any member of a household believes they have been discriminated against, they should write Immediately to the Secretary of Agriculture, Washington, D.C. 20250.

(PRESS RELEASE)

INCOME ELIGIBILITY GUIDELINES

FOR FREE AND REDUCED PRICE MEALS

These are the income scales used by (School Food Authority) to determine eligibility for free and reduced price meals.

HOUSEHOLD SIZE	FREE MEALS			REDUCED PRICE MEALS		
	YEARLY	MONTHLY	WEEKLY	YEARLY	MONTHLY	WEEKLY
1						
2						
3						
4						
5						
6						
7						
8						
For each additional household member, add:						

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APPENDIX 2.1

Study Methods

STUDY METHODS

SAMPLE DESIGN

This section details the process used to select the multi-stage, multi-phase sample of SFAs. The sample plan for the study of income verification in the NSLP had five components, which were all implemented in spring and early summer of 1987. They were:

- a Mail Survey of 1,156 public SFAs;

- a Telephone Survey of 424 public SFA directors or school superintendents;

- Record Abstractions from 5,045 applicant records in 98 SFAs;

- In-Home Audits with 2,791 applicant households in 98 SFAs;

- Non-Applicant Telephone Interviews with 796 parents of NSLP nonapplicants in 98 SFAs.

The Target Population and SFA Sampling Frame Construction

SFAs were sampled and surveyed as part of this study. They also served as sampling units from which samples of children from households approved and not approved for NSLP meal benefits were drawn. The target population of SFAs numbers around 20,000. Roughly 15,000 of these are public SFAs while the remaining 5,000 are private SFAs. As discussed below, SFAs were sampled from Westat Research Corporation's (our subcontractor on this study) national master sample of 80 Primary Sampling Units (PSUs). Appendix 2.2 indicates the counties that comprise these PSUs. Construction of a sampling frame of SFAs involved contacting the 32 states that have one or more PSUs within their boundaries and requesting the following information for each SFA:

- PSU location of the SFA

- type of SFA control (public vs. private)

- total number of enrolled students

- total monthly meal count

- total number of applicants for free or reduced-price meals

The target population of approximately 39,000,000 children attending grades K-12 in the U.S. public schools falls into several key domains of interest. Exhibit A.2.1 summarizes the structure of the population.

Stratification and Selection Procedures

The sample design for this study consists of national probability samples of 1,156 public SFAs, a subsample of 424 public SFAs, a further subsample of 98 SFAs, as well as samples of verified applicants, nonverified applicants and nonapplicants from the 98 SFA subsample. Each of these samples is detailed in turn.

Mail Survey of 1,156 Public SFAs. The national probability sample of 1,156 public SFAs which completed questionnaires* was designed to provide estimates of SFA characteristics such as type of verification sampling system, number of applicants verified, and information on verification outcomes. This sample was selected as part of a two-stage sample. The first stage units were the 80 Primary Sampling Units in Westat's 1980 national master sample. Each PSU consists of a Metropolitan Statistical Area (MSA), a grouping of non-MSA contiguous counties or a single non-MSA county. The master sample contains 20 large self-representing MSAs that were selected with certainty. The remaining 50 PSUs are nonself-representing. The distribution of the 80 PSUs is shown below:

---

*All instruments for this study are included in Appendix 2.3.

Exhibit A.2.1

STRUCTURE OF THE POPULATION

Total Households With
Enrolled School Children

Applicants

Nonapplicants

Selected for
Verification

Not Selected
for Verification

Eligible for
Program Par-
ticipation

Ineligible for
Program Parti-
cipation

Declared
Eligible
by SFA

Declared
Ineligible
by SFA

Nonrespon-
dent to
Verifica-
tion Request

Not Selected
for Verification,
Truly Eligible

Not Selected
for Verification,
Truly Ineligible

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	Census Region				
PSU Stratum Class	North-east	Mid-west	South	West	Total
Self-repre-senting MSAs	7	5	6	2	20
Nonself-repre-senting MSAs	8	9	13	9	39
Nonself-repre-senting county groupings	3	6	9	3	21
	18	20	28	14	80

After a sampling frame of SFAs located in the 80 PSUs was assembled, a stratified sample of roughly 1,700 SFAs was drawn. Stratification variables included SFA control (public versus private) and SFA meal counts. A size-stratified sample averaging 21.3 SFAs per PSU was then selected. The size stratifier was the number of children for SY1985-86 approved for free or reduced-price meals. For each PSU, three size strata were formed by sorting the SFAs as follows:

1. less than or equal to the 33rd percentile of SY1985-86 total meal distribution;

2. 33rd to 67th percentile of SY1985-86 total meal distribution; and

3. greater than or equal to the 67th percentile of SY1985-86 total meal distribution.

By roughly equalizing the stratum total of the SY1985-86 total meal variable, the third strata contained the few large SFAs in a PSU while the first stratum contained several smaller SFAs. The allocation to the three size strata used a square root allocation rule:

$$n_{hi} = \frac{\sqrt{TOTAPPR_i}}{\sum\limits_{i=1}^{3} \sqrt{TOTAPPR_i}}$$

where

n_{hi} is the SFA allocation to the i-th stratum in the h-th PSU;

$TOTAPPR_i$ is the sum of SY1985-86 total meals for the SFAs in the i-th stratum in the h-th PSU.

This allocation rule was intended to ensure that a reasonable portion of the sample consisted of smaller SFAs. Smaller SFAs were thought to be more likely to use the rarer "focused" sampling method. The largest SFAs with respect to the measure of size were, however, included in the sample with certainty. Approximately 1,420 of the 1,700 sampled SFAs were public SFAs. The remainder were private SFAs.

Telephone Survey of 424 Public SFAs. A second national sample of roughly 470 public SFAs was drawn from the 1,420 public SFAs in the above sample. This sample yielded 424 cooperating SFAs, which were surveyed by telephone. The sample was constructed by first designating a subsample of 50 of the 80 Westat PSUs, consisting of all 20 self-representing PSUs and 30 of the 60 nonself-representing PSUs. Appendix 2.2 indicates which of the 80 PSUs were retained. A subsample of 470 public SFAs was then drawn from the size strata in each PSU corresponding to the number of children for SY1985-86 approved for free or reduced-price meals.

On-Site Sample of 98 SFAs. A third national sample of 98 SFAs was selected in order to conduct in-person interviews with samples of households that applied for meal benefits. The in-person interviewing of applicant households had to be based on a cluster sample if the data were to be collected cost-efficiently. The clustering of SFAs by PSU was intended to minimize between-SFA travel costs for personal interviewing. The design also considered the fixed costs associated with a sample of SFAs, e.g., the cost of contacting SFA or school officials, gaining their cooperation in achieving the objectives of the survey, having SFAs or schools compile lists of enrolled students, and sending staff to visit SFAs to sample applicants and nonapplicants. These SFA costs must be incurred no matter what the number of school enrollees that are to be sampled from an SFA.

This circumstance means that, with respect to survey costs, it was more efficient to select a small number of SFAs, and sample a fairly sizeable number of enrollees per sample SFA. Thus, rather than sampling school enrollees from all 470 sample SFAs, it was more cost-effective to draw a stratified

random subsample of 98 SFAs, and to select school
enrollees (and hence households) from these
subsampled SFAs. To obtain the subsample of 98
SFAs, the 470 sample SFAs were first stratified by
method of verification sampling—67 SFAs were
allocated to the random/100% sampling stratum while
the remaining 31 were allocated to the focused
sampling stratum. Moreover, the random sampling
method allowed us to draw a matched replacement for
an initially selected SFA that refused to allow
sampling of its applicants and nonapplicants.
Therefore, if an SFA refused to participate in the
telephone survey, it was replaced with another SFA
of the same size. Given that school children were
selected from 98 SFAs, there is an average of 98/50
= 1.96 SFAs per PSU.

Applicant and Nonapplicant Samples. The third stage
of sampling was the selection of a stratified sample
of enrolled school children from the 98 sample
SFAs. The strata represent analytic domains of
interest for this study. The ten domains and sample
sizes of case record abstractions, personal
interviews and telephone interviews are shown in
Exhibit A.2.2.

For the verified—benefit change group, only case
record abstractions were done. For the verified—
benefit unchanged, verified nonrespondents and non-
verified groups, the case record abstraction was
followed by an attempt to interview the household
in-person. The nonapplicant telephone interviews
were designed to oversample eligible nonappli-
cants. This was accomplished by dividing the entire
nonapplicant sample into replicates. Based on a set
of screening questions to classify the household as
eligible or ineligible, interviews with eligible
nonapplicant households were attempted in all repli-
cates. For the more prevalent ineligible nonappli-
cant group, interviews were attempted only in a
subset of the replicates.

After the 98 sample SFAs were identified, their
cooperation gained, and lists of school enrolles
compiled, the sampling of school enrollees was
undertaken. The design required that three samples
be drawn; one of students from nonverified applicant
households, another of students from nonapplicant
households and a third of students from verified—
benefits unchanged households. To draw the samples,
it was necessary to obtain names of enrolled stu-
dents, applicant/nonapplicant status, and verifi-
cation status for applicants. To contact parents of

Exhibit A.2.2

SAMPLE SIZES FOR FIELD WORK IN
SUBSAMPLE OF 98 SFAs, BY
MODE OF DATA COLLECTION

Verification Sampling Method and Verification Group	Mode of Data Collection		
	Case Record Abstractions	In-Home Audits	Telephone Interviews
Random or 100% Sampling			
Nonverified applicants	607	451	na
Verified applicants who did not respond to verification request	593	373	na
Verified applicants whose benefits were changed by the SFA	192	0*	na
Verified applicants whose benefits were unchanged by the SFA	1,908	989	na
Focused Sampling SFAs			
Nonverified applicants	761	521	na
Verified applicants who did not respond to verification request	267	163	na
Verified applicants whose benefits were changed by the SFA	121	0*	na
Verified applicants whose benefits were unchanged by the SFAs	596	294	na
All SFAs			
Eligible nonapplicants	na	na	330
Ineligible nonapplicants	na	na	466
TOTAL	5,045	2,791	796

*FNS made the design decision to omit this group from the In-Home Audit sample in order to conserve resources.

students sampled for the household interviews, it was necessary to obtain names and addresses of parents as well as telephone numbers where they could be reached. Information on applicants for free and reduced-price meals is sometimes stored at SFA offices and sometimes at individual schools; information on nonapplicants is similarly kept centrally, in school district offices, and at individual schools or both. The location of records varied across and within states (both applicants and non-applicants).

Each of the 98 SFAs was contacted to determine the location of the required information and to obtain counts of the number of applications in the various groups as well as the number of enrolled students and the number that were nonapplicants. Data collection supervisors were trained on sampling procedures for selecting random samples of applications from the four applicant groups of interest. For the sampling of nonapplicants, a random sample of enrolled students was initially selected, applicants were then removed, and only the nonapplicants were retained.

DATA COLLECTION

The data collection effort began with the notification of FNS Regional Offices (FNSROs) and State Directors of Child Nutrition in each of the 32 states included in the study. Both FNSRO and state agency staff received a brief description of the study including its objectives, design, data needs and approximate time-table. States were asked to assist in the construction of the SFA sample frame by supplying the names, addresses and phone numbers of contact persons for school districts in selected counties within their states as well as some data about the school districts. Telephone calls to the states were followed by a letter summarizing the telephone discussion, providing a description of the study and outlining the data needs. In addition to the information needed to contact SFAs, states were asked to supply information on the size of the SFA (as measured by enrollment on October 1, 1986, or average daily attendance) on the size of the school lunch program (as measured by average daily participation) and number of children approved for free and reduced price lunches, and on whether the SFA was public or private.

The states were cooperative in providing the information, although the request presented varying

degrees of difficulty for them. Data were received in many different forms: computer printouts with the information requested, for every school district in the state, rather than for the specified PSUs; pages of typed information, collated by hand; copies of paper files; and computer tapes. Dealing with the information in its several forms, and sorting necessary from unnecessary information was a time-consuming task. Some of the information was obviously incorrect, necessitating calls back to states. Once the necessary information for each SFA in the 80 PSUs had been identified and highlighted, it was entered into a computer file in order to select the sample.

Site Recruitment

The original design for the study called for a mail survey of SFAs followed, one year later, by a telephone interview with a subset of SFAs. Subsequently, the time-frame for the study was compressed, and the decision was made to conduct the two surveys almost simultaneously, along with the recruitment of SFAs that would allow in-home interviews, so that all of the data collection could be completed within the 1986-87 school year. The two survey instruments (mail and telephone) were developed so that the twelve questions that comprised the mail survey were incorporated into the beginning of the telephone survey instrument, eliminating the need to survey SFAs twice.

A sample of 1,420 public SFAs was selected for the mail survey, and within that sample, a subsample of 700 SFAs was selected to be recruited for the In-Home Audit and telephone survey portions of the study. This latter group was sorted into 156 primary SFAs with four replacements for all but the largest and the most rural SFAs. A letter was prepared for State Child Nutrition Directors, listing the SFAs included in this subsample and describing the recruitment process.

The most problematic task of the study was to recruit the 98 SFAs to participate in the In-Home Audit portion of the data collection. These SFAs were asked to cooperate in drawing samples of applicant and non-applicant households and to supply us with names, addresses and telephone numbers of selected households. In early November 1986, a pretest of the recruitment procedures was carried out with 11 SFAs.

Two SFAs, one in Texas, the other in Georgia, said they would have no problem with releasing applicant information and thought they could get agreement from superintendents to release enrollment information.

Five SFAs stated flatly that they would not agree to release applicant or enrollment information for the purposes of this study. Some agreed that NSLP regulations could be interpreted to mean that Abt Associates, as an agent of FNS, could have access to applicant records, but they felt they would refuse in any case, because of likely community reactions to this study. All five felt that confidentiality issues would prevent their release of enrollment information.

The remaining four SFAs had a more mixed response. They felt that they could allow access to applicant information if NSLP regulations were interpreted (by FNS, by their own legal counsel, or by their school board) as permitting this. They were uncertain about the release of enrollment information and felt they would need to get legal advice on this subject.

About half of the eleven SFAs reported that they would have to get permission from their school board to participate, even if there were no legal or regulatory barriers to the release of the information. Three of the SFAs suggested that the way to contact parents was the one traditionally used, i.e., through informed consent procedures. In this approach, the school district would contact families to obtain their written consent to the release of their names and addresses. Moreover, the accelerated timetable for the study made this impossible to implement. In addition, two of the three SFAs that suggested this option pointed out that they did not have staff available to contact parents and would probably refuse to participate for that reason. The problems identified by the pretest made it clear that substantial energies needed to be directed at recruiting SFAs for the In-Home Audit. To help deal with some of the issues raised we requested that FNS provide states with a letter explaining the legal basis for our request for applicant names (see Appendix 2.4).

The process of recruiting the SFAs needed for the In-Home Audit (and telephone survey) began in early December when letters were sent to approximately 700 SFAs describing the study and requesting their cooperation (see Appendix 2.4). These letters were followed by telephone calls to SFA directors; the

calls served to recruit SFAs for one or both of the data collection efforts. The initial round of calls focused on the 156 primary SFAs; calls to alternates were undertaken as necessary. The recruitment process continued through February. With each SFA contacted, AAI staff described the study and then determined:

- whether the SFA director needed additional information;

- whether the SFA director or another individual was authorized to make the commitment to participate;

- time needed to obtain agreement to participate; and

- steps to be taken to get agreement and help needed from AAI.

Following the initial recruitment call, letters were sent to each SFA director who either agreed to participate or agreed to consider participation. These letters outlined the points made in the telephone call, and provided any additional information requested by the SFA. Most SFAs asked to see the letters sent by FNS to FNSRO and state program staff, as well as a list of topics covered in the Household Audit (see copies of letters in Appendix 2.4).

Because the nature and location of applicant and enrollment data vary among school districts, the recruitment calls were also used to elicit information needed to sample households (see forms in Appendix 2.4). Information obtained included:

- location and nature (i.e., computerized or hard copy) of enrollment data;

- location and nature of application files;

- type of information in application files;

- organization of application file;

- sampling method used for verification.

Three issues caused problems in the recruitment of SFAs. First, was the issue of burden. SFA directors are busy and understood that this study would impose a burden on them and their staff. It required them to talk with AAI staff several times

on the phone in order to explain their recordkeeping systems, to be willing to receive field staff in their offices, to work with field staff to draw the necessary samples, and to answer followup questions.

More troublesome were the issues of confidentiality surrounding the release of names and phone numbers for free and reduced-price children, and the release of names and phone numbers for nonapplicants. Most SFAs noted that FNS specifically prohibited them from releasing the names of children approved for free and reduced-price lunches. This is a long-standing practice, and one which is institution-alized in most school districts. Even when presented with letters of support from FNS (contained in Appendix 2.4), some school districts were not willing to release the names of applicants. Even more severe problems of confidentiality arose with respect to the release of names of nonapplicants. Even after agreeing to participate, a few SFAs declined after receiving a legal opinion. Hardest to recruit were the largest districts (because of complex and time-consuming approval procedures and the need for informed consent of parents) and the smallest SFAs (because of the burden on a single staff person).

One hundred and eleven SFAs were selected from those that agreed to participate (anticipating some last-minute refusals, a slightly larger sample of SFAs was recruited than was needed). Eight of the 111 SFAs refused to participate when recontacted. In about half of these cases, the reason given for the refusal was that the district's legal counsel had advised against participation, with respect to both applicants and nonapplicants.

Record Abstractions

For recruiting purposes, the final sample of 98 SFAs for the Record Abstractions and the In-Home Audit was distributed as shown in Exhibit A.2.3. Within the first group of SFAs (centralized files, small districts), there were 11 SFAs where family informa-tion was at individual schools, so that even though sampling could be carried out centrally, individual schools had to be contacted to provide addresses and telephone numbers for sampled applicants. In those 11 SFAs, and in the 29 SFAs with no central files, individual school principals had to be contacted to ask for their cooperation, once the SFA's participa-tion was certain. In all 13 large SFAs with no central files and in some of the 24 small SFAs with

Exhibit A.2.3

**DISTRIBUTION OF IN-HOME AUDIT SAMPLE OF SFAs,
BY VERIFICATION SAMPLING METHOD, SIZE,
AND LOCATION OF DATA FILES**

Location of Data Files and Size	Verification Sampling Method		
	Random	Focused	Total
Centralized files, small districts	30 (8)	20 (3)	50 (11)
No central files, small districts	17	7	24
Central files, medium to large districts	8	3	11
No central files, medium to large districts	12	1	13
TOTAL	67	31	98

no central files, it was necessary to sample schools before contacting principals. Therefore, these SFAs were slower to complete than those in other groups where it was necessary to contact only one or two people at the central district office. Schools were also sampled for large SFAs with central files, however, since files were centralized, only a callback to the district was needed.

For each SFA, all sampling information was compiled into a "sampling packet." These packets contained data on contact persons, location of files, organization of files, agreements made with SFA personnel, sampling instructions, and so on. On-site sampling of households to be interviewed took place in April and was carried out by interviewer supervisors, who drew the five household samples (nonapplicants, non-verified applicants, verified applicants whose benefits were unchanged, verified applicants whose benefits were changed, and nonrespondents to the verification request) and obtained names, addresses and telephone numbers from SFA files. A three-day training session was held for the samplers which covered the following topics: the school lunch program, the application process, the verification process, selection of SFAs, general sampling procedures, SFA-by-SFA sampling procedures, and procedures to be used in record abstraction.

The sampling/abstracting period lasted six weeks, from March 22, 1987 through April. Abstractors had two basic sampling tasks in order to select five required samples: (1) sample non-applicants from an SFA's/school's list of all enrolled students and (2) sample the four applicant groups. Basically, four application file situations covered the sampling situations abstracters faced. Exhibit A.2.4 summarizes the applicant and non-applicant sampling situations.

Once abstracters located the necessary files to draw the required samples they used a "skip sample" to systematically select the students. Abstracters were provided a selection interval, random start number, and an expected sample size. They were instructed to call the home office if the sample they selected was different by more than 10 from the expected sample size. Abstractors completed a sample listing sheet for each individual sample group, a face sheet for every student selected, and an abstract form on every applicant.

The abstract information was taken from the students' school lunch application form. School record

Exhibit A.2.4

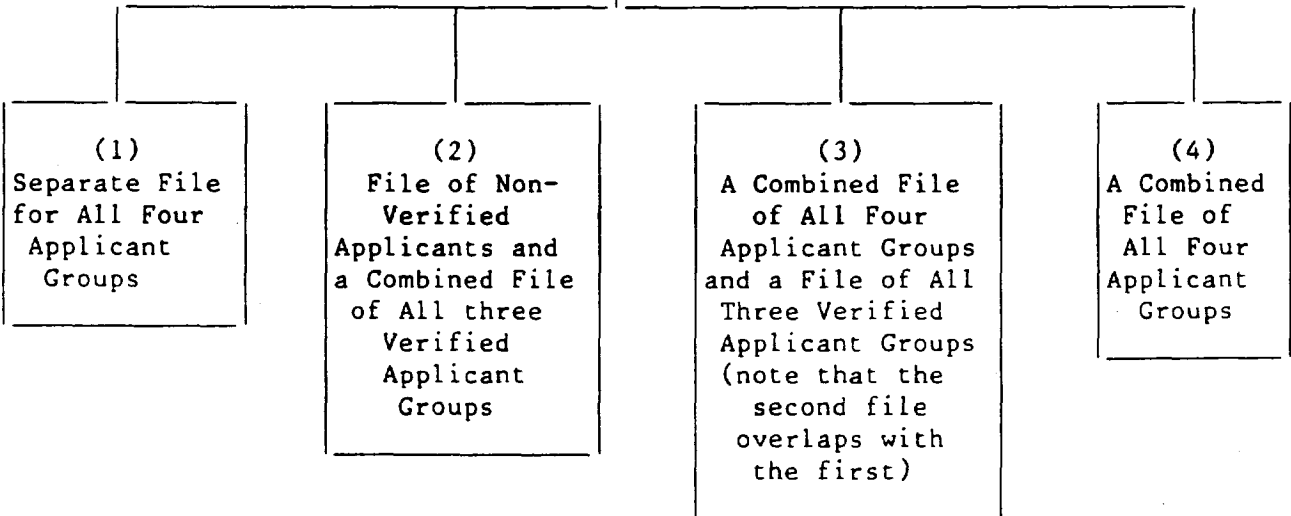## APPLICANT AND NON-APPLICANT SAMPLING SITUATIONS

TASK ONE

Sampling of Non-applicants

General Student Enrollment List

- -

TASK TWO

Sampling of Applicants

(1) Separate File for All Four Applicant Groups	(2) File of Non-Verified Applicants and a Combined File of All three Verified Applicant Groups	(3) A Combined File of All Four Applicant Groups and a File of All Three Verified Applicant Groups (note that the second file overlaps with the first)	(4) A Combined File of All Four Applicant Groups

systems varied tremendously. Abstracters found the applications filed in a variety of ways. In some instances abstracters visited a single office and found everything they needed right there. Others visited individual schools and had to poke around in file cabinets and cartons. Some found the applications for selecting some groups of the sample, such as the non-applicants and the non-verified in the schools, and had to go to the central office for those who were verified. Yet another situation was one where all applications were in the individual schools, but the documentation information for those who were verified was at the central location.

Ongoing supervision, through the home office, was provided to abstracters. Abstracters were required to complete a progress report on each SFA, as well as telephone their progress to their supervisor twice a week. Due to the variety of situations abstracters encountered they were usually in contact with the home office more than twice a week.

As abstracts were submitted to the home office they were edited by the field supervisor. Any discrepancies or missing information in the data was immediately brought to the attention of the abstracter and corrected. In some instances abstracters were asked to recontact schools to clarify information.

In-Home Audits

The In-Home Audits were conducted from May 25, 1987 to mid July 1987 by trained interviewers who were given a list of sampled applicants. The In-Home Audits were used to validate information obtained from the abstracting of school lunch applications, assess any change in household composition and income occurring since the time of application/ verification, and to ascertain to what extent people are deterred from misreporting because of the verification procedures. Each interviewer was responsible for making telephone contact with each targeted respondent assigned to him or her, setting up appointments for in-home interviews and conducting the interviews. A variety of activities were undertaken to help ensure a high response rate.

First, prior to the start of the field period letters were sent to all selected respondents by FNS, telling them about the study. These letters were sent in an envelope stamped "forwarding address requested". Approximately 200 letters were returned

with new addresses, or information indicating that forwarding information was unavailable. If the respondent remained in the same school districts letters were mailed again. Respondents who moved outside the school district were considered ineligible. These advance letters were followed by a telephone call to the potential respondent from the interviewer. The purpose of the call was:

- to verify that the respondent had received the advance letter;

- to schedule an appointment to conduct the interview; and

- to discuss the documents necessary for completing the interview.

If the respondent could not be reached by telephone after five attempts, interviewers were instructed to contact the respondent in person (a maximum of three visits). Every attempt to contact the respondent, whether by phone or in person, was recorded.

After an appointment was scheduled interviewers mailed a letter to the respondent confirming the appointment. The letter contained a list of the type of documentation the respondent would be asked to show at the interview. One of the projected problems in obtaining participation for In-Home Audits was the respondent's concern over the confidentiality of income disclosure. To address this problem, the respondent and interviewer both signed a confidentiality agreement at the beginning of each interview.

Interviews were scheduled within a few days of the recruitment phone call, whenever possible, and at a time during which the respondent could devote time to the interview without being distracted. Interviews were conducted at the respondent's home whenever possible. Spanish-speaking interviewers were used where this was necessary. Where the household language was other than Spanish or English, interviewers obtained the cooperation of an English-speaking household member.

During the field period it became apparent that a number of the respondents could not be located. Either the information on the face sheet was incorrect (some school records were outdated, abstracter error), or the respondent had moved without leaving forwarding information with the post office. To help locate respondents, schools were

recontacted and asked to provide any further available information. The schools were very cooperative. In one instance, a school principal even offered to drive with an interviewer to show them how to find a respondent that lived in an "off the beaten track area".

The survey resulted in 2,791 completed In-Home Audits for an overall 77% response rate. The non-response categories and each categories' percentage of the total non-response rate breaks down as follows:

- Respondent Not Home: Maximum Calls   3%
- Respondent Cannot Be Located   7%
- Respondent Has Extended Illness   1%
- Refusal/Break Off/Broke Appointments   6%
- Language Problem/No Interpreter   3%
- Other   1%
- Out of Range   1%

The results of the In-Home Audit interviews were as follows:

Sample Group	Number Sampled	Number Interviews completed	Response rate
Non-verified	1368	972	71%
Verified eligible	1638	1283	78%
Verified nonrespondent	862	536	62%
TOTAL	3868	2791	77%*

SFA Manager Telephone Survey

In early March 1987 an advance mailing was sent to 470 SFAs. This number included: SFAs that had been contacted by telephone as part of the recruitment effort for the In-Home Audit and had either agreed to participate in both portions of the study or in the telephone survey only; and SFAs that were part of the original subsample that had been contacted

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*Calculated by subtracting 257 ineligible cases from the total, i.e., duplicates, moved out of district, foster children.

only by letter. Excluded were SFAs that refused all participation when contacted by telephone earlier. The mailing prepared SFA directors for the telephone interview by identifying data for which they needed to refer to records. AAI contract staff began telephone interviews with SFA directors one week after this mailing. The results of the telephone survey were as follows:

Number in Sample	Interviews completed	Response rate
470	424	90%

SFA Manager Mail Survey

In addition to the 424 public SFAs surveyed by telephone (whose interview included the mail survey questions as the introductory section of the interview), surveys were mailed to 950 public SFAs. The mail survey consisted of a brief set of questions about SFAs income verification activities and outcomes.

A mail package was prepared which included a brochure that outlined the study, a personalized letter that solicited participation in the study, a brief questionnaire, and a postage-paid return envelope. The letter included AAI's telephone number and AAI staff were available to answer questions throughout the survey period. Questionnaires were mailed in early March 1987, once OMB approval was received. One week after the initial mailing, a postcard was mailed to each of the SFAs, thanking those who already responded and urging those who have not done so to complete the survey.

The mail survey required an intensive telephone follow-up effort. An additional 360 questionnaires were remailed to SFAs after the first telephone follow-up. Results of the mail survey were as follows:

Number mailed	Number received	Response rate
950	732	77%

If the responses from the telephone survey are included:

Number sampled	Number completed	Response rate*
1,420	1,156	81%

Nonapplicant Telephone Survey

From nonapplicant parents in each of the 98 SFAs a sample was drawn to participate in a short telephone survey. An initial sample of 3,684 parents was selected. Interviews were conducted with non-applicant families in May and June of 1987. The sample drawn had several problems: some families were, in fact, applicants for the NSLP; others had

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*The initial sample of 1,420 public SFAs yielded completed interviews with 1,156 SFAs for a 81.4% response rate. In order to check for bias intro-duced by refusals, an analysis of selected vari-ables available on the whole sample was conducted with the result that the group of 264 SFAs that refused to complete the interview were not statistically different from the sample of 1,156 SFAs that completed the interview. Relevant data are presented below:

Variable	1,156 SFAs (Completers)	264 SFAs (Refusers)	t-value (Probability)
Percent of meals served free (mean)	29.2%	31.5%	1.59 (.111)
Percent of meals served at reduced- price (mean)	6.2%	6.1%	- .40 (.686)
Percent of meals served at full price (mean)	64.6%	62.4%	-1.41 (.159)
Enrollment (mean) (std. dev.)	7,770 17,184	10,388 67,240	0.64 (.519)
Average daily attendance (mean)	92.5%	92.0%	-1.07 (.283)

no children in the district's schools; for a substantial group of families, the telephone number provided was incorrect and the family had moved out of the district or could not be located; for some families, a telephone number was not provided and it proved impossible to obtain either because the family had no telephone, had an unlisted number or were no longer at the address provided. The final disposition of the sample for the Non-Applicant Telephone Survey is shown in Exhibit A.2.5.

WEIGHTING PROCEDURES

In order to derive national estimates from the various components of the data collection efforts it is necessary to apply the appropriate set of weights. It is important to understand that the different samples yield different estimates of the same variables. For example, the national total of verified applications can be estimated using data from the SFA Manager Mail Survey, from the SFA Manager Telephone Survey, and from the case record abstractions. Differences in the estimates arise because of the different sample sizes (N of SFAs = 1,156, 424, and 98 respectively) and the different modes of data collection (mail, telephone, and record review). Typically the differences are not large, but the reader should be aware of the issue. Where the selection of a single estimate is important, a choice is made and defended in the accompanying text.

SFA Manager Mail Survey

The sample of 1,156 public SFAs that responded to the mail survey or were interviewed by telephone received a basic weight that equaled the product of the PSU weight shown in Appendix 2.2 and the reciprocal of the within-PSU selection probability of the SFA. The basic weight was then poststratified so that the weighted enrollment size distribution of SFAs was in agreement with the Department of Education's Fall 1985 school district distribution shown below:

Exhibit A.2.5

FINAL STATUS OF NON-APPLICANT TELEPHONE SURVEY SAMPLE

Status	Number
Complete	796
Refused	366
Breakoff	49
Screened out: over income	936
Language barrier	60
Unavailable	5
No contact	284
Applicant	187
Has no children in district's schools	131
Unable to obtain telephone number	297
Number incorrect/parent moved	556
Final other (no further information available)	16
Duplicate listing	1
TOTAL SAMPLE	3,684

Student Enrollment size Poststratification Category	Total Number of School Districts
1 - 299	4,197
300 - 599	2,293
600 - 999	1,813
1000 - 2499	3,545
2500 - 4999	1,963
5000 - 9999	970
10000 - 24999	456
25,000 or more	161
	15,398

This poststratification is intended as a nonresponse adjustment. A weight-smoothing process was then carried out within enrollment size poststratification categories. This process involved reducing (i.e., truncating) the highest weight values and spreading the total truncated amount to all SFAs in that category using a proportional-to-weight allocation algorithm. This weight-smoothing process was intended to reduce the effect of outliers on the key variable of total applications verified by the SFA since in some poststratification categories the SFAs with the highest weight values had outlier values on this variable.

Telephone Survey

The telephone survey of SFAs was conducted with the 424 SFAs in the mail sample. A basic SFA weight for this sample was computed by multiplying the mail sample within-PSU SFA weight times the subsampling rate used in that PSU. This was multiplied by the PSU weight for the 50 PSU subsample shown in Appendix 2.2 of the sample design section. This basic telephone survey weight was also poststratified so that the weighted size enrollment distribution was in agreement with the known population distribution of school districts. Due to the small SFA sample size in the 1-299 category, this group was combined with the 300-599 category for poststratification. This yielded a preliminary set of weights. The weight-smoothing procedure described above was also applied to those categories with outlier values of total applications verified by the SFA. The output of this process is a second set of weights that were used in the analysis.

In-Home Audits and Case Record Abstractions

Weights were also computed for the various application samples and the nonapplicant student sample. The first step in this process was the calculation of a set of SFA weights for the 98 SFAs where on-site data collection occurred. The basic In-Home Audit SFA weight was computed by multiplying the basic telephone survey SFA weight by the SFA subsampling rate for the PSU that SFA is located in. It was necessary to ratio-adjust this weight to compensate for the oversampling of focused SFAs (n=31) over random SFAs (n=67). This was done by using the weighted focused-versus-random SFA distribution of the 1,156 SFAs in the mail survey sample since no population totals exist for this variable. The focused-versus-random SFA classification was for sampling purposes, thus, SFAs that verify all applications were included with random sampling SFAs. For analytic purposes one could classify SFAs differently. The weights computed however are still valid. This SFA weight was next poststratified so that the weighted SFA distribution by enrollment size categories was in agreement with the known population distribution of school districts. Due to small SFA sample sizes, the 1-299 and 300-599 categories were combined, as well as the 600-999 and 1,000-2,499 categories. The result of the post-stratification is a set of weights used to weigh the 98 SFA sample.

Case record abstraction weights were computed for the four application groups that were sampled. Each sample application was assigned a weight that equaled the product of several possible weight components:

> Weight for 98 SFA sample X subdistrict weight (if applicable) X school weight (if applicable) X application weight (to reflect within school or SFA sampling of applications).

This is the application-based weight in the case record abstraction data bases. The sum of the application-based weight by application group is:

Nonverified Applications	10,974,183
Verified--Applications Benefits Unchanged	406,290
Verified--Applications Benefits Changed	42,355
Nonrespondent Applications	94,710
	11,517,538 applications

A-36

This application-based weight was converted into a student-based weight by multiplying by the number of students covered by the application as contained in the case record abstraction data. The student weights produce the following weighted total counts of students by the four application groups when the sample is split between the 31 focused and 67 random SFAs:

Random SFAs

Nonverified Students	10,994,287	–
Verified--Students Benefits Unchanged	437,426	76.7%
Verified--Students Benefits Changed	40,506	7.1%
Nonrespondent Students	92,687	16.2%
	11,564,906	100.0%

Focused SFAs

Nonverified Students	2,643,758	–
Verified--Students Benefits Unchanged	69,050	65.5%
Verified--Students Benefits Changed	17,003	16.1%
Nonrespondent Students	19,291	18.3%
	2,749,102	100.0%

Total

Nonverified Students	13,638,045
Verified--Students Benefits Unchanged	506,476
Verified--Students Benefits Changed	57,509
Nonrespondent Students	111,978
	14,314,008

The calculation of application and student-based weight values gives the data user the option of conducting an application-based or student-based analysis of the case record data. Conducting a household-based analysis of the case record data is not possible since the number of applications submitted by each household that had one of its applications selected in the sample is not known.

It was also necessary to develop weights for the In-Home Audit data base covering three groups verified--benefits unchanged, nonverified, and verified nonrespondents.

The first step in the weight calculation process was
to take the application-based value of each sample
application that yielded an In-Home Audit and
multiplying it by the ratio of the sum of the
application-based weights for all sample case record
abstraction applications to the sum of the applica-
tion-based weights for all sample applications that
yielded an In-Home Audit.   This adjustment was
carried out separately for 67 random versus 31
focused SFAs by the above three application groups:

	Number of Personal Interviews	Sum of Weights
Nonverified-Random SFAs	451	9,087,498
Nonverified-Focused SFAs	521	1,886,685
Verified--Benefits Unchanged-Random SFAs	989	352,568
Verified--Benefits Unchanged-Focused SFAs	294	53,723
Nonrespondents-Random SFAs	373	78,656
Nonrespondents-Focused SFAs	163	16,054
	2,791	11,475,184 applications

This application-based weight for the In-Home Audits
is not of great interest since data users will be
more interested in deriving student-based and espe-
cially household-based estimates from the personal
interviews.

In a given SFA, households with one application had
a lower chance of being selected than a household
with more than one application.   This is not an
issue in "family application" SFAs but is relevant
in "individual" or "mixed" application SFAs.   The
following variables were used to adjust the In-Home
Audit application-based weights to form a household-
based weight:

- Total number of children attending school in
  the household.

- Total number of children on the application
  that was sampled.

- Types of application: 1 = Individual, 2 =
  Family, 3 = Mixed.   This was reported by the
  SFAs in our initial contact with them.

- Total number of children in the household
  currently receiving free or reduced-price
  meals.

The number of children currently receiving free or
reduced-price meals was planned to be used to
determine the number of applications submitted by
the household, but 306 cases had a zero value.
These tended to be nonrespondents. Because of the
problems with this variable as a measure of the
total number of children covered by all applications
submitted by the household, the total number of
children attending school in the household was used
instead.

The sum of the household-based weights for the In-
Home Audits is shown below:

Nonverified-Random SFAs	9,071,741
Nonverified-Focused SFAs	1,884,798
Verified--Benefits Unchanged-Random SFAs	351,950
Verified--Benefits Unchanged-Focused SFAs	53,610
Verified Nonrespondents-Random SFAs	78,406
Verified Nonrespondents-Focused SFAs	15,981
	11,456,486
	households

Multiplying the household-based weight by the number
of children in the household yielded a student-based
weight:

Nonverified-Random SFAs	10,738,109
Nonverified-Focused SFAs	2,682,553
Verified-Benefits Unchanged-Random SFAs	426,949
Verified-Benefits Unchanged-Focused SFAs	65,718
Nonrespondents-Random SFAs	90,728
Nonrespondents-Focused SFAs	19,287
	14,023,344
	students

If one compares these weighted counts of students
from the In-Home Audit data to those resulting from
the case record data they are all in close
agreement.

Nonapplicant Telephone Survey

The final step in the weight calculation process
involved developing weights for the nonapplicant

telephone interview sample. Recall that students were sampled in SFAs and interview supervisors removed from the sample those that were applicants. This was included as a screen in the telephone interview and applicant households that slipped through were terminated. The sample is further complicated by the fact that eligible nonapplicants were oversampled in relation to the more numerous ineligible nonapplicants. This was done, as discussed in the sample design section, by using a replicate sampling methodology and terminating ineligibles in a portion of the replicates.

The total number of eligible and ineligible nonapplicant students for each SFA is not known. It was therefore necessary to estimate this for each SFA using the eligible interviews, the ineligible interviews and the ineligible terminates.

In order to convert the resulting student-based weight into a household-based weight it was necessary to divide the former weight by the number of students in the household in order to eliminate multiplicity due to a single household having more than one nonapplicant student. The resulting weights sums are:

Non-Applicant Group	Students	Households
Ineligible	21,571,439	14,010,041
Eligible	4,267,421	2,645,200
	25,838,860	16,655,241

Splitting the nonapplicant interviews between the 31 focused and 67 random SFAs yields the following weighted student counts:

	Random SFAs	Focused SFAs
Eligible Nonapplicants	3,231,563	1,035,859
Ineligible Nonapplicants	17,027,775	4,543,664
	20,259,338 students	5,579,523 students

Adding the estimate of 25,838,860 nonapplicant students to the estimated number of applicant students based on the case record abstraction data (14,314,008) yields a total of 40,152,869 students which is very close to the Center for Statistics' estimate for Fall 1985 of 39,500,000 students.

ESTIMATION PROCEDURES AND ACCURACY

The analysis techniques used to generate the statistics presented in this report are straightforward and well-known. The statistics consist of summations, averages, standard deviations, medians, frequency distributions and cross-tabulations.

For some of the important variables in the study (e.g., counts of students whose benefits were changed as a result of income verification) some SFAs were unable to provide complete data. For variables where it was necessary to impute missing data (i.e. for variables involving national counts), a discussion of the imputation technique is contained in the "variable definition" section of the relevant chapter.

Most of the statistical tables presented in this report present national estimates of the relevant population with a given characteristic. In those instances where the estimate is based on less than the full sample (i.e., there are missing cases), the sample weights were adjusted to obtain consistent national totals in all tables.

Associated with any given sample is a specific degree of precision of the sample estimates. This means that for any given design, one can say that the results will be reproducible within plus or minus some specified error. This level of error is often expressed as "results are accurate within +- X percent at the 95 percent confidence level." This means that if samples of the same size were to be taken many times from the same population, then approximately 95 percent of the sample estimates would be within +- X percent of the true population value. It is generally true that larger sample sizes yield more precise estimates.

The statistical tables in this report present national estimates of data related to income verification procedures and findings. The data come from several sources (e.g. SFA mail survey, SFA telephone survey, In-Home Audits, etc.). For example, national estimates of error rates have been derived from the SFA Mail Survey, while data from the SFA Telephone Survey have been used to describe the characteristics of SFA income verification procedures across all SFAs, and broken down for SFAs using random vs. focused sampling.

In general, the statistics provided have a high degree of precision. For example, the national error rate based on documented errors is estimated to be 11.1%. Given the sample size upon which this estimate is based (1,156), the confidence interval is +- 2.8 percentage points, and a statistician would conclude that "with 95 percent confidence, the true error rate falls between 8.3% and 13.9%."

As one examines subpopulations, the precision of the estimates is reduced. For example, survey results indicate that 83.2% of all SFAs use random sampling to select the verification sample. Based on the sample size of 424 SFAs for the SFA Telephone Survey, this estimate is accurate to within +- 3.9%.

Because the sample sizes from the SFA Mail Survey (1,156 completed interviews) are larger than the sample size from the SFA Telephone Survey (424 completed interviews), national estimates of error rates are based on the mail survey data, even though it would be possible to obtain an estimate of error rates using only the telephone survey data.

Exhibit A.2.6 is intended to provide the reader with an approximation of the size of the confidence intervals of estimates derived from each of the important study samples. For each sample, the approximate size of the confidence interval is presented for various sample sizes and population estimates. To use these tables, use the column that approximates the population estimate presented in the statistical tables in the body of the report, then use the row that most closely approximates the sample size upon which the population estimate is based to determine the approximate size of the confidence interval for the reported population estimate.

IMPUTATION FOR ITEM NONRESPONSE

Item nonresponse was not a major problem for most of the questions in this study. The key area where nonresponse was problematic is in questions 1-15 of the SFA mail survey. These questions ask about SFA enrollment, number of applications verified, number of nonresponders, number of children changed from one eligibility status to another, etc. The data were used to calculate some of the key variables in this report (e.g. error rates), and so it was extremely important to have a complete data set.

Exhibit A.2.6

SIZE OF 95% CONFIDENCE INTERVALS
FOR EACH STUDY SAMPLE

SFA Telephone Survey

Sample Size	Percentage of Respondents with Characteristic of Interest				
	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
424	3.0	3.9	4.5	4.8	4.9
400	3.0	4.1	4.6	5.0	5.1
375	3.1	4.2	4.8	5.1	5.2
350	3.2	4.3	4.9	5.3	5.4
325	3.3	4.5	5.1	5.5	5.6

SFA Mail Survey

Sample Size	Percentage of Respondents with Characteristic of Interest				
	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
1156	1.8	2.5	2.8	3.0	3.1
1100	1.9	2.5	2.9	3.1	3.1
1000	2.0	2.6	3.0	3.2	3.3
900	2.1	2.7	3.1	3.4	3.4
800	2.2	2.9	3.3	3.5	3.6

Exhibit A.2.6 (continued)

SIZE OF 95% CONFIDENCE INTERVALS
FOR EACH STUDY SAMPLE

Verified Nonresponders - In-Home Audits

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
536	2.8	3.8	4.3	4.6	4.7
500	2.9	3.9	4.4	4.7	4.8
450	3.0	4.0	4.6	4.9	5.0
400	3.2	4.2	4.8	5.2	5.3
350	3.4	4.5	5.1	5.5	5.6

Verified Applicants Whose Benefits Were Changed
by SFA: Case Record Abstractions

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
313	3.5	4.7	5.4	5.7	5.9
300	3.6	4.8	5.5	5.9	6.0
275	3.7	5.0	5.7	6.1	6.2
250	3.9	5.2	5.9	6.3	6.5
225	4.1	5.4	6.2	6.6	6.8

Verified Applicants Whose Benefits Were Unchanged
by SFA: Case Record Abstractions

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
2504	1.8	2.4	2.7	2.9	2.9
2400	1.8	2.4	2.7	2.9	3.0
2300	1.8	2.4	2.7	2.9	3.0
2200	1.3	2.4	2.8	3.0	3.0
2100	1.3	2.4	2.8	3.0	3.1
2000	1.9	2.5	2.8	3.0	3.1

SIZE OF 95% CONFIDENCE INTERVALS
FOR EACH STUDY SAMPLE

Verified Applicants Whose Benefits Were Unchanged
by the SFA (In-Home Audits)

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
1253	2.1	2.8	3.2	3.4	3.5
1200	2.1	2.8	3.2	3.5	3.6
1100	2.2	2.9	3.3	3.6	3.6
1000	2.2	3.0	3.4	3.7	3.8
900	2.3	3.1	3.6	3.8	3.9

Eligible Nonapplicants (Telephone Interviews)

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
330	3.4	4.6	5.2	5.6	5.7
300	3.6	4.8	5.5	5.8	6.0
275	3.7	5.0	5.7	6.1	6.2
250	3.9	5.2	5.9	6.3	6.5
225	4.1	5.4	6.2	6.6	6.8

Ineligible Nonapplicants (Telephone Interviews)

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
466	3.0	4.0	4.6	4.9	5.0
450	3.0	4.0	4.6	4.9	5.0
400	3.2	4.2	4.8	5.2	5.3
350	3.4	4.5	5.1	5.5	5.6
300	3.6	4.8	5.5	5.8	6.0

Exhibit A.2.6 (continued)

SIZE OF 95% CONFIDENCE INTERVALS
FOR EACH STUDY SAMPLE

Nonverified Applicants - Case Record Abstractions

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
1368	2.1	2.7	3.1	3.3	3.4
1300	2.1	2.8	3.2	3.4	3.5
1200	2.1	2.8	3.3	3.5	3.6
1100	2.2	2.9	3.3	3.6	3.7
1000	2.3	3.0	3.4	3.7	3.8

Nonverified Applicants - In-Home Audits

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
972	2.3	3.0	3.5	3.7	3.8
950	2.3	3.1	3.5	3.8	3.8
900	2.3	3.1	3.6	3.8	3.9
850	2.4	3.2	3.6	3.9	4.0
800	2.4	3.2	3.7	4.0	4.1

Verified Nonresponders - Case Record Abstractions

	Percentage of Respondents with Characteristic of Interest				
Sample Size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
860	2.4	3.2	3.6	3.9	4.0
800	2.4	3.2	3.7	4.0	4.1
750	2.5	3.3	3.8	4.1	4.2
700	2.6	3.4	3.9	4.2	4.3
650	2.6	3.5	4.0	4.3	4.4

The general method used is a weighted hot deck imputation procedures.* Details are given below.

Public SFA Imputation Methods

The public SFA survey consists of 1,156 respondig SFAs of which 732 were part of the mail survey and 424 were interviewed by telephone. The first step in the process involved for each SFA assigning a -1 code for "not applicable" to any question that was legitimately blank due to a skip pattern (e.g., Q.2A). Any remaining blanks for questions 1 to 13 were coded to a -2 to identify them as for imputation.

The second step involved looking up the value of Q.1 (enrollment) in the SFA information supplied by the states and using this as the imputed value. Then, for all SFAs with Q.5A > $\emptyset$ the mean value $(\bar{X}_1)$ of the ratio Q.5A/Q.1 was computed. For SFAs with Q.5A = -2, the imputed value equals Q.1 $(\bar{X}_1)$. For all SFAs with Q.5 > $\emptyset$ we then computed the mean value $(\bar{X}_2)$ of the ratio Q.5A/Q.5 was then computed. For SFAs with Q.5 = -2, the imputed value equals Q.5A/ $(\bar{X}_2)$. Finally, for all SFAs with Q.5B > $\emptyset$ the mean value $(\bar{X}_3)$ of the ratio Q.5B/Q.5A was computed. For SFAs with Q.5B = -2, the imputed value equals Q.5A $(\bar{X}_3)$. The imputed SFAs were then edited to ensure that if Q.5A = $\emptyset$, then Q.5B was also equal to zero.

In the third step, for all SFAs with Q.11 > $\emptyset$ the mean value $(\bar{X}_4)$ of the ratio Q.11/Q.5A was computed. For SFAs with Q.11 = -2, the imputed value equals Q.5A $(\bar{X}_4)$. Next, for all SFAs with Q.11A > $\emptyset$, the mean value $(\bar{X}_5)$ of the ratio Q.11A/Q.11 was computed. For SFAs with Q.11 = -2, the imputed value equals Q.11 $(\bar{X}_5)$. The imputed SFAs were then edited to ensure that any SFA with Q.11 = Q.11A had all categories of Q.15 equal to zero.

The fourth step involved using a weighted sequential hot deck procedure (Cox, 1980) to impute Q.2, Q.2A, Q.3, Q.4, Q.7, Q.8, Q.9, Q.10, Q.12 and Q.13. The imputation classes for the recipients (SFAs requiring imputation) and donors (SFAs not requiring

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*Cox, B. (1980). "The weighted hot deck imputation procedure." 1980 Proceedings of the ASA surveys Research Methods Section.

imputation) were based on five SFA enrollment size categories: 0-599; 600-2,499; 2,500-4,999; 5,000-9,999; and 10,000 or more. The imputed SFAs were then edited to ensure that no consistency errors had been introduced. For Q.7 if "Other" was indicated but nothing was listed on the "specify" line, it was coded to "6" for "not indicated."

The fifth step involved using the weighted sequential hot deck procedure to impute Q.6, Q.6A, and Q.6B. For these questions there were two imputation classes: mail versus telephone SFAs. This was necessary because the mail and telephone questionnaires have different skip patterns. The imputed SFAs were then edited to ensure that no consistency errors had been introduced.

The sixth step dealt with Q.14 and Q.15. The telephone questionnaire instructs the interviewer to insert a zero when a category of Q.15 has no children. For the mail survey, however, categories were simply left blank making it difficult to differentiate between a legitimate zero and a blank which requires imputation. The telephone SFAs were therefore used to compute mean ratios for the five categories of Q.15:

Q.15.1/(Q.11-Q.11A)
Q.15.2/(Q.11-Q.11A)
Q.15.3/(Q.11-Q.11A)
Q.15.4/(Q.11-Q.11A)
Q.15.5/(Q.11-Q.11A)

For all mail SFAs with any of Q.15.1 to Q.15.5 blank the ratio of $\sum$ Q.15.i/(Q.11-Q.11A) was computed. For mail SFAs with this ratio < 1.0, any Q.15.1 to Q.15.5 that were blank were imputed using the value of (Q.11-Q.11A) times the appropriate mean value above from the telephone SFAs. The imputed value was rounded to the nearest integer. For mail surveys with this ratio $\geq$ 1.0, blanks were changed to an imputed value of zero. The Q.14 imputation procedure began by taking all SFAs with Q.14.1 and Q.14.2 $\geq$ 0, and computing the mean ratios of Q.14.1/Q.11A and Q.14.2/Q.11A. For SFAs with either category of Q.14 blank, the value of the ratio (Q.14.1 + Q.14.2)/ Q.11A was computed. If an SFA had a value of this ratio < 1.0, the SFA's Q.11A value was multiplied times the appropriate Q.14.1/Q.11A and Q.14.2/Q.11A mean ratios to derive the imputed value(s). Imputed values were rounded to the nearest integer. If an SFA had a value of the above ratio $\geq$ 1.0, the blank value was changed to zero.

Private SFA Imputation Methods

The private SFA survey was conducted completely by mail and 162 SFAs responded. The same imputation steps were used for the private SFAs that have been detailed for the public SFAs, except for the modifications listed below.

First, the weighted sequential hot deck program was used in a single step to impute Q.2 to Q.13. Due to the small sample size no imputation classes were used.

Second, for all SFAs with (Q.11-Q.11A) > $\emptyset$ and none of Q.15.1 to Q.15.5 blank, the aggregate proportion of children in each Q.15.i (i = 1 to 5) category was

computed. Call these P15.1 to P15.5 where

$\sum_{i=1}^{5}$ P15.i = 1.0. For each SFA with any of Q.15.1 to Q.15.5 blank the above P values, for the Q.15 categories that were not blanks, were rescaled to sum to one. Next, for these SFAs the difference between (Q.11-Q.11A) and the sum of the Q.15 values that were not blank was computed. This difference was the multiplied times the rescaled P values for that SFA to form the imputed values for the Q.15 categories that were blank. The imputed values were rounded to the nearest integer.

APPENDIX 2.2

80 PSU Master Sample
and
50 PSU Subsample

This sample is designed to provide approximately*
60, 80 or 100 sample PSU's (locations) throughout
the United States, excluding Alaska, Hawaii, Puerto
Rico and the island possessions.** The sample was
drawn so as to achieve a high overlap with the PSU's
in the 1970 Westat Master Sample and to provide for
essentially unbiased estimates of sampling errors by
balanced half-sample replications in the 80 PSU and
100 PSU designs. Standard errors can only be
estimated by collapsed-strata methods in the 60 PSU
design, thus providing estimates of sampling error
which are biased upward.

Sample Frame

The 3,111 counties and independent cities in the
United States (excluding the areas noted above) were
grouped into 1,179 primary sampling units (PSU's).
The 1970 Master Sample relied heavily on the PSU's
defined by the Bureau of the Census in its design of
the Current Population Survey. PSU's were defined
by the Bureau of the Census to be contiguous
counties or independent cities of such a geographic
size that a single interviewer could reasonably be
expected to cover them. Entire SMSA's were
considered to be single PSU's and other counties
were organized into PSU's so as to make them
heterogeneous when feasible. Counties that were not
part of SMSA's were not grouped with SMSA's,
however.

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*The approximation is due to the flexibility one
has in defining the number of PSU's contained in
the certainty strata. The 1980 design defines
three certainty PSU's in the New York CMA (A111,
A112 and A113). These could be counted as one.
Or, Detroit, Chicago, Los Angeles and Philadelphia
could each be counted as two. Thus, the 80 PSU
design could range from 78 to 84 or more, depending
upon definitions of certainty PSU's.

**A separate sample is provided for Alaska and
Hawaii. Puerto Rico should also be sampled
separately if it is to be included in the universe.

Different SMSA's were not grouped together, with two
exceptions. One was that Palm Beach, Broward, and
Dade Counties, Florida were grouped together to
create a certainty PSU. The second was the grouping
together of Suffolk and Nassau Counties on Long
Island with Orange, Putnam, Westchester and Rockland
Counties. Administratively, it may be wise to group
Nassau and Suffolk with Queens and Westchester with
Bronx. Any other organization of the New York
Consolidated Statistical Area (CSA) certainty
counties that is convenient would be satisfactory.*

Some changes were made in the census definitions in
1970 to (1) increase the size of some small PSU's,
(2) to account for counties that had become parts of
Standard Metropolitan Statistical Areas (SMSA's) and
(3) to redefine New England SMSA's (approximately)
in terms of counties instead of townships.

Additional modifications were made in the 1980
design. These changes shifted counties into newly
defined or newly augmented SMSA's and recombined
counties so that the minimim size of a PSU was
15,000 population.

The 1970 Master Sample existed in several versions,
a 50 PSU design, a 79 PSU design, a 100 PSU design
and a 101 PSU design. The 50 PSU design formed the
basic structure for the 1980 design. Strata had
been constructed in 1970 in an attempt to create
homogeneity in terms of a number of characteristics,
including population change (from 1960) percent of
employed persons in manufacturing, percent white,
percent urban, percent on farms (for non-SMSA's) and
percent over age 65. The only characteristics
available from the 1980 Census at the time of the
1980 revision were data on race (or ethnicity) and
number of housing units. It was necessary to shift
a number of PSU's from one old stratum to another in
order (1) to create new SMSA strata because of the
shift of population into SMSA's and (2) to
approximately equalize strata sizes, in terms of
population and (3) to create some strata that had a
high percent black or high percent Hispanic
popula;tion. This latter need had become evident in
using the 1970 versions of the Master Sample.

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*Note, however, that Hudson, Middlesex, Bergen,
Passaic and Monmouth Counties, New Jersey and part
of Fairfield County, Connecticut, all parts of the
New York CSA, were not included with certainty in
order to more nearly equalize noncertainty SMSA
strata.

Furthermore, since limited data were available for the 1980 revision, it was necessary to rely on the correlation between race/ethnicity and other socio-economic characteristics to construct relatively homogeneous strata. Except for the newly created high black or high Hispanic strata, the strata remain much of their 1970 character, so that the characteristics used in the 1970 designs, although not available in 1980, retain much of their influence on the stratification.

Principal characteristics of the strata are shown below.

Stratum class	Reg 1	Reg 2	Reg 3	Reg 4	Total
Certainties	7	5	6	2	20
SMSA's	5	6	9	6	26
Non SMSA's	2*	4*	6	2	14
TOTALS	14	15	21	10	60

Selection of One Sample PSU Per Stratum

The Keyfitz method, as modified and extended by Kish and Scott,** was used to maximize (approximately) the overlap with the sample PSU's in the 1970 50 PSU design. That design had been used as the basis for the 79 PSU design which had been used extensively and in which experienced field staff were available. The 79 PSU design had been created by grouping strata into super strata from which additional PSU's had been selected. The same general scheme was used in the 1980 design for the 80 PSU design, although in the latter design exactly two of

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*In order to equalize strata sizes and permit pairings of strata within region, 29 non SMSA counties with population of about 500 thousand were shifted from Region 2 to Region 1. A small number of other counties are incorrectly classified by region because they fall in PSU's that cross regional boundaries.

**Leslie Kish and Alastair Scott, "Retaining Units after Changing Strata and Probabilities," JASA, Applications Section, Vol. 66, No. 335, September 1971, pp. 461ff.

the noncertainty strata were grouped together for the selection of an additional PSU. The sampled PSU drawn at the second level of aggregation (i.e., from the superstrata) was ignored in applying the Keyfitz technique. A summary of the effectiveness of the technique in the selection from noncertainty strata follows:

	Number of Strata	Number of 1970 Selections Retained	Number of new Selections
Strata with no 1970 selection	7	0	7
Strata with one 1970 selection	30	26	4
Strata with two 1970 selections	3	3	0
TOTAL	40	29	11

In addition, 14 of the 30 certainties had been identified as certainties in the 50 PSU design. The total overlap of the 80 PSU design with the 1970 70 PSU design is somewhat greater than shown above, since (1) the overlap of certainties increased and (2) the second round of selection within pairs of strata produced additional overlap.

Second-Level Selection of PSU's

As described above, the noncertainty strata were paired to create 80 PSU and 100 PSU designs from the basic 60 PSU design. To avoid restratification, the 20 certainties remain constant in all the designs. Twenty certainties are approximately optimum for the 80 PSU design, too few for the 100 PSU design and probably too many for the 60 PSU design, but the departures from optimum are not likely to have a substantial effect on variances.

In creating pairs of strata, SMSA strata were always paired with other SMSA strata and non-SMSA strata with other non-SMSA strata. After the pairs were created, one member of the pair was selected with equal probability to receive a second sample PSU for the 80 PSU design. The number of sample PSU's in the 80 PSU and 100 PSU designs are shown below.

Class of strata	Reg 1	Reg 2	Reg 3	Reg 4	Total
80 PSU Design					
Certainties	7	5	6	2	20
SMSA's	8	9	13	9	39
Non SMSA's	3	6	9	3	21
TOTALS	18	20	28	14	80
100 PSU design					
Certainties	7	5	6	2	20
SMSA's	10	12	18	12	52
Non-SMSA's	4	8	12	4	28
TOTALS	21	25	36	18	100

Second selections within a stratum were made by the Durbin method, i.e., without replacement and so that unbiased estimates of within-strata variances can be produced.* The 100 PSU design, of course, contains two selections per noncertainty sratum.

The selected sample PSU's for the 80 PSU and 50 PSU designs are defined in the following listings in terms of county boundaries. Their basic sampling weights are also shown. The sampling weight for each certainty in all designs is, of course, 1.0000.

Estimates of national aggregates are made by multiplying PSU estimates by sampling weights (after possible adjustment for nonresponse and other factors) and summing over the universe.

Sample Selection of 50 PSUs Using the Westat 80 PSU Design

In the Westat 60 PSU Design, 80 PSU Design, and the 100 PSU Design, there are 20 certainty PSUs. These 20 certainty PSUs will also be included as certainty PSUs in the collection of 50 PSUs, so that there will be 30 noncertainty PSUs that must be selected. In the Westat 80 PSU Design there are 60 noncertainty PSUs, and to describe the selection of these PSUs, a brief explanation of the derivation of

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*J. Durbin, "Design of Multi-stage Surveys for the Estimation of Sampling Errors," Applied Statistics (Section C of the Journal of the Royal Statistical Society), Volume 16, pp. 152-64.

the Westat 80 PSU Design from the 60 PSU Design is
needed. In the Westat 60 PSU Design, forty nonself-
representing strata were constructed, and one PSU
was sampled from each of the forty strata. These 40
sample PSUs were also sample PSUs in the Westat 80
PSU Design. To select 20 additional PUSs which were
distinct from the 40 already selected, the 40
nonself-representing strata were paired to form 20
superstrata. From each superstratum one stratum was
sampled with equal probability. From the selected
stratum, one PSU was drawn using the Durbin method
of selection, resulting in 20 additional sample
PSUs.

To select a sample of 30 noncertainty, the 20 super-
strata were grouped by SMSA/Non-SMSA status. There
were 13 superstrata composed of PSUs which were
located within SMSAs while 7 superstrata were
composed of PSUs located in Non-SMSA areas. To
maintain the proportions of SMSA and Non-SMSA PSUs
found in the Westat 80 PSU Design, about 20 of the
30 noncertainty sample PSUs needed to be SMSA PSUs
and 10 needed to be Non-SMSA PSUs. To achieve this,
7 random numbers between 1 and 13 were generated,
and the 13 SMSA superstrata were numbered sequen-
tially from 1 to 13. If a SMSA superstratum had a
sequence number which matched one of the random
numbers, then the two PSUs sampled for the Westat 60
PSU Design were included in the group of 30
noncertainty PSUs. If a SMSA superstratum had a
sequence number which did not match one of the
random numbers, then the additional PSU selected for
the Westat 80 PSU Design was included in the group
of 30 noncertainty PSUs. For the 7 Non-SMSA
superstrata, 3 random numbers between 1 and 7 were
generated. For those Non-SMSA superstrata having
sequence numbers which matched the random numbers,
the two PSUs chosen for the Westat 60 PSU Design
were included in the group of 30 noncertainty PSUs,
while from the remaining four Non-SMSA superstrata,
the additional PSU chosen in the construction of the
Westat 80 PSU Design will be added to the group of
30 noncertainty PSUs.

After the selection of the 30 PSUs, the correct
weights must be assigned to these PSUs. When deter-
mining these weights, the assumption is made that
there are 30 strata of PSUs. These would correspond
to the 20 strata formed in the Westat 60 PSU Design
comprising the 10 superstrata whose sequence numbers
matched the generated random numbers, and to the 10
strata pairs whose sequence numbers did not match
the generated random numbers. These 30 strata cover
the entire PSU universe. For sample PSUs in the 20

strata, no adjustment of the 60 PSU Design weight is needed, since this weight is already the inverse of the probability of the PSU being selected within the stratum. For sample PSUs selected from a strata pair, the PSU weights will have to be adjusted. The weight for an additional PSU selected from a strata pair in the formation of the 80 PSU Design was calculated as

$$\frac{1}{3} \times \frac{P_{gh}}{P_g}$$

where P_g is the population for the stratum pair and P_{gh} is the population for the additional PSU. For the 10 superstrata not associated with the 10 random numbers, this additional PSU is the only selection from the superstratum with respect to the group of 30 noncertainty PSUs. The 80 PSU Design weight of

$$\frac{1}{1} \times \frac{P_{gh}}{P_g}$$

is then multiplied by 3 so that the sample PSU represents the entire superstratum.

WESTAT 80 PSU SAMPLE

PSU #	STATE	COUNTY	STRATUM	WEIGHT
1	New York	Bronx	A111	1.000
		New York	A111	1.000
2	New York	Kings	A112	1.000
		Queens	A112	1.000
		Richmond	A112	1.000
3	New York	Nassau	A113	1.000
		Orange	A113	1.000
		Putnam	A113	1.000
		Rockland	A113	1.000
		Suffolk	A113	1.000
		Westchester	A113	1.000
4	New Jersey	Burlington	A120	1.000
		Camden	A120	1.000
		Gloucester	A120	1.000
	Pennsylvania	Bucks	A120	1.000
		Chester	A120	1.000
		Delaware	A120	1.000
		Montgomery	A120	1.000
		Philadelphia	A120	1.000
5	Massachusetts	Essex	A130	1.000
		Middlesex	A130	1.000
		Norfolk	A130	1.000
		Suffolk	A130	1.000
6	Pennsylvania	Allegheny	A140	1.000
		Beaver	A140	1.000
		Washington	A140	1.000
		Westmoreland	A140	1.000
7	New Jersey	Essex	A150	1.000
		Morris	A150	1.000
		Somerset	A150	1.000
		Union	A150	1.000
8	Illinois	Cook	A210	1.000
		DuPage	A210	1.000
		Kane	A210	1.000
		Lake	A210	1.000
		McHenry	A210	1.000
		Will	A210	1.000

PSU #	STATE	COUNTY	STRATUM	WEIGHT
9	Michigan	Lapeer	A220	1.000
		Livingston	A220	1.000
		Macomb	A220	1.000
		Oakland	A220	1.000
		St. Clair	A220	1.000
		Wayne	A220	1.000
10	Illinois	Clinton	A230	1.000
		Madison	A230	1.000
		Monroe	A230	1.000
		St. Clair	A230	1.000
	Missouri	Franklin	A230	1.000
		Jefferson	A230	1.000
		St. Charles	A230	1.000
		St. Louis	A230	1.000
		St. Louis C	A230	1.000
11	Ohio	Cuyahoga	A240	1.000
		Geauga	A240	1.000
		Lake	A240	1.000
		Medina	A240	1.000
12	Minnesota	Anoka	A250	1.000
		Carver	A250	1.000
		Chisago	A250	1.000
		Dakota	A250	1.000
		Hennepin	A250	1.000
		Ramsey	A250	1.000
		Scott	A250	1.000
		Washington	A250	1.000
		Wright	A250	1.000
	Wisconsin	St. Croix	A250	1.000
13	D.C.	District of Col.	A310	1.000
	Maryland	Charles	A310	1.000
		Montgomery	A310	1.000
		Prince George	A310	1.000
	Virginia	Arlington	A310	1.000
		Fairfax	A310	1.000
		Loudoun	A310	1.000
		Prince William	A310	1.000
		Alexandria	A310	1.000
		Fairfax CI	A310	1.000
		Falls Church	A310	1.000
		Manassas	A310	1.000
		Manassas P	A310	1.000

PSU #	STATE	COUNTY	STRATUM	WEIGHT
14	Texas	Collin	A320	1.000
		Dallas	A320	1.000
		Denton	A320	1.000
		Ellis	A320	1.000
		Hood	A320	1.000
		Johnson	A320	1.000
		Kaufman	A320	1.000
		Parker	A320	1.000
		Rockwall	A320	1.000
		Tarrant	A320	1.000
		Wise	A320	1.000
15	Georgia	Cherokee	A330	1.000
		Clayton	A330	1.000
		Cobb	A330	1.000
		DeKalb	A330	1.000
		Douglas	A330	1.000
		Fayette	A330	1.000
		Forsyth	A330	1.000
		Fulton	A330	1.000
		Gwinnett	A330	1.000
		Henry	A330	1.000
		Newton	A330	1.000
		Paulding	A330	1.000
		Rockdale	A330	1.000
		Walton	A330	1.000
16	Florida	Dade	A340	1.000
		Palm Beach	A340	1.000
17	Maryland	Anne Arundel	A350	1.000
		Baltimore	A350	1.000
		Carroll	A350	1.000
		Harford	A350	1.000
		Howard	A350	1.000
		Baltimore	A350	1.000
18	Texas	Brazcria	A360	1.000
		Fort Bend	A360	1.000
		Harris	A360	1.000
		Liberty	A360	1.000
		Montgomery	A360	1.000
		Waller	A360	1.000
19	California	Los Angeles	A410	1.000

PSU #	STATE	COUNTY	STRATUM	WEIGHT
20	California	Alameda	A420	1.000
		Contra CCS	A420	1.000
		Marin	A420	1.000
		San Francisco	A420	1.000
		San Mateo	A420	1.000
21	New Jersey	Bergen	B110	1.9566
		Passaic	B110	1.9566
22	New Jersey	Atlantic	B110	13.3037
23	Oklahoma	Canadian	B330	2.9701
		Cleveland	B330	2.9701
		McClain	B330	2.9701
		Oklahoma	B330	2.9701
		Pottawatomie	B330	2.9701
24	New Jersey	Middlesex	B120	6.4733
25	New Jersey	Monmouth	B120	5.1855
26	Connecticut	Hartford	B130	4.3033
		Tolland	B130	4.3033
27	New York	Madison	B140	5.9439
		Ononcaga	B140	5.9439
		Oswego	B140	5.9439
28	New Jersey	Warren	B150	6.0174
	Pennsylvania	Carbon	B150	6.0174
		Lehigh	B150	6.0174
		Northampton	B150	6.0174
29	New York	Albany	B150	3.2056
		Montgomery	B150	3.2056
		Rensselaer	B150	3.2056
		Saratoga	B150	3.2056
		Schenectady	B150	3.2056
30	Kansas	Johnson	B210	2.0140
		Wayndotte	B210	2.0140
	Missouri	Cass	B210	2.0140
		Clay	B210	2.0140
		Jackson	B210	2.0140
		Platte	B210	2.0140
		Ray	B210	2.0140

PSU #	STATE	COUNTY	STRATUM	WEIGHT
31	Ohio	Greene	B210	3.2351
		Miami	B210	3.2351
		Montgomery	B210	3.2351
		Preble	B210	3.2351
32	Wisconsin	Milwaukee	B220	1.9310
		Ozaukee	B220	1.9310
		Washington	B220	1.9310
		Waukesha	B220	1.9310
33	Michigan	Monroe	B230	3.3720
	Ohio	Fulton	B230	3.3720
		Lucas	B230	3.3720
		Ottawa	B230	3.3720
		Wood	B230	3.3720
34	Wisconsin	Sheboygan	B230	26.6424
35	Indiana	Lake	B250	4.1218
		Porter	B250	4.1218
36	Michigan	Clinton	B240	5.4655
		Eaton	B240	5.4655
		Ingham	B240	5.4655
		Ionia	B240	5.4655
37	Wisconsin	Dane	B240	8.0778
38	Michigan	Kent	B260	4.4038
		Ottawa	B260	4.4038
39	Texas	Brazoa	B310	26.7298
40	North Carolina	Cumberland	B320	10.4216
41	Florida	Alachua	B320	16.7739
42	North Carolina	Currituck	B350	3.1024
	Virginia	Chesapeake	B350	3.1024
		Norfolk CI	B350	3.1024
		Portsmouth	B350	3.1024
		Suffolk	B350	3.1024
		Virginia B	B350	3.1024

PSU #	STATE	COUNTY	STRATUM	WEIGHT
43	Florida	Baker	B350	3.4094
		Clay	B350	3.4094
		Duval	B350	3.4094
		Nassau	B350	3.4094
		St. Johns	B350	3.4094
44	Alabama	Jefferson	B370	2.9389
		St. Clair	B370	2.9389
		Shelby	B370	2.9389
		Walker	B370	2.9389
45	Arkansas	Pulaski	B340	6.3970
		Saline	B340	6.3970
46	Alabama	Etowah	B340	24.5582
47	Georgia	Catoosa	B360	5.9614
		Dade	B360	5.9614
		Walker	B360	5.9614
	Tennessee	Hamilton	B360	5.9614
		Marion	B360	5.9614
		Sequatchie	B360	5.9614
48	Texas	Callahan	B380	18.3753
		Jones	B380	18.3753
		Taylor	B380	18.3753
49	Alabama	Colbert	B390	18.8077
		Lauderdale	B390	18.8077
50	Florida	Manatee	B390	16.9953
51	Colorado	Adams	B410	1.6389
		Arapahoe	B410	1.6389
		Boulder	B410	1.6389
		Denver	B410	1.6389
		Douglas	B410	1.6389
		Gilpin	B410	1.6389
		Jefferson	B410	1.6389
52	Washington	King	B410	1.6003
		Snohomish	B410	1.6003
53	Washington	Kitsap	B430	18.6235
54	California	Orange	B420	1.4268

PSU #	STATE	COUNTY	STRATUM	WEIGHT
55	California	Placer	B440	2.6233
		Sacramento	B440	2.6233
		Yolo	B440	2.6233
56	Arizona	Pima	B440	5.0972
57	Washington	Spokane	B450	7.8223
58	California	Santa Clara	B450	2.0198
59	Arizona	Maricopa	B460	1.6948
60	New Jersey	Sussex	C110	17.0298
	Pennsylvia	Pike	C110	17.0298
61	New York	Clinton	C110	28.2582
62	Pennsylvania	Fayette	C120	11.2249
		Greene	C120	11.2249
63	Indiana	Benton	C210	92.3215
		Carroll	C210	92.3215
64	Iowa	Des Moines	C220	42.7229
		Henry	C220	42.7229
65	Kansas	Reno	C220	43.0546
66	Indiana	Fayette	C230	27.3541
		Henry	C230	27.3541
		Rush	C230	27.3541
67	Ohio	Shelby	C230	63.8565
68	Illinois	Gallatin	C240	77.2965
		Saline	C240	77.2965
69	Texas	Culberson	C310	97.6781
		Hudspeth	C310	97.6781
		Jeff Davis	C310	97.6781
		Presidio	C310	97.6781
		Reeves	C310	97.6781
70	South Carolina	Darlington	C350	22.2620
		Dillon	C350	22.2620
		Marlboro	C350	22.2620

PSU #	STATE	COUNTY	STRATUM	WEIGHT
71	Georgia	Colquitt	C350	52.3366
		Worth	C350	52.3366
72	Georgia	Camden	C320	22.7834
		Charlton	C320	22.7834
		Glynn	C320	22.7834
		Liberty	C320	22.7834
		McIntosh	C320	22.7834
73	Georgia	Whitfield	C320	42.0278
74	Virginia	Madison	C360	43.6657
		Page	C360	43.6657
		Rappahannock	C360	43.6657
		Shenandoah	C360	43.6657
75	South Carolina	Calhoun	C330	29.2788
		Orangeburg	C330	29.2788
76	Virginia	Henry	C340	36.8740
		Martinsville	C340	36.8740
77	Kentucky	Marion	C340	55.7800
		Taylor	C340	55.7800
		Washington	C340	55.7800
78	Colorado	Chaffee	C410	45.4955
		Fremont	C410	45.4955
		Gunnison	C410	45.4955
79	Wyoming	Sweetwater	C410	43.5062
		Uinta	C410	43.5062
80	Washington	Mason	C420	76.0231

WESTAT 50 PSU SAMPLE

PSU #	STATE	COUNTY	STRATRUM	WEIGHT
1	New York	Bronx	A111	1.000
		New York	A111	1.000
2	New York	Kings	A112	1.000
		Queens	A112	1.000
		Richmond	A112	1.000
3	New York	Nassau	A113	1.000
		Orange	A113	1.000
		Putnam	A113	1.000
		Rockland	A113	1.000
		Suffolk	A113	1.000
		Westchester	A113	1.000
4	New Jersey	Burlington	A113	1.000
		Camden	A113	1.000
		Gloucester	A113	1.000
	Pennslyvania	Bucks	A113	1.000
		Chester	A113	1.000
		Delaware	A113	1.000
		Montgomery	A113	1.000
		Philadelphia	A113	1.000
5	Massachusetts	Essex	A130	1.000
		Middlesex	A130	1.000
		Norfolk	A130	1.000
		Suffolk	A130	1.000
6	Pennsylvania	Allegheny	A140	1.000
		Beaver	A140	1.000
		Washington	A140	1.000
		Westmoreland	A140	1.000
7	New Jersey	Essex	A150	1.000
		Morris	A150	1.000
		Somerset	A150	1.000
		Union	A150	1.000
8	Illinois	Cook	A210	1.000
		DuPage	A210	1.000
		Kane	A210	1.000
		Lake	A210	1.000
		McHenry	A210	1.000
		Will	A210	1.000

PSU #	STATE	COUNTY	STRATRUM	WEIGHT
9	Michigan	Lapeer	A220	1.000
		Livingston	A220	1.000
		Macomb	A220	1.000
		Oakland	A220	1.000
		St. Clair	A220	1.000
		Wayne	A220	1.000
10	Illinois	Clinton	A230	1.000
		Madison	A230	1.000
		Monroe	A230	1.000
		St. Clair	A230	1.000
	Missouri	Franklin	A230	1.000
		Jefferson	A230	1.000
		St. Charles	A230	1.000
		St. Louis	A230	1.000
		St. Louis C	A230	1.000
11	Ohio	Cuyahoga	A240	1.000
		Geauga	A240	1.000
		Lake	A240	1.000
		Medina	A240	1.000
12	Minnesota	Anoka	A250	1.000
		Carver	A250	1.000
		Chisago	A250	1.000
		Dakota	A250	1.000
		Hennepin	A250	1.000
		Ramsey	A250	1.000
		Scott	A250	1.000
		Washington	A250	1.000
		Wright	A250	1.000
	Wisconsin	St. Croix	A250	1.000
13	D.C.	Dist. of Col.	A310	1.000
	Maryland	Charles	A310	1.000
		Montgomery	A310	1.000
		Prince George	A310	1.000
	Virginia	Arlington	A310	1.000
		Fairfax	A310	1.000
		Loudoun	A310	1.000
		Prince William	A310	1.000
		Alexandria	A310	1.000
		Fairfax CI	A310	1.000
		Falls Church	A310	1.000
		Manassas	A310	1.000
		Manassas P	A310	1.000

PSU #	STATE	COUNTY	STRATRUM	WEIGHT
14	Texas	Collin	A320	1.000
		Dallas	A320	1.000
		Denton	A320	1.000
		Ellis	A320	1.000
		Hood	A320	1.000
		Johnson	A320	1.000
		Kaufman	A320	1.000
		Parker .	A320	1.000
		Rockwall	A320	1.000
		Tarrant	A320	1.000
		Wise	A320	1.000
15	Georgia	Cherokee	A330	1.000
		Clayton	A330	1.000
		Cobb	A330	1.000
		DeKalb	A330	1.000
		Douglas	A330	1.000
		Fayette	A330	1.000
		Forsyth	A330	1.000
		Fulton	A330	1.000
		Gwinnett	A330	1.000
		Henry	A330	1.000
		Newton	A330	1.000
		Paulding	A330	1.000
		Rockdale	A330	1.000
		Walton	A330	1.000
16	Florida	Dade	A340	1.000
		Palm Beach	A340	1.000
17	Maryland	Anne Arundel	A350	1.000
		Baltimore	A350	1.000
		Carroll	A350	1.000
		Harford	A350	1.000
		Howard	A350	1.000
		Baltimore	A350	1.000
18	Texas	Brazcria	A360	1.000
		Fort Bend	A360	1.000
		Harris	A360	1.000
		Liberty	A360	1.000
		Montgomery	A360	1.000
		Waller	A360	1.000
19	California	Los Angeles	A410	1.000

PSU #	STATE	COUNTY	STRATRUM	WEIGHT
20	California	Alameda	A420	1.000
		Contra CCS	A420	1.000
		Marin	A420	1.000
		San Francisco	A420	1.000
		San Mateo	A420	1.000
21	New Jersey	Atlantic	B110	1.9566
22	Oklahoma	Canadian	B330	2.9701
		Cleveland	B330	2.9701
		McClain	B330	2.9701
		Oklahoma	B330	2.9701
		Pottawatomie	B330	2.9701
23	New Jersey	Middlesex	B120	6.4733
24	Connecticut	Hartford	B130	4.3033
		Tolland	B130	4.3033
25	New York	Madison	B140	5.9439
		Ononcaga	B140	5.9439
		Oswego	B140	5.9439
26	New Jersey	Warren	B150	6.0174
	Pennsylvania	Carbon	B150	6.0174
		Lehigh	B150	6.0174
		Northampton	B150	6.0174
27	Ohio	Greene	B210	3.2351
		Miami	B210	3.2351
		Montgomery	B210	3.2351
		Preble	B210	3.2351
28	Wisconsin	Sheboygan	B230	26.6424
29	Indiana	Lake	B250	4.1218
		Porter	B250	4.1218
30	Wisconsin	Dane	B240	8.0778
31	Florida	Alachua	B320	16.7739

PSU #	STATE	COUNTY	STRATRUM	WEIGHT
32	Florida	Baker	B350	3.4094
		Clay	B350	3.4094
		Duval	B350	3.4094
		Nassau	B350	3.4094
		St. Johns	B350	3.4094
33	Alabama	Jefferson	B370	2.9389
		St. Clair	B370	2.9389
		Shelby	B370	2.9389
		Walker	B370	2.9389
34	Arkansas	Pulaski	B340	6.3970
		Saline	B340	6.3970
35	Georgia	Catoosa	B360	5.9614
		Dade	B360	5.9614
		Walker	B360	5.9614
	Tennessee	Hamilton	B360	5.9614
		Marion	B360	5.9614
		Sequatchie	B360	5.9614
36	Alabama	Colbert	B390	18.8077
		Lauderdale	B390	18.8077
37	Colorado	Adams	B410	1.6389
		Arapahoe	B410	1.6389
		Boulder	B410	1.6389
		Denver	B410	1.6389
		Douglas	B410	1.6389
		Gilpin	B410	1.6389
		Jefferson	B410	1.6389
38	California	Orange	B420	1.4268
39	California	Placer	B440	2.6233
		Sacramento	B440	2.6233
		Yolo	B440	2.6233
40	California	Santa Clara	B450	2.0198

PSU #	STATE	COUNTY	STRATRUM	WEIGHT
41	New Jersey	Sussex	C110	17.0298
	Pennsylvia	Pike	C110	17.0298
42	Iowa	Des Moines	C220	42.7229
		Henry	C220	42.7229
43	Ohio	Shelby	C230	63.8565
44	Illinois	Gallatin	C240	77.2965
		Saline	C240	77.2965
45	Georgia	Colquitt	C350	52.3366
		Worth	C350	52.3366
46	Georgia	Whitfield	C320	42.0278
47	Virginia	Madison	C360	43.6657
		Page	C360	43.6657
		Rappahannock	C360	43.6657
		Shenandoah	C360	43.6657
48	Kentucky	Marion	C340	55.7800
		Taylor	C340	55.7800
		Washington	C340	55.7800
49	Colorado	Chaffee	C410	45.4955
		Fremont	C410	45.4955
		Gunnison	C410	45.4955
50	Washington	Mason	C420	76.0231