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LIHEAP Targeting Performance Measurement Statistics:

GPRA Validation of Estimation Procedures

Final Report

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Executive Summary

The purpose of this report is to present the findings from the LIHEAP Targeting Performance Measurement Statistics: GPRA Validation of Estimation Procedures, referred to in this document as the Validation Study. This study examined and compared alternative procedures for estimating the recipiency targeting performance measurement indicators used by the LIHEAP program to measure program performance. This report includes recommendations for how the LIHEAP program should develop recipiency targeting performance measurement statistics in the future.

Introduction

The Government Performance and Results Act (GPRA) of 1993 established a government-wide requirement for federal agencies to develop performance goals and measures for federal programs. Beginning in FY 1999, GPRA requires federal agencies to submit program performance plans and reports on an annual basis. The Office of Community Services (OCS) in the Administration for Children and Families (ACF) administers the LIHEAP program at the federal level and, as such, has responsibility under GPRA for developing the annual LIHEAP program performance plan and an annual report on program performance. In addition, under GPRA, OCS has a responsibility to verify and validate the performance statistics included in the LIHEAP GPRA plan to ensure its credibility.

OCS has developed its performance measurement plan based on the LIHEAP legislative goals. The plan calls for measurement of LIHEAP recipiency targeting rates (i.e., measurement of the rates at which various vulnerable groups are served by the LIHEAP program). OCS has developed baseline performance statistics and is in the process of undertaking performance enhancement initiatives. OCS has proposed procedures for developing LIHEAP recipiency targeting performance measurement statistics. These procedures use data from the March demographic supplement of the Current Population Survey to develop estimates of the characteristics of households that are income eligible for the LIHEAP program and of the characteristics of households that receive LIHEAP benefits to estimate LIHEAP recipiency targeting performance.

Since the CPS is a survey of a sample of households, there are a number ways in which the statistics developed from the survey can be inconsistent with true population statistics. In this report, we document how each type of survey error might affect the performance measurement statistics for LIHEAP.

Federal LIHEAP Targeting Performance

LIHEAP is not an entitlement program, and the amount of LIHEAP funding varies by state. Therefore, the LIHEAP program is unable to serve all of the households that are income

eligible under the federal maximum income eligibility standard. Given that limitation, LIHEAP's statutory objective is to assist low income households, particularly those with the lowest incomes, that pay a high proportion of household income for home energy, primarily in meeting their immediate home energy needs. The LIHEAP statute identifies two groups of low-income households as having the "highest home energy needs" - vulnerable households (i.e. households with elderly, disabled, or young children) and high burden households (i.e. the households with the lowest income and highest energy costs).

Based on the national LIHEAP program goals, OCS has focused its initial performance goals and measurement on targeting income eligible vulnerable households and income eligible high burden households. OCS's performance plan focuses the LIHEAP program on "increasing the availability of LIHEAP fuel assistance to vulnerable and high-energy burden households whose health and/or safety are endangered by living in a home without sufficient heating or cooling." Baseline data for these recipiency targeting performance goals have been measured to provide a picture of the current status of recipiency targeting performance across the country.

OCS has developed a set of performance indicators that provide for the collection of quantitative measures regarding LIHEAP recipiency targeting performance. To quantify recipiency targeting performance, OCS has defined a targeting performance indicator called the **recipiency targeting index**. The "recipiency targeting index" for a specific group of households is computed by comparing the percent of LIHEAP households that are members of the target group to the percent of all income eligible households that are members of the target group.

The LIHEAP recipiency targeting index is computed for a group and for a defined geographic area. A targeting index can be computed for households with a young child, for households with a disabled member, or even for households with no vulnerable members. A targeting index can be computed for an individual state, a group of states, and for the nation.

The data elements needed to compute a recipiency targeting index for a target group in a geographic area are:

- Target Group Income Eligible Population – The number of target group LIHEAP income eligible households in a defined geographic area.
- Target Group Recipients – The number of target group LIHEAP recipient households in a defined geographic area.
- Income Eligible Household Population – The number of all LIHEAP income eligible households in a defined geographic area.
- LIHEAP Recipients – The number of all LIHEAP recipient households in a defined geographic area.

The purpose of this analysis is to find reliable data sources for the required data elements.

Estimating the Number of LIHEAP Income Eligible Households

The federal LIHEAP GPRA plan requires detailed estimates of the number of LIHEAP income eligible households. The number of income eligible households by demographic group is required to compute recipiency targeting indexes for vulnerable groups. The number of income eligible households by geographic area is required to support an analysis of how LIHEAP targeting varies across Census Regions, Census Divisions, and states. This study examines the strengths and limitations of a number of alternative data sources, including the Decennial Census, the Demographic Supplement of the Current Population Survey (CPS), and the Residential Energy Consumption Survey (RECS).

The study found that the CPS furnished the best information for the recipiency targeting performance measurement system. Annual data are available for Census Divisions, Regions, and the nation. High quality information is available on income, household size, and household vulnerability characteristics. The Decennial Census can furnish much of the same information at lower levels of geography (i.e., sub state areas). However the Decennial Census is not conducted with the frequency required to measure performance annually. The RECS has good energy data to support certain types of analysis. However, the sample size is only one-tenth the size of the CPS, it is missing key demographic and income data, and it is conducted only once every four years.

Analysis of the quality and precision of CPS data shows that it furnishes the best quality data on income eligible households for implementing the LIHEAP performance measurement system. For national statistics, standard errors developed from the CPS are small enough to detect policy relevant changes in the number and characteristics of LIHEAP income eligible households. In addition, a review of the potential nonsampling errors associated with the CPS suggests that such error would not bias estimates of the number and characteristics of LIHEAP income eligible households.

National and regional tables of LIHEAP income eligible households show that the number of income eligible households for the nation and for most census divisions were higher in 2002 than they were in 1998 by a statistically significant amount. The increase was particularly large for households in the South Atlantic Division and for elderly households. In addition, the statistics show a growth in the number of LIHEAP income eligible households with incomes above 150% of poverty and a decline in the number of income eligible households with incomes below 100% of poverty.

For state-level estimates, the study found that using a three-year average from three CPS files could significantly reduce the size of sampling errors and the influence of one-time events in the local economy on estimates of income eligible households. Even with the three-year average, analysts should use caution in examining state-level statistics. At the national level, statistics have a 90% confidence interval of less than +/- one percentage point. However, for state-level statistics, the 90% confidence interval is often +/- five percentage points. So, only fairly large changes in state-level statistics are statistically significant.

Estimating the Number of LIHEAP Recipient Households

The federal LIHEAP recipiency targeting performance measurement plan requires detailed estimates of the number of LIHEAP recipient households. The number of recipient households by demographic group is required to compute recipiency targeting indexes for vulnerable groups. The number of recipient households by geographic area is required to support an analysis of how LIHEAP targeting varies across Census Regions, Census Divisions, and states. The study recommends use of the administrative data from the annual LIHEAP household report to OCS to furnish estimates of the number of LIHEAP recipient households by demographic group and geography.

In general, we can define LIHEAP recipient households as those that receive energy assistance grants funded by LIHEAP. However, several factors make it difficult to get reliable information on LIHEAP recipients from either a household survey or from administrative data. Since states often offer more than one kind of assistance, it can be difficult to get an unduplicated count of recipients from administrative statistics. And, since there are energy assistance grants that are not funded by LIHEAP, it is possible to get false positive responses to survey questions about receipt of LIHEAP. Finally, households generally underreport participation in public assistance programs.

Data sources for LIHEAP recipient households must have household level data on recipiency and information that can be used to determine a household's vulnerability status, or the data source must explicitly report recipiency by household vulnerability status. CPS data (using questions funded by OCS) and State LIHEAP administrative reports have such information. If a comparison between administrative data and CPS data shows that they are consistent, CPS data would be preferred because they are more timely and allow for more complex data manipulation. However, the validation study finds that estimates from the two data sources are not consistent.

The goal of the validation study is to ascertain the best way to develop LIHEAP recipiency targeting performance statistics. CPS weighted counts are lower than counts derived from administrative data. However, if the targeting indexes derived from the estimates were within sampling tolerances, the CPS data would be preferred because it is more timely and versatile. However, the study demonstrates that the two data sources yield quite different information about LIHEAP recipiency targeting. Further, it appears that the administrative data furnish a more accurate picture of recipiency targeting performance. During the period from 1998 to 2001, there were considerable differences from year to year in the way that funds were distributed. These variations are likely to have a large impact on recipiency targeting. The administrative data reflect those changes, while the CPS data show only minor changes in recipiency targeting statistics.

Findings and Recommendations

The purpose of the LIHEAP Performance Measurement Validation Study is to identify and determine the quality of data sources that could furnish reliable estimates of recipiency

targeting performance measurement indexes for elderly households and for young child households. The study showed that CPS data are the best data source for making estimates of the number of LIHEAP income eligible households and the administrative data are the best data source for making estimates of LIHEAP recipient households.

The current LIHEAP GPRA plan uses the CPS Annual Demographic file to estimate the number of LIHEAP income eligible households and the number of LIHEAP recipient households. The plan calls for the use of the CPS for LIHEAP recipients because it was more timely and more flexible than the data furnished to OCS in the state household reports. However, the Validation Study demonstrates that the weighted estimates of LIHEAP recipient characteristics from the CPS are not consistent with the counts of LIHEAP recipient characteristics from state LIHEAP household reports.

Since the CPS undercounts the number of recipients compared to audited state reports, it can be inferred that there is nonsampling error associated with the CPS estimates of the characteristics of LIHEAP recipient households. As such, the CPS data do not furnish valid estimates of the LIHEAP recipiency targeting indexes for elderly and young child households. So, the Validation Study recommends changing the performance measurement plan to use state household reports for estimating LIHEAP recipiency targeting indexes.

There are measurement limitations imposed by the change in procedures. The CPS file is available at the beginning of the federal fiscal year. The state household reports are not available until three to six months later. Therefore, the change in procedures will lengthen the amount of time between the end of the federal fiscal year and the reports on LIHEAP recipiency targeting performance. In addition, state household reports on recipients do not facilitate the same kind of in-depth analysis that would be available with the CPS data.

I. Introduction

The purpose of this report is to present the findings from the LIHEAP Targeting Performance Measurement Validation Study. The purpose of the study was to verify and validate the performance measurement statistics included in the LIHEAP GPRA plan. This study examined and compared alternative procedures for estimating the performance measurement indicators used by the LIHEAP program to measure program recipiency targeting performance. This report includes recommendations for how the LIHEAP program should develop performance measurement statistics in the future.

A. Background

The Government Performance and Results Act (GPRA) of 1993 established a government-wide requirement for federal agencies to develop performance goals and measures for federal programs. Beginning in FY 1999, GPRA requires federal agencies to submit program performance plans and reports on an annual basis. The Office of Community Services (OCS) in the Administration for Children and Families (ACF) administers the LIHEAP program at the federal level and, as such, has responsibility under GPRA for developing the annual LIHEAP program performance plan and an annual report on program performance.

OCS has developed a LIHEAP GPRA plan based on the legislative goals of LIHEAP. The plan calls for measurement of LIHEAP recipiency targeting rates (i.e., measurement of the rates at which various vulnerable groups are served by the LIHEAP program). OCS has developed baseline performance statistics and has undertaken performance enhancement initiatives.

OCS has a responsibility to verify and validate the performance statistics included in the LIHEAP GPRA plan. The Committee Report on GPRA indicates that "… an agency may use an audit or any other procedure that would support the general accuracy and reliability of information contained in the annual performance report." Further, "… the Committee emphasizes that as the success of the Act depends to a large degree on the reliability and utility of the information presented, special attention will be needed to ensure credibility."

B. Performance Measurement Data

OCS has proposed procedures for developing LIHEAP recipiency targeting performance measurement statistics. These procedures use data from the March demographic supplement of the Current Population Survey to develop estimates of the characteristics of households

that are income eligible for the LIHEAP program[1] and of the characteristics of households that receive LIHEAP benefits to estimate LIHEAP targeting performance.

There are several reasons why the CPS data were selected for the development of performance measurement statistics.

- *Annual Updates*: The CPS demographic survey is conducted annually. This facilitates the development of annual performance measurement updates.

- *Survey Quality*: The CPS is used by a number of federal agencies to develop important statistics such as the unemployment rate and the federal poverty rate.

- *Geography*: The CPS can furnish statistics for the nation, Census Regions, and Census Divisions with variances that are small enough to detect meaningful changes in targeting rates. At the state level, a three-year moving average can be used to examine targeting rates.

- *Recipiency*: The CPS collects information on LIHEAP recipiency.

The plan also proposes to use LIHEAP administrative statistics on the characteristics of recipients to support the statistics developed from the CPS.

C. Performance Measurement Validation Procedures

Since the CPS is a survey of households, there are a number ways in which the statistics developed from the survey can be inconsistent with true population statistics. Surveys have sampling error (the sample can vary from the population because of the random selection process), survey nonresponse error (not all selected households participate in the survey), item nonresponse error (not every interviewed household responds to all of the items), and item response error (households do not always understand survey questions or may have forgotten about participation in a program).

In this report, we document how each type of survey error might affect the performance measurement statistics for LIHEAP.

- *Sampling Error*: There are mathematical procedures for estimating sampling error. In this report, we examine the range of sampling error and estimate the minimum change in performance measurement statistics that could be identified by the CPS.

- *Nonsampling Error*:

    - *Survey Nonresponse and Item Nonresponse Error*: Since the response rates to the CPS are high, these errors are not likely to affect the performance

[1] Not all income eligible households are eligible under state program rules.

measurement statistics. However, we furnish information on the potential impact of these errors.

- *Item Response Errors*: These are challenging errors to detect and can represent the most serious bias in estimates. In this report, we use LIHEAP administrative statistics to examine the extent to which item response problems have biased performance measurement statistics.

Based on the findings from the error analysis, we make recommendations on the most reliable procedures for developing LIHEAP recipiency targeting performance measurement statistics.

D. Organization of the Report

Four sections follow this introduction.

1. *Section II – Federal LIHEAP Targeting Performance* provides a detailed description of the LIHEAP GPRA plan.

2. *Section III – Estimates of LIHEAP Income Eligible Households* furnishes an analysis of the data used to estimate the number of income eligible households.

3. *Section IV – Estimates of LIHEAP Recipient Households* examines the quality of the data used to estimate the number of LIHEAP recipient households.

4. *Section V – Findings and Recommendations* gives OCS guidance on how best to compute performance measurement statistics for the LIHEAP program.

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II. Federal LIHEAP Targeting Performance

The Government Performance and Results Act (GPRA) of 1993 established a government-wide requirement for federal agencies to develop performance goals and measures for federal programs. The resulting performance data are to be used in making decisions on budget and appropriation levels. GPRA focuses on program results to provide Congress with more objective information on the achievement of statutory objectives or program goals. Beginning in FY 1999, GPRA requires federal agencies to submit program performance plans and reports on an annual basis.

The Office of Community Services (OCS) in the Administration for Children and Families (ACF) administers the LIHEAP program at the federal level and, as such, has responsibility under GPRA for developing the annual LIHEAP program performance plan and an annual report on program performance. The LIHEAP performance plan must take into account that the federal government does not provide LIHEAP assistance to the public. Instead, the federal government provides funds to states, federal or state-recognized Indian tribes/tribal organizations, and insular areas to administer LIHEAP at the local level. The LIHEAP performance plan also must take into account that LIHEAP is a block grant whereby LIHEAP grantees have broad flexibility to design their programs, within very broad federal guidelines, to meet the needs of their citizens.

OCS has developed a LIHEAP GPRA plan based on the legislative goals of LIHEAP. The plan calls for measurement of LIHEAP recipiency targeting rates (i.e., measurement of the rates at which various vulnerable groups are served by the LIHEAP program). OCS has developed baseline recipiency targeting performance statistics and has undertaken performance enhancement initiatives.

A. National LIHEAP Program Goals

LIHEAP is not an entitlement program. The amount of LIHEAP funding varies by state. Therefore, the LIHEAP program is unable to serve all of the households that are income eligible under the federal maximum, income eligibility standard. (In FY 2000, 13 percent of federally income eligible households received assistance with their heating costs.)

Given that limitation, LIHEAP's statutory objective is to assist low income households, particularly those with the lowest incomes, that pay a high proportion of household income for home energy, primarily in meeting their immediate home energy needs. The LIHEAP statute includes the objective of requiring LIHEAP grantees to provide, in a timely manner, that the highest level of assistance will be furnished to those households that have the lowest incomes and the highest energy costs or needs in relation to income, taking into account family size. The LIHEAP statute identifies two groups of low-income households as having the "highest home energy needs."

- *Vulnerable Households*: Vulnerable households are those with at least one member that is a young child, an individual with disabilities, or a frail older individual. The

statute does not define the terms "young children," "individuals with disabilities[2]," and "frail older individuals." The concern is that such households face serious health risks if they do not have adequate heating or cooling in their homes. Health risks can include death from hypothermia or hyperthermia and increased susceptibility to other health conditions such as stroke and heart attacks**.**

- *High Burden Households*: High burden households are those households with the lowest incomes and highest home energy costs. The concern is that such households will face safety risks in trying to heat or cool their home if they cannot pay their heating or cooling bills**.** Safety risks can include use of makeshift heating sources or inoperative/faulty heating or cooling equipment that can lead to indoor fires, sickness, or asphyxiation**.**

B. National LIHEAP Performance Goals

Based on the national LIHEAP program goals, OCS has focused its initial performance goals and measurement on targeting income eligible vulnerable households and income eligible high burden households. OCS's performance plan focuses the LIHEAP program on "increasing the availability of LIHEAP fuel assistance to vulnerable and high-energy burden households whose health and/or safety are endangered by living in a home without sufficient heating or cooling." The explicit performance goals are:

- Increase the percent of LIHEAP recipient households having at least one member age 60 years or older.

- Increase the percent of LIHEAP recipient households having at least one member age 5 years or younger.

- Increase the percent of LIHEAP recipient households having the lowest incomes and the highest energy costs.

Baseline data for these targeting performance goals have been measured to provide a picture of the current status of recipiency targeting performance across the country. The baseline data serve as a starting point against which the degree of change in LIHEAP targeting can be measured and analyzed. The baseline data also provided a roadmap from which OCS can set realistic recipiency performance standards (a quantitative statement of the degree of desired change) for those parts of the country in which recipiency targeting performance can be improved.

[2]A person with a disability is defined as anyone 15 years of age or older who did not work or seek to work at any time during the past year due to being ill and unable to work, as reported on the March CPS. This definition does not take into account a household having a child with a disability or a disabled adult with a non-work related disability. However, this definition may not represent the definition used by individual states to determine disability, since the LIHEAP statute does not provide a procedure for identifying disabled households.

C. LIHEAP Performance Measures

Performance goals must be measurable in order to determine if the goals are being achieved. OCS has developed a set of performance indicators that will provide for the collection of quantitative measures regarding LIHEAP recipiency targeting performance. OCS's performance indicators facilitate tracking of recipiency targeting performance among regions and divisions. The resulting performance data allow OCS to enhance performance results by targeting its management initiatives to improve recipiency targeting performance.

1. Recipiency targeting index

To quantify recipiency targeting performance, OCS has defined a targeting performance indicator called the **recipiency targeting index**. The "recipiency targeting index" for a specific group of households is computed by comparing the percent of LIHEAP recipient households that are members of the target group to the percent of all income eligible households that are members of the target group. For example, if 25 percent of LIHEAP recipients are elderly households and 20 percent of all income eligible households are elderly, the recipiency targeting index for elderly households is 125 (100 times 25 divided by 20).

2. Benefit targeting indexes

To quantify LIHEAP benefit targeting performance, OCS has defined the following two targeting performance indicators:

- The **benefit targeting index** is computed by comparing the mean LIHEAP grant for a target group of recipients to the mean LIHEAP grant for all recipient households. For example, if elderly household recipients have a mean grant of $250 and the mean grant for all households is $200, the benefit targeting index is 125 (100 times $250 divided by $200).

- The **burden reduction targeting index** is computed by comparing the percent reduction in the median individual energy burden for a target group of recipients to the percent reduction in the median individual energy burden for all recipients.[3] For example, if elderly recipients have their energy burden reduced by 25 percent (e.g., from 8 percent of income to 6 percent of income) and all recipient households have their energy burden reduced by 20 percent (e.g., from 5 percent of income to 4 percent of income), the burden reduction targeting index is 125 (100 times 25 divided by 20).

[3] In general, the mean (or average) is preferred to the median (or midpoint), as it is more informative. LHEAP benefits are not highly skewed (or distorted) variables; therefore, mean benefits are used to compute the benefit targeting index. Because energy burden is a highly skewed statistic, the median energy burden, which is less affected by extreme values, is used to calculate the burden reduction index.

The benefit targeting index and the burden reduction targeting index are both useful indicators, but they measure the different aspects of benefit targeting.

- The benefit targeting index requires fewer data elements; it is a simple measure of how benefits for a particular group of recipient households compare to benefits for all recipient households.

- The burden reduction index is more comprehensive; it accounts for differences in both energy costs and benefit levels for the group of recipient households compared to energy costs and benefit levels for all households.

The LIHEAP GPRA plan has established performance goals only for recipiency targeting performance for elderly and young child households[4]. Since states do not use a consistent definition for categorizing disabled households, it is not possible to develop consistent measures of targeting performance for disabled households. Annual performance data are not available to measure benefit targeting performance. The study is focused on validation of the recipiency targeting performance measurement statistics.

D. Data Required to Compute Recipiency Targeting Indicators

The LIHEAP recipiency targeting index is computed using the following formulas:

- Recipiency Rate = Percent of LIHEAP households that are members of the target group.

- Population Rate = Percent of all income eligible households that are members of the target group.

- Recipiency Targeting Index = 100 * (Recipiency Rate/Population Rate)

For example, an analysis of LIHEAP recipiency targeting might show that 25 percent of LIHEAP recipients are elderly households and that 20 percent of all income eligible households are elderly. In this example, the Recipiency Rate is 25, the Population Rate is 20, and the Recipiency Targeting Index is 125 (100 * 25/20).

The LIHEAP recipiency targeting index is computed for a group and for a defined geographic area. A targeting index can be computed for households with a young child, for households with an elderly member, or even for households with no vulnerable members. A targeting index can be computed for an individual state, a group of states, and for the nation.

[4] OCS was unable to continue to measure LIHEAP targeting of high-energy burden households beyond FY 2001. Funds were unavailable for OCS to do a follow-up survey in FY 2002 with the LIHEAP sample households that were included in the 2001 RECS. Consequently, the performance measure related to targeting high energy burden households was dropped for FY 2002. Instead, OCS will use data from the 2001 RECS to evaluate whether LIHEAP is targeting to high energy burden vulnerable households, using actual home energy costs and LIHEAP benefit amounts.

The data elements needed to compute a recipiency targeting index for a target group in a geographic area are:

- Target Group Income Eligible Population – The number of target group LIHEAP income eligible households in a defined geographic area.
- Target Group Recipients – The number of target group LIHEAP recipient households in a defined geographic area.
- Population of Income Eligible Households– The number of all LIHEAP income eligible households in a defined geographic area.
- Population of LIHEAP Recipients – The number of all LIHEAP recipient households in a defined geographic area.

The purpose of this analysis is to find data sources that can furnish reliable data sources for the required data elements.

E. Validation of Recipiency Targeting Measurement Procedures

The purpose of this study is to assess the validity of using CPS data and administrative data to develop recipiency targeting indexes. The recipiency targeting indexes are currently being used by OCS in the national LIHEAP GPRA plan. It is important to ascertain the most reliable procedure for developing recipiency targeting measures.

In Section III, we examine the use of CPS data for the development of population estimates of households that are income eligible for LIHEAP, as well as the number of households in each vulnerable group that are income eligible for LIHEAP. In Section IV, we examine the use of CPS data and administrative data for the development of population estimates for households that received LIHEAP, as well as the number of households in each vulnerable group that received LIHEAP.

III. Estimating the Number of LIHEAP Income Eligible Households

The federal LIHEAP GPRA plan requires detailed estimates of the number of LIHEAP income eligible households. The number of income eligible households by demographic group is required to compute recipiency targeting indexes for vulnerable groups. The number of income eligible households by geographic area is required to support an analysis of how LIHEAP recipiency targeting varies across Census Regions, Census Divisions, and states. This section reviews alternative data sources and procedures for estimating the number of income eligible households. It recommends use of the CPS data to furnish estimates of the number of LIHEAP income eligible households by demographic group and geography.

A. Determination of Income Eligibility for LIHEAP

The federal LIHEAP statute sets a maximum income standard for participation in the LIHEAP program. The maximum income standard is computed as the greater of 150% of the HHS Poverty Guidelines and 60% of state median income. For most states, 60% of state median income is greater than 150% of poverty. Each year, HHS issues the HHS Poverty Guidelines and publishes estimates of the state median income for a family of four. These statistics are used to compute the federal maximum income standard for each state.

Each state sets its own LIHEAP eligibility determination procedures. The minimum income standard is 110 percent of the HHS Poverty Guidelines. The maximum income standard is defined by the federal maximum standard. Therefore, the number of households that are income eligible under the state guidelines may be less than the federal maximum standard.

In addition, each state sets its own procedures for determining the amount of income available to a household. Some states use prospective accounting (i.e., the "expected" amount of income in the future), while others use retrospective accounting (i.e., the actual amount of income in the past). Furthermore, each state sets its own accounting period; some states consider one month of income, others consider three months, and still others look at income for the year. In addition, some states count net total household income instead of gross total household income in determining LIHEAP income eligibility.

In this report, the number of LIHEAP income eligible households in a state refers to the number of households with annual incomes that are at or below the federal maximum income standard for the state. The total number of LIHEAP income eligible households in a geographic area refers to the count of all income eligible households for the states in that geographic area.

B. Data Sources to Estimate LIHEAP Income Eligible Households

To furnish estimates for LIHEAP income eligible households, a datafile must have household level data on gross income, household size, and the state of residence. In addition, the datafile must have information that can be used to determine a household's membership

in targeted groups (e.g., households with an elderly member, households with a disabled member, and/or households with a young child). The performance measurement plan compares the rates at which vulnerable households are served compared to nonvulnerable households.

A number of different data sources can be used to develop estimates of the LIHEAP income eligible population.

1. Decennial Census

The 2000 Census long form collected demographic information on a sample of about 17 percent of all households in the U.S. Sample files of individual household records are available in the 1-percent and 5-percent Public Use Microdata Samples (PUMS).

2. Current Population Survey – Annual Demographic File

Each year, the CPS Demographic Supplement (conducted by the Bureau of the Census) collects information from a sample of 80,000 households. The public use datafile is available about six months after the survey data are collected.

3. Residential Energy Consumption Survey

Once every four years, the RECS (conducted by the Energy Information Administration) collects information from a sample of 5,000 households. The RECS public use datafile is available about one year after the survey data are collected.

C. Appropriateness of Potential Data Sources

Each of the available datafiles has strengths and limitations with respect to the measurement of the number of LIHEAP income eligible households. For each datafile, we examine the frequency, the levels of geographic disaggregation, and the data elements available.

1. 2000 Census

Frequency: Once every ten years. Since the Census is administered every ten years it cannot be used to assess annual changes in targeting. (Note: The American Community Survey (ACS) – conducted by the Census Bureau - is being developed to furnish continuous Census information. Use of the ACS is limited at this time.)

Geographic Disaggregation: The 5% PUMS file can be used to furnish population and income estimates for sub state areas with at least 100,000 households.

Household Income: Total gross household income available from income question on the long form.

Household Size: The number of persons in the household is available from household roster questions.

Presence of Elderly Household Member: Available from household roster questions.

Presence of Disabled Household Member: Available from household roster questions on the long form

Presence of a Young Child: Available from household roster questions.

Summary: The 2000 Census long form sample available through the 5% PUMS file has all of the required data elements for sub state areas. However, information currently is available only for the year in which the Census is conducted.

2. CPS Annual Demographic File

Frequency: Annual

Geographic Disaggregation: Reliable estimates for Census Divisions, Census Regions, and the nation can be developed from one CPS. Three years of CPS data can be used to furnish population estimates for individual states using a three-year average.

Household Income: Total gross household income is available from a detailed series of income questions.

Household Size: The number of persons in the household is available from household roster questions.

Presence of Elderly Household Member: Available from household roster questions.

Presence of Disabled Household Member: Available from household roster questions.

Presence of a Young Child: Available from household roster questions.

Summary: The CPS has all of the required data elements. It can be used to develop national, regional, and divisional statistics annually. A three-year moving average can be used to furnish state-level statistics.

3. RECS

Frequency: The RECS is administered once every four years.

Geographic Disaggregation: The file can be used to furnish population estimates for Census Divisions, Census Regions, and the nation.

Household Income: Household gross income is reported in ranges from a single income question.

Household Size: Total number of persons in the household reported by respondent.

Presence of Elderly Household Member: Presence reported by respondent.

Presence of Disabled Household Member: Not available.

Presence of a Young Child: Presence reported by respondent.

Summary: The RECS does not have all of the required data elements. It is available once every four years. It can furnish national, regional, and divisional estimates for income eligible households. However, the estimates of income eligible households are higher than those obtained from the CPS.

The CPS furnishes the data most suited for estimation of the population of income eligible households. Annual data are available for Census Divisions, Regions, and the nation. High quality information is available on income, household size, and household vulnerability characteristics. In the future, it is possible that the ACS will furnish a reliable source of annual data for states and sub state areas.

D. Quality and Precision of CPS Estimates of Income Eligible Households

There are two types of errors that can make the survey data from the Current Population Survey different from estimates for the population – sampling error and nonsampling error. The range of probable sampling errors can be quantified. Nonsampling errors generally cannot be quantified. However, one can document the rate at which such errors are likely to occur.

CPS documentation furnishes information on how to compute standard errors for the CPS. Documentation from the March 2001 Supplement furnishes a formula for computing standard errors. From the March 2001 CPS, we calculate that 30,378,000 households were income eligible for the LIHEAP program. Using the formula, for example, we find that a 90% confidence interval for the number of income eligible households is about 640,000. So, we can say that we have 90% confidence that the number of households that are income eligible for LIHEAP in March 2001 was between 29,738,000 and 31,018,000.

Nonsampling error generally falls into four categories – sample frame coverage, survey nonresponse, item nonresponse, and item response errors. For all of the types of nonsampling error, the Census Bureau has worked to minimize the size of the nonsampling error and to make appropriate adjustments to the data when possible. For example, the coverage rate of the CPS sample frame is estimated to be about 92% of the population and the response rate of the survey is estimated to be 92% of the selected units. Both of these problems are partially mitigated through weighting procedures. Item nonresponse errors and item response errors are also kept to a minimum through good quality survey procedures. Item nonresponse problems are further mitigated through imputations.

Nonsampling errors can be expected to have a modest, but unquantifiable effect on the true count of LIHEAP income eligible households and on estimates of the characteristics of these households. Therefore, even when a change appears to be statistically significant, analysts should consider the possibility that nonsampling error, rather than a true change, resulted in the differences in the statistics between two years. For the time series analysis conducted here, it is appropriate then to look at sustained changes in population estimates, rather than year to year variation.

While many item response errors have been minimized, errors in reporting on assistance program participation have been particularly difficult to overcome. Population estimates for most public assistance programs from the CPS are considerably lower than population estimates from administrative statistics. This issue will be addressed in more detail in the discussion of developing estimates of LIHEAP recipients in Section IV.

E. National and Regional Estimates of LIHEAP Income Eligible Households

The tables below furnish estimates of the number of LIHEAP income eligible households for the years 1998 through 2002. The 1999 CPS was used in the development of baseline statistics for the LIHEAP GPRA plan. The 2002 CPS was the latest data available when this study was conducted. The statistics from 2000, 2001, and 2002 use the CPS weights based on the 2000 Census. Preliminary data files for the 2000 and 2001 CPS surveys were published using weights based on the 1990 Decennial Census.

These tables demonstrate that the CPS can be used to examine changes in the number and characteristics of LIHEAP income eligible households. The 90% confidence intervals can detect small changes (less than one half of 1 percent) in the LIHEAP income eligible population (less than one half of 1 percent). Further, the findings are consistent with observed economic trends.

Table 3-1 shows the number of LIHEAP income eligible households and the percent of the overall population that is LIHEAP income eligible.[5] This table shows that the number of LIHEAP income eligible households grew from 1999 through 2002, and that the percent of LIHEAP income eligible households increased significantly from 2001 to 2002. [Note: The 90% confidence interval for the percent of households that are LIHEAP income eligible is about 0.4%. The decrease in the percentage of households that are LIHEAP income eligible from 1998 to 1999 is statistically significant and the increase from 2001 to 2002 is statistically significant at the 90% level.]

[5] The tables in this section cover the years 1998 through 2002. At the time that the data analysis was completed for this study, the 2002 CPS was the latest data available.

Table 3-1. Number of LIHEAP income eligible households and percent of total population income eligible for LIHEAP, 1998 to 2002

Statistic	1998	1999	2000	2001	2002
Number LIHEAP Eligible	29,098,000	29,023,000	30,022,000	30,378,000	32,708,000
Percent of Population	28.4%	27.9%	28.2%	28.1%	29.9%

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, 2001, and 2002

Table 3-2 shows the number of LIHEAP income eligible households by Census Region and the percent of the households in each region that are income eligible for LIHEAP. In all regions, the number of LIHEAP income eligible households was higher by a statistically significant amount in 2002 than it was in 1998. The increase was about 10% for the Northeast, Midwest, and West, while it was about 15% for the South. For all regions except the Northeast, the rate of LIHEAP income eligible households was significantly higher in 2002 than it was in 1998.

Table 3-2. Number of LIHEAP income eligible households by Census Region and percent of households in each Census Region that are income eligible for LIHEAP, 1998 to 2002

Region		1998	1999	2000	2001	2002
Northeast	Number	6,066,000	6,239,000	6,490,000	6,396,000	6,621,000
	Percent	30.6%	31.4%	31.4%	30.4%	31.3%
Midwest	Number	6,510,000	6,369,000	6,669,000	6,667,000	7,283,000
	Percent	26.9%	26.0%	26.8%	26.4%	28.3%
South	Number	10,390,000	10,218,000	10,632,000	11,190,000	12,002,000
	Percent	28.4%	27.6%	28.0%	28.8%	30.7%
West	Number	6,132,000	6,197,000	6,231,000	6,125,000	6,802,000
	Percent	28.0%	27.5%	27.2%	26.5%	29.2%
US Total	Number	29,098,000	29,023,000	30,022,000	30,378,000	32,708,000
	Percent	28.4%	27.9%	28.2%	28.1%	29.9%

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, 2001, and 2002

Table 3-3 shows the number of LIHEAP income eligible households by Census Division and the percent of households in each division that are income eligible for LIHEAP. The statistics show that, for all divisions, the number of LIHEAP income eligible households was higher in 2002 than it was in 1998. The differences are statistically significant for all divisions except the West North Central division. The greatest increase in the number of LIHEAP income eligible households from 1998 to 2002 was experienced in the South Atlantic division, where there was over a 20% increase. The rate of LIHEAP income eligible households increased from 1998 to 2002 for all Census divisions except the West North Central division. The increase was statistically significant for the New England, East North Central, South Atlantic, East South Central, and Pacific divisions. For the east North Central division, the decrease in the percentage of households that were LIHEAP income

eligible from 1998 to 1999 and the increase in the percentage from 2001 to 2002 are both statistically significant at the 90% level.

Table 3-3. Number of LIHEAP income eligible households by Census Division and the percent of households in each Census Division that are income eligible for LIHEAP, 1998 to 2002

Division		1998	1999	2000	2001	2002
New England	Number	1,536,000	1,601,000	1,703,000	1,739,000	1,771,000
	Percent	29.2%	30.4%	30.8%	30.8%	30.9%
Mid Atlantic	Number	4,530,000	4,638,000	4,787,000	4,657,000	4,850,000
	Percent	31.1%	31.7%	31.6%	30.3%	31.5%
East North Central	Number	4,621,000	4,569,000	4,681,000	4,789,000	5,281,000
	Percent	27.1%	26.8%	27.0%	27.2%	29.3%
West North Central	Number	1,889,000	1,800,000	1,988,000	1,878,000	2,002,000
	Percent	26.2%	24.2%	26.2%	24.6%	26.0%
South Atlantic	Number	5,169,000	5,147,000	5,489,000	5,611,000	6,233,000
	Percent	27.2%	26.7%	27.5%	27.4%	29.9%
East South Central	Number	1,911,000	1,803,000	1,894,000	2,042,000	2,233,000
	Percent	29.5%	28.6%	29.0%	30.5%	33.2%
West South Central	Number	3,310,000	3,268,000	3,249,000	3,537,000	3,536,000
	Percent	29.8%	28.7%	28.3%	30.3%	30.5%
Mountain	Number	1,601,000	1,479,000	1,667,000	1,724,000	1,818,000
	Percent	25.6%	23.1%	24.8%	25.2%	26.3%
Pacific	Number	4,531,000	4,718,000	4,564,000	4,401,000	4,984,000
	Percent	28.9%	29.2%	28.2%	27.0%	30.5%
US Total	Number	29,098,000	29,023,000	30,022,000	30,378,000	32,708,000
	Percent	28.4%	27.9%	28.2%	28.1%	29.9%

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, 2001, and 2002

Table 3-4 shows the number of LIHEAP income eligible households by vulnerable group and the percent of households in the vulnerable group that is income eligible for LIHEAP. The number of elderly, disabled, and nonvulnerable households that are income eligible for LIHEAP grew significantly from 1998 to 2002; however, the number of households with young children present that are income eligible for LIHEAP did not change significantly. The increase was over 15% for elderly and nonvulnerable populations, while it was about 6% for disabled households. The percentage of households in each vulnerable group that is income eligible for LIHEAP increased for all vulnerable groups from 1998 to 2002. The increase in the rate of LIHEAP income eligible households is statistically significant for the elderly and nonvulnerable populations. Percentages total more than 100% since households may be counted in more than one vulnerability category.

Table 3-4. Number of LIHEAP income eligible households by vulnerable group and the percent of each vulnerable group that is income eligible for LIHEAP, 1998 to 2002

Vulnerable Group		1998	1999	2000	2001	2002
Elderly	Number	11,565,000	11,411,000	12,120,000	12,563,000	13,374,000
	Percent	38.3%	37.4%	38.0%	39.1%	41.1%
Disabled	Number	7,872,000	7,666,000	7,932,000	8,181,000	8,375,000
	Percent	51.4%	50.0%	50.0%	50.6%	51.9%
Young Child	Number	6,288,000	6,142,000	6,075,000	5,938,000	6,217,000
	Percent	36.0%	35.9%	35.4%	34.3%	36.3%
Nonvulnerable	Number	7,984,000	8,214,000	8,508,000	8,318,000	9,458,000
	Percent	16.4%	16.5%	16.8%	16.1%	17.9%
US Total	Number	29,098,000	29,023,000	30,022,000	30,378,000	32,708,000
	Percent	28.4%	27.9%	28.2%	28.1%	29.9%

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, 2001, and 2002

Table 3-5 shows the share of the LIHEAP income eligible population that is represented by each vulnerable group. The share of LIHEAP income eligible households that are elderly or nonvulnerable increased significantly from 1998 to 2002, while the share of disabled and young child LIHEAP income eligible households decreased by a statistically significant amount.

Table 3-5. Percent of LIHEAP income eligible households by vulnerable group, 1998 to 2002

Vulnerable Group	1998	1999	2000	2001	2002
Elderly	39.7%	39.3%	40.4%	41.4%	40.9%
Disabled	27.1%	26.4%	26.4%	26.9%	25.6%
Young Child	21.6%	21.2%	20.2%	19.5%	19.0%
Nonvulnerable	27.4%	28.3%	28.3%	27.4%	28.9%

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, 2001, and 2002

Table 3-6 shows the number of LIHEAP income eligible households by poverty group and the percent of the total United States population that is represented by each income eligible poverty group. The table shows that the share of the population with incomes below the HHS Poverty Guidelines was lower (by a statistically significant amount) in 2002 than it was in 1998. However, the growth in the share of the population that is income eligible for LIHEAP came as a result of a large increase in the share of households that have incomes above 150% of the HHS Poverty Guidelines, but below the Federal maximum LIHEAP income standard, which is the greater of 150% percent of the HHS Poverty Guidelines or 60% of state median income.

Table 3-6. Number of LIHEAP income eligible households by poverty group and the percent of the total U.S. population in each group, 1998 to 2002

Percent of Poverty Income Guideline		1998	1999	2000	2001	2002
LE 100%	Number	12,018,000	11,847,000	11,098,000	10,919,000	11,428,000
	Percent	11.7%	11.4%	10.4%	10.1%	10.5%
GT 100% and LE 150%	Number	9,760,000	9,586,000	9,842,000	9,607,000	10,233,000
	Percent	9.5%	9.2%	9.3%	8.9%	9.4%
GT 150%	Number	7,321,000	7,590,000	9,081,000	9,853,000	11,046,000
	Percent	7.1%	7.3%	8.5%	9.1%	10.1%
All LIHEAP Eligible Households	Number	29,098,000	29,023,000	30,022,000	30,378,000	32,708,000
	Percent	28.4%	27.9%	28.2%	28.1%	29.9%

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, 2001, and 2002

Table 3-7 shows the share of the LIHEAP income eligible population that is represented by each poverty group. In 1998, about 40% of the LIHEAP income eligible households had incomes below the HHS Poverty Guidelines, while about one-fourth had incomes greater than 150% of the HHS Poverty Guidelines. In 2002, this had changed considerably. Each poverty group represented about one-third of the LIHEAP income eligible population.

Table 3-7. Percent of LIHEAP income eligible households by poverty group, 1998 to 2002

Poverty Group	1998	1999	2000	2001	2002
LE 100%	41.3%	40.8%	37.0%	36.0%	34.9%
GT 100% and LE 150%	33.5%	33.0%	32.8%	31.7%	31.3%
GT 150%	25.2%	26.2%	30.3%	32.4%	33.8%
All LIHEAP Eligible	100.0%	100.0%	100.0%	100.0%	100.0%

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, 2001, and 2002

F. State-Level Estimates of LIHEAP Income eligible Households

The federal LIHEAP GPRA plan does not require measurement of the changes in recipiency targeting performance indicators at the state level. However, individual states may want to develop statistics on the number of LIHEAP income eligible households and the number of LIHEAP income eligible households in vulnerable groups to examine their own targeting performance. The CPS furnishes useful information for states. However, because the variances of state-level survey estimates are high, states should be cautious in the way that they use CPS survey estimates.

The Census Bureau publishes an annual report on poverty in the United States from each CPS. In that report, they publish a table with state-level estimates of poverty rates. In that table, they report a three-year moving average of poverty for the state. They use that approach for two reasons. First, by using a larger number of sampled households, they

reduce the confidence intervals of the estimates by about 25%. Second, by reporting on poverty over a three-year period they reduce the impact of one-time events on the poverty rate and furnish a better estimate of the core poverty rate for a state. Since the same logic can be applied to estimates of LIHEAP income eligible households, we recommend that state-level estimates on LIHEAP income eligible households be developed using the same procedures.

Table 3-8, on page 19, shows the estimated number of LIHEAP income eligible households by state using the three-year moving average approach. The table presents the averages for 1998-2000, 1999-2001, and 2000-2002, as well as the 90% confidence interval for 1998-2000 estimates. No state experienced a statistically significant decrease in the number of households that were income eligible for LIHEAP from 1998 to 2002. Twenty states saw a significant increase in the number of LIHEAP income eligible households from 1998 to 2002, ranging from a modest increase of 6% in Michigan to a nearly 30% increase in Maine. Overall, the states that experienced statistically significant gains from 1998 to 2002 saw an average increase of 13%, a figure that is in line with the increase in the number of LIHEAP income eligible households for the U.S. overall from 1998 to 2002.

Table 3-9, on page 20, shows the estimated number of elderly LIHEAP income eligible households by state using the three-year moving average approach. The table presents the averages for 1998-2000, 1999-2001, and 2000-2002, as well as the 90% confidence interval for 1998-2000 estimates. No state experienced a significant decrease in the number of elderly households that are LIHEAP income eligible from 1998 to 2002. 15 states saw an increase that is statistically significant at the 90% level, ranging from modest increases in New Jersey and Florida to more dramatic growth in Washington and Maine.

Table 3-10, on page 21, shows the estimated number of young child LIHEAP income eligible households by state using the three-year moving average approach. The table presents the averages for 1998-2000, 1999-2001, and 2000-2002, as well as the 90% confidence interval for 1998-2000 estimates. The number of young child households that are income eligible for LIHEAP decreased significantly for 1998-2002 in three states: California, New Hampshire, and Pennsylvania. The average decrease among the tree is 18%. Eight other states saw a statistically significant increase in the number of young child households that are LIHEAP income eligible, ranging from a 14% increase in North Carolina to an increase of 28% in Arkansas.

Table 3-11, on page 22, shows the estimated number of disabled LIHEAP income eligible households by state using the three-year moving average approach. The table presents the averages for 1998-2000, 1999-2001, and 2000-2002, as well as the 90% confidence interval for 1998-2000 estimates. Two states experienced a statistically significant drop from 1998 to 2002 in the number of disabled households that are income eligible for LIHEAP: New York and Ohio. The number of disabled households that are income eligible for LIHEAP increased by a statistically significant amount in 10 other states, ranging from a 12% increase in Pennsylvania to a greater than 30% increase in Utah.

Table 3-12, on page 23, shows the estimated number of nonvulnerable LIHEAP income eligible households by state using the three-year moving average approach. The table presents the averages for 1998-2000, 1999-2001, and 2000-2002, as well as the 90% confidence interval for 1998-2000 estimates. From 1998-2002, there was a statistically significant increase in the number of nonvulnerable households that are income eligible for LIHEAP in eight states, with an average increase of about 20%. The number of nonvulnerable household that are income eligible for LIHEAP in Arkansas dropped by about a quarter from 1998 to 2002.

Table 3-8. Three-year average of the number of households income eligible (federal maximum standard) for LIHEAP for the periods 1998-2000, 1999-2001, and 2000-2002, and the 90% confidence interval for the 1998-2000 statistic

State	FY1999	FY2000	FY2001	90% Confidence Interval, 1998-2000
Alabama	500,000	514,000	553,000	+/-40,609
Alaska	56,000	54,000	54,000	+/-5,252
Arizona	467,000	458,000	483,000	+/-38,435
Arkansas	313,000	313,000	322,000	+/-24,645
California	3,573,000	3,467,000	3,463,000	+/-130,150
Colorado	349,000	389,000	428,000	+/-32,469
Connecticut	417,000	434,000	420,000	+/-37,022
Delaware	77,000	83,000	80,000	+/-7,425
Dist of Columbia	73,000	75,000	78,000	+/-6,306
Florida	1,651,000	1,673,000	1,863,000	+/-74,754
Georgia	791,000	808,000	867,000	+/-60,628
Hawaii	128,000	118,000	119,000	+/-12,234
Idaho	119,000	121,000	122,000	+/-10,025
Illinois	1,260,000	1,277,000	1,346,000	+/-65,459
Indiana	581,000	624,000	679,000	+/-51,301
Iowa	279,000	273,000	295,000	+/-25,365
Kansas	273,000	284,000	293,000	+/-23,893
Kentucky	421,000	439,000	464,000	+/-35,714
Louisiana	497,000	536,000	557,000	+/-39,270
Maine	121,000	127,000	150,000	+/-11,893
Maryland	483,000	517,000	570,000	+/-46,681
Massachusetts	765,000	806,000	831,000	+/-45,451
Michigan	1,047,000	1,037,000	1,110,000	+/-57,040
Minnesota	460,000	459,000	483,000	+/-40,864
Mississippi	336,000	337,000	365,000	+/-26,542
Missouri	551,000	536,000	555,000	+/-49,928
Montana	98,000	94,000	104,000	+/-7,845
Nebraska	178,000	186,000	178,000	+/-15,645
Nevada	170,000	168,000	180,000	+/-15,522
New Hampshire	117,000	118,000	126,000	+/-12,083
New Jersey	913,000	956,000	1,006,000	+/-49,802
New Mexico	189,000	194,000	194,000	+/-15,629
New York	2,353,000	2,338,000	2,336,000	+/-85,889
North Carolina	870,000	922,000	953,000	+/-52,351
North Dakota	76,000	78,000	77,000	+/-6,278
Ohio	1,243,000	1,238,000	1,263,000	+/-65,644
Oklahoma	356,000	369,000	388,000	+/-28,698
Oregon	330,000	342,000	350,000	+/-30,574
Pennsylvania	1,385,000	1,399,000	1,423,000	+/-67,423
Rhode Island	132,000	135,000	142,000	+/-11,389
South Carolina	429,000	443,000	447,000	+/-37,560
South Dakota	74,000	75,000	75,000	+/-6,349
Tennessee	612,000	623,000	675,000	+/-52,235
Texas	2,109,000	2,133,000	2,174,000	+/-94,713
Utah	139,000	151,000	172,000	+/-13,814
Vermont	61,000	62,000	68,000	+/-5,904
Virginia	656,000	666,000	689,000	+/-56,461
Washington	517,000	580,000	663,000	+/-50,395
West Virginia	238,000	230,000	229,000	+/-17,277
Wisconsin	494,000	503,000	519,000	+/-43,992
Wyoming	52,000	50,000	52,000	+/-4,412
All US	29,381,000	29,808,000	31,036,000	+/-459,789

Table 3-9. Three-year average of the number of elderly households income eligible (federal maximum standard) for LIHEAP for the periods 1998-2000, 1999-2001, and 2000-2002, and the 90% confidence interval for the 1998-2000 statistic

State	FY1999	FY2000	FY2001	90% Confidence Interval, 1998-2000
Alabama	205,000	206,000	211,000	+/-25,845
Alaska	11,000	11,000	12,000	+/-2,325
Arizona	145,000	142,000	158,000	+/-21,275
Arkansas	134,000	140,000	143,000	+/-16,066
California	1,142,000	1,140,000	1,177,000	+/-70,254
Colorado	120,000	136,000	151,000	+/-18,949
Connecticut	189,000	202,000	199,000	+/-24,807
Delaware	36,000	38,000	36,000	+/-5,072
Dist of Columbia	27,000	29,000	30,000	+/-3,831
Florida	750,000	755,000	855,000	+/-49,489
Georgia	229,000	266,000	310,000	+/-32,249
Hawaii	48,000	44,000	43,000	+/-7,479
Idaho	42,000	43,000	46,000	+/-5,946
Illinois	521,000	515,000	543,000	+/-41,470
Indiana	259,000	282,000	315,000	+/-34,026
Iowa	113,000	116,000	127,000	+/-16,087
Kansas	107,000	115,000	123,000	+/-14,907
Kentucky	170,000	179,000	189,000	+/-22,578
Louisiana	201,000	208,000	211,000	+/-24,822
Maine	53,000	63,000	78,000	+/-7,860
Maryland	236,000	259,000	281,000	+/-32,465
Massachusetts	338,000	363,000	391,000	+/-29,949
Michigan	438,000	438,000	471,000	+/-36,441
Minnesota	209,000	205,000	199,000	+/-27,403
Mississippi	133,000	136,000	135,000	+/-16,629
Missouri	236,000	223,000	229,000	+/-32,465
Montana	31,000	30,000	36,000	+/-4,406
Nebraska	80,000	81,000	76,000	+/-10,467
Nevada	68,000	67,000	74,000	+/-9,796
New Hampshire	56,000	56,000	64,000	+/-8,349
New Jersey	424,000	447,000	474,000	+/-33,603
New Mexico	63,000	70,000	73,000	+/-9,000
New York	994,000	986,000	991,000	+/-54,362
North Carolina	364,000	380,000	392,000	+/-33,515
North Dakota	33,000	33,000	34,000	+/-4,133
Ohio	504,000	506,000	527,000	+/-41,182
Oklahoma	149,000	154,000	160,000	+/-18,487
Oregon	111,000	115,000	120,000	+/-17,652
Pennsylvania	661,000	650,000	674,000	+/-45,908
Rhode Island	72,000	70,000	74,000	+/-8,401
South Carolina	185,000	195,000	200,000	+/-24,542
South Dakota	28,000	31,000	34,000	+/-3,902
Tennessee	212,000	242,000	264,000	+/-30,492
Texas	719,000	748,000	771,000	+/-53,805
Utah	46,000	51,000	55,000	+/-7,931
Vermont	25,000	26,000	29,000	+/-3,777
Virginia	288,000	306,000	316,000	+/-37,130
Washington	160,000	200,000	245,000	+/-27,830
West Virginia	107,000	103,000	100,000	+/-11,553
Wisconsin	206,000	207,000	214,000	+/-28,240
Wyoming	21,000	21,000	23,000	+/-2,802
All US	11,699,000	12,031,000	12,686,000	+/-237,200

Table 3-10. Three-year average of the number of young child households income eligible (federal maximum standard) for LIHEAP for the periods 1998-2000, 1999-2001, and 2000-2002, and the 90% confidence interval for the 1998-2000 statistic

State	FY1999	FY2000	FY2001	90% Confidence Interval, 1998-2000
Alabama	91,000	95,000	111,000	+/-17,179
Alaska	17,000	17,000	17,000	+/-2,891
Arizona	124,000	118,000	120,000	+/-19,665
Arkansas	54,000	55,000	69,000	+/-10,182
California	1,008,000	955,000	891,000	+/-65,828
Colorado	68,000	77,000	82,000	+/-14,249
Connecticut	56,000	69,000	71,000	+/-13,466
Delaware	17,000	18,000	16,000	+/-3,484
Dist of Columbia	12,000	12,000	12,000	+/-2,553
Florida	289,000	277,000	288,000	+/-30,432
Georgia	201,000	200,000	202,000	+/-30,195
Hawaii	34,000	31,000	28,000	+/-6,293
Idaho	36,000	32,000	31,000	+/-5,504
Illinois	274,000	273,000	266,000	+/-29,922
Indiana	100,000	100,000	112,000	+/-21,073
Iowa	55,000	52,000	52,000	+/-11,210
Kansas	53,000	48,000	51,000	+/-10,480
Kentucky	76,000	78,000	78,000	+/-15,066
Louisiana	100,000	114,000	120,000	+/-17,471
Maine	18,000	17,000	17,000	+/-4,577
Maryland	83,000	75,000	76,000	+/-19,192
Massachusetts	113,000	124,000	124,000	+/-17,236
Michigan	202,000	186,000	192,000	+/-24,627
Minnesota	76,000	70,000	74,000	+/-16,479
Mississippi	70,000	75,000	85,000	+/-12,048
Missouri	124,000	119,000	113,000	+/-23,478
Montana	22,000	21,000	22,000	+/-3,711
Nebraska	32,000	35,000	30,000	+/-6,613
Nevada	39,000	38,000	40,000	+/-7,414
New Hampshire	26,000	22,000	18,000	+/-5,685
New Jersey	146,000	157,000	160,000	+/-19,606
New Mexico	49,000	43,000	43,000	+/-7,935
New York	448,000	429,000	418,000	+/-36,094
North Carolina	164,000	172,000	187,000	+/-22,404
North Dakota	13,000	14,000	13,000	+/-2,593
Ohio	253,000	248,000	250,000	+/-29,027
Oklahoma	56,000	59,000	70,000	+/-11,312
Oregon	79,000	80,000	72,000	+/-14,882
Pennsylvania	232,000	218,000	204,000	+/-26,959
Rhode Island	21,000	19,000	20,000	+/-4,532
South Carolina	82,000	82,000	80,000	+/-16,304
South Dakota	12,000	12,000	11,000	+/-2,553
Tennessee	135,000	114,000	121,000	+/-24,293
Texas	575,000	560,000	560,000	+/-47,976
Utah	44,000	48,000	53,000	+/-7,757
Vermont	10,000	11,000	11,000	+/-2,388
Virginia	115,000	110,000	107,000	+/-23,379
Washington	118,000	122,000	138,000	+/-23,879
West Virginia	41,000	42,000	41,000	+/-7,142
Wisconsin	92,000	95,000	99,000	+/-18,828
Wyoming	12,000	11,000	11,000	+/-2,117
All US	6,168,000	6,052,000	6,077,000	+/-158,304

Table 3-11. Three-year average of the number of disabled households income eligible (federal maximum standard) for LIHEAP for the periods 1998-2000, 1999-2001, and 2000-2002, and the 90% confidence interval for the 1998-2000 statistic

State	FY1999	FY2000	FY2001	90% Confidence Interval, 1998-2000
Alabama	198,000	197,000	218,000	+/-25,396
Alaska	11,000	10,000	12,000	+/-2,325
Arizona	104,000	100,000	102,000	+/-18,002
Arkansas	120,000	125,000	125,000	+/-15,199
California	859,000	857,000	864,000	+/-60,586
Colorado	80,000	78,000	84,000	+/-15,459
Connecticut	96,000	99,000	85,000	+/-17,646
Delaware	20,000	20,000	21,000	+/-3,780
Dist of Columbia	22,000	22,000	20,000	+/-3,458
Florida	404,000	406,000	434,000	+/-36,066
Georgia	244,000	249,000	257,000	+/-33,298
Hawaii	25,000	23,000	25,000	+/-5,395
Idaho	22,000	20,000	21,000	+/-4,302
Illinois	299,000	295,000	313,000	+/-31,273
Indiana	145,000	155,000	156,000	+/-25,399
Iowa	37,000	39,000	47,000	+/-9,191
Kansas	56,000	64,000	69,000	+/-10,773
Kentucky	169,000	168,000	178,000	+/-22,511
Louisiana	181,000	184,000	188,000	+/-23,545
Maine	36,000	37,000	46,000	+/-6,475
Maryland	119,000	123,000	106,000	+/-22,997
Massachusetts	189,000	195,000	210,000	+/-22,327
Michigan	288,000	319,000	332,000	+/-29,458
Minnesota	85,000	84,000	90,000	+/-17,431
Mississippi	130,000	130,000	136,000	+/-16,439
Missouri	133,000	130,000	135,000	+/-24,320
Montana	22,000	20,000	21,000	+/-3,711
Nebraska	38,000	36,000	33,000	+/-7,208
Nevada	38,000	36,000	39,000	+/-7,319
New Hampshire	26,000	28,000	32,000	+/-5,685
New Jersey	181,000	199,000	232,000	+/-21,845
New Mexico	45,000	46,000	49,000	+/-7,603
New York	727,000	723,000	679,000	+/-46,242
North Carolina	276,000	299,000	304,000	+/-29,131
North Dakota	11,000	12,000	12,000	+/-2,385
Ohio	359,000	330,000	319,000	+/-34,653
Oklahoma	117,000	117,000	116,000	+/-16,371
Oregon	70,000	73,000	77,000	+/-14,006
Pennsylvania	356,000	380,000	399,000	+/-33,481
Rhode Island	41,000	42,000	42,000	+/-6,335
South Carolina	128,000	138,000	148,000	+/-20,390
South Dakota	16,000	15,000	15,000	+/-2,949
Tennessee	202,000	215,000	240,000	+/-29,758
Texas	526,000	508,000	512,000	+/-45,840
Utah	24,000	27,000	32,000	+/-5,726
Vermont	15,000	16,000	16,000	+/-2,925
Virginia	192,000	186,000	205,000	+/-30,256
Washington	118,000	136,000	145,000	+/-23,879
West Virginia	94,000	92,000	94,000	+/-10,826
Wisconsin	114,000	112,000	119,000	+/-20,968
Wyoming	12,000	10,000	11,000	+/-2,117
All US	7,823,000	7,926,000	8,163,000	+/-183,116

Table 3-12. Three-year average of the number of nonvulnerable households income eligible (federal maximum standard) for LIHEAP for the periods 1998-2000, 1999-2001, and 2000-2002, and the 90% confidence interval for the 1998-2000 statistic

State	1998-2000	1999-2001	2000-2002	90% Confidence Interval, 1998-2000
Alabama	132,000	134,000	145,000	+/-20,707
Alaska	22,000	20,000	19,000	+/-3,289
Arizona	149,000	149,000	156,000	+/-21,568
Arkansas	83,000	71,000	62,000	+/-12,631
California	1,106,000	1,045,000	1,070,000	+/-69,089
Colorado	119,000	135,000	151,000	+/-18,870
Connecticut	114,000	107,000	110,000	+/-19,237
Delaware	17,000	20,000	21,000	+/-3,484
Dist of Columbia	24,000	24,000	27,000	+/-3,612
Florida	444,000	459,000	523,000	+/-37,841
Georgia	236,000	227,000	246,000	+/-32,743
Hawaii	38,000	37,000	41,000	+/-6,653
Idaho	34,000	39,000	36,000	+/-5,349
Illinois	332,000	355,000	394,000	+/-32,976
Indiana	162,000	172,000	180,000	+/-26,857
Iowa	93,000	86,000	91,000	+/-14,588
Kansas	90,000	90,000	85,000	+/-13,667
Kentucky	100,000	104,000	110,000	+/-17,291
Louisiana	130,000	145,000	148,000	+/-19,933
Maine	32,000	30,000	32,000	+/-6,105
Maryland	122,000	140,000	171,000	+/-23,287
Massachusetts	219,000	229,000	225,000	+/-24,048
Michigan	271,000	262,000	284,000	+/-28,566
Minnesota	138,000	142,000	160,000	+/-22,234
Mississippi	83,000	80,000	95,000	+/-13,123
Missouri	142,000	150,000	162,000	+/-25,134
Montana	34,000	32,000	36,000	+/-4,615
Nebraska	51,000	56,000	57,000	+/-8,352
Nevada	50,000	52,000	56,000	+/-8,397
New Hampshire	25,000	27,000	28,000	+/-5,575
New Jersey	267,000	268,000	272,000	+/-26,580
New Mexico	60,000	64,000	61,000	+/-8,782
New York	606,000	607,000	630,000	+/-42,115
North Carolina	227,000	254,000	258,000	+/-26,392
North Dakota	24,000	25,000	25,000	+/-3,524
Ohio	322,000	329,000	337,000	+/-32,794
Oklahoma	95,000	100,000	106,000	+/-14,745
Oregon	106,000	113,000	116,000	+/-17,248
Pennsylvania	342,000	353,000	358,000	+/-32,807
Rhode Island	24,000	26,000	29,000	+/-4,845
South Carolina	116,000	111,000	110,000	+/-19,405
South Dakota	25,000	23,000	22,000	+/-3,687
Tennessee	172,000	163,000	177,000	+/-27,442
Texas	644,000	656,000	670,000	+/-50,844
Utah	42,000	43,000	49,000	+/-7,578
Vermont	20,000	18,000	21,000	+/-3,377
Virginia	180,000	183,000	186,000	+/-29,288
Washington	169,000	179,000	203,000	+/-28,607
West Virginia	48,000	46,000	45,000	+/-7,728
Wisconsin	142,000	151,000	151,000	+/-23,415
Wyoming	14,000	15,000	15,000	+/-2,287
All US	8,235,000	8,347,000	8,761,000	+/-189,091

IV. Estimating the Number of LIHEAP Recipient Households

The federal LIHEAP GPRA plan requires detailed estimates of the number of LIHEAP recipient households. The number of recipient households by demographic group is required to compute recipiency targeting indexes for vulnerable groups. The number of recipient households by geographic area is required to support an analysis of how LIHEAP targeting varies across Census Regions, Census Divisions, and states. This section reviews alternative data sources and procedures for estimating the number of LIHEAP recipient households. It recommends use of the administrative data to furnish estimates of the number of LIHEAP recipient households by demographic group and geography.

A. LIHEAP Recipient Households – Definitional and Measurement Challenges

In general, we can define LIHEAP recipient households as those that receive energy assistance grants funded by LIHEAP. However, several factors make it difficult to obtain reliable information on LIHEAP recipients from either a household survey or from administrative data. Since states often offer more than one kind of energy assistance, it can be difficult to get an unduplicated count of recipients from administrative statistics. And, since there are energy assistance grants that are not funded by LIHEAP, it is possible to get false positive responses to survey questions about receipt of LIHEAP. Finally, households generally underreport participation in public assistance programs on surveys. These challenges make it difficult to find any good source of information on the characteristics of LIHEAP recipients.

1. Types of Assistance

Grantees use funds from the federal LIHEAP program for a range of services, including:

- *Heating Programs*: Assistance with home heating bills during the winter heating season.
- *Cooling Programs*: Assistance with home cooling bills during the summer cooling season.
- *Crisis Assistance*: Assistance with heating or cooling bills to ameliorate a home energy crisis.
- *Weatherization*: Assistance in reducing the heating or cooling consumption of a home through installation of usage reduction measures in the home.

Some grantees offer only one type of assistance, while others offer two or more types of assistance. Some grantees allow a household to receive only one type of assistance (e.g., either a regular grant or a crisis grant) while others allow a household to receive

more than one type of assistance under certain circumstances. If a state had a consolidated and automated system for assistance, they could furnish administrative statistics on the characteristics of LIHEAP recipients. However, few states have systems that are capable of generating unduplicated statistics across different types of energy assistance.

2. Sources of Funding

In addition to LIHEAP funding, grantees may have funding for energy assistance from other sources, including:

- *State Funds*: Some states have special funds that supplement the benefits available from LIHEAP.
- *Rate-Based Funds*: Some grantees have supplemental funds that are furnished through system benefit charges associated with regulated utilities.

In addition to programs run by grantees, there are often energy assistance programs run by other organizations. Some of these include:

- *Utility Programs*: Assistance programs offered by the utility company.
- *Rates Programs*: Special utility rates offered by the utility company or the public service commission.
- *Private Fuel Funds*: Special funds that raise money to pay utility bills.
- *FEMA*: The Federal Emergency Management Agency furnishes grants to local agencies that can use those grants to help pay household utility bills.
- *Emergency TANF*: Sometimes TANF makes emergency payments to avert the shutoff of utility services.

With all of these different programs, it is difficult for households to know whether they are receiving LIHEAP benefits and respond accurately to survey questions.

3. Survey Response Errors

Respondents to household surveys generally underreport participation in public assistance programs. Even with a high quality survey such as the CPS, households fail to report the receipt of public assistance benefits. In the 2001 RECS, a special supplement of 500 LIHEAP recipients was interviewed. These households were listed in state LIHEAP databases, but 14% of the respondents reported that they did not receive energy assistance, 1% reported that they did not know if they received LIHEAP benefits, and 1% refused to report whether they received LIHEAP benefits. Household

survey estimates of LIHEAP recipients are expected to be lower than administrative counts of LIHEAP recipients.

The RECS survey also demonstrates that there appear to be false positive responses to reports of energy assistance[6]. At the state level, there are a number of energy assistance programs that are not funded by LIHEAP and, for most programs there is no way for the respondent to know whether the assistance is funded by LIHEAP. In the 2001 RECS, the weighted count of households reporting receipt of LIHEAP was approximately the same as the national estimate of the number of LIHEAP heating assistance recipients. Since the LIHEAP supplement showed that 16 percent of recipients failed to report LIHEAP recipiency, we infer that the false positive rate for the RECS survey was approximately the same percentage as the false negative rate.

B. Data Sources for LIHEAP Recipient Households

Data sources for LIHEAP recipient households must have household level data on LIHEAP recipiency and information that can be used to determine a household's vulnerability status, or the data source must explicitly report LIHEAP recipiency by household vulnerability status. CPS data and State LIHEAP administrative reports have such information.

1. Current Population Survey – Annual Demographic File

Frequency and Timing: The CPS Demographic File is conducted annually and is available just after the end of the federal fiscal year.

Weighted Count of LIHEAP Recipients: The CPS has a question on receipt of LIHEAP heating assistance.

Weighted Count of Vulnerable Recipients: The CPS has high quality data on the household's vulnerability status.

Limitations: A comparison of CPS estimates of recipients to administrative statistics shows that the CPS undercounts LIHEAP participation. (Note: Most household surveys undercount participation in public benefit programs – e.g., Food Stamp Program participants were undercounted by about 30% and TANF recipients, by about 25% in the 2002 CPS Demographic File.)

[6]Receipt of energy assistance was determined using responses to the following question from the 2001 RECS: "The government has a home energy assistance program, often called HEAP, LIHEAP, or HEAT, that helps people pay for their heating, cooling, and other home energy costs. These programs are run by State, county, or local governments and the assistance can be paid directly to the household or to the electric or gas company or fuel supplier. If heat is included in a household's rent, the payment can be used to help reduce the rent. During the past 12 months did anyone in your household receive government assistance for any of the following: Help in paying home heating costs? Help in paying home cooling or air-conditioning costs? Help with other home energy costs?" 2001 RECS, Energy Information Administration, U.S. Department of Energy.

2. Administrative Data on Recipients

Frequency and Timing: State recipient characteristics reports are due to HHS three months after the end of the fiscal year.

Count of LIHEAP Recipients: Each state furnishes an annual LIHEAP Household Report to the federal government on the number of LIHEAP recipients by program type and by demographic characteristics (i.e., heating assistance, cooling assistance, and crisis assistance). For the remainder of this report, we will refer to the state reports as administrative data.

Count of Vulnerable Recipients: State reports furnish information on vulnerable households. The reports are consistent in the characterization of elderly and young child households. However, each state develops its own definition of disabled households.

Limitations: In states where households can get more than one kind of benefit that furnishes assistance with heating costs, the state administrative reports may not furnish an unduplicated count of recipients. The estimate of disabled LIHEAP recipient households from state reports is not consistent with the CPS estimate of disabled LIHEAP income eligible households because states are free to develop their own definition for "disabled" households.

Both CPS data and state administrative reports furnish estimates of LIHEAP recipients that can be used to compute recipiency targeting indicators. However, each data source has limitations. If a comparison between administrative data and CPS data shows that they are consistent, CPS data would be preferred because they are more timely and allow for more complex data manipulation. However, the validation study finds that estimates from the two data sources are not consistent.

C. Comparison of Recipient Estimates from CPS and Administrative Reports

The validation study compares both the counts of LIHEAP recipients and the share of LIHEAP recipients in vulnerable groups. The analysis shows that the CPS undercounts recipients and the rate at which it undercounts recipients varies by year. The analysis also shows that the CPS estimates a different demographic profile for recipients from administrative statistics.

1. Counts of LIHEAP Recipients

The first row of Table 4-1 shows the number of LIHEAP heating assistance recipients reported for each fiscal year from state administrative reports.[7] This statistic is heating assistance recipients only. While the administrative count of heating assistance recipients is

[7] The tables in this section cover the years 1998 through 2001. At the time the data analysis was completed for this study, the 2001 state administrative data was the latest available.

an undercount of LIHEAP recipients (some households receive other types of assistance benefits), it furnishes a convenient measure of the CPS undercount. However, the undercount presented in the tables is the minimum undercount rate. The second row of Table 4-1 shows the estimated number of households that reported receiving energy assistance on the CPS. Given the large fluctuations in state administrative reports, the much smaller variation in CPS estimates are of some concern. The ratio in the third row of Table 4-1 shows that the undercount was about 30% in 1998, but was 43% in 2001. [Note: These differences are statistically significant.]

Table 4-1. Number of LIHEAP heating assistance recipient households from the CPS and from state administrative reports, 1998 to 2001

Data Source	1998	1999	2000	2001
Administrative Data	3,635,000	3,123,000	3,604,000	4,380,000
CPS Data	2,528,000	2,274,000	2,211,000	2,492,000
Ratio of Estimates	69.5%	72.8%	61.3%	56.9%
Regular Appropriation	$1.000	$1.100	$1.100	$1.400
Emergency Appropriation	$0.160	$0.180	$0.744	$0.456
Total Funding (billions)	$1.160	$1.128	$1.844	$1.856

Rows four through six of Table 4-1 shows the appropriation levels for LIHEAP. The number of heating assistance recipients in the state data reports shows some consistency with the size of the regular appropriation.

2. Demographic Characteristics of LIHEAP Recipients

The LIHEAP GPRA plan requires estimates of the number of LIHEAP recipient households with an elderly person and LIHEAP recipient households with a young child. Table 4-2 shows the count of elderly recipients from administrative statistics and from the CPS. Table 4-3 shows the count of young child recipients from administrative statistics and from the CPS.

Comparing the ratio of estimates in Table 4.2 to those in Table 4.1 shows that the ratio of estimates is higher for elderly households than for all households. This means that elderly recipients are more likely to report LIHEAP recipiency than all households.

Table 4-2. Number of elderly LIHEAP heating assistance recipient households from the CPS and from state administrative reports, 1998 to 2001

Data Source	1998	1999	2000	2001
Administrative Data	1,171,000	1,030,000	1,267,000	1,404,000
CPS Data	858,000	786,000	770,000	916,000
Ratio of Estimates	73.3%	76.3%	60.8%	65.2%

Comparing the ratio of estimates in Table 4.3 to those in Table 4.1 shows that the ratio of estimates is about the same for young child households as for the average household. This means that young child households report LIHEAP recipiency at about the same rate as other households. [Note: Since there are problems with the administrative statistics from 1998 and 1999, the estimates of the undercount for these years are less reliable than those for other household types.]

Table 4-3. Number of young child LIHEAP heating assistance recipient households from the CPS and from state administrative reports, 1998 to 2001

Data Source	1998	1999	2000	2001
Administrative Data	763,000	825,000	809,000	952,000
CPS Data	633,000	554,000	509,000	539,000
Ratio of Estimates	83.0%	67.2%	62.9%	56.6%

In the recipiency targeting analysis, we compare reported recipiency rates for each group to compute the targeting index. If elderly households are more likely to report recipiency than other groups, the targeting index for elderly households is inflated and it appears that elderly households are targeted at a higher rate than they are actually targeted.

D. Comparison of Targeting Indexes from Administrative Data and CPS

The goal of the study is to ascertain the best way to develop LIHEAP targeting performance statistics. CPS weighted counts are lower than counts derived from administrative data. However, if the targeting indexes derived from the estimates are within sampling tolerances, the CPS data would be preferred because it is more timely and versatile. However, the study demonstrates that the two data sources yield quite different information about LIHEAP targeting. Further, it appears that the administrative data furnish a more accurate picture of targeting performance. During the period from 1998 to 2001, there were considerable differences from year to year in the way that funds were distributed. These variations are likely to have a large impact on program targeting. The administrative data reflect those changes, while the CPS data show only minor changes in targeting statistics.

Table 4-4 shows the elderly targeting index for the years 1998 to 2001. The administrative data show a significant increase in targeting from 1998 to 1999 and from 1999 to 2000. The administrative data show a significant reduction in the targeting index between 2000 and 2001. Preliminary statistics from 2002 suggest that the reduction in the targeting index for elderly households persisted in 2002. The CPS data, however, show no statistically significant change in targeting.

Table 4-4. Elderly Targeting Indexes comparing CPS recipient counts to administrative data recipient counts, 1998 to 2001

Data Source	1998	1999	2000	2001
Administrative Data Index	81	84	87	78
90% CI of AD Index	+/-0.7	+/-0.7	+/-0.8	+/-0.6
CPS Data Index	85	88	86	89
90% CI of CPS Index	+/-4.6	+/-5	+/-5	+/-3.1
Ratio of Estimates	105%	105%	99%	115%

Table 4-5 shows the young child targeting index for the years 1998 to 2001. The administrative data index shows significant changes in targeting between 1998 and 1999, and between 1999 and 2000. The CPS data show no statistically significant changes for the analysis period. [Note: Since there are problems with the administrative statistics from 1998 and 1999, the estimates of the undercount for these years are less reliable than those for other household types.]

Table 4-5. Young Child Targeting Indexes comparing CPS recipient counts to administrative data recipient counts, 1998 to 2001

Data Source	1998	1999	2000	2001
Administrative Data Index	97	125	111	111
90% CI of AD Index	+/-0.6	+/-0.7	+/-0.6	+/-0.4
CPS Data Index	116	115	114	111
90% CI of CPS Index	+/-7.3	+/-7.8	+/-8.2	+/-5.5
Ratio of Estimates	119%	92%	103%	100%

V. Findings and Recommendations

The purpose of the LIHEAP Performance Measurement Validation Study is to identify data sources that could furnish reliable estimates of recipiency targeting performance measurement indexes for elderly households and for young child households. The study showed that CPS data are the best data source for making estimates of the number of LIHEAP income eligible households and the administrative data are the best data source for making estimates of LIHEAP recipient households. This section reviews the procedures that must be employed for using each data source to develop the recipiency targeting indexes and furnishes estimates of the changes in recipiency targeting indexes for the analysis period.

A. Estimates of Income Eligible Households

The study recommends that CPS data should continue to be used to develop estimates of income eligible households. The recipiency targeting measure in the LIHEAP GPRA plan looks at recipiency targeting performance for households at or below the federal maximum income standard. Starting with the CPS microdata file, each sample case should be assigned an income threshold based on household size and state of residence. The reported gross annual income for the household should be compared to the threshold to determine whether the household is income eligible for LIHEAP.

The targeting measure in the LIHEAP GPRA plan looks at targeting performance for elderly households and young child households. A household is categorized as elderly if one or more of the household members is 60 years or older. A household is categorized as young child if one or more of the household members is 5 years or younger. For each sample case, the person records should be searched to assess the presence of an elderly household member or a young child.

Table 5-1 shows the estimated number of LIHEAP income eligible households (federal maximum standard), income eligible elderly households, and income eligible young child households for the analysis period.

Table 5-1. Weighted count of LIHEAP income eligible households (federal maximum standard), income eligible elderly households, and income eligible child households, 1998-2001.

Group	1998	1999	2000	2001
Elderly	11,565,000	11,411,000	12,120,000	12,563,000
Young Child	6,288,000	6,142,000	6,075,000	5,938,000
U.S. Total	29,098,000	29,023,000	30,022,000	30,378,000

B. Estimates of Recipient Households

The study recommends that administrative data be used to develop estimates of recipient households. The targeting indicator in the LIHEAP GPRA plan looks at targeting performance for elderly households and young child households. States are required to report a household as elderly to the federal government if one or more of the household members is 60 years or older. States are required to report a household as young child if one or more of the household members is 5 years or younger. However, states furnish counts of elderly recipients and young child recipients for each of their program components, not an unduplicated count of recipients for all programs.

A large share of the program resources is used to fund heating assistance benefits. In addition, programs may require that a household apply for a regular assistance benefit prior to applying for an emergency grant. So, one procedure for estimating the number of recipients would be to use the report for regular heating assistance benefits. A more precise estimate of the characteristics of LHEAP recipients could be obtained by directly examining procedures for each state and collecting supplemental data from states where a household can receive other types of grants without receiving a regular heating assistance grant. [Note: This could be accomplished by taking a sample of households that receive other types of assistance benefits, identifying which do not receive heating assistance benefits, and using the sample data to characterize households that receive only the other type of assistance.

The LIHEAP GPRA plan requires reliable data on changes in the targeting indexes over time. One quality control step that will enhance the reliability of state administrative data is to explicitly check state data reports for year-to-year variations in data. For example, one check might be to compare the percentage of LIHEAP recipients that are elderly from the current year report to the prior year report. In the event that the current year report percentage is five percentage points higher or lower than the prior year report, the state would be contacted to discuss what program changes might have led to such a change.

There are several drawbacks to using state administrative data to estimate LIHEAP recipients. CPS data are available just after the end of the fiscal year, while state reports are not available until several months after the end of the federal fiscal year. Therefore using state administrative data introduces a longer data lag than using CPS data alone. Moreover, state administrative data provides only limited analysis options compared to CPS data.

Table 5-2 shows the estimated number of LIHEAP recipient households, elderly recipient households, and young child recipient households for the analysis period.

Table 5-2. Count of LIHEAP recipient households, elderly recipient households, and young child recipient households, 1998-2001.

Group	1998	1999	2000	2001
Elderly	1,171,000	1,030,000	1,267,000	1,404,000
Young Child	763,000	825,000	810,000	952,000
U.S. Total	3,642,000	3,339,000	3,604,000	4,380,000

C. National, Regional, and Divisional Targeting Indexes

The targeting index is the performance indicator specified in the LIHEAP GPRA plan. The targeting performance goal is to increase the national elderly and young child targeting indicators. In addition to the national targeting indicators, regional and divisional targeting indicators are useful to understand what sections of the country need assistance in the development of outreach procedures for elderly and young child households.

The targeting indicators in the LIHEAP GPRA plan focuses on targeting for households at or below the federal maximum income standard. However, many states have set lower maximum income standards to accommodate the goal of targeting LIHEAP benefits to the lowest income, highest burden households. The performance measurement system should compute a set of targeting indexes using the federal maximum standard and another set using the state maximum standards to better understand how state restrictions affect the targeting performance of the LIHEAP program, as shown in Tables 5-3 and 5-4.

Tables 5-3 and 5-4 show the estimated targeting indexes for elderly households and for young child households at the national level. Table 5-3 uses the federal maximum standard to count income eligible households and Table 5-4 uses the state maximum income standards. Using the state maximum income standards consistently produces estimated targeting indexes that are higher than those created using the federal maximum standard for elderly households. For households with at least one young child, using the state maximum standards consistently produces lower targeting indexes than are created using the federal maximum standard. Elderly households tend to be smaller in size than households with young children and, therefore, many elderly households that are income eligible for LIHEAP under the federal maximum standard may not be eligible under the lower state maximum standards.

Table 5.3. LIHEAP recipiency targeting indexes (federal maximum standard) for elderly households and young child households, 1998-2001.

Group	1998	1999	2000	2001
Elderly	81	84	87	78
Young Child	97	125	111	111

Table 5.4. LIHEAP recipiency targeting indexes (state maximum standards) for elderly households and young child households, 1998-2001.

Group	1998	1999	2000	2001
Elderly	86	89	93	80
Young Child	89	115	103	105

The 90 percent confidence interval for the targeting statistics for 1998 through 2000 is about 1.5 index points; the targeting index would have to increase by 1.5 or more points to be considered statistically significant. Starting in 2001, the sample for the CPS was expanded. The 90 percent confidence interval for the targeting index was reduced to about 1 index point.

Tables showing the targeting indexes at the regional and divisional level are included in Appendix A. On average, the 90 percent confidence interval for regional targeting indexes is about 3.0 index points and for divisional targeting indexes about 4.5 index points.

D. State Targeting Indexes

It is useful for a state to compute targeting indexes to get a general understanding of the targeting effectiveness for their programs and to be able to compare their programs to programs in other states. However, states need to be cautious when using targeting index statistics. For 1998 through 2000, the 90 percent confidence interval for the targeting index for an average state is about 10 index points. Using a three-year average targeting index can reduce the 90 percent confidence interval to about 7.5 index points. Further, with the expanded sample for 2001 and later CPS surveys, the 90 confidence interval for the three-year average is reduced to about 5 index points. However, since these data furnish a three-year average, a state cannot use these data to examine one-year changes in targeting that result from program changes.

Tables showing the three-year average targeting indexes for states are included in Appendix B.

E. Recommendations

The current LIHEAP GPRA plan (See Appendix C) specifies use of the CPS Annual Demographic file to estimate the number of LIHEAP income eligible households and the number of LIHEAP recipient households. The plan calls for the use of the CPS for LIHEAP recipient data because it is more timely and more flexible than the data furnished to OCS in the state household reports. The Validation Study demonstrates that the CPS data furnish the best information for developing estimates of LIHEAP eligible households. However, the Validation Study demonstrates that the targeting indexes for LIHEAP recipient characteristics from the CPS are not consistent with the targeting indexes for LIHEAP heating assistance recipient characteristics from state household reports.

Since the CPS undercounts the number of recipient households compared to state reports, it can be inferred that there is nonsampling error associated with the CPS estimates of the characteristics of LIHEAP recipient households. As such, the CPS data do not furnish valid estimates of the LIHEAP recipiency targeting indexes for elderly and young child households. So, the Validation Study recommends changing the performance measurement plan for estimating LIHEAP recipiency targeting indexes.

Several data options are available for LIHEAP performance measurement.

- State household reports: The performance measurement statistics could be computed using recipient characteristics data from the LIHEAP state household reports. This would improve the estimates of targeting for vulnerable households. However, the data would not support measurement of targeting for non-vulnerable households. As a result, the performance goals would need to be changed to refer only to targeting of vulnerable households, with no reference to the rates for non-vulnerable households. (See performance goals 7.3a and 7.3b in Appendix C.) One additional problem with this approach is that the information needed to make estimates of targeting would be delayed by at least six months compared to the current plan.

- Revised state household reports: The reason that current LIHEAP state household reports do not allow OCS to estimate targeting for non-vulnerable households is because there is allowable duplication among the reports of vulnerable households (i.e., many elderly households are also classified as disabled). A change in the LIHEAP state household reporting procedures to request information for the count of nonelderly disabled households, that is households not having an elderly or disabled member, or a young child, would substantially eliminate the duplication of vulnerable households and would thereby allow OCS to develop estimates of non-vulnerable households. These revisions would allow the LIHEAP program to maintain the existing performance goals.

- LIHEAP Recipient Survey: In 2003, the National Energy Assistance Directors Association (NEADA) conducted the National Energy Assistance Survey with a representative sample of LIHEAP recipients. This survey developed national and regional estimates of the count of vulnerable and non-vulnerable LIHEAP recipients. If a LIHEAP Recipient Survey were conducted at the end of each LIHEAP fiscal year, the data could be used to support the development of the targeting performance measures for vulnerable and non-vulnerable households. In addition, the 2003 survey developed LIHEAP program impact measures that would furnish additional performance data to measure LIHEAP program outcomes. Finally, if the survey were administered immediately following the end of the fiscal year, the timing of performance measurement would be consistent with the current plan.

- CPS Matching: The nonsampling error in the CPS estimates of vulnerable and non-vulnerable households results from response error with respect to the reporting of LIHEAP program participation. Another alternative is to identify LIHEAP recipient respondents to the CPS by asking the Census Bureau to match a national list of LIHEAP recipients to the file of CPS respondents. This would improve the quality of the CPS estimates by eliminating the need for self-reported LIHEAP recipiency data, but would require the LIHEAP program to require states to report the names and addresses of all LIHEAP recipients.

This study finds that the second and third options offer the LIHEAP program the best alternatives for improving LIHEAP targeting performance measurement. Revising the

LIHEAP state household reports would be a relatively low cost alternative and would improve measurement of the existing set of performance measures. Fielding a LIHEAP Recipient Survey would be expensive to implement, but would both improve the measurement of the existing set of performance measures and would allow the LIHEAP program to consider other, more meaningful outcome measures for the program.

The CPS continues to be the most appropriate data source for LIHEAP income eligibility data. It is timely and has all the required data elements to characterize the LIHEAP eligible population.

Appendix A: LIHEAP Recipiency Targeting Indexes by Census Region and Division

To quantify recipiency targeting performance, OCS has defined a targeting performance indicator called the **recipiency targeting index**. The "recipiency targeting index" for a specific group of households is computed by comparing the percent of LIHEAP recipient households that are members of the target group to the percent of all income eligible households that are members of the target group. The LIHEAP recipiency targeting index is computed using the following formulas:

- Recipiency Rate = Percent of LIHEAP households that are members of the target group.
- Population Rate = Percent of all income eligible households that are members of the target group.
- Recipiency Targeting Index = 100 * (Recipiency Rate/Population Rate)

For example, an analysis of LIHEAP recipiency targeting might show that 25 percent of LIHEAP recipients are elderly households and that 20 percent of all income eligible households are elderly. In this example, the Recipiency Rate is 25, the Population Rate is 20, and the Recipiency Targeting Index is 125 (100 * 25/20).

The LIHEAP recipiency targeting index is computed for a group and for a defined geographic area. A targeting index can be computed for households with a young child, for households with an elderly member, or even for households with no vulnerable members. A targeting index can be computed for an individual state, a group of states, and for the nation.

Table A-1. LIHEAP recipiency targeting indexes for elderly households and young child households by Census region, 1998 to 2001.

Region		1998	1999	2000	2001
Northeast	Elderly	69	65	78	73
	Young Child	60	150	138	131
Midwest	Elderly	78	79	82	74
	Young Child	167	123	114	132
South	Elderly	87	98	93	79
	Young Child	88	100	110	99
West	Elderly	86	95	92	79
	Young Child	73	164	95	91
All U.S.	Elderly	81	84	87	77
	Young Child	97	125	111	111

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, and 2001

Table A-2. LIHEAP recipiency targeting indexes for elderly households and young child households by Census division, 1998 to 2001.

Division		1998	1999	2000	2001
New England	Elderly	71	75	76	75
	Young Child	179	160	151	130
Mid Atlantic	Elderly	69	61	79	73
	Young Child	33	147	135	131
East North Central	Elderly	76	83	84	77
	Young Child	171	124	103	122
West North Central	Elderly	82	72	75	69
	Young Child	151	121	143	161
South Atlantic	Elderly	77	98	87	85
	Young Child	98	115	128	131
East South Central	Elderly	99	89	97	55
	Young Child	86	92	114	75
West South Central	Elderly	110	103	107	99
	Young Child	78	78	72	72
Mountain	Elderly	90	88	83	78
	Young Child	50	129	112	121
Pacific	Elderly	83	98	98	80
	Young Child	89	192	88	71
All U.S.	Elderly	81	84	87	77
	Young Child	97	125	111	111

Source: March Demographic Supplement from the Current Population Surveys for 1998, 1999, 2000, and 2001

Appendix B: LIHEAP Recipiency Targeting Indexes by State

To quantify recipiency targeting performance, OCS has defined a targeting performance indicator called the **recipiency targeting index**. The "recipiency targeting index" for a specific group of households is computed by comparing the percent of LIHEAP recipient households that are members of the target group to the percent of all income eligible households that are members of the target group. The LIHEAP recipiency targeting index is computed using the following formulas:

- Recipiency Rate = Percent of LIHEAP households that are members of the target group.
- Population Rate = Percent of all income eligible households that are members of the target group.
- Recipiency Targeting Index = 100 * (Recipiency Rate/Population Rate)

For example, an analysis of LIHEAP recipiency targeting might show that 25 percent of LIHEAP recipients are elderly households and that 20 percent of all income eligible households are elderly. In this example, the Recipiency Rate is 25, the Population Rate is 20, and the Recipiency Targeting Index is 125 (100 * 25/20).

The LIHEAP recipiency targeting index is computed for a group and for a defined geographic area. A targeting index can be computed for households with a young child, for households with an elderly member, or even for households with no vulnerable members. A targeting index can be computed for an individual state, a group of states, and for the nation.

It is useful for a state to compute targeting indexes to get a general understanding of the targeting effectiveness for their programs and to be able to compare their programs to programs in other states. However, states need to be cautious when using targeting index statistics. For 1998 through 2000, the 90 percent confidence interval for the targeting index for an average state is about 10 index points. Using a three-year average targeting index can reduce the 90 percent confidence interval to about 7.5 index points. Further, with the expanded sample for 2001 and later CPS surveys, the 90 confidence interval for the three-year average is reduced to about 5 index points. However, since these data furnish a three-year average, a state cannot use these data to examine one-year changes in targeting that result from program changes.

Table B-1. LIHEAP recipiency targeting indexes for elderly households by state, 1998 to 2001.

State	1998-2000	1999-2001	2000-2002
Alabama	87	85	94
Alaska	92	100	94
Arizona	39	41	38
Arkansas	85	95	87
California	122	125	111
Colorado	78	79	75
Connecticut	62	53	67
Delaware	68	72	80
Dist of Columbia	110	106	104
Florida	79	58	75
Georgia	191	151	121
Hawaii	84	88	110
Idaho	90	93	80
Illinois	47	48	60
Indiana	77	72	68
Iowa	92	86	76
Kansas	99	96	80
Kentucky	62	75	1
Louisiana	94	120	87
Maine	97	102	100
Maryland	70	72	74
Massachusetts	75	75	73
Michigan	93	90	83
Minnesota	77	73	73
Mississippi	115	122	112
Missouri	64	66	64
Montana	79	79	74
Nebraska	30	31	32
Nevada	198	202	189
New Hampshire	68	67	63
New Jersey	47	100	53
New Mexico	98	96	71
New York	65	81	75
North Carolina	91	74	73
North Dakota	66	66	58
Ohio	85	89	87
Oklahoma	90	95	91
Oregon	91	94	78
Pennsylvania	--	69	69
Rhode Island	45	97	68
South Carolina	131	133	131
South Dakota	109	108	88
Tennessee	140	141	120
Texas	121	93	104
Utah	74	76	77
Vermont	71	72	70
Virginia	84	81	82
Washington	49	42	38
West Virginia	65	62	60
Wisconsin	84	85	79
Wyoming	59	57	56
All US	77	87	78

Source: March Demographic Supplement from the Current Population Surveys for 1997, 1998, 1999, 2000, 2001, and 2002

Table B-2. LIHEAP recipiency targeting indexes for young child households by state, 1998 to 2001.

State	1998-2000	1999-2001	2000-2002
Alabama	129	138	122
Alaska	81	81	88
Arizona	72	118	68
Arkansas	93	57	81
California	279	74	78
Colorado	249	118	134
Connecticut	200	188	139
Delaware	112	97	167
Dist of Columbia	160	160	166
Florida	159	167	162
Georgia	64	66	77
Hawaii	105	96	102
Idaho	140	105	113
Illinois	157	156	148
Indiana	167	154	158
Iowa	84	134	144
Kansas	94	105	155
Kentucky	107	138	82
Louisiana	92	93	---
Maine	193	84	110
Maryland	137	152	165
Massachusetts	158	146	147
Michigan	99	108	116
Minnesota	151	172	167
Mississippi	68	91	68
Missouri	108	105	116
Montana	142	133	155
Nebraska	298	285	318
Nevada	86	79	76
New Hampshire	111	127	168
New Jersey	163	112	156
New Mexico	92	89	127
New York	142	132	117
North Carolina	140	171	159
North Dakota	188	145	152
Ohio	130	63	91
Oklahoma	115	103	96
Oregon	102	105	---
Pennsylvania	---	136	146
Rhode Island	190	157	139
South Carolina	60	58	119
South Dakota	119	113	142
Tennessee	74	59	---
Texas	79	106	92
Utah	69	103	108
Vermont	121	91	130
Virginia	117	121	124
Washington	134	137	142
West Virginia	124	119	133
Wisconsin	114	119	125
Wyoming	150	123	134
All US	118	110	111

Source: March Demographic Supplement from the Current Population Surveys for 1997, 1998, 1999, 2000, 2001, and 2002

Table B-3. LIHEAP recipiency targeting indexes for disabled households by state, 1998 to 2001.

State	1998-2000	1999-2001	2000-2002
Alabama	73	84	81
Alaska	100	122	112
Arizona	190	218	213
Arkansas	135	125	113
California	165	167	149
Colorado	150	178	149
Connecticut	138	115	137
Delaware	19	22	22
Dist of Columbia	51	50	57
Florida	64	51	79
Georgia	103	90	129
Hawaii	78	103	105
Idaho	245	293	264
Illinois	121	132	120
Indiana	128	133	136
Iowa	331	326	274
Kansas	181	168	194
Kentucky	88	127	115
Louisiana	66	96	113
Maine	116	110	96
Maryland	64	72	93
Massachusetts	57	61	61
Michigan	52	47	48
Minnesota	27	107	84
Mississippi	73	77	94
Missouri	113	117	114
Montana	142	165	168
Nebraska	93	103	103
Nevada	353	373	356
New Hampshire	149	128	113
New Jersey	73	197	66
New Mexico	158	163	133
New York	144	103	106
North Carolina	77	72	109
North Dakota	163	161	143
Ohio	139	151	112
Oklahoma	68	78	84
Oregon	144	147	119
Pennsylvania	---	98	91
Rhode Island	76	72	71
South Carolina	102	98	85
South Dakota	125	138	11
Tennessee	193	176	163
Texas	191	198	210
Utah	204	216	212
Vermont	75	77	85
Virginia	153	149	156
Washington	96	94	91
West Virginia	125	127	122
Wisconsin	152	98	149
Wyoming	113	124	126
All US	111	115	112

Source: March Demographic Supplement from the Current Population Surveys for1997, 1998, 1999, 2000, 2001, and 2002

Appendix C: LIHEAP GPRA Performance Plan and Report for FY 2005

LOW-INCOME HOME ENERGY ASSISTANCE (LIHEAP)

PROGRAM DESCRIPTION AND CONTEXT

The purpose of LIHEAP is to assist low-income households, particularly those with the lowest income that pay a high proportion of household income for home energy, in meeting their immediate home energy needs. LIHEAP is a block grant program providing grantees with flexibility to determine how to implement or target their programs. LIHEAP is not an entitlement program.

States, Federally or State-recognized Indian Tribes/Tribal organizations, and Insular Areas receive Federal LIHEAP block grants to provide the following types of LIHEAP assistance at the community level:

- heating or cooling benefits (i.e., fuel subsidies) to increase the affordability of recipients to heat or cool their homes;
- energy crisis intervention to assist recipients to cope with weather-related and supply-shortage home energy emergencies, and other household energy-related emergencies; and
- low-cost residential weatherization and other energy-related home repairs.

Approximately 4.1 million households received heating assistance in FY 2002. This represents about 15 percent of all households with incomes under the maximum Federal LIHEAP income standard (29.9 million households) in FY 2002.

Grantees are required by law to conduct outreach activities designed to assure that eligible households are made aware of LIHEAP assistance. The LIHEAP statute specifies that the following two groups of households are especially made aware of LIHEAP assistance:

- The first group includes households with frail older individuals, individuals with disabilities, or very young children (**vulnerable households**). These households are vulnerable to serious health risks if their homes are too cold in the winter or too hot in the summer.

  Of the 4.1 million households receiving heating assistance in FY 2002, approximately 1.4 million households had at least one member 60 years or old; approximately 0.9 million of these households had at least one child 5 years or under. Some of these households contained both an elderly person and a young child. Although available, State data on households with disabled members are not comparable as each State can use its own definition of "disabled."

- The second group includes households with the lowest incomes and highest home energy costs (**high-energy burden households**). These households can face serious safety risks if their homes are too cold in the winter or too hot in the summer.

  We do not know the number of high-energy burden households that comprise those households receiving heating assistance. We do know that an estimated 10.4 million income-eligible households had home energy burdens of 5 percent or more and 4.3 million households had home energy burdens of 10 percent or more in FY 2001. The average home energy burden for non low income households was close to 1 percent in FY 2001.

The extent to which the two priority groups of households receive LIHEAP assistance serves as a proxy for the following health and safety outcomes:

- **Health Outcome**: The program targets LIHEAP assistance to protect those low income households that are vulnerable to serious health risks if their homes are too cold in the winter or too hot in the summer. Such risks can include life threatening illness or death from hypothermia or hyperthermia and increased susceptibility to other health conditions, including strokes and heart attacks.
- **Safety Outcome**: The program targets LIHEAP assistance to protect those low income, high-energy burden households that face serious safety risks if homes are too cold in the winter or too hot in the summer. Such risks can include the use of makeshift heating sources or inoperative/faulty heating or cooling equipment that can cause fires or asphyxiation.

Program Partnerships

In addition to the outreach efforts of LIHEAP grantees, partnerships at the Federal level can play an important role in directing LIHEAP outreach information down to the community level. OCS has developed partnerships with national organizations and Federal programs to support dissemination of LIHEAP outreach information to priority households. Existing partnerships include the following:

- The National Energy Assistance Directors' Association (NEADA), which has its own LIHEAP outreach campaign.
- OCS' Community Services Block Grant Program (CSBG) delivers a range of community-based services to low income individuals through Community Action Agencies. A number of these agencies serve low-income vulnerable households through various Federal funds. The LIHEAP statute requires LIHEAP grantees to conduct outreach activities to assure that eligible households are made aware of any similar energy-related assistance under CSBG.
- The Department of Energy's (DOE) Low Income Weatherization Assistance Program (WAP) is mandated to target vulnerable households.
- The Administration on Aging reaches elderly households and the Head Start Bureau reaches households with young children through their community-based programs.

PROGRAM PERFORMANCE ANALYSIS

Summary Table

Performance Measures	**Targets**	**Actual Performance***	**Reference (relevant Strategic Goal in the HHS Strategic Plan)**
PROGRAM GOAL: Increase the availability of LIHEAP fuel assistance to vulnerable and high-energy burden households whose health and/or safety is endangered by living in a home without sufficient heating or cooling.			
7.3a. Increase the targeting index of LIHEAP recipient households having at least one member 60 years or older compared to non-vulnerable LIHEAP recipient households. [O]	FY 05: TBD FY 05: TBD FY 04: TBD	FY 05: 12/05 FY 04: 12/04 FY 03: 90:63 (Baseline) FY 02: 91:64 (Baseline) FY 01: 89:58 (Baseline)	HHS 1
7.3b.Increase the targeting index of LIHEAP recipient households having at least one member 5 years or under compared to non-vulnerable LIHEAP recipient households. [O]	FY 05: TBD FY 04: TBD	FY 05: 12/05 FY 04: 12/04 FY 03: 120:63 (Baseline) FY 02: 109:64 (Baseline) FY 01: 111:58 (Baseline)	HHS 1
COSTS ASSOCIATED WITH MEASURES 7.3a and b **% of Full Costs** **FY 2003: 10%** **FY 2004: 12%** **FY 2005: 12%** **Other**: FY 2003: 90%(Block grants to States and Tribes to provide energy assistance to eligible households) FY 2004-2005: 88% (Block grants to States and Tribes to provide energy assistance to eligible households)			
7.3c. Increase the amount of nonfederal energy assistance resources leveraged through the LIHEAP leveraging incentive program. [O]	FY 05: TBD	FY 05: TBD FY 04: TBD (Baseline) FY 03: TBD (Baseline) FY 02: $1.322 B (Baseline) FY 01: $1.142 B (Baseline)	HHS 1 **EFFICIENCY MEASURE**
Total Funding **See detailed Budget Linkage Table in Appendix A-10 for line items included in funding totals.**	FY 05: $2010.0 FY 04: $2000.0 FY 03: $1788.3 FY 02: $2000.0 FY 01: $1855.7 FY 00: $1844.4 FY 99: $1275.3	Bx: budget just. section Px: page # performance plan	

*****Targeting index values have been recalibrated to ensure comparable population weights across years, to increase the accuracy in nonvulnerability calculations, and to decrease underreporting of LIHEAP recipiency on the Bureau of the Census' Annual Demographic File of the Current Population Survey.

Summary of Program Performance

The U.S. Administration for Children and Families' Office of Community Services (OCS) developed a LIHEAP a national LIHEAP education campaign to improve LIHEAP program performance. OCS joined with the Administration on Aging (AoA) to launch the national campaign in November 2003. The purpose of the campaign is to increase the awareness of the availability of energy assistance to low-income elderly persons. OCS decided not to include young children as part of the campaign because baseline data indicate that overall LIHEAP is serving households with young children at a high incident rate (see above Summary Table).

As part of the project, ACF developed in the fall 2003 a generic LIHEAP brochure that includes information about the need for eligible vulnerable and high energy-burden households to receive energy assistance. OCS distributed 121,000 copies of the brochure in November 2003 through AoA. A limited number of copies were distributed through AoA's national network. A larger number of copies were distributed to AoA's network of states that baseline data indicated have been underserving eligible elderly households.

OCS originally had planned to initiate the education campaign prior to the winter of 2002-03. As the result of the delay, OCS now has baseline data for FY 2001 – FY 2003.

a) ***Data Quality****: The recipiency targeting index (hereafter referred to as the "targeting index") relies on the use of national household survey data from the Bureau of the Census' Annual Demographic File of the Current Population Survey (CPS). These data present the following problems:*

- The reliability of household survey data is subject to sampling and non-sampling errors. Consequently, differences in data from one year to the next, between groups of households, and sections of the country need to be tested for statistical significance.
- Household survey data on public assistance programs undercount the number of assisted households when compared to state-reported data. Likewise, the number of LIHEAP recipient households is undercounted when compared to aggregate data from the program's *LIHEAP Household Report*. The undercount may bias the CPS weighted estimates of the percentage of vulnerable households that received LIHEAP heating assistance. To check for bias, the CPS percentages from the Annual Demographic File will be compared against data on vulnerable households from the *LIHEAP Household Report*. The data comparisons may result in adjustments to the CPS data.
- Verification of State-reported data on LIHEAP-recipient households is difficult. There are no Federal quality control or audit requirements for data reported in *the* States' *LIHEAP Household Report*.

Data Availability: OCS has been collecting data from the Annual Demographic File of the CPS on vulnerable households and the receipt of energy assistance. Data are generally available 6-7 months after the survey is conducted.

Table Linking Investments to Outcomes

The table below does not include the cost of Federal staff time.

Investments*	**Activity**	**Outputs**	**Outcomes**
$14,000	Development of brochure	50,000 copies produced and disseminated	Vulnerable households will be made aware of their susceptibility to energy-related health and safety issues and the availability of LIHEAP fuel assistance.
$5,000	Technical assistance on measuring LIHEAP targeting performance, using CPS and RECS data	LIHEAP targeting indexes	Improved targeting indexes in underserved Census divisions for vulnerable households compared to nonvulnerable households
$10,000	Technical assistance on assessing the statistical reliability and validity of targeting indexes	Reliability and validity assessment	Determination of whether LIHEAP targeting indexes can be used for managing for results.

*When integrating budget and performance information, ACF programs were encouraged to identify primary investments used to accomplish program outcomes. Some ACF programs focused primarily on training and technical assistance resources, while others included all budget activities.

Measure by Measure Presentation of Performance

The effect of the LIHEAP educational campaign will be examined for vulnerable households using the targeting indexes calculated from the Annual Demographic File of the 2004 CPS. The results, computed for various parts of the country, will be used to adjust the dissemination of the LIHEAP brochures, as indicated by the targeting indexes. OCS will use the targeting index to determine in which Census divisions vulnerable households are under-served. This data will assist OCS in directing or targeting the dissemination of the LIHEAP brochures to various parts of the country.

The reliability of the targeting indexes needs to be assessed before this information can be used to manage the program. The analysis, to be completed in spring 2004, will examine the variability in the targeting indexes for FY 2001 - 2003.

State LIHEAP grantees report annually on the number of LIHEAP assisted households with at least one member who is elderly, disabled, or 5 years of age or younger. (A recipiency targeting index can be calculated for households having a disabled member. However the usefulness of the index is limited by the fact that States define disability differently.) Table 8.3-2 shows the national percent of assisted households nationally for FY 1999-2002 that included elderly members or young children. The variability in this data from year to year will need to be examined as part of the validation study.

Table 7.3. Percent of LIHEAP heating assisted households containing at least one elderly member or young child, as reported by States, fiscal years 1999-2002

Type of vulnerable household member	FY 99	FY 00	FY 01	FY 02
Elderly*	33%	35%	32%	33%
Young children**	33%	25%	22%	23%

*An elderly member is a person who is 60 years or older.
**A young child is a person who is under six years of age. Data on households with a young child were not as reliable for FY 99 due to reporting problems, and should be used with caution.

PROGRAM GOAL - HEALTH AND SAFETY: Increase the availability of LIHEAP fuel assistance to vulnerable and high-energy burden households whose health and safety is endangered by living in a home without sufficient heating and cooling.

Given the legal mandate for LIHEAP targeting, the targeting index is a meaningful and valid measure in that it allows one to determine whether the program is serving each of the two priority groups at a greater rate than other eligible households.

7.3a. Increase the targeting index of LIHEAP recipient households having at least one member 60 years or older compared to non-vulnerable LIHEAP recipient households.
(Data Source: Bureau of the Census' Annual Demographic File of the Current Population Survey)

7.3b. Increase the targeting index of LIHEAP recipient households having at least one member 5 years or younger compared to non-vulnerable LIHEAP recipient households.
(Data Source: Bureau of the Census' Annual Demographic File of the Current Population Survey)

OCS has developed the LIHEAP **recipiency targeting index t**o measure LIHEAP targeting performance**.** The index allows one to determine whether the program is serving eligible households with the highest energy costs or needs at a higher rate than other eligible households. The recipiency targeting index for a specific group of households is computed by comparing the percent of an eligible target group that received LIHEAP benefits to the percent of all eligible households that received LIHEAP benefits. For example, if 25 percent of eligible elderly households are served, but only 20 percent of all eligible households are served, the recipiency

targeting index for elderly households is 125 (100 times 25 divided by 20). This would indicate that elderly households are served at a 25 percent higher rate than all eligible households. Determining if there are parts of the country where the targeting index of non-vulnerable households is greater than the targeting index of vulnerable households has particular relevance to the targeting project. Also, we will examine whether the difference between a higher targeting index of vulnerable households and a lower non-vulnerable household index was increasing over time as the result of Federal LIHEAP outreach targeting.

OCS is using data from the 2001 RECS to evaluate the extent to which LIHEAP assistance is being targeted to high energy burden households, using actual home energy costs and LIHEAP benefit amounts. In addition, the evaluation will allow OCS to examine the overlap between vulnerable households and high-energy burden households. The degree of overlap could affect the comparison of targeting indexes for vulnerable households and non-vulnerable households if a large number of high energy burden households are being counted as non-vulnerable households. The results of the evaluation study will be available in the summer 2004.

Developmental Measures

7.3c. **FY 2003:** Increase the amount of nonfederal energy assistance resources leveraged through the LIHEAP leveraging incentive program. ***(Baseline data is FY 2001.)***

LIHEAP leveraging incentive funds reward grantees that add private or non-federal public resources to provide home energy benefits to low income households beyond what could be provided with federal resources. Under the statute, grantees desiring leveraging incentive funds must submit a report to HHS each fiscal year that quantifies the amount of leveraging accomplished by the grantee the prior fiscal year, less any costs incurred by the grantee to leverage such resources and any costs imposed on federally eligible households. Leveraging incentive funds are awarded for activities that took place in the prior fiscal year (e.g., leveraging activities that occurred in FY 2003 would be the basis for making leveraging incentive grant awards in FY 2004). This efficiency measure will be further refined in our discussions with OMB.