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STATEMENT OF

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BEFORE THE

SUBCOMMITTEE ON CENSUS AND POPULATION

COMMITTEE ON POST OFFICE AND CIVIL SERVICE

HOUSE OF REPRESENTATIVES

ON

THE CENSUS BUREAU'S ACTIVITIES

PARTICULARLY ON THE 1990 DECENNIAL CENSUS

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Mr. Chairman and Members of the Subcommittee:

I am pleased to participate today in this hearing on the Census Bureau. I am accompanied by Ms. Eleanor Chelimsky and Mr. Jack Kaufman. Ms. Chelimsky is director of GAO's Program Evaluation and Methodology Division and Mr. Kaufman is responsible for supervising our audits at the Census Bureau. My comments will focus on the Bureau's preparations for the 1990 decennial census. In addition, I will provide the status of our work in assessing the evaluations of non-cash benefits for the purpose of measuring income.

As a prologue to current preparations for the 1990 census, I believe it is appropriate to briefly look back at the 1980 census. The 1980 census was by far the most expensive in history, costing about $1.1 billion. Even when inflation and increased population are considered, the cost of the 1980 census was twice the cost of the prior census. Moreover, considerable controversy surrounded the 1980 results. For example, about 50 law suits were filed by communities and groups contesting the results. Some plaintiffs contended that the results should be adjusted to compensate for census count errors. Many of these cases have not yet been decided. Although the actual head counts were reported on the date required by law, some critics of the census focused on the lack of timeliness in reporting some of the other census data results.

With this as a backdrop, we were encouraged to note the Bureau's stated goals for the 1990 census are to include the

following:

--conducting the 1990 census without increasing the per housing unit cost in 1980 dollars;

--expediting the availability of the data to the users;

--maintaining a high rate of overall coverage and improving the accuracy of small-area data while reducing the undercount differential for population groups and geographical areas; and

--striking an appropriate balance between the time it takes respondents to complete the questionnaire and the need for information by census data users.

We are also pleased that the Bureau plans to accelerate its testing activities to achieve its stated goals. For example, its first pretest is currently underway, about 1 year earlier than for the 1980 census. This accelerated schedule means that greater resource levels will be needed earlier in the census cycle, with the hope that it will produce a more effective, efficient, and economical census.

It remains to be seen whether the Bureau's goals will be achieved. To date, considerably more funds have been committed to the 1990 census than in a comparable period for the 1980 census. We also have some reservations and questions about the use of some of the early funding and about whether the Bureau is maximizing the opportunity and resources it now has. Thus far, the Bureau intends to spend through fiscal year 1986 about $90 million. This is considerably more than the $8 million spent through fiscal year 1976 for the 1980 census. The $90

million figure excludes the costs associated with the geographic support and data processing budget line items for fiscal years 1985 and 1986 totaling about $71 million.

We also have some questions about the Bureau's timetable for making decisions on the 1990 census. We are concerned that the Bureau may not have allowed sufficient time to obtain the most advantageous processing equipment for the 1990 census.

SHORTER "SHORT FORM" QUESTIONNAIRE NEEDED

In Jersey City, New Jersey, the Bureau is testing the use of a new two-stage process for administering questionnaires using a long and short form. For half of Jersey City, the Bureau will send a short form--similar to the one used in 1980--to every household. At a later time, the Bureau will send a long form to a one-in-five sample of this test group. For the other half of Jersey City, the Bureau will send a long form to one-fifth of the households and, simultaneously, a short form to the remaining households, similar to what was done in 1980.

Although we endorse the two-stage process using the short and long forms, we have strong reservations about the size and content of the short form used in the first stage. As we advocated in our May 5, 1976, report, Programs to Reduce the Decennial Census Undercount (GGD-76-72) and in our June 26, 1984, testimony to the subcommittee, the short form should be limited to just a few basic questions to obtain an accurate population count.

We believe the short form should be simpler and contain fewer questions than the one used in 1980 which contained a num-

ber of household questions extraneous to the basic count. For example, we believe that questions about plumbing facilities or the value and rent of housing units increase the complexity of the questionnaire and thus tend to discourage response. Moreover, with less information on the short form it could be processed more quickly and thus allow more time for Bureau and local officials to review the preliminary counts. In addition, processing costs could be reduced.

The decision on the content and format of the questionnaire also has an important influence on automation because of the workload considerations and automation options available. Without a decision on the general specifications of the questionnaire, the Bureau cannot make valid cost comparisons between feasible automation options. The Bureau's announced plans of deciding on the questionnaire in 1986 or later does not allow much opportunity to review automation options.

TIMELY AUTOMATION DECISIONS CRUCIAL

In the pretests, the Bureau is also evaluating some automation procedures and new technology, including procedures to account for the questionnaires as received (check-in) and to determine the completeness and consistency of the questionnaire responses (editing). In its Tampa, Florida, pretest, the Bureau is also testing a data-entry technology different than that used in the prior census. The questionnaire responses will be entered into computer files using a commercial optical mark reader. We are pleased to note the testing of the automated

check-in and editing procedures, but have reservations about the usefulness of the optical mark reader test.

According to Bureau specialists, the equipment being tested has some known limitations in connection with census use. The reading capability of the equipment is basically dependent on the use of lead pencil marks. To help overcome this limitation, the Bureau has supplied each prospective respondent with a number 2 pencil. As the mark reader also requires a special type of paper and ink, the equipment manufacturer is providing the paper and printing the questionnaires for the test. Because of the stringent specifications needed for the paper, changes in environmental conditions, particularly humidity, which can affect the size of the paper, can significantly affect the mark reader's capability. Commercial mark readers generally require flat unfolded pages, usually 8-1/2 by 11 inches. To accommodate this paper size constraint, the questionnaire for the Tampa pretest was physically reduced in size, thus reducing the per-page space for the questions. In early tests of the equipment at the Bureau's headquarters, Bureau technical personnel noted problems such as incorrect readings when the questionnaire responses (marks) were not precisely within the space provided or where there were erasures.

We have recently observed the early pretest operations of the optical reader in the Bureau's special processing location in Jeffersonville, Indiana. In this test, we noted that after the equipment was adjusted by the vendor's technical personnel and the climatic conditions stabilized by regulating the humid-

ity, the equipment performed very well. I might add that, although not expected to do so, the equipment even read marks made by colored pencils and ink pens.

In addition to having reservations about the optical mark reader being used in the Tampa pretest, we have reservations about the use of keying of the questionnaire responses in the pretests. In the pretests, only the short form questionnaire responses in the Tampa pretest will be read by the commercial optical mark reader. All other data which the Bureau plans to enter into its computer files will be keyed in. This appears to be a step backwards in technology and we wonder about the rationale and the purpose served. The Bureau's timetested method of data entry using its unique FACT 80 system which incorporated a film optical sensing device for input to computers and automated camera technology certainly seems to have been an advancement over keying for data entry. In fact, the Census Bureau and the Bureau of Standards jointly developed the forerunner of the FACT 80 system in the 1950's because they recognized that keying was too slow for the massive amounts of data collected in a decennial census.

If the Bureau decides to enter data by keying in 1990, Bureau experts have estimated that it would require as many as 14,000 machines. Moreover, the machine operators that would be employed would be temporary employees. Recruiting competent short-term staff has traditionally been a problem in a decennial census, and recruiting the machine operators needed would compound this problem.

We understand that the Bureau will be testing other automation system proposals in its planned 1986 pretests. Based on early planning, these systems, which feature a decentralized mode of processing, have merit. However, we are very concerned about the timetable for deciding on the preferred automation system for the 1990 census. We understand the Bureau will not decide on a system until late 1986.

Historically, the Bureau and the Department of Commerce have taken 4 to 5 years to make automation equipment available after its need was identified. This period was required to identify the needed equipment and develop specifications, request and evaluate proposals, contract for and install the hardware, develop and test software, and develop procedures and train staff. On the basis of that experience, the Bureau needs to start the acquisition and system development cycle no later than the spring of 1986 if the new equipment is to be available for the next census.

The vendor of the optical mark reader equipment currently being used in the pretest has proposed that its equipment could be tailored to the Bureau's unique requirements only if equipment modifications can be made. Thus, in proposing the development of a prototype, the vendor acknowledges that the optical mark reader currently being tested would not satisfy census requirements. This vendor believes that he can develop a census suitable optical mark reader for 1987 testing if he is given a research and development contract immediately. According to the vendor, there is not a sufficient commercial demand for such

equipment to justify the company's developmental work with its own funds.

If the Bureau committed itself to the vendor's proposal, 3 years would remain for the testing, fabrication, and installation of a sufficient number of readers for the actual census. The requirement for a specific number of readers has not been defined. One scenario calls for several hundred readers. However, the vendor in its 10-year manufacturing history has produced fewer than 100 of the readers being tested.

A representative of another prominent prospective vendor advised that a decision in late 1986 would just about rule out that company's involvement in the project because of his company's need for an 18 month prototype development period and a several year period for production.

Thus by planning to decide on the automation approach in late 1986, the Bureau will have backed itself into the position of deploying some form of the current FACT 80 system. The Bureau may now, in fact, be rapidly approaching the point where it will have no other option. Moreover, if it does not soon commit itself to begin to increase its inventory of cameras and related equipment for the FACT 80 system, it may not even have an adequate number of upgraded FACT 80 system equipment for 1990. Upgrading is necessary because some of the control mechanisms of the FACT 80 equipment are no longer manufactured, and consequently there would be no backup support in the event of break downs. Additionally, without upgrading, the Bureau would forego some opportunities available to it through advanced technology.

Should the Bureau decide to upgrade its FACT 80 system, considerable work would be needed. For example, the Bureau currently has only about 30 of the 60 cameras used in the 1980 census. All current system proposals suggest the need for 60 to 120 cameras. Acquiring that additional number of unique equipment through either in-house assembly or contractor fabrication and upgrading the existing equipment will take several years.

Another important decision the Bureau needs to make in the near future is the deployment of processing equipment. This deployment has a major influence on the Bureau's field organization and on the amount and type of equipment needed. More importantly, the number of offices where the equipment will be installed has tremendous influence on the overall cost of the census.

EFFECTIVELY INCREASING AND EVALUATING CENSUS COVERAGE QUESTIONABLE

Census coverage (completeness of count) which is the main focus of the decennial census, can be divided into two categories--obtaining the best count in the enumeration process and developing an acceptable method of adjusting for a substantiated error in the count. The Bureau spent many millions of dollars in the 1980 census on procedures specifically designed to improve the overall coverage and particularly to reduce the disproportionality of the historic undercount for the minority population groups. Based on the Bureau's own estimates, coverage improvement programs are among the most costly and lowest yielding operations it conducts during a census. Bureau analyses show that the overall coverage for the census improved,

but the disproportionality of the minority undercount, particularly for blacks, did not improve.

The Bureau's efforts to evaluate the coverage so that the error (difference between the census and the true population) could be distributed throughout the Nation for the 1980 census were not successful. Currently the Bureau believes that there is no acceptable method for distributing the national level undercount to subnational levels. Therefore the Bureau has established a special staff with specific responsibility to coordinate undercount measurement and adjustment research for the 1990 census.

Because of problems experienced in the past with coverage evaluation techniques, we are wary about the success of an acceptable 1990 adjustment method unless there is a breakthrough in the technology or methodology. With that in mind we made several recommendations in our report, Procedures to Adjust 1980 Census Counts Have Limitations (GGD-81-28, Dec. 24, 1980). Some of these, such as requiring the Commerce Secretary to keep the Congress apprised of his plans for making an adjustment, were incorporated in H.R. 5720 introduced in the last Congress by this subcommittee's former chairperson. We believed then, as we do now, that it was important for the Congress to be formally apprised of the Bureau's plans for adjustment prior to the 1990 census

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I will now discuss the progress our office has made in assessing the evaluations of non-cash benefits for the purpose of measuring income.

QUANTIFYING NONCASH BENEFITS AFFECTS POVERTY INDICATOR

The poverty indicator reported by the Bureau of the Census is used to determine eligibility and to allocate billions of dollars for public assistance, thus affecting millions of citizens. In addition, this index is used as one means of assessing national welfare: that is, a rise in the proportion of citizens living in poverty is interpreted as reason for concern, a decline as evidence of progress. The current official poverty indicator reflects only cash income. Recognizing the great expansion of noncash benefits such as medical care, food, and housing since 1965, a Congressional concern in 1980 prompted the Bureau of the Census to develop methods of quantifying their value. We have been asked by this subcommittee to examine these methods of quantification and to identify for the Congress the technical questions that need to be asked in order to learn more about their accuracy and fairness.

We have just begun our technical work. Even at the beginning, however, we have identified features of the proposed indicators that could lead to distortions in the general understanding of poverty in the United States. For example, the poverty rate for the elderly is greatly affected, in valuing noncash benefits, by the inclusion of medical care transfers. Adding the market value of medical care to income in 1979 reduces the number of elderly in poverty by 2.6 million in that year. However, about 28 percent of all Medicare payments are accounted for by services rendered to persons who die within a 12-month period. Since the valuation method for Medicare assigns an average benefit level to all program participants, the extensive

and expensive services provided to those who are in the terminal period of their lives are "credited" to the well-being of many others, who may have received no actual services during that 12 month. This not only could exaggerate the real benefits received but might also cause a change in the poverty status of some participants without a corresponding increase in their services. This concern and others are detailed in the technical appendix to our testimony, and we would be happy to answer questions about our initial observations.

In developing and demonstrating methods for valuing noncash benefits, the Bureau of the Census has been candid about their strengths and their limitations. These methods, which are currently being used by policy analysts, have not been comprehensively examined by a group independent of the Bureau. Our preliminary work reveals a number of areas where the procedures that would be used for each valuation technique that has been proposed may be subject to technical errors, and these may have a considerable, distorting influence on the derivation of poverty indicators and rates. A large number of individuals and families could be affected by the use of these calculations. For policy analyses that address issues involving the valuation of noncash benefits, the new methods are, at present, the best available. However, GAO believes it would be prudent to suspend major changes in policy, and decisions regarding eligibility and the distribution of funds, until these methods have been comprehensively examined.

This concludes my prepared statement, Mr. Chairman. We will be happy to respond to any questions.

Technical Appendix: Issues in Valuing Noncash Benefits

This appendix summarizes GAO's ongoing work in the area of valuing noncash benefits. There are, of course, many possible methods for quantifying these benefits. Our work focuses on the issue of how these methods are constructed. We are not, however, developing formulas for quantifying noncash benefits. Rather, we are devising an evaluation methodology for assessing approaches that have been developed by others.

In 1980 Congressional concern prompted the Bureau of the Census to develop a way of representing the value of noncash benefits in its poverty indicators. In the past, these have not been counted in eligibility determinations or in official reports on poverty in the United States, although noncash benefits such as food stamps, housing assistance, Medicare, and Medicaid made up 30 percent of federal assistance to low income persons in 1982. Devising a fair way of valuing noncash assistance is technically challenging. Any proposal is likely to be controversial because of its different effects on different groups of people: that is, when we consider who gains and who loses.

This subcommittee has asked GAO to develop a means of objectively evaluating the technical adequacy and fairness of the proposed valuation methods. We were also asked to consider, in detail, the current valuation techniques being developed by the Bureau of the Census. We are in an early phase of this work. This is, therefore, a preliminary report on what have emerged as important evaluative questions to be asked about proposed valuation techniques.

BACKGROUND ISSUES

The manner in which the value of noncash benefits is represented depends heavily on the purposes for which the poverty index is used and the way it is interpreted. The poverty index is used for three major interdependent purposes. Each could imply a different approach to quantifying noncash benefits. First, some Federal programs (e.g., Maternal and Child Health Services Block Grants and the Head Start program) use a distribution formula based on the poverty index computed by the Census Bureau. A second purpose is to base benefit eligibility for families and individuals on this indicator of need. In addition to its application in distributing billions of dollars, a third purpose of the poverty index is to serve as a primary measure of national welfare: increases in the proportions of our citizens whose incomes fall below the poverty threshold are typically taken as reasons for concern, and decreases in these proportions are cited as evidence of improvement in the condition of life. An evaluation methodology must take into account these different purposes. For example, if noncash benefits are included in program eligibility determinations, the accuracy of the benefit levels assigned to particular individuals may be more important than when they are included as part of the distribution formulae.

Thus far, efforts to quantify noncash benefits have been made most extensively in the area of measuring national welfare, where two persistent issues have arisen. First, while it is clear that the definition of income is expanded when it includes noncash benefits, it is not clear which benefits should be

included in the definition. Some analysts have argued that some benefits (e.g., medical care) are not intended to close the poverty gap but to provide services that are otherwise not available. Other analysts have argued for accounting for all forms of federal and nonfederal benefits, dollars and services for the poor and the nonpoor. The broader the definition of income -- whether it includes wages or cash assistance or the value of in-kind transfers or all three -- the more the poverty rate can be expected to decline.

The second issue concerns the appropriateness of altering the poverty threshold[1] if in-kind benefits are added to the definition of income. That it is appropriate is advocated by some analysts for two reasons: to ensure that the poverty "threshold" corresponds to some "real" poverty level and to avoid definitional changes that would vitiate comparisons between one year and another. Where to set the threshold is a question that has been debated for at least two decades. A more recent question is: What changes in the threshold should be made if noncash benefits are included in the definition of income? We do not expect to resolve these questions in our work. Rather, we hope to address two problems that pertain to all methods of measuring poverty: First, What conceptual, procedural, or statistical aspects of the methods distort the estimates of poverty that are derived from them? Second, If there are factors

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[1] In 1983 the proverty threshold for a family of four was $10,178.

that distort the estimates, how big is their influence on the poverty rate?

COMMON VALUATION METHODS

Acknowledging that there is no generally agreed upon way of quantifying the cash value of noncash benefits, the Bureau of the Census has developed three alternative methods spelling out the theoretical foundations. They are referred to as the "market value", "recipient value" and "poverty budget share" methods. The Bureau of the Census also demonstrated how these methods could be used to re-estimate the poverty rate using existing data on program participation, income, and program costs from various sources. Only selected assistance areas (i.e., housing, food, and health care) were included in these demonstrations.

In theory, the three methods differ in that they use different concepts of how federal assistance can be valued. The market value method considers the value of noncash benefits to be equal in cash to the private market purchasing power that would be needed to buy the same goods and services that are consumed. The recipient value method employs the concept of the beneficiary's own valuation of benefits: the equivalent of a noncash benefit is the cash the individual would trade for it. Under various conditions, the recipient value method will produce lower cash values than the market value method. The third method, the poverty budget share method, limits benefit values to the observed consumption levels of people near the poverty line.

In its original work, the Bureau of the Census used all three conceptual schemes to derive benefit levels for each of the

three assistance areas--food, housing and medical care. Depending on which method is used and which noncash benefits are included in the definition of income (e.g., money income alone; money income + housing + food; money income + housing + food + medical care), the overall poverty rate in 1979 falls from a rate of 11.1 percent (considering money income only) to as low as 6.4 percent (using the market value for food, medical and housing benefits). That is, the poverty rate declines by as much as 42.3 percent when the market value of noncash benefits is considered. When the poverty budget share and recipient value methods are used, the poverty rate declines 20.1 and 26.7 percent, respectively. What are the relevant questions that should be asked about these methods and the different results they produce?

ILLUSTRATIVE EVALUATION QUESTIONS

The list of technical issues about the adequacy of these valuation methods can be classified into three general evaluative questions:

--How valid are the methods? That is, do they accurately measure what they are intended to measure?

--Do the assigned benefit values derived by each method meaningfully represent the diverse circumstances of individuals?

--What are the known technical problems in acquiring the information needed in order to use each method?

One way of thinking about these questions is in terms of how well the valuation technique corresponds to the actual benefit levels individuals receive.

To establish this correspondence, two questions can be raised. First, we might ask, are the valuation methods faithfully represented by the computational procedures that are employed? Second, Do the computational procedures reasonably approximate the level of benefits received by individuals? In what follows, we describe a number of problems that can arise when there is a lack of correspondence at the conceptual, procedural, and statistical levels.

Question 1: How valid are the methods?

It is not uncommon to find that computations do not correspond very well to the conceptual definition of poverty on which they are based. One reason for this is the many constraints, such as the costs and availability of information, that are encountered in making the computations. For example, the recipient value method is intended to assess the beneficiaries' own valuation of a benefit--that is, its utility. Utility is difficult to establish, particularly in a national survey. Acknowledging this difficulty, the Bureau of the Census has substituted a simpler method for establishing utility--the identification of normal expenditures at different income levels. This procedure is therefore only an approximation to the theoretical notion underlying the recipient value method, which means that the computation may misrepresent the notion of an individual's utility function. In addition, this procedure for establishing utility may be subject to a variety of technical shortcomings. In particular, since the normal expenditure levels that are used to estimate the value of the benefit are derived from individuals who do not receive

the benefit but have incomes similar to the income of those who do, these individuals are likely to be in different circumstances from those who receive the benefit. This noncomparability means that the values that are used may be biased--that is, the values may be larger or smaller than the true recipient value. Whether this bias is present and, if it is, how much it distorts the resulting poverty rate has not been rigorously examined. Yet this problem is extremely important in evaluating the validity of the recipient value method. If this method is to be justified as valuing noncash benefits in terms of what individuals believe they are worth, it is essential to demonstrate that the actual procedures faithfully represent their perspectives.

Question 2: Do the assigned values represent diverse circumstances?

The computational procedures used to assign values to each of several noncash benefits may obscure some important distinctions between categories of individuals. For example, in a valuation of medical benefits, the individiual is the basic unit of analysis. In computing these benefits, the average costs within each state for individuals in four risk categories are applied to the family composition as reported in the Current Population Survey. When some very high medical costs are averaged with many low costs, this tends to produce a higher market value of the medical benefit than actually received for those individuals with no or low medical expenditures. Depending upon the actual distribution of expenditures, averaging across individuals who have high and low consumption patterns may seem to remove some

households from poverty although they might not have received any medical assistance at all.

If the value of medical care transfers is to be quantified, it is important to portray accurately the levels of benefits that individuals actually receive. To do this, alternative procedures may be necessary. For example, it is possible to employ alternative summary values rather than using average benefits, which are influenced by the presence of high medical expenditures. In particular, the median benefit level might be useful. This value -- the point that divides a distribution of values into two equal halves -- is not as sensitive to the presence of high medical expenditures as is the calculation of an average.

Other, more technical computational procedures (such as weighting and clustering individuals according to consumption patterns) could also represent more faithfully the distribution of medical assistance as it is provided. The potential importance of alternative procedures is demonstrated in the accompanying table. The numbers in the table are hypothetical and have been summed to illustrate how considering the distribution of actual expenses (per family) instead of averages influences the poverty indicator.

In this simple example, 50 families have incomes below the poverty level, established for the example at $12,000. The average medical benefit is $3000. When it is added to each family's income, 18 families or 36 percent are still below the poverty line. However, when each family's actual medical benefit is added to its income, 45 families or 90 percent remain below

Simulated Distribution of Family Income and Medical Benefit Valuation

Family number	Family annual income	Actual medical benefit	Average medical benefit	Family Income Plus Actual medical benefit	Poverty level	Family Income average medical benefit
1	$11,000	0	$3,000	$11,000	$12,000	$14,000*
2	9,100	$2,000		11,100		12,100*
3	8,400	2,500		10,900		11,400
4	8,600	800		9,400		11,600
5	10,000	0		10,000		13,000*
6	6,400	4,000		10,400		9,400
7	7,500	400		7,900		10,500
8	9,800	0		9,800		12,800*
9	9,200	600		9,800		12,200*
10	11,700	900		12,600*		14,700*
11	9,300	0		9,300		12,300*
12	8,900	500		9,400		11,900
13	10,500	100,000		110,500*		13,500*
14	11,000	100		11,100		14,000*
15	9,200	0		9,200		12,200*
16	7,900	400		8,300		10,900
17	11,100	0		11,100		14,100*
18	9,900	300		10,200		12,900*
19	10,100	3,000		13,100*		13,100*
20	10,000	200		10,200		13,000*
21	9,600	2,000		11,600		12,600*
22	9,400	200		9,600		12,400*
23	8,900	0		8,900		11,400
24	10,400	100		10,500		13,400*
25	11,000	3,500		14,500*		14,000*
26	9,100	2,500		11,600		12,100*
27	10,600	800		11,400		13,600*
28	9,100	0		9,100		12,100*
29	8,500	800		9,300		11,500
30	6,900	1,800		8,700		9,900
31	9,700	1,000		10,700		12,700*
32	10,600	0		10,600		13,600*
33	8,800	600		9,400		11,800
34	8,100	400		8,500		11,100
35	10,300	0		10,300		13,300*
36	7,800	2,000		9,800		10,800
37	9,400	1,000		10,400		12,400*
38	7,800	100		7,900		10,800
39	11,000	0		11,000		14,000*
40	10,300	700		11,000		13,300*
41	9,300	0		9,300		12,300*
42	8,100	800		8,900		11,100
43	8,900	2,200		11,100		11,900
44	10,200	500		10,700		13,200*
45	9,200	400		9,600		12,200*
46	7,800	3,000		10,800		10,800
47	11,400	500		11,900		14,400*
48	10,900	0		10,900		13,900*
49	7,600	4,000		11,600		10,600
50	8,300	5,400		13,700*		11,300
Summary, below poverty line:				45/50=90%		18/50=36%

*From below to above the poverty line.

the poverty line. Comparing those two methods, we see that 27 more families would be pushed above the poverty line if the average medical benefit is applied, but 12 of these families would not have received any medical benefits at all. In our example, the median medical benefit is $500. If we substitute the median for the average, adding the median to each family's income, 49 families or 98 percent would be classified as in poverty, which differs very little from the figures that are derived by using money income alone for classifying poverty. Regardless of which procedure is used -- the distribution of actual values or the median benefit level -- we see that using alternatives to averages can make a substantial difference in the classification of individuals in or out of poverty.

A striking example of how different circumstances can influence the value of medical benefits can be illustrated by examining Medicare expenditures. About 28 percent of total Medicare costs are incurred during the 12 months preceding death. Applying the market value method to derive a benefit level, without taking into account the inherent differences between the could ascribe a greater market value to these benefits than is warranted.

The Bureau of the Census has recognized this general problem of the qualitative difference in various circumstances in the area of benefits for institutionalized versus noninstitutionalized persons. The Bureau calculates the cash value of health benefits separately, alternatively including and excluding the costs of institutionalized care which explicitly include food, housing, and custodial services.

This calculation method appears to be sound practice, but other similar differences in circumstances also need to be considered.

Question 3: What are the known technical problems in acquiring the information needed in order to use each method?

In its yearly estimate of the official poverty rate, the Bureau of the Census conducts, in March, the large-scale Current Population Survey. In this survey, the Bureau interviews a nationally representative sample of about 60,000 households to determine their characteristics, income level, and program participation. As with any survey, a variety of technical problems can threaten its accuracy. For example, since the survey results are based on a sample of households, it is possible that the results may not reflect the actual state of affairs because of the variability of those who are included in the sample--known as "sampling error." The potential discrepancy between the sample and the entire population depends on the size of the sample: as the sample size grows, the sampling error shrinks.

For the Current Population Survey, the sample size is adequate for obtaining a precise indication of the national poverty rate, but it is too small and imprecise for estimating poverty rates in a region or a state. Nevertheless, state medical costs are imputed for valuing health benefits. The influence of mixing these two sources of data has not been formally examined. In order to obtain precise estimates of poverty at the state level, the sample size for the Current

Population Survey would have to be increased substantially (as would its operating budget).

A second class of factors beyond sampling error influences the overall quality of information derived from surveys. These factors are referred to collectively as "nonsampling errors" and include interviewing irregularities, bias inherent in respondents' answers (for example, an unwillingness to disclose income levels), failure to carry out the sampling plan (for example, inadvertently failing to list specific households), and the inappropriateness of the sampling plan (for example, the undercount problem). Many of these factors have been assessed by the Bureau of the Census. Here we provide one simple illustration of the problems they generate for estimating the poverty rate.

It is well known that some individuals do not answer interview questions about income in the Current Population Survey. Further, the instances of not responding have increased over the past decades. The Bureau attempts to adjust for the influence of nonresponse by estimating the value, based on the responses of the individuals who do respond. The adequacy of this adjustment depends on how well the estimate approximates the actual income level of those who do respond. In order to find this out, Census has conducted a series of investigations that link estimated values with IRS records. The results suggest that for some income groups, in particular part-time and part-year employees, the method of accommodating nonresponse is not adequate. For example, to the extent that low-income persons are more likely to work part-time, more error is introduced into Current Population Survey data from them.

These and other sources of error create uncertainty about the merit of how poverty is estimated. Important questions that need further examination include the extent to which these individual sources of error influence the poverty rate, whether they compensate for one another (that is, whether one source of error increases the poverty rate and a different source reduces it), and their cumulative effect.

FUTURE WORK

During the next 6 to 9 months, we plan to refine the questions that should be considered in evaluating valuation techniques for quantifying noncash benefits. This work will also focus on determining the applicability of our evaluation methodology to new methods of quantifying noncash benefits. Further, we will attempt to determine, through information synthesis, reanalysis, and simulations, the relative importance of the evaluative questions to the valuation techniques proposed by the Bureau of the Census. The importance of each aspect of the methodology as it applies to the three purposes of the poverty indicator -- distributing benefits, determining eligibility for the, and counting the poor order to measure national welfare-- will also be examined and highlighted.

OBSERVATIONS

In developing and demonstrating methods for valuing noncash benefits, the Bureau of the Census has been candid about the limitations as well as the strengths of these methods. Nevertheless, the methods are currently being used by policy analysts, even though they have not been comprehensively examined

by a group independent of their developers. In response to the Congressional request, our preliminary work reveals that there are a number of areas where the procedures used for each valuation technique may be subject to technical errors and that these may have a considerable, distorting influence on poverty indicators and rates. It is important to identify these errors because a large number of individuals and families could be affected by the results of these calculations. For policy analyses, these methods, at present, are the best available for addressing issues involving the valuation of noncash benefits. However, GAO believes that before major changes in policy are made and before decisions are made regarding eligibility and the distribution of funds, it would be prudent to examine these methods comprehensively.