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Critical Issues For Census Adjustment:  
Completing Post Enumeration Survey on  
Time While Protecting Data Quality

Statement of  
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Before the  
Subcommittee on Census and Population  
Committee on Post Office and Civil Service  
House of Representatives



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CRITICAL ISSUES FOR CENSUS ADJUSTMENT:  
COMPLETING POST ENUMERATION SURVEY ON TIME  
WHILE PROTECTING DATA QUALITY

SUMMARY OF STATEMENT BY  
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OPERATIONS ISSUES

At the request of the Subcommittee on Census and Population, GAO reviewed the results and conduct of the post enumeration survey (PES) that the Bureau of the Census carried out in the 1988 dress rehearsal for the 1990 census. GAO found that the Bureau generally followed its PES procedures and criteria, and that methodological innovations worked well.

The 1988 dress rehearsal PES confirmed, once again, a disproportionate undercount of the black population, particularly black men. For example, in St. Louis City, preliminary results show that the black population was undercounted by 8.1 percent, while the white, non-Hispanic population had an estimated undercount of 2.3 percent.

The Department of Commerce, in accordance with a court-approved stipulation and order, agreed that if the Secretary decides to adjust census counts to compensate for an undercount or overcount, that it would publish adjusted counts no later than July 15, 1991. If an adjustment to the 1990 census counts is to be made, it will be based largely on results of the PES. In an attempt to meet the July 15, 1991 deadline, the Census Bureau has accelerated its 1990 timetable for PES operations.

Based on its reviews of census operations to date, GAO believes that, despite the Bureau's accelerated time schedules, it is unlikely that the Census Bureau will be able to meet a July 15, 1991 deadline for publication of data corrected using 1990 PES results. The 1988 dress rehearsal PES was completed 6 months later than planned. The 1990 PES will be much larger and administratively more complicated. Moreover, if the 1990 experience is at all like 1980, a large number of district offices may again be late completing basic census operations, running a risk that the census and the PES will overlap in some key field operations.

GAO is concerned that schedule compressions and changes that have been made in basic 1990 census procedures to achieve operational economies could impair data quality. GAO urges that any future proposed changes in planned operations or time schedules be carefully considered in light of the potential risk of impairing the quality of PES data or, of even more importance, interfering with or impairing the quality of the census itself.

Mr. Chairman and Members of the Subcommittee:

We welcome this opportunity to appear today to discuss our preliminary observations on the Census Bureau's 1988 dress rehearsal post enumeration survey (PES). The 1988 dress rehearsal was the Bureau's final opportunity to test and refine 1990 procedures, including the PES. In simple terms, a PES is a matching study in which the Bureau interviews a sample of households independent of the census. The persons enumerated in the PES households are matched to census records to determine whether each person was counted correctly or missed in the census.

The Department of Commerce, in accordance with a court-approved stipulation and order, agreed that if the Secretary decides to adjust census counts to compensate for an undercount or overcount, it would publish adjusted counts not later than July 15, 1991. If an adjustment to the 1990 census counts is to be made, it will be based in large part on results of the PES.

The dress rehearsal PES was done in two field offices and one processing office. These offices covered all three dress rehearsal sites: the City of St. Louis, Missouri, 14 counties in East Central Missouri and 11 counties in Eastern Washington State. Within these areas, the Bureau randomly selected about 660 blocks with about 11,000 housing units. This represented

about 2 percent of the total blocks in the dress rehearsal.

As the Subcommittee requested, we reviewed the Bureau's dress rehearsal PES operating procedures and processes, including the scheduled and actual time periods needed to carry out the PES and compute the error estimates. In our work we examined 375 randomly selected households in which the Bureau was unable to match at least one household member.

Today I will discuss our preliminary observations on the dress rehearsal PES, focusing on the Bureau's statistical findings on the extent of undercounting and how well the Bureau followed its PES procedures to measure that undercount. I also will discuss our concern about whether the Bureau can complete 1990 PES activities at an acceptable level of quality and still meet the July 15, 1991 deadline for determining whether 1990 census counts will be adjusted.

DRESS REHEARSAL PRELIMINARY RESULTS  
SHOW DISPROPORTIONATE UNDERCOUNTS

Historically, the census has undercounted the black population, particularly black men, at much higher rates than white and other races. The preliminary results of the dress rehearsal PES once again show a disproportionate undercount of the black population in the basic census. For example, St. Louis City had an overall net undercount of 5.2 percent, but the black population was

undercounted by 8.1 percent. In contrast, the white non-Hispanic population in St. Louis had an estimated undercount of 2.3 percent. Minority men, predominantly black, between the ages of 10 and 44 had the highest undercount rates, ranging from 15 to 22 percent.

DRESS REHEARSAL PES PROCEDURES  
IMPLEMENTED AS PLANNED

Except for not completing the PES within the expected timeframes --an issue which I will address later--the Bureau generally carried out its operations as planned. The Bureau appeared to follow its criteria for matching persons from sampled households to census records.

The Bureau's innovations for the 1990 census cycle in coverage evaluation--namely block sampling and matching using an automated process--worked well. Both innovations helped to expedite the dress rehearsal PES operations.

Using the Bureau's criteria, we reviewed 375 randomly selected households. For these households we agreed about 99 percent of the time with the Bureau's determinations that persons in these households matched or did not match census records. We do not believe those few instances in which we disagreed would have influenced the undercount estimates developed by the Bureau.

BUREAU UNLIKELY TO  
MEET DEADLINE

The court approved stipulation and order between the Department of Commerce and New York City and others specifies that if the Secretary decides to make an adjustment, the Department of Commerce will publish corrected 1990 Decennial Census population data not later than July 15, 1991. The proposed guidelines, published in accordance with the court approved stipulation and order, specify, among other things, that "if sufficient data and analysis of the data are not available in time to publish adjusted counts by July 15, 1991, a determination will be made not to adjust."

Based on our reviews of census operations, we believe it is unlikely that the Bureau will be able to meet the July 15, 1991 deadline despite recent compressions of planned 1990 PES time schedules. PES operations are essentially sequential in nature. Delays in early PES and census operations will likely delay the start of subsequent PES operations and tend to extend the schedule for remaining activities. This occurred in the dress rehearsal and contributed to the PES taking about 20 months to complete, 6 months longer than planned. According to several Bureau officials, time was not regarded as a crucial issue in the dress rehearsal PES. However, time was a major objective of a prior PES test in Los Angeles. During this test, the PES took about 3 months longer to complete than planned, even after the

size of the test area was substantially reduced.

It must also be kept in mind that the Bureau did the dress rehearsal PES using only two field offices and one processing office and included about 11,000 households. Even though this was a relatively small and administratively confined operation, it took 6 months longer to complete than planned. In contrast, the 1990 PES will be managed from 12 field offices and 7 processing offices and will include 150,000 households nationwide. We believe the increased size of the operation and the greater decentralization will require more time to maintain a consistency and quality of work comparable to that done in the dress rehearsal.

In addition, some planned 1990 PES procedures, such as transferring data among processing offices, have never been tried before, and some PES software has not been tested in an actual PES operation. Software problems delayed the PES in both the 1986 test and the dress rehearsal. Also, some software from the dress rehearsal must be revised to accommodate larger files from the seven processing offices. We believe these factors also could increase the time it takes to do a quality PES.

COMPRESSED SCHEDULES AND OTHER CHANGES  
POSE POTENTIAL RISKS TO DATA QUALITY

In an attempt to meet the July 15, 1991 date, the Census Bureau

has revised its 1990 PES timetable for PES operations. The Bureau recognizes that there are risks associated with the accelerated time schedule. We agree with the Bureau's concerns. We are concerned that schedule compressions, coupled with changes that have been made in basic 1990 census procedures to achieve operational economies, could impair the data quality of both the census and the PES. For example, one revision requires that the PES interviewing begin in June 1990 rather than a month later as planned. This allows only about 19 days between the planned end of the nonresponse follow-up operation (that is, following up on questionnaires not mailed back) and the start of the largest PES field operation.

Based in part on our assessment of the 1980 census, we believe many offices will still be doing nonresponse field follow-up activities through June and July 1990 and some offices could take even longer. In the 1980 census, 125 of the 385 offices, or 32 percent, took between 4 to 8 weeks longer than originally scheduled to complete nonresponse follow-up activities. Another 43 offices, or 11 percent, took over 8 weeks longer than planned, with 4 offices in New York still doing nonresponse follow-up activities as late as August 1980. These timeframes have relevance for 1990 because the basic census methodology has not changed.

We also believe the 1990 census may have difficulty improving on

the 1980 experience because the Bureau anticipates a 5 percent lower census questionnaire response rate and this will increase the census field follow-up workload. If the rate is indeed 5 percent lower, and if the Bureau has difficulty in hiring a proportionately greater number of temporary workers, the time required to complete the 1990 nonresponse follow-up operation could exceed the 1980 experience. Recruiting and retaining temporary workers was a problem for the Bureau in 1980 and has continued to be a problem in early 1990 operations.

We are, therefore, concerned that the revised schedule could require PES interviewing to begin while census data collection is still underway. This simultaneous collection of data could compromise the quality of the data needed for possible adjustment decisions and confuse respondents. For example, persons working in the census who are alerted to the fact that their areas are in the sample PES blocks might perform differently, working more or less diligently because they know their results will be systematically checked, and thus bias the projectability of the PES results. Moreover, if there is a lot of PES interviewing before census field follow-up interviews are completed, the quality of the PES and census data could be impaired because of the confusion and annoyance of the household respondents. Additionally, simultaneous collection of data could exacerbate the Bureau's problems in obtaining a sufficient number of temporary staff to do both the census and the PES.

Changes in planned 1990 census procedures could also increase the time it takes to complete the PES and could affect PES data quality. For example, to reduce census operating costs, the Bureau recently decided to reduce the amount of follow-up work on most census questionnaires with missing data on population characteristics, such as sex and race. This decision will reduce the data collected from households during the census and will make PES matching more difficult. This could result in erroneous matching decisions and ultimately impair PES results. In addition, PES field follow-up workloads to resolve differences between census and PES data may increase, and more time may be needed to complete the PES. This situation is further compounded by the Bureau's recent decision to reduce the time schedule for a PES matching operation from 10 to 7 weeks. The Bureau has identified this change as one that could place PES data quality at risk.

#### CONCLUSION

In conclusion, Mr. Chairman, we realize that a great deal of attention will be paid in the next few months to the issue of adjusting the census counts by the Bureau, the Commerce Department and its advisors, the participants in the court case, and Congress. We urge all parties to keep in mind that there is a tradeoff between the time allowed to complete census

operations, including the PES, and the quality of the data produced. We have testified that it is unlikely that the Bureau will be able to meet the July 15, 1991, deadline, and pointed out that the schedule changes it has already made may lead to some quality risks without providing assurance of meeting the deadline. We urge that any future proposed changes in planned operations or time schedules be carefully considered in light of the potential risk of impairing the quality of PES data or, of even more importance, interfering with or impairing the quality of the census itself.

That concludes my prepared statement, Mr. Chairman. My colleagues and I would be pleased to respond to questions.