U.S. Department of Housing and Urban Development
Office of Policy Development and Research

Quality Control For Rental Assistance Subsidies Determinations for FY 2003

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Quality Control for Rental Assistance Subsidies Determinations

Executive Summary

The Department of Housing and Urban Development (HUD) Quality Control for Rental Assistance Subsidies Determinations studies provide national estimates of the extent, severity, costs, and sources of rent errors for the Public Housing, Section 8 Housing Choice Voucher, Section 8 project-based, and Section 202 and Section 811 programs with PRAC or PAC tenant subsidies. These so-called "deep subsidy" programs account for nearly all of HUD's current housing assistance outlays administered by the Offices of Housing and Public and Indian Housing, as well as the large majority of units assisted by HUD. This study was designed to measure the extent of administrative error by housing providers. The errors found affect the rent contributions tenants should have been charged. *The findings presented in this report are based on data collected during two data collections efforts. The first focused on (re)certifications conducted during the first half of FY 2003; the second on (re)certifications conducted during the second half of FY 2003. The data from these two studies have been combined to provide findings for the entire 2003 fiscal year.* These findings show that efforts made by HUD and program sponsors have had a significant impact on reducing program errors since the last Quality Control (QC) study in 2000.

HUD's rental housing assistance programs are administered on HUD's behalf by third party program administrators include public housing agencies (PHAs), public and private project owners, and contracted management agents. In the programs examined, eligible tenants generally are required to pay 30 percent of their income towards rent, with HUD providing the balance of the rental payment. New program applicants are required to provide certain information on household characteristics, income, assets, and expenses that is used to determine what rent they should pay. Existing tenants are required to recertify this information on an annual basis and also, in some circumstances, when there are significant changes in household income. Applicant or tenant failure to correctly report their income may result in the Department's over- or underpayment of housing assistance. The failure of the responsible program administrator to correctly interview the tenant or process, calculate and bill the tenant's rental assistance also may result in the Department's over- or underpayment of housing assistance.

In 2000, HUD began to establish a baseline error measurement to cover the major types of rental housing assistance payment errors: (1) program administrator income and rent determination error, (2) intentional tenant misreporting of income, and (3) errors in program administrator billings for assistance payments. The study referenced in this report covers the entire FY 2003, and is being used to update the 2000 baseline measurement of errors in program administrator income and rent determinations. The tenant data collected for this study will also be used to provide the sample and data used for income matching to measure the extent of intentionally unreported tenant income. A methodology for developing baseline estimates for the third error component, billing error, has been developed and tested, but studies with sufficient sample sizes to produce nationally reliable error estimates will not provide results until FY 2005. The balance of this report relates solely to program administrator income and rent determination error.

For purposes of this study, "error" is defined as any rent calculation or eligibility determination that differs from what would have occurred if the PHA or other program administrator had followed all HUD income certification and rent calculation requirements during the most recent income certification or annual recertification. When appropriate, study findings are compared to findings from the previous study.

The extent of the identified error is sensitive to a number of assumptions made in the study. Doubling the error threshold of plus or minus $5 per month, for example, would affect the number of units with errors and modestly affect overall dollar error estimates. Changes in tenant behavior that result in correcting errors are more difficult to estimate. Some tenants with large rent increases resulting from corrected calculations might leave the program. Since those with the largest rent increases usually have above-average corrected incomes and rents, this could minimize or even reverse any potential subsidy savings. And those with decreased rents might be more likely to remain, thereby increasing subsidy requirements. The corrections themselves are desirable outcomes, because they better target limited housing assistance to those most in need of such assistance, but it is unclear what their net impact will be on subsidy costs. The most appropriate use of this study is as a tool for strengthening HUD's procedures for ensuring administrative compliance with regulations. HUD's objective of providing the right subsidies to the right families is a worthy one that this study can assist in achieving. (Large program outlays are already being made to achieve these objectives.)

METHODOLOGY

HUD Requirements and Study Standards. Using the *Code of Federal Regulations* and official HUD handbooks and notices, all HUD requirements relevant to the determination of rent were consolidated into a set of HUD requirements. Nationally recognized experts were involved in establishing and reviewing the standards used in this study.

The Sample. As mentioned above, the data used to generate this report were collected during two data collections efforts. The selection of the tenant sample was also implemented in two stages. Both sampling efforts called for a nationally representative sample of 600 projects in the United States and Puerto Rico. These projects were selected from the universe of the three program types covered by the study:

- Public Housing
- PHA-administered Section 8 (Vouchers and Moderate Rehabilitation)
- Owner-administered Section 8, Section 202 PRAC, Section 811 PRAC, Section 202/162 PAC.

A random sample of four households for the first study, and two households for the second study was selected for most projects, but more tenants were selected from unusually large projects. The final study data set includes responses from 3,601 households.

The Data Collection Process. The data collection effort included creating and automating over 30 data collection instruments, contacting and obtaining information from PHA/owner staff, hiring and training over 60 field interviewers, and selecting the tenant sample. Field interviewers obtained data from tenant files, and interviewed tenants using Computer Assisted Personal Interviewing (CAPI) software developed for this study. The automated data collection process included built-in consistency and edit checks that prompted interviewers to probe inconsistent and anomalous responses. Collected data were electronically transferred on a daily basis to ORC Macro headquarters for review. Requested third-party verifications related to income and expenses were also processed at ORC Macro headquarters.

Calculation of Rent Error. A quality control rent (QC Rent) was calculated for each household in the sample using the information reported by the PHA/project and household. Rent error was calculated by subtracting the QC Rent from the actual tenant rent (the rent from the HUD Form 50058 or 50059). A discrepancy of $5 or less between the actual and QC Rent was not counted as an error. This $5 differential was used to eliminate rounding differences and minor calculation discrepancies that have little impact on program-wide subsidy errors.

MAJOR ERROR FINDINGS

National Rent Error Estimates. The analysis of the 2003 tenant files, tenant interview, and income verification data indicates that:

- 60 percent of all households paid the correct amount of rent within $5 (44 percent paid exactly the right amount)
- 23 percent of all households paid at least $5 less than they should (with an average error of $78)
- 18 percent of all households paid at least $5 more than they should (with an average error of $57) [See Appendix C, Table 3, for more detailed information on these numbers]

Rent error estimates varied by program type. The highest rate of underpayment of rent (25 percent) was found in the PHA-administered Section 8 program. The lowest rate of overpayment (15 percent) was found in the Public Housing program. Underpayment of rent was found in 21 percent of Public Housing households and 21 percent of owner-administered households. Overpayment of rent was found in 21 percent of PHA-Administered Section 8 households and 17 percent of owner-administered households. The exhibit that follows summarizes this information.

Exhibit ES-1
Frequency of Rent Error by Program Type

Program	Rent Underpayment (Subsidy Overpayment)	Rent Overpayment (Subsidy Underpayment)
Public Housing	21%	15%
PHA-Administered Section 8	25%	21%
Owner-Administered	21%	17%
Total	23%	18%

Dollar Error Impact of Rent Errors. All summary error estimates represent the summation of net case-level errors. That is, a case is determined to have a net overpayment error, no error, or a net underpayment error. Major findings were:

- *Rent Underpayments of Approximately $896 Million Annually*. For tenants who paid less monthly rent than they should pay (23 percent), the average monthly underpayment was $78. For purposes of generalization, total underpayment errors were spread across all households (including those with no error and overpayment error) to produce a program-wide average monthly underpayment error of $18 ($212 annually). Multiplying the $212 by the approximately 4.2 million units represented by the study sample results in an overall annual underpayment dollar error of approximately $896 million per year.

- *Rent Overpayments of Approximately $519 Million Annually*. For tenants who paid more monthly rent than they should pay (18 percent), the average monthly overpayment was $57. When this error was spread across all households, it produced an average monthly overpayment of $10 ($123 annually). Multiplying the $123 by the approximately 4.2 million assisted housing units represented by the study sample results in an overall annual overpayment dollar error of approximately $519 million per year.

- *Aggregate Net Rent Error of $377 Million Annually*. When combined, the average *gross* rent error per case is $28 ($18 + $10). Overpayment and underpayment errors partly offset each other. The *net* overall average monthly rent error is $8 ($18-$10). HUD subsidies for Public Housing and Section 8 programs equal the allowed expense level or payment standard minus the tenant rent, which means that rent errors have a dollar-for-dollar correspondence with subsidy payment errors, except in the public housing program in years in which it is not fully funded (in which case errors have slightly less than a dollar-for-dollar impact). The study found that the *net* subsidy cost of the under- and over-payments was approximately $377 million per year ($896 Million - $519 Million).

Subsidy overpayment and underpayment dollars are summarized in the exhibit below.

Exhibit ES-2
Subsidy Dollar Error

Type Dollar Error	Subsidy Overpayment	Subsidy Underpayment
Average Monthly Per Tenant Error for Households With Errors	$78 (23% of cases)	$57 (18% of cases)
Average Monthly Per Tenant Error Across All Households	$18	$10
Total Annual Program Errors	$896 million	$519 million
Total Annual Errors – 95% Confidence Interval	$806- $987 million	$397 Million - $642 million

Comparison with 2000 Baseline Error Estimates. The 2000 baseline estimates of erroneous payments attributed to program administrator rent calculation and processing errors were based on a HUD Office of Policy Development and Research (PD&R) study of "Quality Control for Rental Assistance Subsidies Determinations," which was published as a final report in June 2001. PD&R's methodology provided for interviewing a representative sample of tenants, verifying and validating tenant income reporting, and recalculating rents for comparison to program administrator determinations for the purpose of identifying errors. The 2000 study verified rent calculations for a representative sample of 2,403 households receiving assistance at 600 projects. The 2003 study to update these estimates used the same methodology, sampling procedures, and sample sizes. There was a significant reduction in erroneous payments attributed to program administrator income and rent determinations between 2000 and 2003, as reflected in the following exhibit:

Exhibit ES-3
Comparative 2000 and FY 2003 Program Administrator Errors

Administration Type	FY 2003 Estimates of Error in Program Administrator Income and Rent Determinations (in $1,000's)				2000 Est. of Gross Erroneous Payments	Percent Reduction in Gross Erroneous Payments
	Assistance Overpayments	Assistance Underpayments	Net Erroneous Payments	Gross Erroneous Payments		
Public Housing	$198,828	$117,288	$ 81,540	$316,116	$602,556	47.50%
PHA-Administered Section 8	$447,432	$283,524	$163,908	$730,956	$1,906,524	33.30%
Total PHA Administered	$646,260	$400,812	$245,448	$1,047,072	$1,699,092	38.40%
Owner-Administered	$250,236	$118,560	$131,676	$368,796	$539,160	31.60%
Total	$896,484 (+/-$ 91,000)	$519,360 (+/-$123,000)	$377,124 (+/-$141,000)	$1,415,844 (+/-$163,000)	$2,238,252 (+/-$275,000)	36.70%

Eligibility of Newly Certified Households. A separate analysis of newly certified households (14 percent of the sample) was conducted to determine if these households were eligible for HUD housing assistance. There were only three newly certified households (1 percent) in the sample who were not income-eligible based on the QC income determination. However, 8 percent of the newly certified households failed to document *social security numbers* (or certify non-assignment of a number) for one or more family members (at least six years of age), and 12 percent lacked the signed *consent forms* needed to authorize verification of income and assets (for each member of the household at least 18 years of age). In addition, 9 percent lacked the signed declaration forms or evidence accepted as proof of citizenship.

Overdue Recertifications. HUD requires that every household be recertified annually. Recertifications for 3 percent of the households were overdue. The majority of these households were overdue by 6 months or less.

Occupancy Standards. Eight percent of all households occupied a unit that had more bedrooms than permitted under normal occupancy standards. Two percent had fewer than needed bedrooms. As found in the past studies, most of the errors involved one-person households in two-bedroom units. This could not be explained by program rules. Excluding voucher units, that can legitimately have more bedrooms than needed if the landlord discounts the rent, did not change this relationship.

Rent Reasonableness. The Section 8 voucher program requires that program administrators determine that the contract rent for units subsidized in the program must be found to be reasonable relative to the rents charged for comparable program units. About 80 percent of the PHAs in the study used unit-to-unit rent comparison, unit-to-market rent comparisons, or some combination of the two approaches when determining if the rent was reasonable. About 16 percent relied on professional judgment for their rent reasonableness determination.

SOURCES OF ERROR

Rent errors are often due to a mix of different errors. For purposes of this study, **administrative errors** (e.g., calculation errors, transcription errors, failure to recertify on time, and failure to verify information) are analyzed separately from specific **component errors** (income and expense items used to calculate rent). Component errors often result when project staff do not conduct a thorough tenant interview or do not verify the information obtained during the interview. However, component error may also occur when the tenant supplies incorrect information, either intentionally or unintentionally.

Administrative Errors. The two most common administrative errors are calculation errors and failure to verify and make use of verified income and expense information. The HUD MTCS/PIC and TRACS data systems check the rent calculations on forms 50058 and 50059. For tenants for whom data are submitted (and corrected if required), these systems virtually eliminate rent determination calculation errors for the items included on the forms. However, not all cases are reported and some cases returned to program sponsors for correction are ignored or are changed only in what is reported to HUD. PIC/TRACS data system matches were attempted for the 2401 households included in the study which covered the first half of fiscal year 2003. Ninety-seven percent of these households were found in the PIC/TRACS data bases. It is worth noting that subsidy overpayment errors were higher for households for which TRACS/PIC data had not been submitted. Improvement should continue as data for more and more households are submitted to these data systems. A PIC/TRACS match was not attempted for the 1200 households included in the study conducted for the second half of fiscal year 2003.

Despite significant improvements in tenant file documentation and verifications, written third-party verification of income and expenses remains a problem. HUD requires that information provided by tenants be verified. Verification rates have generally improved since the last study. With the exception of other income[1] (which was only verified 79 percent of the time), income items were

[1] Other income includes sources of income other than earned income, social security or pensions, public assistance, or income from assets. Examples of other income are: unemployment, workers' compensation, child support, alimony, gifts and contributions, and income from rental property.

verified at least 87 percent of the time. However, a quarter (25 percent) of the verified amounts of earned income did not match the amount of earned income reported on the 50058/50059 form. Failure to use verified income and expense amounts was also highly correlated with other sources of rent determination error such as transcription errors.

Obtaining income verification is often difficult. Even when repeated requests are made, employers sometimes don't respond to requests for verification. Some program sponsors do a much better job than others, and the QC study shows that it is reasonable to expect all program sponsors to have as high a success rate as the current high performers. The study also shows that there is significant room for improvement in using the verification data obtained, which are often collected consistent with procedures but then filed and never used.

Component Errors. Incorrect income and deduction amounts were by far the most significant sources of error in determining rents. All but 5 percent of households with rent errors had an income or expense component error. Earned income (25 percent), pension income (21 percent), and medical allowances (17 percent) had the greatest error frequency. The following exhibit shows the frequency of the most serious component errors and the average error for that component for households with the same type error. Errors are ordered by their impacts on program subsidy levels, which means that both the error cost per case as well as the frequency of that type error was considered.

Exhibit ES-4
Households in Error: Rent Components Responsible for the Largest Dollar Error

Rent Component	Percent of Households	Average Dollar Amount
Earned Income	25%	$4672
Other Income	12%	$3330
Pensions	21%	$3426
Asset Income	4%	$966
Public Assistance	8%	$3192
Child Care Allowance	5%	$2320
Medical Allowance	17%	$1028
Dependent Allowance	3%	$589
Disability Allowance	--	--
Elderly/Disabled Allowance	1%	$499
No Rent Component Error	5%	$0
Total	100%	$2863

To respond to HUD's interest in understanding the cause of errors, the QC income and rent error were recalculated using only information obtained from the tenant files. This calculation excluded those income and expense items identified during the household interview that were not present in the tenant file. It also excluded verification obtained from third party sources by ORC Macro field interviewers. The income and expense items identified during the household interview and by

obtaining third party verification accounted for about a third of the annual underpayment and overpayment dollar errors. The exhibit below presents the percent of households in error and the total annual program dollar errors with and without income and expense information identified through sources other than the tenant file.

Exhibit ES-5
Findings With and Without Information Obtained From Sources Other Than the Tenant File

	Percent of Households in Error		Total Annual Dollar Errors	
	Subsidy Overpayment	**Subsidy Underpayment**	**Subsidy Overpayment**	**Subsidy Underpayment**
Error Based on *All* Income and Expense Items Identified During the Study	23%	18%	$896 Million	$519 Million
Error *Without* Income and Expense Information Identified through Sources Other Than the Tenant File	15%	16%	$583 Million	$759 Million

The table above indicates that – compared to current practices – a thorough tenant interview will identify additional sources of income and expenses, and result in a more accurate rent calculation. However, even if a tenant interview is thoroughly conducted, tenants may not disclose all sources of income. This may be due to forgetfulness, language problems, misunderstanding the questions, or other difficulties. Research conducted by HUD's Office of Inspector General and its Real Estate Assessment Center (REAC); however, suggest that most of this non-disclosure is intentional, since significant and routine sources of income are not reported even with detailed questioning. Most program sponsors, however, lack the means to detect most intentionally unreported sources of income.

One effective way of detecting most unreported sources of income and assets is through income matching with State or Federal data systems. HUD has established a system available to all program sponsors that provides information on Social Security benefits. It also matched 2000 Quality Control study data with IRS and Social Security Administration data to determine if there were any significant discrepancies between reported and actual income. It used a $1,000 annual income threshold to screen out additional sources of income that might be due to timing or definitional differences between how HUD and the IRS count income. (Screening out these cases had a small impact on the total related error estimate.) To minimize the possibility of incorrectly determining that intentional income misreporting occurred, new income sources were screened out unless income from that source was earned in the month before, the month during, and the month after the tenant's income and rent certification date.

The tenants surveyed in the 2000 Quality Control study had all been asked detailed questions about all sources of income. Any additional, screened and verified sources of income were examined to determine if the additional income found would have affected the computation of the correct HUD rental assistance amount (e.g., rent ceilings might apply that would result in no increase in rent even with a large, unreported source of additional income, or the additional income could be subject to a program regulation exclusion). Based on the results of this review, the Department estimated that there was a 95 percent likelihood that the amount of assistance overpayments attributed to tenant

underreporting of income was within $247 million of $978 million. Approximately $848 million of this amount was associated with earned income, and the balance with retirement, pension, or asset income. HUD plans to update its income matching estimates using the current study data, but this is contingent on the availability of the data needed.

2000-2003 PROGRESS

In response to the findings and recommendations of the 2000 Assisted Housing Quality Control Study, HUD initiated a series of aggressive actions to address the causes of erroneous assistance payments, including extensive on-site monitoring. While it was unsuccessful in obtaining the statutory changes recommended in the report on the 2000 study to simplify the program, it took a number of actions:

- A Rental Housing Integrity Improvement Program (RHIIP) committee headed by the Office of the Chief Financial Officer with representatives from the other affected Offices was formed to coordinate and monitor corrective actions, and meets weekly to review progress status and identify and seek to resolve impediments to progress in reducing errors.
- The Offices of Housing and Public and Indian Housing developed and issued new Handbooks and instructional material that detailed all current HUD program requirements and standardized them to the extent possible without regulatory or statutory change. These Handbooks cover nearly all aspects of occupancy policy, from the point of tenant application for admission and rent calculations through ongoing occupancy to lease termination. For public housing, the issuance of a Public Housing Occupancy Guidebook represented the first such effort in over 20 years, and provided defined methodology for calculating a number of complex requirements (e.g., the Earned Income Disallowance).
- Both the Office of Housing and the Office of Public and Indian Housing substantially increased training efforts, and have held a number of national and regional training sessions. This contrasts with a less activist role in the 1980's and 1990's.
- Both program Offices initiated comprehensive, large-scale, on-site occupancy and management reviews, which also represented a major procedural change from the previous two decades for most HUD offices:

    - The Office of Housing primarily used new agreements with Contract Administrators, which are usually state agencies, to perform this function. Contract Administrators provide technical support in adhering to HUD program requirements and routinely do detailed monitoring on agency compliance.

    - The Office of Public and Indian Housing initiated a system of Rental Integrity Monitoring (RIM) reviews to: detect and reduce errors in income and rent calculations at targeted PHAs; reduce rent underpayments and/or overpayments by residents; and, ensure that HUD's limited housing resources were being utilized to serve eligible families in a fair and equitable manner as intended by the Congress.

- HUD initiated a legislative change that gives it access to the Department of Health and Human Services New Hires income and wage data base for income matching purposes. It will use these data to compare tenant- reported income with state wage data to better ensure that the right subsidy payments are made to the right households in accordance with program statutory and regulatory requirements. This legislation was passed in late 2003 and requires implementing agreements and data systems that should be in place in 2005. HUD had also negotiated agreements with some states to obtain access to the same information. Some local agencies have already initiated income matching systems, and it is believed that this has already made some contribution to error reductions.

The Department's performance goals, which were developed in consultation with the Office of Management and Budget, call for reducing the 2000 benchmark assisted housing error levels by 50 percent by the end of 2005. The study of program administrator error for the first half of FY 2003 shows that HUD exceeded its interim 2003 goal of a 15 percent reduction in that component of error. It should be noted, however, that the reduction of errors and improper payments is unlikely to have an equivalent impact on budget outlays. HUD's experience indicates that its program integrity improvement efforts are likely to result in some higher income tenants leaving assisted housing and being replaced with lower income tenants requiring increased outlays. Nevertheless, HUD's goal remains to ensure that the right benefits go to the right people.

RECOMMENDATIONS

The progress made to date, even with the most conservative statistical assumptions, is impressive given that many of HUD's initiatives were only starting to be fully implemented during the period of the study data collection. The study findings for the first half of FY 2003 show a substantial improvement in the quality of documentation and a reduction in the number of calculation errors. There is significant room for improvement in both areas, but the single biggest remaining problem relates to income reporting. Highly detailed questions on sources of income, which research shows are required, are often not a routine part of the income certification/recertification process.

Based on the results of the current study, the following approaches to further reducing program administrator income and rent determination error rates are recommended:

- *HUD should continue its plans to implement use of the Department of Health and Human Service's "New Hires" income matching database as quickly as possible.* The recent Congressional authorization giving HUD access to the Department of Health and Human Service's "New Hires" income matching data base provides the opportunity to correct most errors associated with reported and unreported income for the Public Housing and Section 8 voucher programs. The majority of subsidy overpayment errors are associated with earned income determination errors, and the large majority of tenant income under-reporting also relates to earned income. Full implementation of an income matching system will quickly eliminate over half of current errors in the Public Housing and Section 8 voucher programs. It would have the further significant advantage of doing so by providing a tool that reduces and simplifies the program administrator workload associated with verifying income sources and amounts.

Full implementation of the New Hires data base will require HUD to implement procedures to ensure that program sponsors obtain valid social security numbers from all tenants of employment age. It will also need to mandate use of income matching using the new system. The large majority of PHAs that already seek to comply with income verification rules should find the new system less burdensome than current practices. For at least the next one to two years, programs managed by the Office of Housing that provide project-based assistance without the involvement of a public agency will be unable to access the New Hires data base. Some of these projects have management ties with PHAs and may be able to access the New Hires data base through such links. The balance of projects without management ties to PHAs will need to wait until HUD has fully implemented income matching for public housing programs and is in a position to request extension of its current authority.

- *HUD should consider expanding support of the occupancy function and conducting an outreach campaign to PHAs and owners informing them of the Department's occupancy related-resources.* Provision of detailed, current occupancy handbooks, such as those recently issued, goes a long way towards providing needed guidance but will never be able to answer all possible questions that surface. Specifically, HUD should develop a nationwide, consistent, reliable approach to providing guidance and support to PHAs and owners. HUD Housing and PIH occupancy question and answer web sites have recently started to become a valuable tool. They provide a fast way of providing an official, uniform response to questions that surface on a widely and increasingly used medium. Other opportunities exist. For example, the Department could offer a monthly-televised program highlighting a specific occupancy topic, leaving at least half of the program time for call-in questions on any occupancy topic. HUD could then make the taped program available for Internet access to reach a larger audience (as the Department does now with many video programs.). PHA managers and staff often are unaware of the resources that HUD has to offer—especially those originating from headquarters. Even when HUD's customers are aware of some of the Department's direct assistance options, owners and PHA staff are still reluctant to use them. A PHA may hesitate to call HUD staff for fear that their questions will bring a closer scrutiny of their operations. Some PHAs may have had past experiences with getting different answers to the same question from different HUD staff, or may be aware that their HUD contact person has a different perspective than that expressed by another HUD staff to a neighboring PHA. For these and other reasons, it is important that the PHA/owner community know that there are HUD-approved resources that they can trust to provide consistent guidance and quick, reliable answers to questions.

  It is also critical that there be a close link between the team that responds to field concerns and the staff responsible for writing HUD notices and guidance documents. The team responding to field questions and concerns knows what the problems are that face the field. These problems should be the subject of the guidance that comes from HUD.

- *HUD should provide the PHA/owners with the forms, training, and other tools needed to determine rent correctly.* Rent calculation error could be reduced if HUD would provide structured forms for interviewing tenants, obtaining verifications, and calculating rent. Ideally, these tools would be provided in the form of computer-assisted interview software that minimizes the number of questions that need to be asked. Such systems would ensure

that tenants are asked about all income sources and expenses that affect their rent. Manuals and training materials explaining how to implement requirements correctly and calculate rent accurately should be provided. To the extent that HUD program rules can be simplified, provision of automated and manual tools would be easier.

HUD experts and local housing staff should be given an opportunity to work together to develop these tools and systems needed to reduce rent error. Many local PHA/owners have already developed forms, training materials, manuals, automated systems, and monitoring processes that have enabled them to provide accurate efficient service to the tenants they serve. HUD should learn from these PHA/owners and develop materials that will help those PHA/owners who for one reason or another have not been as successful.

- *HUD should continue to implement its on-site monitoring program and PHA/owners should be held accountable for implementing HUD regulations and calculating rent accurately.* An on-site monitoring system that includes reviews at both the local and Federal level is essential to improving accountability. PHA/owners with excessive errors should be required to develop corrective action plans and show improvement within specified time periods. HUD has initiated extensive on-site monitoring efforts since the 2000 QC study, in contrast with its policies of most of the previous two decades. The most obvious explanation for the magnitude of error reductions in subsidy determinations between 2000 and 2003 is improved HUD monitoring and the expectation of such monitoring.

  Monitoring can be conducted at a variety of different levels. We recommend that HUD require PHA/owners to perform their own quality control reviews on a percentage of income determinations and rent calculations. Agencies that have aggressively sought to improve performance of their programs have had some significant successes, and one of the most frequently used error reduction strategies included establishment of internal quality control review procedures. In addition to agency monitoring, HUD Field Offices and/or other national level well-trained staff should conduct a re-review of a percentage of the cases reviewed at the local level to ensure that the quality control reviews are being conducted correctly, or select their own random sample of files for review. This type of oversight not only identifies errors, but prevents them. In addition, it demonstrates HUD's concern and focuses PHA/owner attention on tenant income and rent.

  There is evidence that PHA/owners will respond to HUD directives if they are monitored and held accountable. The Section 8 SEMAP system, for instance, appears responsible for much of the recent burst of improvement in activity by public housing agencies to implement or improve the rent reasonableness determination requirement. MTCS reporting, which is part of the new PHA rating systems, has improved partly as a result of the potential penalty from low rating scores, and the higher reporting and associated calculation checks appear responsible for much of the reduction in rent and subsidy calculation errors for units passing the MTCS data system edits.

- *Federal laws, regulations, and HUD requirements should be simplified to the extent possible.* The current statutory environment poses substantial obstacles to efficient, accurate income and rent calculations. It contains dozens of requirements which may all be well-intentioned and have potentially desirable impacts but which, taken as a whole, make the

income and rent determination process extremely complex. HUD has sought to issue guidance on virtually all aspects of current income and rent determination requirements, but some of the legislative provisions were written without any thought as to implications for their administrative complexity. While determining which income to count, which expenses to allow, and annualizing that information in a program with multiple objectives may always be complicated, the various specialized provisions that relate to small subparts of the population could be eliminated or simplified. Two examples of such policies follow:

- *Disallowance of Earned Income from Public Housing Rent Determinations.* Legislation passed in 1998 related to employment incentives provides an example of the complexities associated with rent determinations. The legislation provides special rent treatment for families:

  -- whose income increases as a result of employment of a member of the family who was previously unemployed for one or more years;

  -- whose earned income increases during the participation of a family member in a family self-sufficiency or other job training program; or,

  -- who is or was, within six months of being hired or receiving a pay increase, assisted under any State program for temporary assistance for needy families funded under part A of title IV of the Social Security Act and whose earned income increases.

  Families that qualify under these provisions are not subject to rent increases related to increased earned income for a 12 month period. After that period, the rent will be increased but only by 50 percent of the amount of the total rent increase that would be otherwise applicable.

  In practice, low-income tenants often have jobs with little security and move in and out of employment and training programs. Regulations needed to define the range of circumstances that occur and adequately document eligibility for this provision are necessarily long and somewhat complex. Keeping track of rent increase constraints imposes a significant added burden on PHAs and adds to rent determination errors. As with many provisions associated with rent and income determinations, there apparently was little thought given to striking a balance between a policy objective and administrative feasibility. A flat dollar or percentage income deduction for any earned income, for instance, would have provided a more direct and understandable incentive, and would have been easier for program sponsors to implement and for HUD to monitor.

- *Medical Expenses.* Elderly and disabled families are eligible for a medical expense deduction which is intended to cover prospective medical costs. Determining the amount that a family **anticipates** spending on medical needs is a difficult thing to do. Elderly tenants often keep poor records, and there is limited reason to believe that the medical expenses claimed have a close relationship with actual expenses, which HHS data suggest are, on average, higher. Verifying medical expenses is a burdensome process for program sponsors. Calculating the medical expense allowance would be far less

complicated if HUD would substitute a flat medical allowance for the inexact science of estimating future expenses. If some provision for exceptionally high expenses was considered essential, then the requirement could be that actual expenses could be claimed if in excess of some relatively high percentage of a family's income (e.g., 20 percent). This approach would be welcomed by the many elderly people and people with disabilities who resent the intrusion of housing staff into their very personal medical affairs (many verifications by their very nature reveal the type of clinics being visited, the practice of doctors being seen, and the names and dosages of prescriptions drugs being taken).

Expecting what are often relatively low-paid, minimally trained, high turn-over project staff to correctly implement unnecessarily complex rules is unrealistic. Some program sponsors do a remarkably good job, but expecting a generally high level of accuracy in rent and subsidy determinations may be unrealistic within the context of the current system. The legislative changes affecting tenant rent determinations made every one or two years usually affect a relatively small percentage of tenants, but are sufficient to substantially reduce incentives to design and implement comprehensive forms, procedures, and data systems that cover all aspects of income and rent determinations.

Recommendations for Modifying the Quality Control Process: The current quality control study methodology is based on the successes and failures of previous studies, and is generally performed well. Some minor changes in the next study appear desirable. These include continued expansion of computer systems and processes to further automate data collection, processing and reporting functions; expanding contractor access to verification obtained through inter-agency agreements; and continued investigation of the use of TRACS/PIC data to streamline the sampling and data collection process. For future studies, HUD has requested that case-file data be copied and made available to HUD staff in cases with errors over a yet to be specified threshold. The availability of this information will facilitate HUD monitoring efforts.

I. Introduction

A. Purpose of the Quality Control for Rental Assistance Subsidies Studies

The purpose of these studies is to provide national estimates of rent subsidy errors for the Department of Housing and Urban Development's (HUD) Public Housing Agencies (PHAs) and owner-administered housing programs. Rent subsidy errors occur during the tenant certification and annual recertification processes and these studies examine the extent, costs, and sources of these subsidy errors.[2] For purposes of these studies, "error" is defined as any rent calculation or eligibility determination that differs from what would have occurred if the PHA/owner had followed all HUD's income certification and rent calculation requirements during the most recent (re)certification. *The findings presented in this report are based on data collected during two data collection efforts. The first focused on (re)certifications conducted during the first half of FY 2003; the second on (re)certifications conducted during the second half of FY 2003. The data from these two studies have been combined to provide findings for the entire 2003 fiscal year.* HUD identified fourteen study objectives related to types of errors and cost issues; this report addresses each of these objectives. The analysis also identifies errors in assigning appropriate size units to households and certain procedural errors in the eligibility and rent determination process.

B. Background of the Study

This project is the third in a series of studies designed to identify current HUD eligibility, income, and rent determination regulations; translate these regulations into survey instruments; develop an error detection system; and provide nationally representative estimates of rent subsidy errors. The final report for the first study, conducted by ORC Macro (Macro) and KRA Corporation (KRA) was published in April, 1996. The final report for the second study, conducted by ORC Macro, was published in June, 2001. Work on the current project began in October, 2002. Tasks completed prior to data collection included designing the research and survey methodology, compiling HUD's regulations for the programs included in the study (public housing; Section 8 tenant-based; and Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC project-based), obtaining approval from the Office of Management and Budget (OMB), and automating the data collection process. Data were collected from nationally representative samples of HUD-assisted housing projects and project residents during two data collection periods; the first from March through August, 2003, the second from January through June 2004.

C. Organization of This Report

This report is organized as follows:

- Section I: Introduction
- Section II: Methodology

[2]PHAs and owners of HUD-assisted housing are required to make an initial determination of eligibility (called a "certification") and thereafter an annual recertification of each household's rent (a "recertification"). In this report, the term (re)certification refers to certifications and annual recertifications. Interim recertifications were not included in this study.

I. Introduction

- Section III: Study Objectives
- Section IV: Findings
- Section V: Recommendations
- Appendices
    - A. Rent Calculations
    - B. Weighting Procedures
    - C. Analysis Tables
    - D. Consistency Errors

Definitions of key terms used throughout this report are found at the end of Section V.

II. Methodology

A. HUD Requirements and Study Standards

Using the C*ode of Federal Regulations* and official HUD handbooks and notices, all HUD rules relevant to the determination of rent were consolidated into a set of HUD requirements. These requirements were used to create a uniform set of rules that could identify errors in eligibility determination, rent calculation, and unit assignment for the housing programs in the study. In general this uniform set of rules, known as the standards, follow the official HUD requirements. However, for some complex requirements, standardized procedures had to be developed so the data could be collected in a uniform manner. A complete list of standards used in this study can be found in the *Data Collection Standards.*[3]

B. The Sample

As mentioned above, the data used to generate this report were collected during two data collection efforts. The first focused on (re)certifications conducted during the first half of FY 2003; the second on (re)certifications conducted during the second half of FY 2003. The selection of the tenant sample was also implemented in two stages. The initial sampling design called for a nationally representative sample of 600 projects[4] with four households randomly selected from each project, or 2,400 households. Projects were selected with probabilities proportional to size without replacement (PPS), but voucher projects whose size exceeded the sampling interval were selected for eight, twelve, or more households in the project, and were counted as more than one project for purposes of determining the sample size. Because some large projects were selected multiple times, the study sample included 535 distinct projects in 54 geographic areas across the United States and Puerto Rico.

The sampling design required approximately equal allocations for the three assisted program types: Public Housing, PHA-administered Section 8 (Vouchers and Moderate Rehabilitation), and owner-administered Section 8 (New Construction, Substantial Rehabilitation, Property Disposition, and Loan Management, Section 202 PRAC, and Section 811 PRAC, and Section 202/162 PAC). PHAs that participated in the Move to Work block grant demonstration program through Public Housing or Section 8 Vouchers were removed from the project level sample. For additional information on the sampling procedures, see the *Sampling Report: 2003, Quality Control for Rental Assistance Subsidy Determinations.*[5]

Stage 1. For the first stage of the study, a random sample of four households was selected from most[6] projects. An equal number of potential "replacement" households were identified as potential substitutes when selected households did not meet the study requirements or were unavailable to be

[3] ORC Macro unpublished report to HUD dated January 16, 2003.

[4] For purposes of this study, a project is defined as: a Public Housing project, an owner administered project, or a PHA administering the voucher or moderate rehabilitation program in a specific county.

[5] ORC Macro unpublished report to HUD dated December 22, 2003.

[6] However, as noted above, some large voucher projects had additional households. For example, the New York City Housing Authority Section 8 Voucher program had a household sample size of 40.

interviewed. The tenant sample was selected from all households that were certified or recertified during the first half of the fiscal year. The universe of tenants or sampling frame for this stage included only those households where the month of the effective date of action was November through April. For purposes of sampling we assumed that the rent was actually calculated one month prior to the effective date of action. While this is not always the case, a consistent procedure was needed to avoid selection bias. The year of the effective date was not considered when selecting the sample to capture on-time as well as overdue annual recertifications.

Including only households recertified during the first half of the year had an impact on the project level sample because some PHA/projects complete all annual recertifications at one time and during a specific month or months that did not fall within the first half of the year. These projects had to be replaced by projects that either spread their annual recertifications throughout the year or completed all annual recertifications during the first half of the fiscal year.

Four households were excluded from the tenant sample of 2,400 after the data collection process was completed because the household interviews for these cases were incomplete. In addition, in five of the 535 projects data were collected for one additional household member because of changes in the tenant sample selection process. Rather than exclude originally-selected units, these households were added to the final data set. Therefore, the final data set for the first stage included responses from 2,401 households in the 535 projects.

Stage 2. The second stage of the study was designed to represent tenants certified or recertified during the second half of the fiscal year. Therefore, the universe of tenants or sampling frame for this stage included only those households where the month of the effective date of action was May through October. Again, for purposes of sampling, we assumed that the rent was actually calculated one month prior to the effective date of action. And again, the year of the effective date was not considered when selecting the sample to capture on-time as well as overdue annual recertifications.

Projects for the second stage of the study were selected using a set of rules established for that purpose. To the extent possible data were collected from the same projects included in the first phase of data collection. However, because some of those projects did not recertify any households during the second half of the fiscal year, replacement projects were selected. For the second stage, a random sample of two households was selected from each project, and an equal number of potential "replacement" households were identified as potential substitutes when selected households did not meet the study requirements or were unavailable to be interviewed. Therefore, the sample size for the second phase of data collection was 1,200 households.

The final sample represented in this report is 3,601 households.

C. The Data Collection Process

For each data collection phase, a multi-stage data collection process was used to obtain all required information. A mail survey provided project-level information from PHA/project staff. Tenant-level information was obtained by field interviewers who abstracted data from the household file,

interviewed the tenant, and requested verification for income and expense items from third parties.[7] Field data collection for phase one began in March, 2003 and ended in August, 2003. Field data collection for phase two began in January 2005, and ended in July, 2005. The data collection process for both phases was the same, and involved several major tasks that are discussed below.

Creating the Data Collection Instruments. Over 30 data collection forms were used for this study. These were the same forms used for the 2000 data collection effort with the exception of the third-party verification forms that were modified to improve the data collection process. These forms were created to collect data and determine whether: 1) there were errors in the eligibility determination; 2) the household rent was calculated correctly, and; 3) units were correctly assigned according to the study standards. Each form was created by a survey research specialist and reviewed by a HUD policy expert. All data collection forms were approved by OMB.

Automating the Data Collection Process. An automated data collection system has been developed to support the data collection process. Data from tenant files were entered directly into laptop computers, and a computer-assisted personal interviewing system (CAPI) was used to interview tenants. This system, referred to as the HUDQC Data Collection Software (HDCS) system, was developed by a special team of ORC Macro survey specialists and computer systems experts.[8] As sections of the instruments were collected by field interviewers, the HDCS system compared the data to expected responses or data previously entered, allowing data entry errors to be corrected in the field. The system required that the data be collected in the correct order, and that all the appropriate skip patterns be followed. This structured, automated process greatly reduced the need to edit, code, and clean the data after data collection was completed. Data were transferred to ORC Macro electronically on a daily basis.

Contacting PHA/Project Staff. PHA/project contact names were obtained from HUD headquarters staff. Letters were sent to PHA/project staff advising them of the study and requesting their participation. Prior to field data collection, PHA/project staff verified the project type and size, and provided project specific information necessary to accurately calculate the tenant's rent.

Hiring and Training Field Interviewers. Over 60 field interviewers were hired to complete each field data collection effort. Each field interviewer was assigned a group of projects. Field interviewers typically lived in the same general area as the projects selected for the study. For the first data collection phase, two eight-day training sessions were held (half of the data collectors were trained at each session). For the second phase, again two training sessions were held. However, a shorter four day session was conducted for field interviewers who collected data for phase one. This detailed training covered:

- project background
- HUD programs and requirements
- survey procedures

[7]Verification is a process of obtaining information about income or expenses from a third party who can attest to the accuracy of the information provided by the household. HUD requires that most information provided by the household be verified by a third party or substantiated from documents (such as award letters).

[8]The base of HDCS is the CSPRO software system used to collect demographic and health information in many countries, in conjunction with the U.S. Agency for International Development.

- automated data collection
- administrative procedures

Field Data Collection Data Sources. Data for each sampled household came from the sources listed below. Abbreviated terms and acronyms used in this report are in parentheses following the form's official title.

- **HUD Form 50058/50059 (50058/50059).** PHAs/projects must complete a HUD Form 50058 for each household in public housing, moderate rehabilitation, and voucher programs at certification and recertification. A HUD Form 50059 is required for all other programs in the study. Data from the forms were entered directly into the HUD QC Data Collection System (HDCS) on each field interviewer's laptop computer. As the data were entered, the system identified potential data entry errors, such as incorrect codes or numbers based on internal calculations and consistency checks. The electronic checking procedures enabled field interviewers to make immediate corrections.

- **Documentation and Other Verification from PHA/Project Files (D Forms).** Field interviewers collected information from the tenant files used by PHAs/projects to determine tenant eligibility and calculate their rent. The D Form module also collected information indicating whether the income, asset, or expense used by the PHA/owner was verified.

- **Household Interview Data (Household Questionnaire)**. An adult household member (preferably the head of the household) was interviewed in person via CAPI for this study. Interview questions focused on family composition, sources and amounts of income, assets, and applicable expenses. Data were collected for the same point in time as the (re)certification was conducted.

- **Third-Party Verification Data (Release Forms)**. When there was no evidence that the PHA/owner verified the information used for calculating rent, or the existing verification information did not meet requirements agreed to for this study, ORC Macro requested verification from the appropriate third-party sources. Verification was also requested from third parties when household interviews identified new sources of income then shown in the tenant files. Tenants signed release forms during the household interview to obtain third-party verification of income and expenses. Third-parties completed the forms and returned them to ORC Macro.

- **Match with Social Security Administration Data**. Sample household members were matched with Social Security Administration files (SSA) by HUD. Social Security and SSI benefit data were then obtained from SSA for all household members. This benefit data was used in the final QC rent determination.

Tenant income, expense, allowance, and third-party verification information were collected using HUD-sanctioned data collection procedures. ORC Macro data collectors strictly adhered to these procedures to avoid misclassifying errors caused by PHAs/projects that did not follow HUD requirements.

II. Methodology

Field Data Collection Time Periods. Data were collected for a particular point in time, referred to as the Quality Control Month (QCM). This month represents the date the rent calculation for the most recent certifications or annual recertification was completed. For most households, the QCM is the month in which the project manager (or other authorized housing project staff member) signed the 50058/50059 form, certifying that the information contained on the form was correct. If no signature was available on the 50058/50059 form, the data collector used other documentation in the tenant file to determine when the action was taken. In rare situations, when the rent was calculated after the effective date of the action (because of retroactive adjustments) the QCM is the effective date of the action.

If the recertification was overdue by more than 12 months, the QCM was moved forward in 12-month intervals to a point in time within 12 months of the date on which the data were collected. During the household interview, the respondent was questioned about circumstances for the month in which the recertification would have been completed had the housing project staff completed it on time.

The Project Staff Questionnaire. A mail survey was sent to the PHA/project staff person most knowledgeable about certification and recertification procedures. This survey requested information about local policies and procedures that might help explain the rent error findings.

D. Constructing the Analysis Files

The initial database consisted of five separate files that included abstracted 50058 and 50059 forms, tenant file information from the D form module, information from the household interview, and the third-party release forms. Data fields were at both the member and household levels, with income and expense items in hourly, weekly, monthly, or annual amounts. ORC Macro constructed an analysis file that annualized all income and expense data at the household level. For some items, such as stable income from Social Security this calculation was relatively easy. For other items, such as seasonal employment or medical expenses annualizing income is more complicated.

For the calculation of rent error, the final analysis files contained income and expense/allowance data aggregated at the household level in annual amounts. Rent data were in monthly amounts. Separate files were created for the analysis of issues such as verification, internal 50058/50059 errors, and occupancy standards.

E. Third-Party Verification Rules

For purposes of this study, verification was considered acceptable if it was *in writing and from a third party*. Written verifications had to be dated 60 days before or 30 days after the date the certification or annual recertification was completed. As each income or expense item was identified during the data collection process, it was assigned a unique identification code. This code (which links the member number, income or expense type, and a consecutive number) was used to match the specific item to the third-party verifications sent from providers.

II. Methodology

F. Rent Formulae

HUD uses specific formulae for determining tenant rents for each of its programs. The formula for determining the Total Tenant Payment (TTP) is the same for all programs except Sections 202 PRAC, 811 PRAC, and 202/162 PAC. The Total Tenant Payment is the greater of:

(1) 30 percent of a household's adjusted monthly income, which is one-twelfth of the total of all household members' earned and unearned income (other than those amounts specifically excluded by HUD or PHA policy), less allowances for elderly/disabled households and for household dependents, and deductions for disability, medical, and child care expenses.

(2) 10 percent of a household's gross monthly income with no allowances or expense deductions.

(3) The welfare rent in as-paid states.

(4) The minimum rent ($25 for owner-administered projects, or an amount established by the PHA, not to exceed $50).

The formula for determining the TTP for the Sections 202 PRAC, 811 PRAC, and 202/162 PAC programs includes steps (1) through (3) above; but there is no minimum rent requirement for these programs.

There are five different rent calculations used to calculate the actual amount of the household's rent (depending on the program type and the household-specific situation) for the programs included in this study. These five rent calculations include:

- Public Housing
- Section 8 Vouchers
- Section 8 Enhanced Vouchers
- Section 8 Project-Based (including Moderate Rehabilitation), Sections 202 PRAC, 811 PRAC, and Section 202/162 PAC
- Manufactured Home Space Rental for Section 8 Vouchers

The household rent was calculated after data from all sources were collected. When calculating rent, a cap was placed on the maximum amount of rent the tenant was required to pay. For all Section 8 programs, this is the *Gross Rent*. In the Public Housing program, this is the *Flat Rent or the Ceiling Rent*. If the Flat Rent or the Ceiling Rent was not available, the *Fair Market Rent* for the appropriate county was used to cap the rent. The rent is not capped for the Section 202 PRAC or Section 811 PRAC programs.

Additional rent calculations were necessary for households with ineligible noncitizens. Determining the correct rent for these households is a multi-part process that first determines whether the household is entitled to continued assistance, temporary deferral of termination of assistance, and

prorating the rent if appropriate. Two proration formulae were used--one for Public Housing and one for all Section 8 programs.

The algorithms for the rent calculation formulae can be found in Appendix A.

G. Calculation of Rent Error

The monthly rent algorithms used by ORC Macro to calculate the national estimates of error are:

- **Actual Rent:** The monthly rent indicated on the 50058/50059 forms. If this item was missing on the 50058/50059 form, the Actual Rent was calculated based on the other information on the 50058/50059 form.[9]

- **Quality Control (QC) Rent:** The monthly rent calculated by ORC Macro using all of the verified household information.[10]

Rent error was calculated by subtracting the QC Rent from the Actual Rent. A discrepancy of $5 or less between the Actual and QC Rent was not considered to be an error. The $5 window was used to allow for minor calculation and rounding errors, and to focus the data analysis on major sources of error. For an exploratory analysis, a rent calculated solely on the information contained on the 50058/50059 forms was used to determine if errors could be identified using only information contained on the 50058/50059 forms.

H. Quality Control Rent

ORC Macro calculated QC Rents using the best available information. Every effort was made to use data that would have been available to the PHA/project when determining which data to use in the QC rent calculation. Each income and expense item was processed individually. For each item, ORC Macro first used available verification from the project files. If acceptable verification was not available from the tenant file, verification was requested from an appropriate third party (see Section II-E for a discussion of acceptable verification). If the verification was not returned by the third party and the tenant file did not include verification, information obtained during the household interview was used. The following special procedures were followed when appropriate:

- Income that started after the QCM was not counted when calculating the QC Rent.

- Income that ended after the QCM was counted for the full year unless it was clear that the PHA/owner knew that this income was going to end.

[9] Rent Roll data was not used as a substitute for Actual Rent because a previous study found that the rent roll sometimes included amounts to make up for previous unpaid rent, fines, or damages, etc.

[10] Attempts were made to verify items that were not verified by PHA/owner staff; however, verification was not always obtained.

- Earned income bonuses with a frequency of once per year were not counted.

- Temporary Assistance to Needy Families (TANF) and Other Welfare income were treated as the same source of income so that income listed as TANF on one form (e.g. the household questionnaire), and Other Welfare on another form (e.g., the Documentation forms) would not be counted twice.

- Welfare (TANF and Other Welfare) income, Child Support income, and Child Care expenses were treated at the household level instead of the member level so that the same source of income associated with one member (e.g. the head of household) on one form, but another member (e.g. a child) on another form would not be counted twice.

- Passbook rates (for determining the imputed income from assets) for PHA administered programs were taken from information provided by PHA/owner staff. If the rate was missing, the average rate for the geographic area was used. The passbook rate for owner-administered programs is 2 percent.

- For new certifications, PHA/project staff provided the low and very low income limits. Income limits were obtained from HUD's website when not provided.

I. HUD Requirements Affecting the Analysis

Several HUD requirements affected the data collection methodology and subsequent analysis. As noted in Section II-A above, relevant HUD requirements were incorporated in the study standards used to determine error. All data collection procedures and analyses were based on these study standards. Though most standards were easily implemented, several were more problematic and complicated the data collection or analysis, as discussed below:

Anticipated Income. The amount of rent a household will pay is based on *anticipated* household income and deductions for the 12 months following (re)certification. For households with a stable income source like Social Security or steady employment, annual income estimates for the next 12 months are relatively accurate. However, many assisted households have members with seasonal employment or members who move in and out of the household. And certain expenses such as medical expenses (for elderly/disabled households) and child care costs may be very difficult to anticipate. Determining whether such income and expense amounts were figured correctly at the time of recertification is very difficult when data are collected after the changes occurred. Every effort was made to treat questionable income or expenses in the same manner as PHA/project staff treated them. Several of the special procedures described in Section II-H were created for this purpose.

Third-Party Verification. HUD regulations require that the information supplied by residents at (re)certification be verified by third parties (for example, employers, the Social Security Administration, banks, medical personnel). Data collectors obtained release forms from the households when evidence of verification was not present in the tenant's file and then requested verification from the appropriate third parties. However, some third parties did not respond, others

returned information for incorrect time periods, and other problems were encountered in obtaining the correct verification. Follow-up requests for missing verification were not made in all cases due to time constraints. In calculating the rents, codes were assigned to indicate which rents were based on verified information and those for which the income/expense information was only partially or not verified.

ORC Macro and HUD established a set of verification rules to determine whether an item was verified. Section II-E shows the rules used to determine if verification was acceptable and for each matched item used in the rent calculation. Verification rates for different rent components are in Table 1 (in the appendix) and Exhibit IV-1 in Section IV-A.

Earned Income Disregard. The regulations governing the public housing and voucher programs require PHAs to exclude a portion of earned income for households meeting certain "self-sufficiency" eligibility criteria. Only participants in these programs—not applicants entering the programs—are eligible for this income exclusion.

To identify households eligible for the self-sufficiency exclusion, tenants were asked about training and self-sufficiency programs during the household interview. Eighty-six household members were identified as possibly being entitled to an earned income exclusion. Forty-three of these household members were removed from this list because either their job start date did not meet the policy requirements, or their entitlement to the exclusion expired. This left 43 household members who appeared to qualify for the earned income exclusion.

For these household members, we examined the tenant file information on the 50058 and the documentation forms. We compared the QC calculated earned income exclusion (using the household questionnaire information) to the earned income used by the PHA when calculating the total annual income. We did not verify that the wage earners who appeared to qualify for the earned income exclusion were actually eligible; nor did we verify the amount of income the wage earner received prior to obtaining employment or receiving pay increases.

Of the 43 household members where according to the QC data the tenant was entitled to a self-sufficiency exclusion, it also appeared that the PHA gave an exclusion in 11 of the cases (26%). In another 11 cases, it appeared that the PHA may have given an exclusion. In the remaining 23 cases (53%), it appears that the PHA did not give an earned income exclusion.

After considering this information, we realized that we did not have enough information to say with certainty that the PHA applied the earned income disregard correctly (or incorrectly). Therefore, *we have not included any errors in the study findings solely because the PHA did not follow the earned income disregard requirements correctly*. Instead, we gave the PHAs the benefit of the doubt. If the PHA excluded earned income, we used the amount of earned income reflected on the 50058 form rather than the QC calculated amount of earned income. If the PHA did not exclude earned income, the QC rent calculation does not reflect an earned income exclusion.

It should be noted that the policy related to the earned income disregard is very complex. It requires the PHA staff to keep and verify a historical record of household member's employment and participation in self-sufficiency incentive programs. The policy is hard to follow and subject to

interpretation by the staff involved. This makes reviewing and determining whether the policy has been followed correctly extremely difficult.

Permissible Deductions. Public Housing programs may adopt deductions from annual income in addition to HUD's required deductions. To make sure that the appropriate additional permissible deductions were taken into consideration when determining the adjusted annual income, we looked at two sources. First, we looked at items 8b through 8e on the 50058 where the type and amount of permissible deductions were recorded. Second, we asked a question in the Project Staff Questionnaire to identify additional exclusions adopted by the Public Housing PHAs. We found that many PHAs use the Permissible Deduction section (items 8b through 8e) of the 50058 form to record all kinds of information that have nothing to do with permissible deductions. Therefore, we had to rely on the Project Staff Questionnaire information to determine whether the items listed on the 50058 form were in fact additional permissible deductions. Based on the information obtained through the Project Staff Questionnaires, and the 50058 forms, only four households were entitled to permissible deductions--one for medical premiums, one for child care expenses, and two for participation in a WIN program.

Flat Rent. Households that paid a flat rent rather than an income-based rent were included in the study. For these households there is no rent error. The QC rent is the same as the Flat Rent used by the PHA. There are 56 flat rent cases in the study sample. It should be noted that determining if a household is paying the flat rent is not always easy. For most cases items 10b – Unit's Flat Rent, and 10u – Type of Rent Selected, could be used to identify whether the household is paying the flat rent instead of income based rent. However, some PHAs put the flat rent amount in the Tenant Rent field on the 50058 (item 10f). Therefore, notations from other documents in the file had to be considered.

Ineligible Non-citizens. HUD regulations require that rent be prorated for households with ineligible non-citizens unless the household meets certain criteria that allow continuation of full assistance. ORC Macro reviewed all households with ineligible non-citizens to ensure that the rent was calculated correctly. No households with ineligible non-citizens were entitled to continuation of full assistance. Less than one percent of the households in the study included an ineligible non-citizen.

III. Study Objectives and Analytic Methods

This section presents the fourteen study objectives and a brief description of the methodology used to meet them.[11]

Objective 1: Identify the various types of rent errors, rent error rates, and calculate their variance estimates.

The types of errors and error rates in the 2000 HUD report are replicated in the 2003 analyses. These errors include percent of households paying correct and incorrect rent, dollar error amounts, and dollar error rates. Variance estimates (standard errors) are provided for selected error rates. Errors were determined by recalculating the tenant rent based on verified QC information and subtracting this amount from the tenant rent indicated on the 50058/50059 forms (Actual Rent). Three different types of dollar rent error estimates were calculated:

Dollar Rent Error—The difference between the *monthly* Actual Rent and the *monthly* QC Rent (i.e., Actual Rent minus QC Rent). A household rent is found to be in error if the difference between the Actual Rent and QC Rent is greater than $5, while "proper" rent payments reflect differences of $5 or less. Rates of exactly matching Actual and QC rents (within $1) are also presented. Simple percentages of the number of households paying the proper and exact rents are reported, as well as the percent of households in error per program, the average gross dollars in error, and the percent of rent dollars in error. For households who were ineligible when initially certified, the QC Rent is the unsubsidized tenant rent; the dollar error is this amount minus the Actual Rent.[12]

Total Component Dollars in Error—the absolute sum (i.e., the sum of the positive and negative amounts, ignoring the plus or minus signs) of all individual income and expense component errors. These errors are combined to provide an overall Total Dollars in Error and are presented as *annual* amounts. A dollar amount of rent overpayment and underpayment was calculated for each component with identified error; however, some of these errors were overlapping or offsetting. For example, earned income may have been underreported while—perhaps because of a calculation error—Supplemental Security Income may have been overstated. The net difference could be zero, or a positive or negative amount. This calculation disregards offsetting values when signs differ.

Largest Component Dollar Error—the *annual* dollar amount of error for the income or expense components with the largest error. Income and expense components include the five sources of income (earned, pensions, public assistance, other income, and assets) and the five types of deductions (medical, child care, and disability assistance expenses, dependent allowance, and elderly/disabled allowance). If the component with the largest error is earned income, the largest dollar error would reflect the difference between the earned income used by the PHA/project, and the earned income used in the QC Rent calculation.

[11]See *Analysis Plan*, an unpublished ORC Macro report to HUD, dated December 20, 2002, for a more detailed description of the methodology.

[12]As an operational matter, for public housing households, the underpayment due to ineligibility is defined as the Flat Rent (if it is available) , the HUD-approved ceiling rent (if available), or the Section 8 Existing Fair Market Rent, minus the actual total tenant payment.

The dollar error rate is used for other error calculations, including the National Rent Error Rate and Net and Gross Error Rates. The latter error calculations link errors in the rent determination process to dollar error rates, sparking new oversight practices to better manage HUD subsidies.

Objective 2: Identify the dollar costs of the various types of errors.

Five types of administrative errors are linked to rent errors. Data obtained directly from the 50058/59 form as well as project and tenant information from the tenant file can be used to identify and measure each of error type:

- Calculation errors
- Consistency errors
- Transcription errors
- Incorrect determination of allowances and income sources
- Overdue recertifications

Calculation errors are detected by recalculating section subtotals and the final rent based on the exact information in the 50058/59 forms. The tenant rent is calculated using the detailed information on the 50058/59 and compared to the actual tenant rent on the 50058/59. If the two rents differ, there is a calculation error.

Consistency errors are determined when there is a lack of logical conformity between elements within the 50058 or 50059 forms. For example, transaction type and assistance status must correspond. Elderly status information must be consistent with information about the age of the head of household or spouse.

Transcription errors are detected by comparing 50058/59 data with information in the tenant file. If the 50058/59 data for a specific income or expense item does not match the tenant file data, a transcription error exists.

Incorrect determination of allowances and income sources are identified by taking tenant file information and comparing it to the 50058/59 data. Allowance errors are detected by calculating the allowances based on the tenant file information and comparing this QC allowance to the Actual Allowance on the 50058/59. Similarly, income is calculated based on the types and amounts of income reported in the tenant file. The improper application of allowances and incorrect calculation of income are a subset of transcription errors.

Overdue Recertifications produce rent errors because rents are based on old information. For households with overdue recertifications, the quality control information is based on the month the recertification should have been completed rather than when it was completed.

III. Study Objectives and Analytic Methods

Objective 3: Estimate the national-level costs for total error and major error types.

This analysis includes determining the National Rent Error Rate, the numbers and proportions of households found to be in error, and the dollar amount of rent error and the proportion of total dollars found to be in error. Sample data were weighted to provide national estimates.

Objective 4: Determine the relationship between errors detectable using the HUD 50058 and HUD 50059 forms and total errors found in the study.

As discussed under Objective 2, calculation and consistency errors identify mistakes made by the housing project staff. Under Objective 4 households with calculation and consistence errors are compared to households with QC errors to determine if error found within the 50058/50059 form can be used to predict QC error.

Objective 5: Determine whether error rates and error costs have statistically significant differences from program to program.

This analysis presents differences in error rates by program type. Data is provided for three program groups: Public Housing, PHA-Administered Section 8 (vouchers and moderate rehabilitation), and Owner-Administered housing (Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC). The gross and net error rates are provided for each of these program types. The gross error rate is the sum dollar amount of gross error divided by the sum dollar amount of QC Rent, and the net error rate is the sum dollar amount of net error divided again by the sum dollar amount of QC Rent.

Objective 6: Determine the apparent cause of significant rent errors, either on a sample or a comprehensive basis, to provide HUD with information on whether the error was caused primarily by the tenant or by program sponsor staff.

As was done in the previous studies, we provide descriptive information on the sources of discrepancies between housing file information and verified information, and describe the incidence of administrative errors and their impacts. In addition, we examine whether failure to verify sources of income and expenses are a contributor to QC error. Multivariate analyses using administrative errors and income components as independent variables were performed to identify how these errors affect the QC Dollar Rent Error.

Objective 7: Determine the extent to which households are over housed relative to HUD's occupancy standards.

This objective addresses whether households reside in units with the correct number of bedrooms. Generally acceptable HUD guidelines specifying the appropriate size unit for assisted households are shown in Exhibit I-1 below. [13]

[13] Local projects have discretion in determining unit size, and may determine unit size differently than shown.

III. Study Objectives and Analytic Methods

For most programs, the rules are not based solely on household size and allow discretion on the part of the project staff. All programs allow exceptions to these rules. This study replicates the analyses in the previous studies that identified bedroom size and program, and the proportion of households in compliance with and in violation of occupancy standards according to the guidelines in the table below.

Exhibit I-1: PHA Section 8 Unit Size Standards

Number of Bedrooms	Number of Persons in Household	
	Minimum	Maximum
0	1	1
1	1	2
2	2	4
3	3	6
4	5	8
5	7	10

Objective 8: Provide information on the extent to which errors are concentrated in projects and programs.

Further descriptive analyses were conducted to examine whether errors are concentrated or are randomly distributed across PHAs/projects. Multivariate analyses were conducted with the tenant as the unit of analysis. Tenant and PHA/project characteristics were analyzed as independent variables predicting error rates. This analysis identified how each of these variables contributes to rent error. The results will help guide HUD's management of error rates and elaborate relationships between management practices and project/tenant characteristics that affect error rates.

Objective 9: Identify the percentage of newly certified tenants who were incorrectly determined eligible for program admission.

Incorrect initial eligibility determinations create long-term problems for assisted-housing programs. Newly certified households were reviewed to determine whether they met the eligibility requirements. Five criteria reviewed at initial certification are not a part of the recertification process: definition of family, citizenship, verification of social security numbers, signing consent forms, and low and very low income limits. This study did not investigate definition of family because it is determined by the PHA or owner. Therefore, findings are provided on four of the five initial certification criteria. In addition, this study did not include suitability factors that PHA/owners may use in selecting tenants—factors such as tenant histories, histories of drug use or criminal activity.

III. Study Objectives and Analytic Methods

Objective 10: Determine the extent to which Section 8 voucher rent comparability determinations are found in the tenant file, and indicate the method used to support the determination.

To comply with the rent reasonableness requirement, housing authorities must determine that Section 8 voucher rents are reasonable in comparison to rents for similar housing in the private, unassisted market. Using information collected from tenant files, we estimated the proportion of Section 8 voucher recipients with comparable documentation. For those with documentation, we classified the type of evidence cited in the tenant file documentation (e.g., no evidence, cited market estimates for comparable units, or the rents of one or more units considered to be comparable). We present weighted proportions of voucher recipients with rent comparability data.

Objective 11: Estimate the total positive and negative errors in terms of HUD subsidies.

Proper payments are those in which the Actual Rent equals the QC Rent. Errors can be either overpayments (Actual Rent greater than QC Rent) or tenant underpayments (Actual Rent less than QC Rent). Overpayment error rates were calculated by dividing the total amount of overpayment by the total QC Rent; underpayment error rates were calculated similarly by dividing the total amount of underpayments by the total QC Rent.

Objective 12: Determine the extent to which error rates in projects that use an automated rent calculation system differ from errors in those that do not.

We expected to find a significant association between the use of automated rent calculation software and rent errors. Rent calculation using an automated system should eliminate calculation errors. Automated systems may also facilitate accurate collection and storage of tenant information. We used a multinomial logic model to test the association of computer automation with underpayments and overpayments. In addition, variables representing usage of automated rent calculation systems were used as explanatory variables in error-prone models.

Objective 13: Determine whether other tenant or project characteristics on which data are available are correlated with higher or low error rates.

To respond to this objective, we use multivariate analysis to conduct more detailed analyses of differences among PHA/projects and provide HUD with more information for identifying projects and tenants likely to exhibit high error rates.

Objective 14: Determine whether cases for which 50058/9 data had been submitted to HUD were more or less likely to have errors than those for which data had not been submitted.

The QC sample was matched to the TRACS/PIC data. Analysis was conducted to compare the average dollars in error for households included in TRACS/PIC with those that were not. For those households found in TRACS/PIC additional analysis was conducted.

IV. Findings

A. Overview

Analyses were conducted using weighted sample data for the 3,601 households.[14] Data are presented by the three program types that were the basis for the sampling design—Public Housing, PHA-administered Section 8 (Vouchers, and Moderate Rehabilitation), and owner-administered (Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC). Each of the major study findings, the reasons for the errors, and other background information concerning these errors are discussed below. In many of the exhibits throughout the report the data collected during the current study (referred to as the 2003 data) are compared to the data collected in a previous study. The data for this earlier study was collected in 2000; the analysis was completed in 2001. Dollar figures for the 2000 report are given as actual dollars.[15,16]

This discussion is divided into seven parts: the errors in the rent amount based on the QC data (rent error), the errors in sources of income and expenses (component errors), the errors found using only project file data (administrative error), occupancy standards, comparisons with PIC/TRACS data, project level analysis, and findings related to rent reasonableness determinations. The first three parts present different types of error.

Rent error is error that results in an actual dollar error. A dollar error means the household paid too much rent (an overpayment) or the household paid less rent than it should have paid (an underpayment).

Component errors are the income and expense components used to calculate rent. The income components are employment income, Social Security and pensions, public assistance, other income, and asset income. The expense/allowance components are elderly/disabled allowance, dependent allowance, medical expenses, childcare expenses, and disability expenses.

Administrative errors are errors that result from procedural mistakes. They consist of:

- Consistency errors—errors in logical conformity between elements within the 50058 or 50059 form
- Calculation errors—arithmetic errors within subsections of the 50058 or 50059 form
- Transcription errors—errors in transferring information from documentation in the tenant file to the 50058 or 50059 form
- Failure to conduct a recertification in a timely manner
- Failure to verify information.

Component and administrative errors may or may not result in rent errors. Administrative errors tell us at what point during the rent determination process that an error occurred, while the component errors tell us which income or expense caused the error. Data supporting the discussion are presented in Appendix C tables.

[14] Appendix B presents the procedure used in weighting the data

[15] The Consumer Price Index (CPI) increased by 6 percent from summer 2000 to summer 2003.

[16] The move-to-work projects were removed from the 2000 findings to provide comparable PHA/project universes.

B. Rent Error

Overview. Rent errors were identified by subtracting the QC Rent from the Actual Rent.[17] The QC Rent was calculated using third-party verification whenever possible. If third-party verification was not available, information from the Documentation forms or Household Questionnaire was used. The Actual Rent is the Tenant Rent from the 50058/50059 form. As noted above, a household was considered to be correct (proper payment) if the QC Rent and the Actual Rent matched within $5. All exhibits included in this report (except IV-2) and all tables in Appendix C define households whose Actual and QC Rents matched within $5 as proper payments, except for the supplemental tables (designated by the letter "S"), which are based on exact matches between these two rents.

Definitions of Rent Errors. Dollar error can be determined by comparing the rent the household should have paid to what it was paying, or by identifying the percent of the Federal subsidy that was paid in error. In this study, error was determined by the first method. The rent errors presented throughout this report were calculated in the following manner:

- **Dollar Rent Error** was calculated at the household level by subtracting the household's QC Rent from the Actual Rent. Note that these are *monthly* rents. A negative number indicates an underpayment, meaning the household paid less than it should have paid, and that HUD's contribution was higher than it should have been. A positive number indicates a household overpayment, meaning HUD's contribution was less than it should have been.

- **Gross Rent Error** is the absolute value (i.e., the sum of the absolute value of positive and negative Rent Error) of the Dollar Rent Error for the sample as a whole or a specified group of households. The Gross Rent Error functions simply as a measure of the magnitude of the errors. The dollar amounts presented in the tables are Gross Rent Error values, unless otherwise indicated.

- **Net Rent Error** is the arithmetic value (i.e., the sum of the negative and positive values of over- and underpayments) of the rent error.

- **Error Rate** is calculated by dividing the sum of the Gross Rent Error by the sum of the QC Rent, for the entire sample or a specified group of households.

Verification Used in Determining the QC Rent. As indicated above, a set of rules was established for third-party verification (see Section II-E). If an income or expense component was used for a rent calculation and was not verified by the PHA/owner, ORC Macro staff sought third-party verification. However, ORC Macro verification could not be obtained for all unverified items despite a considerable effort and expense.

Exhibit IV-1 shows the percentage of each rent component that was verified by either the PHA/owner or Macro. The first two columns present the percent of rent components that were verified with third party in writing, third-party verbal, or documentation. The remaining two columns present the percent of rent components that were verified with the more stringent

[17] Rent error is based on Tenant Rent, not Total Tenant Payment. Tenant Rent is calculated using the formulas listed in Section II F. and presented in detail in Appendix A.

verification requirements for this study (third-party in writing). As the table indicates, there has been an increase in the percent of rent components that were verified.

Exhibit IV-1
Percent of Households Fully Verified by Either the PHA/Owner or ORC Macro

Rent Component	Third-Party Verbal or In Writing, or Documentation		Third-Party In Writing	
	2000	2003	2000	2003
Earned Income	71%	89%	62%	78%
Pensions, etc.	88%	98%	78%	95%
Public Assistance	74%	84%	65%	68%
Other Income	52%	76%	47%	59%
Asset Income	57%	86%	49%	72%
Child Care Expense	50%	72%	47%	64%
Disability Expense	20%	68%	20%	67%
Medical Expense	52%	76%	40%	52%

Source: Table 1, Appendix C

Tables 1a and 1b in Appendix C provide additional verification information by rent component. They present the number of households for which the income or expense component was not verified, partially verified, or fully verified. Table 1a includes items that were verified by third parties in writing or verbally, or with documentation. Table 1b provides data for items verified in writing by third parties (as required by the study).

Proper Payments. Exhibit IV-2 shows the percent of households with proper payments by program, for households where the Actual and QC Rents matched within $5 and where the Actual and QC Rents matched exactly. At (re)certification, the rent was calculated correctly (within $5) in more than one half of the households (60 percent), 16 percent higher than 2000's total of 44 percent. More than a third matched exactly for 2003 (44 percent), up 13 percent from 31 percent in 2000.

Exhibit IV-2
Percent of Households with Proper Payments

Administration Type	Percent of Households Within $5		Percent of Households Matched Exactly	
	2000	2003	2000	2003
Public Housing	47%	64%	33%	49%
PHA-Administered Section 8	37%	54%	29%	40%
Total PHA-Administered	42%	58%	31%	43%
Owner-Administered	48%	63%	32%	46%
Total	44%	60%	31%	44%

Source: Table 3, Appendix C

IV. Findings

Households with QC Rent Error. Exhibit IV-3 shows the percent of households in error, the average dollar amount in error, and error rate by program. Forty percent of the households have a rent error greater than $5, down from 56 percent in 2000. The average gross dollars in error, calculated by dividing the sum of the dollar amount of gross error (i.e., the sum of the absolute values of under- and overpayments) by the total number of households, is $28 in 2003, and is much lower than the 2000 estimate of $44. The gross dollar error rate, calculated by dividing the sum of the dollar amount of Gross Rent Error by the sum of the dollar amount of the QC Rent, was reduced by a third from 23 percent in 2000 to 15 percent.

Exhibit IV-3
Percent of Households with Error, Average Dollars in Error, and Dollar Error Rate for Households with Error Greater Than or Less Than $5

Administration Type	Percent of Households with Error		Average Gross Dollars in Error		Gross Dollar Error Rate	
	2000	2003	2000	2003	2000	2003
Public Housing	53%	36%	$41	$23	20%	12%
PHA-Administered Section 8	63%	46%	$59	$35	31%	18%
Total PHA-Administered	58%	42%	$51	$31	26%	16%
Owner-Administered	52%	37%	$32	$22	18%	12%
Total	56%	40%	$45	$28	23%	15%

Source: Table 2 and 3, Appendix C

The rent errors are sensitive to a number of assumptions made in this study. Changes in the error threshold, for example, would affect the overall dollar error estimates. Perhaps more importantly, it is likely that tenants with large rent increases resulting from corrected calculations would leave the program, reducing potential subsidy reductions. Those with decreases in their rents would be more likely to remain, increasing subsidy requirements. These corrections are desirable outcomes, but it is unclear what their net impact would be on subsidy costs. The most appropriate use of this study is as a tool for strengthening HUD's procedures for ensuring administrative compliance with regulations. The recommendations presented in this report will require greater rather than fewer resources in the short-term. Significant error reductions can only be attained through rule simplifications, additional instructions, and better forms, training, and monitoring, as discussed in the report. We believe that the recommended changes will take two to four years before measurable results can be achieved.

Underpayment and Overpayment Households. Exhibits IV-4a and IV-4b show the percent of households and average dollar amount of error for all households when errors of $5 or less are excluded from calculations. Exhibit IV-4a and IV-4b present the error for underpayment and overpayment households, respectively. Twenty-three percent of all households paid more than $5 less than they should have in 2003, compared with 34 percent in 2000. For the 2003 households, the average monthly payment was $78, much lower than the mean of $94 in 2000. While 22 percent of all households in 2000 paid more than $5 more than they should have, overpayments were slightly

lower at 18 percent for 2003. The average monthly overpayment was $57 in 2003, up slightly from $56 in 2000.

Exhibit IV-4a
Underpayment Households
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households in Error		Average Dollar Amount of Error			
			For Underpayment Households (with errors < $5)		For All Households	
	2000	2003	2000	2003	2000	2003
Public Housing	33%	21%	$85	$71	$28	$15
PHA-Administered Section 8	42%	25%	$107	$86	$45	$22
Total PHA-Administered	38%	24%	$99	$80	$38	$19
Owner-Administered	27%	21%	$81	$73	$22	$15
Total	34%	23%	$94	$78	$32	$18

Source: Table 3 and 4, Appendix C

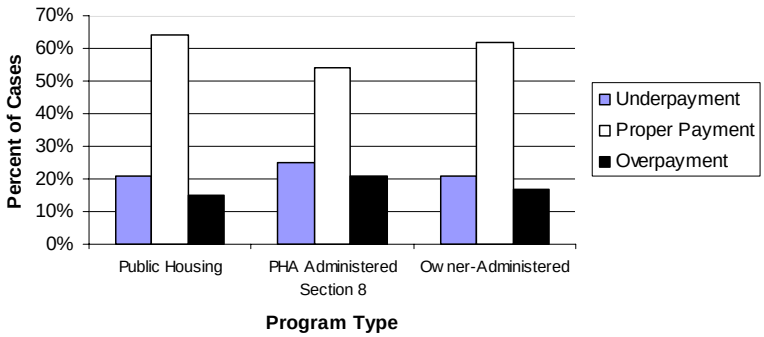
Exhibit IV-4b
Overpayment Households
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households in Error		Average Dollar Amount of Error			
			For Overpayment Households (with errors > $5)		For All Households	
	2000	2003	2000	2003	2000	2003
Public Housing	20%	15%	$64	$58	$13	$7
PHA-Administered Section 8	21%	21%	$67	$65	$14	$14
Total PHA-Administered	20%	19%	$65	$63	$13	$12
Owner-Administered	25%	17%	$41	$44	$11	$7
Total	22%	18%	$56	$57	$12	$10

Source: Table 3 and 4. Appendix C

Figure IV-1 shows the percent of underpayments, proper payments, and overpayments by program type. Programs were grouped into three categories—Public Housing, PHA-administered Section 8, and owner-administered. Note that PHA-administered Section 8 programs have greater underpayment error than the other programs. As indicated above, a household was considered to be correct (proper payment) if the Actual Rent and the QC Rent matched within $5.

Figure IV-1: Payment by Program Type



Gross and Net Dollars in Error. Exhibit IV-5 presents the gross and net average dollars in error and their associated standard error. To obtain the Gross and Net Rent Error, the dollar amount of overpayments is added to the dollar amount of underpayments, first using the absolute values for gross error, and then the arithmetic values for the net error. The net error measures the dollar cost of the errors and is -$7 (indicating a tenant underpayment) for 2003; the average gross dollar error is $28 for 2003 and represents the dollars associated with the errors (the magnitude of the errors).

Exhibit IV-5
Gross and Net Dollar Rent Error (Monthly) for All Households

Administration Type	Gross Rent Error			Net Rent Error		
	Average Dollars in Error		Standard Error	Average Dollars in Error		Standard Error
	2000	2003		2000	2003	
Public Housing	$41	$23	$2.42	-$15	-$6	$1.94
PHA-Administered Section 8	$59	$35	$3.21	-$31	-$8	$2.69
Total PHA-Administered	$51	$31	$2.21	-$24	-$7	$1.82
Owner-Administered	$32	$22	$1.85	-$11	-$8	$1.69
Total	$45	$28	$1.64	-$20	-$7	$1.42

Source: Table 5, Appendix C

Error Rates by Program. Differences in error rates by programs were investigated and the results are summarized in Exhibit IV-6. Differences include Gross Error Rate, which is the sum dollar amount of gross error divided by the sum dollar amount of QC Rent, and the Net Error Rate, which is the sum dollar amount of net error divided again by the sum dollar amount of QC Rent. The Gross Error Rate remains much greater for PHA-administered Section 8 programs than for either Public Housing or owner-administered programs.

Exhibit IV-6
Gross and Net Dollar Error Rates (Monthly) for All Households

Administration Type	Error Rates	
	Gross Error Rate	Net Error Rate
Public Housing	12%	-3%
PHA-Administered Section 8	18%	-4%
Total PHA-Administered	16%	-4%
Owner-Administered	12%	-4%
Total	14%	-4%

Source: Table 5, Appendix C

Certifications/Recertifications. The sample households included both certifications (i.e., newly admitted households) and recertifications. Certifications were analyzed to determine if these households were eligible for HUD housing assistance, with a separate analysis for overdue recertifications. Figure IV-2 presents the breakdown of cases by case type—certifications, recertifications, and overdue recertifications.

Figure IV-2: Case Type

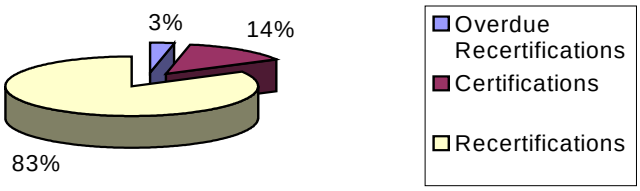


Exhibit IV-7 shows the breakdown of the percent of certifications, recertifications not overdue, and recertifications overdue, by program type. The exhibit indicates in 2003 that 14 percent of the households were certifications and three percent of the households were overdue recertifications. The findings indicate an increase in the percentage of certifications from 2000 (from 9 percent to 14 percent) and a decrease in the percentage of overdue certifications (from 6 percent to 3 percent).

Exhibit IV-7
Certifications and Recertifications by Administration Type

Administration Type	Certifications		Non Overdue Recertifications		Overdue Recertifications		Row Total By Year*
	2000	2003	2000	2003	2000	2003	
Public Housing	8%	10%	85%	86%	7%	4%	100%
PHA-Administered Section 8	10%	14%	85%	84%	5%	3%	100%
Total PHA-Administered	9%	12%	85%	85%	6%	3%	100%
Owner-Administered	9%	19%	86%	80%	6%	2%	100%
Total	9%	14%	86%	83%	6%	3%	100%

Source: Table 6, Appendix C
*Rounding error may result in totals not exactly equal to 100%.

Certifications. Exhibit IV-8a presents a summary of the findings related to eligibility criteria and Exhibit 8b shows the percent of newly certified households meeting the certification criteria by program type. The results indicate improvement since the 2000 estimate. The reviewed criteria included citizenship, social security number, signing the appropriate consent form, and qualifying as low income or very low income households. However, only those households that did not meet the appropriate low or very low income limit were ineligible for assistance. The total gross income of 98.8 percent of the households (according to the QC Rent calculation) fell within the appropriate low or very low income limit.

A household met the citizenship or social security number criteria if there was evidence in the tenant file that the citizenship or social security number was verified. The data indicate that a citizenship code (indicating whether each household member was a citizen, eligible noncitizen or ineligible noncitizen) and a social security number was available (from either the tenant file or the household interview) for each household member. However, 9 percent of the households had at least one household member for whom there was no verification of citizenship. To meet the citizenship verification requirement, the file must have contained (for each household member) a signed declaration of U.S. citizenship or eligible immigration status; proof of age documentation; an INS card; or INS system verification of citizenship status, or documentation that the member was in process for verification or an INS hearing. All of the criteria in Exhibit 8a were higher in 2003, compared to 2000.

Eight percent of the households had at least one member age six or over for whom there was no verification of their social security number. To meet the social security number verification requirements the file must have contained (for each household member six years of age or older) a copy of the social security card, or statement from the Social Security Administration verifying the social security number or a certification indicating the member does not have a social security number.

In 87 percent of the households there was a signed consent form, dated within 15 months of the QCM (the date for which data was collected), for all members age 18 or over. Note that not meeting the social security number, citizenship, and consent form criteria may not mean the household was not eligible for assistance; rather, the project did not follow the HUD requirements in documenting the information.

Exhibit IV-8a
Percent of Newly Certified Households Meeting Certification Criteria

Certification Criteria	Met Criterion	
	2000	2003
Citizenship	79%	91%
Social Security Number	84%	92%
Consent Form	71%	87%
Low and Very Low Income	99%	99%
Meets All Eligibility Criteria	53%	75%

Exhibit IV-8b
Percent of Newly Certified Households
Meeting Certification Criteria by Program Type

Certification Criteria	Percent of Households Meeting the Criteria		
	Public Housing	PHA-Administered Section 8	Owner-Administered Section 8
Citizenship	93%	90%	90%
Social Security Number	88%	93%	92%
Consent Form	85%	90%	86%
Low and Very Low Income	99%	98%	99%
Meets All Eligibility Criteria	72%	77%	74%

Underpayments and Overpayments for Certifications, Recertifications, and Overdue Recertifications. Exhibit IV-9 presents a summary of the households with overpayments and underpayments by the type of case—certification, non-overdue recertification, and overdue certification. The Average Dollar Amounts are based on the sum of the dollar amounts for payment errors (either underpayment or overpayment) for the type of household (certification, overdue recertification, or non-overdue recertification) divided by the number of households with that payment type (for whom a QC Rent could be calculated). For example, the sum of the dollar amounts for new certifications with monthly underpayments ($9.48M) was divided by the total number of certifications in the sample for whom QC Rent could be calculated (.61M). The result is an underpayment average dollar amount of $16.

IV. Findings

The data indicate that the amount of underpayment dollar error in new certifications in 2003 is less than the amount for recertifications. However, there is a very large difference in the underpayment error for overdue and non-overdue recertifications. The 2003 calculated overpayment error (total) is slightly less than the error calculated using 2000 data, but the difference is not statistically significant.

Exhibit IV-9
Average Monthly Underpayment and Overpayment Dollar Amount
Averaged Across All Households

Household Type	Underpayment Average Dollar Amount		Overpayment Average Dollar Amount	
	2000	**2003**	**2000**	**2003**
Certifications	$28	$16	$9	$10
Non-overdue Recertifications	$32	$17	$13	$10
Overdue Recertifications	$36	$41	$10	$12
Total	$32	$18	$12	$10

Source: Table 7, Appendix C

Subsidies. The actual cost of errors to HUD is expressed in terms of subsidy payments. HUD subsidies for assisted housing programs equal the allowed expense level or payment standard minus the total tenant payment or tenant share. The subsidy is correct if the Actual Rent equals the QC Rent (within $5). A negative subsidy error occurs when the tenant pays too much rent (QC Rent < Actual Rent). A positive subsidy error occurs when the tenant pays too little rent (QC Rent > Actual Rent). These subsidy errors by program type are summarized in Exhibit IV-10a and 10b, below. The subsidy errors by certification status are summarized in Exhibit IV-11.

Exhibit IV-10a
Negative Subsidy Households (Tenant Over-payment)
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households in Error		Average Dollar Amount of Error			
			For Negative Subsidy Households (with errors > $5)		For All Households	
	2000	**2003**	**2000**	**2003**	**2000**	**2003**
Public Housing	20%	15%	$64	$58	$13	$7
PHA-Administered Section 8	21%	21%	$67	$65	$14	$14
Total PHA-Administered	20%	19%	$65	$63	$13	$12
Owner-Administered	25%	17%	$41	$44	$11	$7
Total	22%	18%	$56	$57	$12	$10

Source: Table 3 and 4. Appendix C
Note: Table results replicate Exhibit IV-4a for the convenience of the reader.

Exhibit IV-10b
Positive Subsidy Households (Tenant Under-payment)
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households in Error		Average Dollar Amount of Error			
			For Positive Subsidy Households (with errors < $5)		For All Households	
	2000	2003	2000	2003	2000	2003
Public Housing	33%	21%	$85	$71	$28	$15
PHA-Administered Section 8	42%	25%	$107	$86	$45	$22
Total PHA-Administered	38%	24%	$99	$80	$38	$19
Owner-Administered	27%	21%	$81	$73	$22	$15
Total	34%	23%	$94	$78	$32	$18

Source: Table 3 and 4, Appendix C
Note: Table results replicate Exhibit IV-4b for the convenience of the reader.

Exhibit IV-11
Average Monthly Dollar Amounts of Error for Negative (Under-) and Positive (Over-) Subsidies Averaged Across All Households

Household Type	Negative Subsidy Average Dollar Amount of Error		Positive Subsidy Average Dollar Amount of Error	
	2000	2003	2000	2003
Certifications	$9	$10	$28	$16
Non-overdue Recertifications	$13	$10	$32	$17
Overdue Recertifications	$10	$12	$36	$41
Total	$12	$10	$32	$18

Source: Table 7, Appendix C

C. Sources of Error

Additional analyses examined which income and expense components contributed the most to rent error. It should be noted that the component dollar amounts are *annual* income and expense dollars, rather than the monthly figures used to present rent error data. In addition, the sum of the component errors is greater than net rent errors because of off-setting errors. For example, the households presented in Exhibit IV-12a (below) have earned income and child care costs with errors in both components. The total component error is $600 ($400 + $200); however, the adjusted net income error (the amount used to determine the household's rent) is only $200.

Exhibit IV-12a
Rent Components

Component	File Data	QC Data	Dollar Error
Earned Income	$2200	$2600	$400
Child Care	$ 400	$ 600	$200
Adjusted Net Income	$1800	$2000	$200

Exhibit IV-12b presents each income and expense component included in the rent calculation and the percent of households where this component contributed the most to the gross error. The exhibit indicates that earned income caused the largest dollar error in the highest percentage of households (25 percent). Pension income was in error 21 percent of the time and medical expenses was in error 17 percent of the time. The average dollar amount associated with earned income is $4,672, substantially higher than the average dollar amount associated with pension income and medical expenses where the average dollar amount was $3,426 and $1,028 respectively. While total dollar amounts were down sharply for 2003, the rent components had mixed results, compared to 2000.

Exhibit IV-12b
Rent Components Responsible for the Largest Dollar Error
For Households with Rent Error

Rent Component	Percent of Households in Error		Average Dollar Amount	
	2000	2003	2000	2003
Earned Income	27%	25%	$6627	$4,672
Other Income	12%	12%	$3881	$3,330
Pensions	14%	21%	$3706	$3,426
Asset Income	4%	4%	$3450	$966
Public Assistance	9%	8%	$2844	$3,192
Child Care Allowance	3%	5%	$2333	$2,320
Medical Allowance	15%	17%	$1124	$1,028
Dependent Allowance	5%	3%	$1068	$589
Elderly/Disabled Allowance	4%	1%	$400	$499
No Rent Component Error	7%	5%	$0	$0
Total	100%	100%	$3470	$2,863

Source: Table 8, Appendix C

Note that for some households the rent error is not caused by one of the ten components listed. Rather, it is caused by other arithmetic errors or using the wrong rent calculation formula. The number of households in this category decreased from seven percent in 2000 to five percent in 2003, possibly because some of the rent calculations (for vouchers) have become less complicated. The percent of households in error stayed the same or increased for most rent components, with the highest increase for pensions.

IV. Findings

Total and Largest Component Dollar Error. Exhibit IV-13 shows the dollar amounts associated with the total dollars in error (the sum of the absolute value of errors in all rent components) and the largest dollars in error (the largest error attributable to a specific source for each household), by program type. There were significant declines from 2000 to 2003 for total households and most programs. Owner-administered households showed the smallest declines.

Exhibit IV-13
Total and Largest Component Dollars in Error
For Households with Rent Error

Administration Type	Average Total Dollars in Error		Average Largest Dollars in Error	
	2000	2003	2000	2003
Public Housing	$4919	$4221	$3764	$3429
PHA-Administered Section 8	$5066	$3339	$3841	$2801
Total PHA-Administered	$5007	$3634	$3810	$3012
Owner-Administered	$3351	$3013	$2709	$2514
Total	$4495	$3449	$3470	$2863

Source: Table 9, Appendix C

QC Rent Components by Payment Type and Administration Type. Exhibit IV-14 shows the percentage of the total number of households with (and without) component error by component type and payment type. For example, eight percent of all households with underpayment rent error had earned income errors; three percent of all households with proper rents had earned income errors; and five percent of all households with overpayment rent error had earned income errors. It also shows this information for PHA- and owner-administered households. This exhibit reflects component errors in proper payment households when the component dollar error is $5 or less. The exhibit indicates that pension income is the rent component that has the highest percent of error (16 percent=10% underpayment + 6% overpayment), followed by earned income (13%).

Exhibit IV-14
Component Error by Payment Type for All Households*

Component	Underpayment			Proper Payment			Overpayment		
	PHA	Owner	Total	PHA	Owner	Total	PHA	Owner	Total
Earned Income	8%	6%	8%	4%	3%	3%	6%	4%	5%
Pension Income	9%	11%	10%	13%	18%	15%	6%	8%	6%
Public Assistance Income	3%	2%	3%	2%	1%	2%	2%	1%	2%
Other Income	6%	4%	5%	5%	4%	5%	3%	2%	3%
Asset Income	4%	5%	4%	6%	9%	7%	3%	4%	3%
Dependent Allowance	2%	1%	2%	2%	<1%	1%	2%	1%	2%
Elderly Household Allow.	<1%	<1%	<1%	1%	<1%	1%	<1%	<1%	<1%
Child Care Allowance	2%	1%	2%	1%	<1%	1%	2%	1%	2%
Disability Assistance Allow.	-	-	-	-	<1%	<1%	-	<1%	<1%
Medical Allowance	4%	9%	6%	6%	12%	8%	5%	9%	6%
No Rent Component Error	1%	<1%	1%	33%	32%	33%	2%	<1%	1%

Source: Table 10, Appendix C
*Small percentages are based on few actual sample cases and do not provide reliable national estimates.

Allowances. Elderly/disabled and dependent allowances were examined to determine whether these allowances were being applied correctly.[18] The findings are summarized in Exhibit IV-15.

Exhibit IV-15
Elderly/Disabled Allowances and Dependent Allowances*

Allowance	Elderly Allowance			Dependent Allowance		
	Non-Elderly/ Disabled Households	Elderly/ Disabled Households	All Households	Households Without Dependents	Households With Dependents	All Households
No Allowance	99%	-	48%	99%	<1%	54%
Incorrect Allowance	1%	2%	2%	1%	12%	6%
Correct Allowance	-	98%	50%	-	88%	40%
Total	100%	100%	100%	100%	100%	100%

Source: Table 11, Appendix C
*Small percentages are based on few actual sample cases and do not provide reliable national estimates.

The exhibit shows the percent of elderly/disabled and nonelderly/disabled households for which allowances were correctly or incorrectly applied. Elderly/disabled allowances were incorrectly used in two percent of the households in 2003. Two percent of the elderly/disabled households received an incorrect allowance, while one percent of non-elderly/disabled households received an allowance.

The exhibit also shows the percent of households with and without dependents for which a dependent allowance was correctly or incorrectly applied. The dependent allowances were incorrect in six percent of the households. In one percent of the households, a dependent allowance was given to a household that did not have dependents. For the remainder of the households in error (12 percent), either a dependent allowance was not given when it should have been or the wrong allowance amount was given.

D. Errors Detected Using Information Obtained From Project Files

The QC rent and rent error were recalculated using income and expense items identified in the tenant file and ignored income and expense reports from the household interview (Exhibit IV-16). Ignoring income and expense items identified during the household interview decreases the annual underpayment by just under 50 percent. The table below shows the percent of households in error and the total annual program dollar errors with and without income and expense items identified during the household interview.

[18]Households with an elderly or disabled head or spouse are entitled to one $400 allowance (i.e., deduction from gross annual income) in calculating rent. Households are entitled to a $480 allowance for each dependent (defined as children under 18, full-time students, and disabled members other than the head or spouse).

Exhibit IV-16
Households in Error and Dollar Error Using Only Project File Information

Error Source	Percent of Households in Error		Total Annual Dollar Errors	
	Subsidy Overpayment	Subsidy Underpayment	Subsidy Overpayment	Subsidy Underpayment
Error Based on *All* Income and Expense Items Identified During the Study	23%	18%	$896M	$519M
Error *Without* Income and Expense Items Identified during the Household Interview	15%	16%	$583M	$759M

Analysis of the errors on the 50058/50059 form examined whether the errors identified using the 50058/50059 form as a sole source of information are representative of the total errors in the program. The analyses focused on calculation and consistency errors:

Calculation error was identified from income, expenses, and allowances used to calculate the rent amount and recorded on the 50058/50059 form. This calculation did not take into account whether dollar amounts were verified or whether the recertification was conducted on time. This analysis identified errors due to arithmetic mistakes, the incorrect use of a formula, and items that were not completed but should have been. This analysis did not identify households where items were recorded in the wrong place on the 50058/50059 forms, although improper use of a field on the 50058/50059 forms can result in a calculation error. *Table 12* in Appendix C presents the number of households with 50058/50059 forms that contained calculation errors by the rent component contributing to the error.

Consistency errors were based on the logical conformity of elements in the 50058 or 50059 forms. For example, transaction type and assistance status must correspond, elderly status information should be consistent with household head and spouse ages, and number of dependents should not exceed the number of household members. *Table 13* in Appendix C shows the number of households with consistency errors on the 50058/50059 forms, summarized by form subsections. Appendix D lists the data items by subsection that were included in this analysis.

Exhibit IV-17 shows the percent of households with calculation and consistency errors by 50058 and 50059 form subsections. It is important to emphasize that the 50058 form is formatted differently and has more line items of information than the 50059 form. Consequently, the number and types of calculation and consistency errors on the forms differ, and findings from the two forms are not comparable. The large number of calculation errors (particularly on the 50058 forms) may be a contributing factor to QC errors, though a calculation or consistency error does not necessarily lead to a rent error. The PHA/owner may make an error when completing one section of the form, and still calculate the rent correctly.

Exhibit IV-17
Percentage of Households with Calculation and Consistency Errors*

50058/50059 Item	Percent of Households					
	Calculation Errors			Consistency Errors		
	50058	50059	Total	50058	50059	Total
General Information	n/a	n/a	n/a	5%	6%	5%
Household Composition	13%	55%	26%	23%	11%	19%
Net Family Assets and Income	7%	8%	7%	5%	6%	5%
Allowances and Adjusted Income	49%	9%	36%	14%	3%	10%
Family Rent and Subsidy Information	67%	12%	49%	8%	3%	6%

Source: Table 12 and 13, Appendix C
*Small percentages are based on few actual sample cases and do not provide reliable national estimates.

Comparison of 50058/50059 Errors to QC Error. A comparison was made between the rent calculation errors on the 50058/50059 form and errors identified through the QC Rent calculation process. The purpose of this comparison was to determine if errors identified using only the 50058/50059 data could predict the rent errors found in a quality control review. When using only the 50058/50059 data to calculate the Actual Rent, errors were found in 11 percent of the households in 2003, a small improvement from 2000's figure of 14 percent. The QC error calculation found errors in 40 percent of the households in 2003, down from 2000's 56 percent. The results are quite different from the individual and joint comparison methods. This emphasizes that data from the 50058/50059 forms alone cannot accurately identify rent error. Exhibit IV-18 summarizes these results for 2000 and 2003.

Exhibit IV-18
50058/59 Rent Calculation Error Compared to QC Rent Error

Rent Calculation	Percent of Households Correct		Percent of Households Incorrect	
	2000	2003	2000	2003
Using Information on the 50058/50059 Form	86%	89%	14%	11%
According to the QC Rent Calculation	44%	60%	56%	40%
Both 50058/50059 Calculation and QC Rent Calculation	43%	54%	12%	5%

Verification errors were identified by whether an item was verified by the project and, if it was, whether the correct information was transferred to the 50058/50059 form. An error occurs when the verified amount obtained by the project is not recorded properly on the 50058/50059 forms (and, presumably, not used in the rent calculation). When determining whether a verified income or

expense item matched the amount used on the 50058/50059 form, we assumed a variance of $100 to accommodate potential rounding errors when annualizing data.

Table 14 in Appendix C shows the number of households where verification was not obtained, where it was obtained but did not match the amount used on the 50058/50059 form, and where the verified amount did match the 50058/50059. *Tables14aand 14b* include items that were verified by third parties in writing or verbally, or with documentation. *Table 14c and 14d* provide data for items verified in writing by third parties (as required by the study).

Exhibit IV-19 summarizes the findings in *Table 14b.* In general, PHAs/owners had greater verification rates and matched verification amounts in 2003. The percentage of verified items increased for all rent components. The percentage of time the verification matched the 50058/50059 data also increased for all rent components except Public Assistance and Disability Expense. However, the number of households where verification was obtained and used by the PHA/owner varies greatly depending on the rent component. For example, earned income, one of the main sources of error, was verified 92 percent of the time in 2003, compared to 82 percent in 2000. However, the correct amount of earned income was only used 68 percent of the time. Other income was fully verified 79 percent of the time, but only matched the 50058/50059 data 54 percent of the time.

Exhibit IV-19
Verification of 50058/50059 Rent Components*

Rent Component	No Project Verification		Item Verified by Project		Verification Matched 50058/59 within $100	
	2000	2003	2000	2003	2000	2003
Earned Income	18%	8%	82%	92%	55%	68%
Pensions	13%	7%	87%	93%	71%	78%
Public Assistance	16%	13%	84%	87%	66%	60%
Other Income	37%	21%	63%	79%	42%	54%
Asset Income	11%	9%	89%	91%	75%	78%
Child Care Expense	28%	19%	72%	81%	52%	66%
Disability Expense	63%	46%	37%	54%	26%	23%
Medical Expense	28%	17%	72%	83%	53%	62%

Source: Table 14a, Appendix C
*Small percentages are based on few actual sample cases and do not provide reliable national estimates.

Exhibit IV-20 shows verification results by program type, again showing the verification rate for each rent component and the proportion that matched within $100 of the 50058/50059 form amounts.

Exhibit IV-20
Verification of 50058/50059 Rent Components by Program Type**

Rent Component	Public Housing		PHA Administered Section 8		Owner-Administered	
	Verified	Matched*	Verified	Matched*	Verified	Matched*
Earned Income	89%	62%	92%	71%	93%	69%
Pensions	94%	76%	96%	83%	89%	75%
Public Assistance	87%	62%	87%	58%	86%	67%
Other Income	76%	49%	82%	60%	75%	47%
Asset Income	89%	72%	85%	76%	95%	80%
Child Care Expense	66%	53%	87%	69%	83%	71%
Disability Expense	0%	--	--	--	64%	31%
Medical Expense	83%	61%	76%	61%	86%	63%

* Matched within $100 Source: Table 14a, Appendix C
**Small percentages are based on few actual sample cases and do not provide reliable national estimates.

Tenant File Verification Compared to QC Error. Errors identified through the QC process were investigated to whether they were associated with sources of income and expenses. Exhibit IV-21 presents the percentage of households with QC error for which verification was missing in the tenant file. Each error is presented by rent component. The data indicates that missing verification does have a major impact on error. Verification for each rent component was missing for at least 67 percent of all households with QC error.

Exhibit IV-21
QC Error Households with Missing Verification*

Rent Component	50058				50059			
	Households with QC Error		Households with QC Errors and Missing Verification		Households with QC Error		Households with QC Errors and Missing Verification	
	2000	2003	2000	2003	2000	2003	2000	2003
Earned Income	24%	14%	75%	69%	12%	10%	77%	67%
Pensions	16%	15%	77%	90%	19%	18%	59%	90%
Public Assistance	12%	5%	72%	69%	5%	3%	75%	73%
Other Income	14%	8%	83%	74%	7%	6%	88%	74%
Asset Income	6%	7%	82%	78%	16%	9%	81%	67%
Child Care Expense	6%	4%	80%	78%	3%	2%	75%	76%
Disability Expense	<1%	<1%	100%	81%	1%	<1%	77%	91%
Medical Expense	12%	10%	94%	88%	25%	16%	86%	83%
No Component Error	49%	62%	--	--	53%	64%	--	--

*Small percentages are based on few actual sample cases and do not provide reliable national estimates.

Summary of 50058/50059 Errors. Exhibit IV-22 provides a summary of the errors identified from the 50058/50059 forms. These include consistency errors, calculation errors, and overdue recertifications. The exhibit shows the percent of households in error, the average dollar error, and the standard errors for both households with recalculated 50058/50059 error (error determined using only the 50058/50059 form), and households with QC Rent error. This information is provided for households with error for each error type. An unduplicated count of 50058/50059 error is also provided. The exhibit shows that individual types of 50058/50059 errors cannot predict QC Rent Error. However, 50058/50059 forms with any type of error (consistency, calculation or overdue recertifications) can predict QC Rent Error in 59 percent of the households.

Exhibit IV-22
50058/50059 Procedural Error: Percent of Households, Average Dollars in Error*

Error Type Based on 50058/59 Recalculation	Households with Recalculated 50058/9 Error				Households with QC Rent Error			
	Percent of Households in Error	Standard Error of Percent	Average Dollar Error	Standard Error of Mean	Percent of Households in Error	Standard Error of Percent	Average Dollar Error	Standard Error of Mean
Households with Consistency Error	44%	4.0%	$96	$17.29	38%	2.5%	$72	$4.42
Households with Allowance Calculation Error	16%	2.8%	$125	$41.58	11%	1.6%	$83	$12.29
Households with Income Calculation Error	7%	2.0%	$48	$15.90	6%	1.1%	$47	$10.20
Households with Other Calculation Error	27%	2.8%	$53	$11.76	27%	1.5%	$73	$5.78
Overdue Recertifications	3%	0.9%	$56	$15.00	4%	0.8%	$81	$10.56
Unduplicated Count, Any Type of 50058/50059 Error	60%	3.8%	$75	$14.02	59%	2.0%	$70	$3.64
Total Households	100%		$64	$9.37	100%	–	$69	$2.89

*Small percentages are based on few actual sample cases and do not provide reliable national estimates.

Summary of Administrative Errors. As outlined in the study objectives, calculation errors, transcription errors, failure to recertify on time and failure to apply allowances appropriately produce administrative or procedural errors. Exhibit IV-23 shows the Gross and Net Rent Errors for households with each type of administrative procedural error.

Exhibit IV-23
Administrative Error: Percent of Households, Average Dollars in Error
For All Households with 50058/50059 Recalculated Rent*

Error Type		Gross Rent Error		Net Rent Error	
	Percent of Households in Error	Average Dollars in Error	Standard Error of Mean	Average Dollars in Error	Standard Error of Mean
Transcription Errors	45%	$9	$1.76	-$1	$1.30
Calculation Errors-Allowances	7%	$30	$12.01	-$1	$0.85
Calculation Errors-Income	4%	$10	$3.68	$2	$2.25
Calculation Errors- Other	26%	$6	$1.56	$1	$1.57
Overdue Recertifications	3%	$7	$2.78	-$2	$1.46
Any Administrative Errors	61%	$8	$1.84	-$1	$1.09
Total	100%	$7	$1.25	-$1	$0.85

*Small percentages are based on few actual sample cases and do not provide reliable national estimates.

E. Occupancy Standards

Exhibit IV-24 presents a summary of the analysis that determined whether households are assigned units with the correct number of bedrooms. It shows the percent of households by actual number of bedrooms and correct number of bedrooms according to the guidelines used in the study. Note that the guidelines used in this study are generally acceptable HUD guidelines. All programs allow exceptions to the HUD's rules. However, the Section 8 Voucher program sometimes allow households to rent units with fewer or more bedrooms then specified by the guidelines.

Exhibit IV-24
Percent of Households in Units with the Correct Number of Bedrooms
(According to Study Guidelines)*

Number of Bedrooms	PHA Administered				Owner Administered		Total	
	Public Housing		HCVP					
	2000	2003	2000	2003	2000	2003	2000	2003
0	100%	91%	100%	95%	97%	98%	99%	94%
1	99%	99%	99%	97%	100%	100%	99%	99%
2	72%	78%	82%	89%	76%	78%	78%	83%
3	83%	78%	85%	94%	83%	74%	84%	86%
4	69%	59%	66%	79%	69%	61%	68%	69%
5	21%	35%	--	86%	--	--	27%	62%
All Units	85%	86%	86%	92%	92%	90%	88%	90%

Source: Table 15, Appendix C.
*Some cells were based on few actual sample cases and do not provide reliable national estimates.

Ten percent of all households occupied a unit with too many or too few bedrooms in 2003, according to the guidelines used for this study. This number is down slightly from 2000, where twelve percent of all households occupied a unit with an incorrect number of bedrooms. About fourteen percent of PHA-administered households were over- or under housed. Ten percent of owner-administered households were incorrectly housed in 2003, up slightly from eight percent in 2000.

Exhibits IV-24a and IV-24b show the percent of households that met these guidelines for each bedroom size for 2000 and 2003, respectively. The shaded cells indicate the percent of households that fall within study guidelines.

Exhibit IV-24a
Percent of All Households by
Number of Bedrooms and Number of Household Members *

Number of Bedrooms	*2000* Number of Household Members							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8+**
0	99%	1%	--	--	--	--	--	--
1	89%	10%	<1%	<1%	--	--	--	--
2	20%	41%	26%	11%	2%	<1%	<1%	--
3	4%	10%	30%	32%	16%	6%	2%	1%
4	--	7%	8%	18%	25%	25%	12%	6%
5	--	--	10%	13%	15%	13%	9%	40%

*Some cells were based on few actual sample cases and do not provide reliable national estimates.

Exhibit IV-24b
Percent of All Households
by Number of Bedrooms and Number of Household Members*

Number of Bedrooms	*2003* Number of Household Members							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8+**
0	96%	3%	1%	--	--	--	--	--
1	89%	10%	<1%	<1%	--	--	--	--
2	15%	48%	27%	8%	2%	<1%	<1%	--
3	5%	8%	35%	34%	13%	3%	1%	<1%
4	4%	5%	6%	14%	25%	22%	16%	8%
5	--	--	7%	6%	14%	4%	38%	31%

*Some cells were based on few actual sample cases and do not provide reliable national estimates.

Exhibit IV-24c shows the percent of households in *project-based programs* (Public Housing and all owner-administered projects) that met these guidelines for each bedroom size. The shaded cells indicate the percent of households that fall within study guidelines.

Exhibit IV-24c
Percent of Project-Based Households by
Number of Bedrooms and Number of Household Members*

Number of Bedrooms	*2003* Number of Household Members							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8+**
0	96%	2%	2%	--	--	--	--	--
1	91%	8%	<1%	<1%	--	--	--	--
2	20%	47%	23%	9%	2%	--	--	--
3	9%	13%	30%	30%	12%	3%	2%	<1%
4	7%	10%	8%	14%	26%	19%	11%	4%
5	--	--	14%	13%	29%	9%	2%	33%

*Some cells were based on few actual sample cases and do not provide reliable national estimates.

F. Comparison with TRACS/PIC Data

The comparison with TRACS/PIC data was only made for the households included in the first data collection phase – 2,401 households. More than 97 percent of the households in the study sample were found in the TRACS/PIC files; however only 75 percent of the sample cases matched on Social Security number, effective date, total annual income, and tenant rent. Social Security numbers are a critical component needed to match individual household members with outside databases. For the tenants in the HUDQC sample, 85 percent had a valid verified Social Security number, 10 percent had a valid unverified Social Security number, and 5 percent did not have a valid Social Security number. Exhibit IV-25 provides a breakdown of rent errors after TRACS/PIC data were matched with the HUDQC sample. Two findings are immediately apparent: units with matched TRACS/PIC data have lower rent error rates and smaller average gross dollar errors. Owner-administered units had the greatest error rates and average gross errors.

Exhibit IV-25
Average Dollars in Error by Program and TRACS/PIC Data

Administration Type	TRACS/PIC PRESENT		TRACS/PIC ABSENT	
	Percent of Households in Error	**Average Dollars in Error [1]**	**Percent of Households in Error**	**Average Dollars in Error [1]**
Public Housing	35%	$25	44%	$30
PHA-administered Section 8	39%	$22	43%	$30
Total PHA-administered	37%	$23	44%	$30
Total Owner-administered	47%	$37	57%	$43
Total	41%	$29	49%	$35

[1]Across all households.

Exhibit IV-26 breaks down gross error into under- and overpayments by matched TRACS/PIC data. A somewhat higher proportion of households with matched TRACS/PIC data had proper payments (57% vs. 51%). Comparing matched and unmatched groups for households with rent errors, average dollars in error were the same with a very large average dollars underpayment for households with matched TRACS/PIC data.

Exhibit IV-26
Average Dollars in Error by Payment Type and TRACS/PIC Data

Payment Type	TRACS/PIC PRESENT		TRACS/PIC ABSENT	
	Percent of Households	Average Dollars in Error[1]	Percent of Households	Average Dollars in Error[1]
Underpayment	24%	$84	28%	$71
Overpayment	19%	$54	21%	$71
Proper Payment	57%	-	51%	-
Total	100%	$71	100%	$71

[1]Average dollars error per under- and overpayment subgroups.

Exhibit IV-27 examines net and gross errors by program type and matched TRACS/PIC data. This table provides no new insights about the impact of matching TRACS/PIC data but highlights the importance of reviewing both gross and net rent errors. The large gross error rate for owner-administered households indicates greater variability in error rate results that tend to cancel each other out as evidenced by the smaller mean net rent errors.

Exhibit IV-27
Average Net and Gross Dollars in Error by Payment Type and TRACS/PIC Data

Payment Type	Average Net Rent Error		Average Gross Rent Error	
	TRACS/PIC Present	TRACS/PIC Absent	TRACS/PIC Present	TRACS/PIC Absent
Public Housing	-$11	-$9	$25	$30
PHA-administered Section 8	-$10	-$4	$22	$30
Total PHA-administered	-$10	-$6	$23	$30
Total Owner-administered	-$8	-$2	$37	$43
Total	-$10	-$5	$29	$35

G. Project Level Analysis

Project level analysis was only conducted on the households included in the first phase of the data collection – 2,401 households.

The Project Staff Questionnaire. PHA/project staff completed self-administered questionnaires that examined their (re)certification procedures, training and qualifications of (re)certification staff members, and (re)certification problems. The project staff questionnaire (PSQ) provides a more comprehensive albeit qualitative picture of the how PHAs/projects administer their rent determination responsibilities. Project staff members are first-line gatekeepers that determine whether rent subsidies are in error and if tenant rents are just and equitable. Indirectly, the results suggest the success and failure of HUD policies and the manner in which the three assisted housing programs perform their missions. Below is a short list of highlights from the PSQ results:

- PHAs/projects spent an average of 50 minutes performing certifications and 34 minutes on recertifications
- About 19 percent of PHAs/projects did not perform (re)certifications on anniversary dates and used geographic-based or all-at-once methods
- HUD policy information and changes were usually obtained from HUD, but more than half of PHAs/projects also relied on communications with other PHAs/projects and web-based sources
- About 95 percent of PHAs/projects used some form of calculation worksheet but only 71 percent required all staff members to use the same interview guide/script; a sizable proportion (25 percent) of interview scripts/guides were completed by tenants
- About 97 percent of PHAs/projects used computers for rent calculations making it difficult to compare rent errors between those projects and the small number that did not
- Quality control monitoring relied most often on random samples of cases and focused on file reviews and PHA/project statistics; few PHAs/projects monitored staff during interviews so the connection between tenant and case information is not closely monitored
- Income (especially sporadic employment income) and medical expenses were the most often cited problem questions and most difficult to verify
- PHAs/projects reported that about one third of tenants and third-party providers were not usually cooperative
- The HCVP program was more staff-intensive but appeared to perform less QC monitoring, had a greater reliance on Nan McKay and web-based training, and used random sample QC monitoring than PIH-administered PHAs/projects

Use of Automated Rent Calculation Software. We expected to find a significant association between the use of automated rent calculation software and rent errors. We tested whether the use of computer automation was associated with underpayments and overpayments by using a multinomial logit model. Our multivariate models did not exhibit a statistically significant association, possibly because about 98 percent of projects used computers for calculating rents (see Appendix F, Exhibit F-28). We also tested whether the computer-driven interviewing/recording efforts had lower error

rates and found no evidence to support that the use of computer-driven interviewing recording impacted under- and overpayments, compared to proper payments.

H. Rent Reasonableness

The Housing Choice Voucher Program (HCVP) assists low-income families obtain housing in the private market. Public housing authorities are responsible for administering the program and ensuring that the rents paid for dwellings leased by participants in the HCVP are reasonable in comparison to rental units in the private, unassisted local market. High rents can waste government funds and inadvertently raise private market rents.

HUD regulations require PHAs to conduct a rent reasonableness determination before units are leased, before rent increases are granted to owners, and when fair market rents decrease by at least 5 percent. This analysis examines whether PHAs fulfilled the requirement for documenting rent reasonableness determinations, but does not investigate whether rents were in fact reasonable.

Methodology. Field interviewers were instructed to review case files for a rent reasonableness certification. For new certifications, field interviewers searched the file for the initial rent reasonableness certification, and recorded its date. For annual recertifications, field interviewers examined case files for evidence of when the current rent to owner became effective. If the rent became effective within the past two years, the case file was searched for a rent reasonableness certification and the date of the certification was recorded. The recently adopted RFTA form was not considered a rent reasonableness certificate.

Findings. The most common method of determining rent reasonableness is the unit-to-unit comparison (see Exhibit IV-28). About 55 percent of the housing authorities reported using this method. The unit-to-unit method is similar to the standard real estate appraisal technique of comparing a unit to similar private, unassisted units. Rent amounts are sometimes modified for differences in unit characteristics, such as size, age, amenities, housing services, maintenance, and utilities.

The unit-to-market comparison approach estimates the average and range of "market" rents for units with similar characteristics in the private, unassisted market. Valuation adjustments are based on typical units in the private market. About 22 percent of housing authorities reported using this method. Four housing authorities (3.1%) use a combination of unit-to-unit and unit-to-market methods.

Twenty-one housing authorities (16%) indicated their rent reasonableness determinations were based on their professional judgment. Only two housing authorities indicated they relied solely on professional judgment to perform rent reasonableness determinations in the 2000 study, suggesting that PHAs are giving less attention to reasonableness determinations.

Exhibit IV-28
PHAs by Rent Reasonableness Method

Method	n	%
Unit-to-Unit Comparison	72	55%
Unit-to-Market Comparison	29	22%
Combination	4	3%
Professional Judgment	21	16%
Do not do Rent Reasonableness	1	1%
No Information Provided	4	3%
Total	131	100%

About 71 percent of **new admission** files contained rent reasonableness documents (see Exhibit IV-29). However, the absence of documentation does not necessarily indicate a determination was not completed; only that it was not properly documented.

Exhibit IV-29
Rent Reasonableness Documents for New Admissions

Status	Units (000s)	%
Determination documented	205	71%
No determination documented	84	29%
Total	289	100%

Rent reasonableness determinations must be conducted prior to signing the rental lease. The timeliness of the rent reasonableness determination was evaluated by comparing the lease date to the rent reasonable certification date in the case file. Exhibit IV-30 provides a summary of the most recent rent reasonableness determination by initial lease date for those households where the current rent to owner was established within two years prior to the data collection period. About 9 percent of rent reasonable determinations were made after the rent had been established as part of the initial lease agreement.

Exhibit IV-30
Timing of Most Recent Rent Reasonableness Determination-New Admissions

Determination-Certification Chronology	Units (000s)	%
More than 4 months before lease date	15	7%
Up to 4 months before lease date	162	79%
After lease date – up to 2 months	13	6%
After lease date – greater than 2 months	68	3%
Date Missing	8	4%
Total	205	100.0%

Annual recertifications required rent reasonableness documents only when owners increased rental rates. We examined case files to determine when the current rent to owner first became effective. The case file was searched for the rent reasonableness determination when rent reasonableness determinations were performed in the previous two years. About 59 percent of these case files had certified rent reasonableness documents (see Exhibit IV-31).

Exhibit IV-31
Rent Reasonableness Documents for Recertifications

Status	Units (000s)	%
Determination documented	644	59%
No determination documented	441	41%
Total	1085	100%

The current rent to owner in the lease agreements were compared to the dates of the rent reasonable documents. If the lease effective date occurred after the determination, the rent reasonableness determination had no impact on the rent charged. About 22 percent of the rent reasonable determinations were made after rents had been established (see Exhibit IV-32).

Exhibit IV-32
Timing of Most Recent Rent Reasonableness Determination and Initial Lease

Determination-Certification Chronology	Units (1000s)	%
More than 4 months before lease date	44	7%
Up to 4 months before lease date	444	69%
After lease date – up to 2 months	34	5%
After lease date – greater than 2 months	110	17%
Date Missing	12	2%
Total	644	100%

Conclusion. PHAs are not fully documenting rent reasonableness determinations as required by HUD regulations. And a large percentage of existing rent determinations have been based on less formal means of evaluating rents. These findings may be partially attributable to the PIH notice issued May 16, 2003 (notice PIH 2003-12) that supports a more streamlined rent reasonable process. For example, a PHA need not consider all nine criteria cited in 24 CFR 982.507(b) to fully comply with the regulation. PIH 2003-12 also asserts that "each PHA should use appropriate and practical procedures for determining rental values in the local market." This statement may also be intended to justify less formal methods of rent determination.

V. Recommendations

This section discusses recommended changes to the study that will improve the data collection process or the quality of the data used in the analysis. Section A discusses changes to the quality control process itself. Section B identifies additional analysis that could help HUD better understand rent calculation errors. Section C addresses policy actions that could be taken to reduce error.

A. Modifying the Quality Control Process

The current methodology that ORC Macro has used to conduct its quality control study is based on the successes and failures of previous studies, and is generally performed well. However, there are some recommendations that would be helpful for expanding the utility of data products as well as improving the overall efficiency of ongoing quality control studies. These include:

1) *Continue the HUD quality control studies as a regular, ongoing effort to monitor and manage HUD rent determination processes.* A wise strategy of managing rent errors is administering an ongoing evaluation program that measures rent errors, tests alternatives to reduce rent errors, and better manages current and changing conditions at PHAs/projects. Such an evaluation program would have scheduled annual or biannual rent error data collection efforts for assessing current rent error issues. An ongoing evaluation program would also facilitate more accurate cross-year comparisons of rent errors. It also allows for data collection and analysis staff to develop specific expertise with HUD policy areas, and develop tailored solutions for improving data quality. Further, other HUD-related topics could be investigated (e.g., the changing demographics of HUD tenants) and piggy-backed on to the rent error data collection processes. Finally, with highly trained staff and automated data systems, HUD could achieve greater cost efficiencies at this and other field tasks.

2) *Expand contractor access to verification obtained through inter-agency agreements.* Despite increasing rates of third-party verification, a large proportion of tenant income and expenses are not being verified. This is especially important given that the study results indicate a significant relationship between third-party verification of certain types of income and rent errors.

   During the current study household level information was used to match sample household members with Social Security data files through the tenant assessment system (TASS). Though this electronic match, verification was obtained for most sample household members Social Security, and Supplemental Security Income benefits. However, there were many household members where a match between the study electronic files and the SSA/SSI electronic files was not found when expected and other situations where irresolvable discrepancies were identified. If ORC Macro as the contractor for the HUDQC study could have access to the SSA/SSI database these mismatches and discrepancies could be resolved.

   In addition, there are now many PHAs that have access to the Department of Human Services "new Hire" income matching database. This allows PHAs to have access to income verification documented in this database. Again, giving ORC Macro as the contractor for the study access to these databases would considerably increase our ability to obtain verification for reported income and identify sources of unreported income.

3) *Continue to investigate PIC/TRACS data for sampling and other purposes.* A match of the study sample households with PIC/TRACS data indicate that 97 percent of the sample households are included in the PIC/TRACS databases. Given this information, consideration should be given to using these data for selecting the household sample. If it is determined that PIC/TRACS data could be used for selecting the sample, consideration should also be given to using PIC/TRACS data in place of abstracting 50058/50059 data from the tenant file. Using the PIC/TRACS data for selecting the household sample may not be appropriate because the data are not current, or because of delay between when the sample is drawn and when the actual data collection occurs.

4) *Continue to expand existing computer systems and processes that further automate data collection, processing, and reporting functions*. Most of the data for the current study were collected using an automated data collection system. This system simplified the data collection process, reduced the number of data collection errors, and eliminated the need to code the data after data collection. While the existing systems work well, there are many improvements that can be made to the data collection software, the field monitoring software, and the processing and tracking of third-party verifications. In addition, consideration should be given to developing systems that would allow for calculating rent as the data is collected and comparing the QC calculated rent to the rent identified on the 50058/50059 form. Expanding and investing in better automated systems will yield large dividends in terms of costs, time required to collect and process data, as well as the breadth, depth, and quality of data.

5) *Look at the Payment Standard as a factor that contributes to rent error.* In the HCVP the payment standard identifies the maximum subsidy payment for a family (before deducting the total tenant payment). Payment standards must be kept current and set between 90 and 110 percent of the fair market rent (FMR). If a PHA does not ensure that their payment standards are within this range, or they misunderstand how new FMRs affect exception payment standards, errors in tenant rent determinations will result.

B. Additional Analysis

The study as designed collects a tremendous amount of household and project level data. This data could be used to provide HUD with information on national and sub-national trends, and possible alternative for reducing errors. Three such suggestions for additional analysis are provided below.

1) *Investigate sub-national rent errors and develop tailored alternatives to address variations that occur in specific regions or metropolitan areas.* Despite the importance of using national rent error results for measuring HUD program performance, rent errors are likely to differ across certain parts of the U.S. Further, examining only national-level rent errors may obscure issues that lead to rent errors in one part of the country but not elsewhere. Therefore, it is important to investigate and assess rent errors within HUD regions as well as metropolitan areas. Such an investigation would help facilitate tailored remedies for reducing rent errors by sub-region that in turn will reduce national rent error subsidies. A sub-national error investigation would need to utilize geographic information systems (GIS) technology for spatial mapping and analyses.

2) *Develop local and regional maps of HCVP tenants and integrate existing data from other federal agencies to examine unexplored influences on HCVP rent errors.* HCVP rent errors

were greater than project-based rent errors and are spread across wide regions rather than in a fixed location. This suggests that higher error rates may be related to the spread of HCVP tenants and/or the manner in which the HCVP program is managed. One way to understand this is to produce spatial/geographic maps of HCVP rent errors. Certain counties and neighborhoods may have important influences on assisted tenant rents and rent errors. Contextual information about the neighborhood characteristics (e.g., median rent and home values, mobility rates, dwelling and family characteristics) can be linked with tenant and PHA measures and provide a comprehensive framework for understanding how all possible influences affect rent errors.

3) *Perform small experimental studies that test promising alternatives to more accurate rent determination results.* The project staff questionnaire and multivariate models suggest that some project staff practices were associated with fewer rent errors. For example, one such finding was performing recertifications on anniversary dates rather than performing them all at one time. One way to confirm this cause and effect relationship is to conduct small controlled field experiments of best practices. Once a field test indicated a particular practice caused a decline in rent errors, that practice could be assessed, improved, and implemented in all PHAs/projects or as needed.

C. Policy Actions

This study was not designed to provide recommendations regarding basic program objectives and policies. However, the findings from this study suggest that some major procedural changes should be considered when establishing and revising policy. We recommend five major changes to existing policies:

1) *HUD should continue its plans to implement use of the Department of Health and Human Service's "New Hires" income matching database as quickly as possible.* The recent Congressional authorization giving HUD access to the Department of Health and Human Service's "New Hires" income matching data base provides the opportunity to correct most errors associated with reported and unreported income for the Public Housing and Section 8 voucher programs. The majority of subsidy overpayment errors are associated with earned income determination errors, and the large majority of tenant income under-reporting also relates to earned income. Full implementation of an income matching system will quickly eliminate over half of current errors in the public housing and Section 8 voucher programs. It would have the further significant advantage of doing so by providing a tool that reduces and simplifies the program administrator workload associated with verifying income sources and amounts.

   Full implementation of the New Hires data base will require HUD to implement procedures to ensure that program sponsors obtain valid social security numbers from all tenants of employment age. It will also need to mandate use of income matching using the new system. The large majority of PHAs that already seek to comply with income verification rules should find the new system less burdensome than current practices. For at least the next one to two years, programs managed by the Office of Housing that provide project-based assistance without the involvement of a public agency will be unable to access the New Hires data base. Some of these projects have management ties with PHAs and may be able to access the New Hires data

base through such links. The balance of projects without management ties to PHAs will need to wait until HUD has fully implemented income matching for public housing programs and is in a position to request extension of its current authority.

2) *HUD should consider expanding support of the occupancy function and conducting an outreach campaign to PHAs and owners informing them of the Department's occupancy related-resources.* Provision of detailed, current occupancy handbooks, such as those recently issued, goes a long way towards providing needed guidance but will never be able to answer all possible questions that surface. Specifically, HUD should develop a nationwide, consistent, reliable approach to providing guidance and support to PHAs and owners. HUD Housing and PIH occupancy question and answer web sites have recently started to become a valuable tool. They provide a fast way of providing an official, uniform response to questions that surface on a widely and increasingly used medium. Other opportunities exist. For example, the Department could offer a monthly-televised program highlighting a specific occupancy topic, leaving at least half of the program time for call-in questions on any occupancy topic. HUD could then make the taped program available for Internet access to reach a larger audience (as the Department does now with many video programs.). PHA managers and staff often are unaware of the resources that HUD has to offer—especially those originating from headquarters. Even when HUD's customers are aware of some of the Department's direct assistance options, owners and PHA staff are still reluctant to use them. A PHA may hesitate to call HUD staff for fear that their questions will bring a closer scrutiny of their operations. Some PHAs may have had past experiences with getting different answers to the same question from different HUD staff, or may be aware that their HUD contact person has a different perspective than that expressed by another HUD staff to a neighboring PHA. For these and other reasons, it is important that the PHA/owner community know that there are HUD-approved resources that they can trust to provide consistent guidance and quick, reliable answers to questions.

   It is also critical that there be a close link between the team that responds to field concerns and the staff responsible for writing HUD notices and guidance documents. The team responding to field questions and concerns knows what the problems are that face the field. These problems should be the subject of the guidance that comes from HUD.

3) *HUD should provide the PHA/owners with the forms, training, and other tools needed to determine rent correctly.* Rent calculation error could be reduced if HUD would provide structured forms for interviewing tenants, obtaining verifications, and calculating rent. Ideally, these tools would be provided in the form of computer-assisted interview software that minimizes the number of questions that need to be asked. Such systems would ensure that tenants are asked about all income sources and expenses that affect their rent. Manuals and training materials explaining how to implement requirements correctly and calculate rent accurately should be provided. To the extent that HUD program rules can be simplified, provision of automated and manual tools would be easier.

   HUD experts and local housing staff should be given an opportunity to work together to develop these tools and systems needed to reduce rent error. Many local PHA/owners have already developed forms, training materials, manuals, automated systems, and monitoring processes that have enabled them to provide accurate efficient service to the tenants they serve. HUD should

learn from these PHA/owners and develop materials that will help those PHA/owners who for one reason or another have not been as successful.

4) *HUD should continue to implement its on-site monitoring program, and PHA/owners should be held accountable for implementing HUD regulations and calculating rent accurately.* An on-site monitoring system that includes reviews at both the local and Federal level is essential to improving accountability. PHA/owners with excessive errors should be required to develop corrective action plans and show improvement within specified time periods. HUD has initiated extensive on-site monitoring efforts since the 2000 QC study, in contrast with its policies of most of the previous two decades. The most obvious explanation for the magnitude of error reductions in subsidy determinations between 2000 and 2003 is improved HUD monitoring and the expectation of such monitoring.

   Monitoring can be conducted at a variety of different levels. We recommend that HUD require PHA/owners to perform their own quality control reviews on a percentage of income determinations and rent calculations. Agencies that have aggressively sought to improve performance of their programs have had some significant successes, and one of the most frequently used error reduction strategies included establishment of internal quality control review procedures. In addition to agency monitoring, HUD Field Offices and/or other national level well-trained staff should conduct a re-review of a percentage of the cases reviewed at the local level to ensure that the quality control reviews are being conducted correctly, or select their own random sample of files for review. This type of oversight not only identifies errors, but prevents them. In addition, it demonstrates HUD's concern and focuses PHA/owner attention on tenant income and rent.

   There is evidence that PHA/owners will respond to HUD directives if they are monitored and held accountable. The Section 8 SEMAP system, for instance, appears responsible for much of the recent burst of improvement in activity by public housing agencies to implement or improve the rent reasonableness determination requirement. MTCS reporting, which is part of the new PHA rating systems, has improved partly as a result of the potential penalty from low rating scores, and the higher reporting and associated calculation checks appear responsible for much of the reduction in rent and subsidy calculation errors for units passing the MTCS data system edits.

5) *Federal laws, regulations, and HUD requirements should be simplified to the extent possible.* The current statutory environment poses substantial obstacles to efficient, accurate income and rent calculations. It contains dozens of requirements which may all be well-intentioned and have potentially desirable impacts but which, taken as a whole, make the income and rent determination process extremely complex. HUD has sought to issue guidance on virtually all aspects of current income and rent determination requirements, but some of the legislative provisions were written without any thought as to implications for their administrative complexity. While determining which income to count, which expenses to allow, and annualizing that information in a program with multiple objectives may always be complicated, the various specialized provisions that relate to small subparts of the population could be eliminated or simplified. Two examples of such policies follow:

V. Recommendations

- *Disallowance of Earned Income from Public Housing Rent Determinations.* Legislation passed in 1998 related to employment incentives provides an example of the complexities associated with rent determinations. The legislation provides special rent treatment for families:

  -- whose income increases as a result of employment of a member of the family who was previously unemployed for one or more years;

  -- whose earned income increases during the participation of a family member in a family self-sufficiency or other job training program; or,

  -- who is or was, within six months of being hired or receiving a pay increase, assisted under any State program for temporary assistance for needy families funded under part A of title IV of the Social Security Act and whose earned income increases.

  Families that qualify under these provisions are not subject to rent increases related to increased earned income for a 12 month period. After that period, the rent will be increased but only by 50 percent of the amount of the total rent increase that would be otherwise applicable.

  In practice, low-income tenants often have jobs with little security and move in and out of employment and training programs. Regulations needed to define the range of circumstances that occur and adequately document eligibility for this provision are necessarily long and somewhat complex. Keeping track of rent increase constraints imposes a significant added burden on PHAs and adds to rent determination errors. As with many provisions associated with rent and income determinations, there apparently was little thought given to striking a balance between a policy objective and administrative feasibility. A flat dollar or percentage income deduction for any earned income, for instance, would have provided a more direct and understandable incentive, and would have been easier for program sponsors to implement and for HUD to monitor.

- *Medical Expenses.* Elderly and disabled families are eligible for a medical expense deduction which is intended to cover prospective medical costs. Determining the amount that a family **anticipates** spending on medical needs is a difficult thing to do. Elderly tenants often keep poor records, and there is limited reason to believe that the medical expenses claimed have a close relationship with actual expenses, which HHS data suggest are, on average, higher. Verifying medical expenses is a burdensome process for program sponsors. Calculating the medical expense allowance would be far less complicated if HUD would substitute a flat medical allowance for the inexact science of estimating future expenses. If some provision for exceptionally high expenses was considered essential, then the requirement could be that actual expenses could be claimed if in excess of some relatively high percentage of a family's income (e.g., 20 percent). This approach would be welcomed by the many elderly people and people with disabilities who resent the intrusion of housing staff into their very personal medical affairs (many verifications by their very nature reveal the type of clinics being visited, the practice of doctors being seen, and the names and dosages of prescriptions drugs being taken).

V. Recommendations

Expecting what are often relatively low-paid, minimally trained, high turn-over project staff to correctly implement unnecessarily complex rules is unrealistic. Some program sponsors do a remarkably good job, but expecting a generally high level of accuracy in rent and subsidy determinations may be unrealistic within the context of the current system. The legislative changes affecting tenant rent determinations made every one or two years usually affect a relatively small percentage of tenants, but are sufficient to substantially reduce incentives to design and implement comprehensive forms, procedures, and data systems that cover all aspects of income and rent determinations.

Definitions

Actual Rent—the tenant rent from the 50058/50059 form

Administration Type—PHA or owner

Case Type—certification, recertification, and overdue recertification

Abstract Month—the month in which the data collection process for any given household was initiated

Error Rate—the sum of the dollar amount of Gross Rent Error divided by the sum of the dollar amount of the QC Rent.

Net Rent Error—the arithmetic sum of over- and underpayments

Gross Rent Error—the sum of the absolute values of under- and overpayments

Largest Component Dollar Error—the annual dollar amount of error in the component with the largest error

Overpayment—results when the household paid more than it should have paid; HUD's contribution was less than it should have been

Payment Type—underpayment, proper payment, and overpayment

Program Type—Public Housing, Section 8 Housing Choice Voucher, Section 8 Moderate Rehabilitation, Section 8 project based, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC

Quality Control Month—the month in which the PHA/owner completed the rent calculation

Quality Control (QC) Rent—calculated by ORC Macro using the tenant file, household interview and verification data

Rent Component—the five sources of income (earned, pensions, public assistance, other income, and assets) and the five types of deductions (medical, child care, and disability assistance expenses, dependent allowance, and elderly/disabled allowance)

Rent Error—the difference between the monthly Actual Rent and the monthly QC Rent

Total Component Dollars in Error—the absolute sum (i.e., the sum of the positive and negative amounts, ignoring the plus or minus signs) of all individual income and expense component errors. These errors are combined to provide an overall Total Dollars in Error and are presented as annual amount.

Underpayment—results when the household paid less than it should have paid; HUD's contribution was higher than it should have been.

Appendix A

Rent Calculations

Appendix A – Rent Calculations

1. Public Housing

a. Obtain the Total Tenant Payment (TTP).

b. Determine if the family includes any ineligible noncitizens. IF YES, **continue**. If NO, **go to d.**

c. Determine if the family includes any citizens or eligible noncitizens. IF YES, **go to** #3 (continuation) (p. 10). IF NO, **go to #4 (**temporary deferral) (p. 11).

MARKER (marks the return point after determining continuation of assistance status)

d. Obtain the Utility Allowance.

e. Determine if the tenant selected the Flat Rent. IF NO, **go to** f. IF YES, the QC RENT equals the flat rent. **Go to** g.

f. Determine if the PHA has a Ceiling Rent. (If blank, assume no ceiling rent.) IF YES, obtain the amount of the ceiling rent. The amount of the tenant's rent (QC RENT) is the lower of the Ceiling Rent, or a. (TTP), minus b. (Utility Allowance). IF NO, the amount of the tenant's rent (QC RENT) is a. (TTP) minus d. (Utility Allowance).

g. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error**.

Note: If there is no ceiling rent, the QC rent will be capped with the flat rent for purposes of determining the dollar amount of error.

2. Section 8 Vouchers

a. Obtain TTP.

b. Obtain Rent to Owner.

c. Obtain Utility Allowance

d. Add Rent to Owner (b.) to Utility Allowance (c.). This is the Gross Rent
If TTP > Gross Rent, then set TTP to Gross Rent.

e. Obtain Payment Standard (the Payment Standard is based on the lower of the Unit (actual) Bedroom Size, and Family (eligible) Bedroom Size.)

f. Obtain the household's Adjusted Monthly Income.

g. Subtract e. (Payment Standard) from d. (Gross Rent). If the Payment Standard is higher than the Gross Rent, use 0.

h. Add a. (TTP) to g. (Gross Rent minus Payment Standard).

i. Determine if this is the initial occupancy for this dwelling unit. (Item 12b on the 50058 is yes). IF YES, **continue**. IF NO, **the Family Share = h. Go to l.**

j. Calculate 40 percent of the household's Adjusted Monthly Income (f.).

k. Determine if j. (40 percent of Adjusted Monthly Income) is equal to or greater than h. (TTP plus Gross Rent minus Payment Standard). IF YES, the Family Share equals h. **Go to l.**
IF NO, **procedural error**. Family Share equals h. **Go to l.**

l. Determine if the family includes any ineligible noncitizens. IF YES, **continue.**
If NO, **go to n.**

m. Determine if the family includes any citizens or eligible noncitizens. IF YES**, go to #3** (continuation). IF NO, **go to #4** (temporary deferral).

MARKER (marks the return point after determining continuation of assistance status)

n. Subtract c. (Utility Allowance) from the Family Share (h.). This is the QC RENT.

o. Determine if the QC RENT equals the ACTUAL RENT
IF YES, **no error.** IF NO, **dollar error**.

3. **Section 8 Enhanced Voucher**

a. Determine if household is receiving an Enhanced Voucher. If YES, **continue**. If NO, **use regular Voucher formula.**

b. Obtain the Total Tenant Payment.

c. Obtain the Gross Rent.

d. Determine the lesser of b. (TTP) or c. (Gross Rent)

e. Determine if the family includes any ineligible noncitizens. IF YES, **continue.** If NO, **go to g.**

f. Determine if the family includes any citizens or eligible noncitizens. IF YES, go to #3 (continuation). IF NO, **go to #4 (temporary deferral).**

MARKER (marks the return point after determining continuation of assistance status)

g. Obtain the Utility Allowance.

h. Subtract g. (Utility Allowance) from d. (the less of TTP or Gross Rent). This is the Family Rent to Owner (QC RENT.

i. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error**.

4. Section 8 Project-Based, Section 202, Section 811, Section 8 Moderate Rehabilitation

a. Obtain the Gross Rent (Gross Rent equals the Contract Rent plus the Utility Allowance).

b. Obtain the TTP.

c. Determine if the family includes any ineligible noncitizens. IF YES, **continue.** If NO, **go to f.**

d. Determine if the family includes any citizens or eligible noncitizens. IF YES, **go to** #3 (continuation). IF NO, **go to #4 (temporary deferral).**

MARKER (marks the return point after determining continuation of assistance status)

e. Obtain the Utility Allowance.

f. Subtract e. (Utility Allowance) from b. (TTP) or a. (Gross Rent) whichever is lower. This is the QC RENT.

g. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error**.

Note: The tenant rent for the Section 8 programs is capped with the Gross Rent. The rent is not capped in the Section 202 PRAC, or Section 811 PRAC programs.

5. **Manufactured Home Space Rental for Section 8 Vouchers**

a. Obtain the Rent to Owner

b. Obtain the owner maintenance and management charges for the space.

c. Obtain the Utility Allowance

d. Add together a. (Rent to owner), b. (owner maintenance and management charges), and c. (utility allowance). This is the Space Rent.

e. Obtain the TTP

f. Obtain the Payment Standard.

g. Subtract f. (Payment Standard) from d. (Space Rent).

h. Add e. (TTP) to g. (the amount the Space Rent exceeds the Payment Standard). This is the Family Share.

i. Determine if this is the initial occupancy for this dwelling unit. (Item 12b on the 50058 is yes). IF YES, **continue**. IF NO, **the Family Share = h. Go to m.**

j. Obtain the household's Adjusted Monthly Income.

k. Calculate 40 percent of the household's Adjusted Monthly Income.

l. Determine if k. (40 percent of Adjusted Monthly Income) is equal to or greater than h. (TTP plus Gross Rent minus Payment Standard). If YES, **the Family Share equals h.; go to m**. If NO, **Procedural Error. The family is not entitled to assistance in this unit.**

m. Determine if the family includes any ineligible noncitizens. IF YES, **continue.** If NO, **go to o.**

n. Determine if the family includes any citizens or eligible noncitizens. IF YES, **go to** #3 (continuation). IF NO, **go to #4 (temporary deferral).**

MARKER

o. Subtract c. (Utility Allowance) from h. (Family Share) to determine QC Rent (Family Rent to Owner).

p. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error**.

A. Special Calculations for Household with Ineligible Non-Citizens

1. Continuation of Assistance

a. Determine if the family was receiving assistance on June 19, 1995. IF YES, **continue**. IF NO, the FAMILY is eligible for pro-rated assistance; **go to** #5 (proration formula) (p. 22).

b. Determine if the FAMILY head or spouse is a citizen or eligible noncitizen. IF YES, **continue**. IF NO, the FAMILY is eligible for pro-rated assistance; **go to** #5.

c. Determine if the FAMILY includes any ineligible members other than the head, spouse, child or parent of the head or spouse. IF NO, **continue**. IF YES, the FAMILY is eligible for pro-rated assistance; **go to** #5.

d. Determine if the FAMILY was granted continuation of assistance before 11/29/96. IF YES, the FAMILY is eligible for full continuation of assistance. **Return to** MARKER. IF NO, the FAMILY is eligible for pro-rated assistance; **go to** #5.

2. Temporary Deferral of Termination of Assistance

a. Determine if Temporary Deferral of Termination of Assistance has been granted. If YES, **continue**, If NO, **go to d.**

b. Determine the date Temporary Deferral was granted.

c. Determine if more than 18 months have passed since temporary deferral of termination of assistance was granted. IF YES, **go to d.** IF No, the FAMILY is entitled to temporary deferral of termination of assistance; **go to MARKER.**

d. Determine if the FAMILY includes a refugee under Section 207 of the Immigration and Naturalization Act or an individual seeking asylum under Section 208 of that Act. IF YES, **the Family is entitled to ongoing deferral of termination. Go to MARKER**. IF NO, **continue**.

e. Determine if the Family was receiving assistance on June 19, 1995. If YES, **the Family is eligible for Temporary Deferral of Termination of Assistance, go to MARKER**.

f. Determine if the FAMILY is exercising its hearing rights (waiting for a decision from an INS or PHA/owner appeal). If **YES, go to MARKER.** IF NO, **continue**.

g. Determine if the HA is making reasonable efforts to evict. IF YES, **go to MARKER.** IF NO, **Procedural Error,** HOUSEHOLD IS INELIGIBLE**.**

3. Proration Formula for Public Housing

a. Determine if this is a Public Housing case? IF YES, **continue.** IF NO, **go to** #6.

b. Determine the number of FAMILY members.

c. Determine the number of eligible FAMILY members.

d. Obtain the TTP.

e. Obtain the 95th percentile of Gross Rents for similarly sized public housing units in order to determine the public housing maximum rent.

f. Determine if the Family pays a Flat Rent. IF NO, **go to** i. IF YES, **continue.**

g. Obtain the Flat Rent

h. If the Flat Rent (g.) Is greater than or equal to the maximum rent (e), there is no prorated rent. Use the Flat Rent; go to n. If the Flat Rent (g) is less than the Maximum Rent (e), subtract the Flat Rent from the Maximum Rent. This is the Family's maximum subsidy. **Go to j.**

i. Subtract d. (TTP) from e. (maximum rent) to determine maximum subsidy.

j. Divide h. or i. (maximum subsidy) by b. (number of FAMILY members) and multiply by c. (number of eligible members) to determine the eligible subsidy for the FAMILY.

k. Subtract j. (eligible subsidy) from e. (maximum rent) to obtain the pro-rated TTP

l. Obtain the Utility Allowance.

m. The amount of the tenant's rent (QC RENT) is k. (prorated TTP) minus l. (Utility Allowance).

n. Did the Family accept the prorated rent? Y/N
IF NO: Go to #4.

o. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error**

4. Proration Formula for All Section 8 Programs

a. Obtain the Rent to Owner (voucher)

b. Obtain the Utility allowance

c. Obtain the Gross Rent
Voucher Gross Rent = Rent to Owner plus the Utility Allowance.

d. Obtain the TTP

e. Obtain the Payment Standard (Voucher)

f. Obtain the HAP.
Owner Administered: HAP=Gross Rent minus TTP
Voucher: HAP=Gross Rent or Payment Standard (whichever is less) minus the TTP.
Enhanced Voucher: HAP=Gross Rent minus the Payment Standard.

g. Record the number of FAMILY members.

h. Record the number of eligible FAMILY members.

i. Divide f. (HAP) by g. (total number of FAMILY members), and then multiply the result by h. (number of eligible FAMILY members) to obtain the prorated HAP.

j. If Manufactured Home Space Rental, return to MARKER

k. Subtract i.(prorated HAP) from c.(Gross Rent) to obtain the prorated Family Share.

l. Subtract b. (utility allowance) from k. (prorated Family Share) to determine the prorated QC RENT.

m. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error**.

Appendix B

Weighting Procedures

Appendix B – Weighting Procedures

This appendix describes the procedures followed in weighting the sample data.

Study Population. The universe under study included all projects and tenants located in the continental United States, Alaska, Hawaii, and Puerto Rico.

The following programs were included in the sample:

- Public Housing

- PHA-administered Section 8 projects:
  - Moderate Rehabilitation
  - Vouchers

- Owner-administered projects:
  - Section 8 New Construction/Substantial Rehabilitation
  - Section 8 Loan Management
  - Section 8 Property Disposition
  - Section 202 PRAC
  - Section 811 PRAC
  - Section 202/162 PAC

Weighting Strategy. The use of purposive replacement for projects that conduct all annual recertifications outside the study period makes the sample weight calculations complicated. The determination of an actual probability of selection for a replacement is impossible to make. A sample weight proportional to what the probability would have been had the project been selected originally is a reasonable estimate. For one replacement PSU it was decided that the probability of the original PSU should be used.

The probability of selection of a tenant was thus the product of the following combinations:

1) The probability of selection of the PSU.

2) The probability of selection of the sub-PSU when the PSU was divided.

3) The probability of selection of the project from the PSU. This was defined as the minimum of kt/T and one, where k is the number of projects in the program selected from the PSU, t is the number of tenants in the project and T is the number of tenants in the program. This is not the exact probability of selection, but given the number of projects found to be out of scope and the number of replacements it was a reasonable approximation.

4) The probability of selection of the tenant from the set of tenants in the project with (re)certification effective dates from November to April. This is the total number of tenants sampled from the project divided by the estimated number of tenants whose annual recertifications were conducted during the study period (households with effective dates from November to April). The estimate was obtained by multiplying the total number of tenants by

the proportion of tenants selected who were in-scope and (re)certified in November through April. For example, if a total of six tenants were reviewed to find four tenants who were both in-scope and had an effective date from November to April, one was out of town and one was (re)certified outside of the six month window, and the list included 120 tenants, then the estimate would be 120x(5/6)=100 tenants.

The four probabilities were multiplied together and formed the preliminary weight. The weights were then adjusted to add to estimates of the national total of tenants in each program. The weights summed to 1,376,525 for the owner-administered programs, 1,124,863 for the Public Housing, and 1,720,882 for the PIH-administered Section 8 programs.

Primary Sampling Unit Probabilities. Each PSU was sampled with probabilities proportional to size. The size measure used was the number of tenants adjusted to obtain equal expectation for the three major types of programs in the study. The number of tenants of each kind in a PSU was multiplied by an inflation factor to make all three numbers equal. The size measures were then averaged and the PSU probability of selection was its size measure divided by the sum of the size measures nationwide, multiplied by the number of PSUs to be selected (which was 60). PSUs with probabilities greater than 1 could be selected more than once. For weighting purposes, probabilities greater than one were set to 1.0.

Project Probabilities. Replacements were treated just like initially selected projects. The projects were selected with probabilities proportional to adjusted size (using the same adjustment as that used for PSUs). Ten projects were selected from each PSU, and if a PSU was selected several times, ten projects were selected for each time the PSU was selected. In turn, a project might be selected more than once.

The probability of selection of the projects, given that the PSU was selected is $p=ns/\Sigma s_j$ where s is the adjusted size of the project, n is the number of projects to be sampled from the PSU, and the summation is taken over the entire PSU. This is a conditional probability and must be multiplied by the probability that the PSU was selected at all in order to obtain the unconditional probability of selection of the project.

Tenant Probabilities. We followed an analogous procedure for calculating tenant weights. The probability of selection of the tenant was n_{ijk} /N_{ijk}, where N_{ijk} was the number of tenants in project j in PSU i during half year k and n_{ijk} was the number of tenants sampled from the same PSU, project and half-year.

If projects were selected proportional to N_{ij} had accurate data been available for all projects, the probabilities would have been the same for tenants in the three programs. Tenant weights and probabilities differ only because the number of tenants per project was usually different from the number in the sampling frame.

Adjustments to Weights. We have assumed that we would obtain the exact number of tenants in the project and sample exactly four tenants every time the project was selected. In practice, we sampled tenants who were not in scope, and in a few cases we sampled a number other than the one called for in the design. This happened because an out-of-scope tenant was discovered too late or when a tenant thought to be out-of-scope and replaced turned out to be in scope.

Tenant weights for out of scope tenants were multiplied by n/(n+m), where n is the number of in-scope tenants sampled and m is the number of out-of-scope tenants sampled. This multiplication has the effect of reducing the N_{ijk} to account for the fact that some of the tenants making up that number are out of scope. If the number sampled in a project was n' and the number that was supposed to be sampled was n, then weights in the project were multiplied by n/n'in order to spread the weights while retaining the sum of the weights provided by the project.

Post-Stratification. The sample was designed to obtain similar numbers of tenants in each of three categories of projects:

- Public Housing
- PHA-administered Section 8
- Owner-administered

HUD provided approximate totals for each of the three categories. The sampling frame totals did not correspond to these numbers and required extensive adjustments. Consequently, the weights were adjusted so they added up to those provided by the external source.

Trimming the Weights. The final step was the trimming of the weights. Using a procedure used in the National Assessment of Educational Progress (Potter, 1990), the extreme weights were reduced and the weights were re-adjusted so they added up to the same national totals (reference). Extreme weights tend to add to the variance of the estimates. We trimmed these extreme weights using a method developed by the National Assessment of Education Progress (NAEP). The NAEP procedure is summarized below:

- For each of the three post-strata, the NAEP criterion is defined as sqrt($10*(\Sigma w^2/n)$).
- If any weight exceeds the criterion it is set to the criterion.
- The weights in the post-strata are adjusted to add up to the same value as before.
- The procedure is repeated as many times as is necessary.

This procedure was applied both before and after post-stratification. It effectively reduced extreme weights while retaining the total number in each post-stratum. The weights led to an effective sample size of 976 (down from an actual size of about 1,200) for the owner-administered projects, 944 for the public housing, and 978 for the PHA-administered Section 8 projects.

Appendix C

Source Tables

Table 1a. Verification of QC Rent Components -- Third Party Verbal or In Writing, or Documentation

RENT COMPONENTS	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	133	(9.3%)	25	(1.7%)	1,269	(88.9%)
Pension, Etc.	32	(1.3%)	24	(1.0%)	2,383	(97.7%)
Public Assistance	103	(15.6%)	3	(.4%)	550	(84.0%)
Other Income	200	(21.6%)	22	(2.3%)	706	(76.1%)
Asset Income	34	(4.2%)	86	(10.3%)	710	(85.5%)
Child Care Expense	78	(25.8%)	7	(2.4%)	215	(71.8%)
Disability Expense	7	(32.1%)	--	--	15	(67.9%)
Medical Expense	95	(8.0%)	187	(15.7%)	908	(76.3%)

Table 1b. Verification of QC Rent Components --Third Party In Writing

RENT COMPONENTS	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	272	(19.1%)	40	(2.8%)	1,115	(78.1%)
Pension, Etc.	67	(2.7%)	67	(2.8%)	2,304	(94.5%)
Public Assistance	208	(31.8%)	4	(.6%)	443	(67.6%)
Other Income	350	(37.7%)	33	(3.6%)	545	(58.7%)
Asset Income	90	(10.8%)	142	(17.1%)	599	(72.1%)
Child Care Expense	99	(33.1%)	9	(2.9%)	192	(63.9%)
Disability Expense	7	(33.5%)	--	--	14	(66.5%)
Medical Expense	181	(15.2%)	385	(32.3%)	624	(52.4%)

Table 2. Dollar Rent Error by Program Type

PROGRAM TYPE	ACTUAL RENT (MONTHLY)				QC RENT (MONTHLY)				GROSS RENT ERROR (MONTHLY)			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
PHA ADMINISTERED												
Public Housing	1,125	(26.6%)	220,321	195.87	1,125	(26.6%)	227,556	202.30	1,125	(26.6%)	26,342	23.42
Section 8	1,721	(40.8%)	317,547	184.53	1,721	(40.8%)	331,248	192.49	1,721	(40.8%)	60,913	35.40
Total	*2,846*	*(67.4%)*	*537,869*	*189.01*	*2,846*	*(67.4%)*	*558,804*	*196.36*	*2,846*	*(67.4%)*	*87,255*	*30.66*
OWNER ADMINISTERED												
SEC.8 Project-Based	1,377	(32.6%)	245,041	178.01	1,377	(32.6%)	255,922	185.92	1,377	(32.6%)	30,732	22.33
TOTAL	**4,222**	**(100.0%)**	**782,910**	**185.42**	**4,222**	**(100.0%)**	**814,726**	**192.96**	**4,222**	**(100.0%)**	**117,988**	**27.94**

Note: The numbers do not add up to the total due to rounding.

Table 3. Percent of Households by Payment Type and Program Type

PROGRAM TYPE	UNDERPAYMENT			PROPER PAYMENT			OVERPAYMENT			Total		
	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED												
Public Housing	235	(20.9%)	(24.6%)	722	(64.2%)	(28.8%)	168	(14.9%)	(22.2%)	1,125	(100.0%)	(26.6%)
Section 8	435	(25.3%)	(45.6%)	925	(53.7%)	(36.8%)	361	(21.0%)	(47.8%)	1,721	(100.0%)	(40.8%)
Total	670	(23.6%)	(70.2%)	1,647	(57.9%)	(65.6%)	529	(18.6%)	(70.0%)	2,846	(100.0%)	(67.4%)
OWNER ADMINISTERED												
SEC.8 Project-Based	285	(20.7%)	(29.8%)	864	(62.8%)	(34.4%)	227	(16.5%)	(30.0%)	1,377	(100.0%)	(32.6%)
TOTAL	**956**	**(22.6%)**	**(100.0%)**	**2,511**	**(59.5%)**	**(100.0%)**	**756**	**(17.9%)**	**(100.0%)**	**4,222**	**(100.0%)**	**(100.0%)**

Note: The numbers do not add up to the total due to rounding.

Table 3(S). Percent of Households by Payment Type and Program Type (Proper Payment Based on Exact Match of Actual and QC Rent)

PROGRAM TYPE	UNDERPAYMENT			PROPER PAYMENT			OVERPAYMENT			Total		
	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED												
Public Housing	312	(27.8%)	(25.4%)	545	(48.5%)	(29.2%)	267	(23.8%)	(23.8%)	1,125	(100.0%)	(26.6%)
Section 8	548	(31.8%)	(44.5%)	690	(40.1%)	(36.9%)	483	(28.1%)	(43.0%)	1,721	(100.0%)	(40.8%)
Total	860	(30.2%)	(69.9%)	1,235	(43.4%)	(66.1%)	751	(26.4%)	(66.7%)	2,846	(100.0%)	(67.4%)
OWNER ADMINISTERED												
SEC.8 Project-Based	370	(26.9%)	(30.1%)	633	(46.0%)	(33.9%)	374	(27.2%)	(33.3%)	1,377	(100.0%)	(32.6%)
TOTAL	**1,230**	**(29.1%)**	**(100.0%)**	**1,868**	**(44.2%)**	**(100.0%)**	**1,125**	**(26.6%)**	**(100.0%)**	**4,222**	**(100.0%)**	**(100.0%)**

Note: The numbers do not add up to the total due to rounding.

Table 4. Dollar Error Amount by Payment Type and Program Type

PROGRAM TYPE	UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
PHA ADMINISTERED												
Public Housing	235	(24.6%)	16,569	70.51	168	(22.2%)	9,774	58.27	1,125	(26.6%)	227,556	202.30
Section 8	435	(45.6%)	37,286	85.64	361	(47.8%)	23,627	65.48	1,721	(40.8%)	331,248	192.49
Total	670	(70.2%)	53,855	80.34	529	(70.0%)	33,401	63.19	2,846	(67.4%)	558,804	196.36
OWNER ADMINISTERED												
SEC.8 Project-Based	285	(29.8%)	20,853	73.13	227	(30.0%)	9,880	43.53	1,377	(32.6%)	255,922	185.92
TOTAL	**956**	**(100.0%)**	**74,707**	**78.19**	**756**	**(100.0%)**	**43,280**	**57.28**	**4,222**	**(100.0%)**	**814,726**	**192.96**

Note: The numbers do not add up to the total due to rounding.

Table 4(S). Dollar Error Amount by Payment Type and Program Type (Proper Payment Based on Exact Match of Actual and QC Rent)

PROGRAM TYPE	UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
PHA ADMINISTERED												
Public Housing	312	(25.4%)	16,759	53.65	267	(23.8%)	9,978	37.34	1,125	(26.6%)	227,556	202.30
Section 8	548	(44.5%)	37,575	68.62	483	(43.0%)	23,875	49.40	1,721	(40.8%)	331,248	192.49
Total	860	(69.9%)	54,334	63.18	751	(66.7%)	33,853	45.10	2,846	(67.4%)	558,804	196.36
OWNER ADMINISTERED												
SEC.8 Project-Based	370	(30.1%)	21,065	56.96	374	(33.3%)	10,184	27.22	1,377	(32.6%)	255,922	185.92
TOTAL	**1,230**	**(100.0%)**	**75,399**	**61.31**	**1,125**	**(100.0%)**	**44,037**	**39.16**	**4,222**	**(100.0%)**	**814,726**	**192.96**

Note: The numbers do not add up to the total due to rounding.

Table 5. Gross and Net Rent Error by Program Type

PROGRAM TYPE	GROSS RENT ERROR (MONTHLY)				NET RENT ERROR (MONTHLY)				QC RENT (MONTHLY)			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
PHA ADMINISTERED												
Public Housing	1,125	(26.6%)	26,342	23.42	1,125	(26.6%)	-6,795	-6.04	1,125	(26.6%)	227,556	202.30
Section 8	1,721	(40.8%)	60,913	35.40	1,721	(40.8%)	-13,659	-7.94	1,721	(40.8%)	331,248	192.49
Total	2,846	(67.4%)	87,255	30.66	2,846	(67.4%)	-20,454	-7.19	2,846	(67.4%)	558,804	196.36
OWNER ADMINISTERED												
SEC.8 Project-Based	1,377	(32.6%)	30,732	22.33	1,377	(32.6%)	-10,973	-7.97	1,377	(32.6%)	255,922	185.92
TOTAL	**4,222**	**(100.0%)**	**117,988**	**27.94**	**4,222**	**(100.0%)**	**-31,427**	**-7.44**	**4,222**	**(100.0%)**	**814,726**	**192.96**

Note: The numbers do not add up to the total due to rounding.

Table 5(S). Gross and Net Rent Error by Program Type (Proper Payment Based on Exact Match of Actual and QC Rent)

PROGRAM TYPE	GROSS RENT ERROR (MONTHLY)				NET RENT ERROR (MONTHLY)				QC RENT (MONTHLY)			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
PHA ADMINISTERED												
Public Housing	1,125	(26.6%)	26,737	23.77	1,125	(26.6%)	-6,781	-6.03	1,125	(26.6%)	227,556	202.30
Section 8	1,721	(40.8%)	61,450	35.71	1,721	(40.8%)	-13,700	-7.96	1,721	(40.8%)	331,248	192.49
Total	2,846	(67.4%)	88,187	30.99	2,846	(67.4%)	-20,481	-7.20	2,846	(67.4%)	558,804	196.36
OWNER ADMINISTERED												
SEC.8 Project-Based	1,377	(32.6%)	31,249	22.70	1,377	(32.6%)	-10,881	-7.90	1,377	(32.6%)	255,922	185.92
TOTAL	**4,222**	**(100.0%)**	**119,436**	**28.29**	**4,222**	**(100.0%)**	**-31,363**	**-7.43**	**4,222**	**(100.0%)**	**814,726**	**192.96**

Note: The numbers do not add up to the total due to rounding.

Table 6. Case Type by Program Type

PROGRAM TYPE	CERTIFICATIONS			RECERTIFICATIONS/ NON-OVERDUE			RECERTIFICATIONS/OVERDUE			Total		
	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED												
Public Housing	117	(10.4%)	(19.2%)	968	(86.1%)	(27.6%)	40	(3.6%)	(36.7%)	1,125	(100.0%)	(26.6%)
Section 8	235	(13.6%)	(38.6%)	1,440	(83.7%)	(41.1%)	46	(2.7%)	(41.9%)	1,721	(100.0%)	(40.8%)
Total	352	(12.4%)	(57.8%)	2,408	(84.6%)	(68.7%)	86	(3.0%)	(78.6%)	2,846	(100.0%)	(67.4%)
OWNER ADMINISTERED												
SEC.8 Project-Based	256	(18.6%)	(42.2%)	1,097	(79.7%)	(31.3%)	23	(1.7%)	(21.4%)	1,377	(100.0%)	(32.6%)
TOTAL	**608**	**(14.4%)**	**(100.0%)**	**3,505**	**(83.0%)**	**(100.0%)**	**109**	**(2.6%)**	**(100.0%)**	**4,222**	**(100.0%)**	**(100.0%)**

Note: The numbers do not add up to the total due to rounding.

Table 7. Dollar Error Amount by Payment Type and Case Type

CASE TYPE	UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
CERTIFICATION	129	(13.5%)	9,478	73.26	103	(13.7%)	6,047	58.49	608	(14.4%)	101,174	166.44
RECERTIFICATION												
Non-Overdue	779	(81.5%)	60,758	78.00	628	(83.1%)	35,901	57.18	3,505	(83.0%)	688,404	196.40
Overdue	47	(4.9%)	4,471	94.71	24	(3.2%)	1,332	54.72	109	(2.6%)	25,149	230.07
Total	826	(86.5%)	65,229	78.96	652	(86.3%)	37,233	57.09	3,614	(85.6%)	713,553	197.42
TOTAL	**956**	**(100.0%)**	**74,707**	**78.19**	**756**	**(100.0%)**	**43,280**	**57.28**	**4,222**	**(100.0%)**	**814,726**	**192.96**

Note: The numbers do not add up to the total due to rounding.

Table 7(S). Dollar Error Amount by Payment Type and Case Type (Proper Payment Based on Exact Match of Actual and QC Rent)

CASE TYPE	UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
CERTIFICATION	169	(13.8%)	9,576	56.55	154	(13.7%)	6,152	39.82	608	(14.4%)	101,174	166.44
RECERTIFICATION												
Non-Overdue	1,008	(82.0%)	61,340	60.84	944	(83.9%)	36,547	38.73	3,505	(83.0%)	688,404	196.40
Overdue	52	(4.2%)	4,483	85.82	26	(2.3%)	1,338	50.68	109	(2.6%)	25,149	230.07
Total	1,060	(86.2%)	65,823	62.07	970	(86.3%)	37,885	39.05	3,614	(85.6%)	713,553	197.42
TOTAL	**1,230**	**(100.0%)**	**75,399**	**61.31**	**1,125**	**(100.0%)**	**44,037**	**39.16**	**4,222**	**(100.0%)**	**814,726**	**192.96**

Note: The numbers do not add up to the total due to rounding.

TABLE 8. Largest Component Error for Households with Rent Error (Annual Dollars)

RENT COMPONENT	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
Earned Income	429	(25.1%)	2,004,036	4,672
Pension, Etc.	354	(20.7%)	1,211,369	3,426
Public Assistance	129	(7.6%)	412,981	3,192
Other Income	203	(11.9%)	675,962	3,330
Asset Income	61	(3.6%)	58,832	966
Dependent Allowance	52	(3.0%)	30,714	589
Elderly HH Allowance	18	(1.0%)	8,941	499
Child Care Allowance	84	(4.9%)	193,916	2,320
Medical Allowance	293	(17.1%)	301,448	1,028
No Error	88	(5.2%)	--	--
TOTAL	**1,711**	**(100.0%)**	**4,898,199**	**2,863**

Table 9. Total and Largest Dollar Error by Program Type for Households with Rent Errors

PROGRAM TYPE	TOTAL DOLLAR IN ERROR				LARGEST DOLLAR ERROR			
	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
PHA ADMINISTERED								
Public Housing	403	(23.5%)	1,699,775	4,220.78	403	(23.5%)	1,380,813	3,428.75
Section 8	796	(46.5%)	2,658,345	3,338.66	796	(46.5%)	2,230,007	2,800.70
Total	1,199	(70.1%)	4,358,120	3,634.96	1,199	(70.1%)	3,610,821	3,011.66
OWNER ADMINISTERED								
SEC.8 Project-Based	512	(29.9%)	1,543,184	3,013.37	512	(29.9%)	1,287,378	2,513.86
TOTAL	**1,711**	**(100.0%)**	**5,901,304**	**3,448.92**	**1,711**	**(100.0%)**	**4,898,199**	**2,862.67**

Table 10. QC Rent Components by Payment Type and Administration Type

RENT COMPONENT	PHA ADMINISTERED			OWNER ADMINISTERED			Total		
	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
UNDERPAYMENT									
Earned Income	234	(8.2%)	(72.9%)	87	(6.3%)	(27.1%)	321	(7.6%)	(100.0%)
Pension, Etc.	264	(9.3%)	(64.5%)	146	(10.6%)	(35.5%)	410	(9.7%)	(100.0%)
Public Assistance	91	(3.2%)	(79.6%)	23	(1.7%)	(20.4%)	114	(2.7%)	(100.0%)
Other Income	159	(5.6%)	(74.2%)	55	(4.0%)	(25.8%)	214	(5.1%)	(100.0%)
Asset Income	106	(3.7%)	(62.3%)	64	(4.6%)	(37.7%)	171	(4.1%)	(100.0%)
Dependent Allowance	51	(1.8%)	(77.2%)	15	(1.1%)	(22.8%)	66	(1.6%)	(100.0%)
Elderly HH Allowance	14	(0.5%)	(64.3%)	8	(0.6%)	(35.7%)	22	(0.5%)	(100.0%)
Child Care Allowance	52	(1.8%)	(76.3%)	16	(1.2%)	(23.7%)	68	(1.6%)	(100.0%)
Disability Allowance	0	--	--	0	--	--	0	--	--
Medical Allowance	123	(4.3%)	(51.3%)	117	(8.5%)	(48.7%)	239	(5.7%)	(100.0%)
No Error	36	(1.3%)	(93.6%)	2	(0.1%)	(6.4%)	38	(0.9%)	(100.0%)
PROPER PAYMENT									
Earned Income	101	(3.5%)	(72.1%)	39	(2.8%)	(27.9%)	140	(3.3%)	(100.0%)
Pension, Etc.	382	(13.4%)	(60.2%)	253	(18.4%)	(39.8%)	635	(15.0%)	(100.0%)
Public Assistance	63	(2.2%)	(76.4%)	19	(1.4%)	(23.6%)	82	(1.9%)	(100.0%)
Other Income	136	(4.8%)	(69.5%)	60	(4.4%)	(30.5%)	196	(4.6%)	(100.0%)
Asset Income	166	(5.8%)	(57.6%)	122	(8.9%)	(42.4%)	288	(6.8%)	(100.0%)
Dependent Allowance	52	(1.8%)	(88.0%)	7	(0.5%)	(12.0%)	59	(1.4%)	(100.0%)
Elderly HH Allowance	22	(0.8%)	(88.5%)	3	(0.2%)	(11.5%)	25	(0.6%)	(100.0%)
Child Care Allowance	28	(1.0%)	(88.8%)	4	(0.3%)	(11.2%)	32	(0.8%)	(100.0%)
Disability Allowance	0	--	--	5	(0.4%)	(100.0 %)	5	(0.1%)	(100.0%)
Medical Allowance	162	(5.7%)	(49.5%)	165	(12.0%)	(50.5%)	327	(7.7%)	(100.0%)
No Error	942	(33.1%)	(67.9%)	445	(32.3%)	(32.1%)	1,387	(32.9%)	(100.0%)
OVERPAYMENT									
Earned Income	165	(5.8%)	(75.6%)	53	(3.8%)	(24.4%)	219	(5.2%)	(100.0%)
Pension, Etc.	166	(5.8%)	(61.2%)	105	(7.6%)	(38.8%)	271	(6.1%)	(100.0%)
Public Assistance	51	(1.8%)	(73.4%)	19	(1.4%)	(26.6%)	70	(1.7%)	(100.0%)
Other Income	79	(2.8%)	(71.6%)	31	(2.3%)	(28.4%)	110	(2.6%)	(100.0%)
Asset Income	84	(2.9%)	(59.5%)	58	(4.2%)	(40.5%)	142	(3.4%)	(100.0%)
Dependent Allowance	61	(2.1%)	(81.7%)	14	(1.0%)	(18.3%)	75	(1.8%)	(100.0%)
Elderly HH Allowance	16	(0.6%)	(77.5%)	5	(0.4%)	(22.5%)	21	(0.5%)	(100.0%)
Child Care Allowance	61	(2.1%)	(78.6%)	17	(1.2%)	(21.4%)	78	(1.8%)	(100.0%)
Disability Allowance	0	--	--	1	(0.1%)	(100.0 %)	1	(0.0%)	(100.0%)
Medical Allowance	153	(5.4%)	(56.1%)	119	(8.6%)	(43.9%)	272	(6.4%)	(100.0%)
No Error	46	(1.6%)	(92.4%)	4	(0.3%)	(7.6%)	50	(1.2%)	(100.0%)
TOTAL WITH RENT ERROR CALCULATIONS	**2,846**	**(100.0%)**	**(67.4%)**	**1,377**	**(100.0%)**	**(32.6%)**	**4,222**	**(100.0%)**	**(100.0%)**

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Table 11a. Elderly/Disabled Allowances

ALLOWANCES	NON-ELDERLY/DISABLED HH			ELDERLY/DISABLED HH			Total		
	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases
No Allowance	2,026	(99.0%)	(100.0%)	--	--	--	2,026	(48.0%)	(100.0%)
Incorrect Allowance	20	(1.0%)	(27.0%)	53	(2.4%)	(73.0%)	73	(1.7%)	(100.0%)
Correct Allowance	--	--	--	2,124	(97.6%)	(100.0%)	2,124	(50.3%)	(100.0%)
TOTAL	**2,046**	**(100.0%)**	**(48.4%)**	**2,177**	**(100.0%)**	**(51.6%)**	**4,222**	**(100.0%)**	**(100.0%)**

Note: The numbers do not add up to the total due to rounding.

Table 11b. Dependent Allowances

ALLOWANCES	HH W/OUT DEPENDENT			HH W/DEPENDENT			Total		
	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases
No Allowance	2,263	(98.9%)	(99.8%)	3	(.2%)	(.2%)	2,267	(53.7%)	(100.0%)
Incorrect Allowance	24	(1.1%)	(9.4%)	232	(12.0%)	(90.6%)	256	(6.1%)	(100.0%)
Correct Allowance	--	--	--	1,699	(87.8%)	(100.0%)	1,699	(40.2%)	(100.0%)
TOTAL	**2,288**	**(100.0%)**	**(54.2%)**	**1,935**	**(100.0%)**	**(45.8%)**	**4,222**	**(100.0%)**	**(100.0%)**

Note: The numbers do not add up to the total due to rounding.

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Table 12. Calculation Errors on Form 50058/59

ITEMS	FORM				Total Number of Cases	
	50058		50059			
	# of Cases (in 1,000)	Col % of Cases	# of Cases (in 1,000)	Col % of Cases	# of Cases (in 1,000)	Col % of Cases
Age	252	(8.9%)	70	(5.1%)	323	(7.6%)
Number of Family Members	--	--	710	(51.6%)	710	(16.8%)
Number of Foster Child & Live-in	--	--	6	(.4%)	6	(.1%)
Number of Dependents	121	(4.3%)	18	(1.3%)	140	(3.3%)
Total Assets	32	(1.1%)	27	(1.9%)	58	(1.4%)
Imputed Asset Income	41	(1.4%)	42	(3.0%)	83	(2.0%)
Earned Income Sum	--	--	13	(.9%)	13	(.3%)
Pension, Etc., Income Sum	--	--	10	(.7%)	10	(.2%)
Public Assistance Income Sum	--	--	2	(.1%)	2	(.0%)
Asset Income Sum	13	(.4%)	20	(1.5%)	33	(.8%)
Other Income Sum	--	--	9	(.7%)	9	(.2%)
Total Non Asset Income	82	(2.9%)	34	(2.5%)	117	(2.8%)
Income form Asset	42	(1.5%)	25	(1.8%)	67	(1.6%)
Total Annual Income	108	(3.8%)	47	(3.4%)	156	(3.7%)
Elderly Allowance	45	(1.6%)	13	(1.0%)	58	(1.4%)
Dependent Allowance	121	(4.3%)	14	(1.0%)	135	(3.2%)
3% of Annual Income	1,273	(44.7%)	75	(5.5%)	1,348	(31.9%)
Medical Allowance	39	(1.4%)	39	(2.8%)	78	(1.8%)
Disability Allowance	--	--	3	(.2%)	3	(.1%)
Child Care Allowance	4	(.1%)	3	(.2%)	7	(.2%)
Total Allowance	247	(8.7%)	55	(4.0%)	303	(7.2%)
Adjusted Annual Income	285	(10.0%)	92	(6.7%)	376	(8.9%)
Gross Rent	1,703	(59.9%)	45	(3.3%)	1,749	(41.4%)
Total Tenant Payment	278	(9.8%)	109	(7.9%)	387	(9.2%)
Tenant Rent	334	(11.7%)	121	(8.8%)	455	(10.8%)
TOTAL	**2,846**	**(100.0%)**	**1,377**	**(100.0%)**	**4,222**	**(100.0%)**

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Table 13. Consistency Errors on Form 50058/59

ITEMS	FORM				Total Number of Cases	
	50058		50059			
	# of Errors	# of Cases (in 1,000)	# of Errors	# of Cases (in 1,000)	# of Errors	# of Cases (in 1,000)
General Information	134	134	79	66	212	200
Household Composition	1,843	656	229	151	2,072	807
Net Family Assets And Income	160	137	99	82	258	219
Allowances And Adjusted Income	401	390	42	35	443	424
Family Rent And Subsidy Information	235	231	39	38	273	269

Table 14a. Verification of Form 50058/59 Rent Components --Third Party Verbal or In Writing, or Documentation

RENT COMPONENTS	NO VERIFICATION		VERIFICATION				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	112	(8.4%)	313	(23.5%)	907	(68.1%)	1,332	(100.0%)
Pension, Etc.	172	(7.3%)	349	(14.8%)	1,846	(78.0%)	2,367	(100.0%)
Public Assistance	86	(13.1%)	172	(26.3%)	396	(60.5%)	654	(100.0%)
Other Income	174	(21.1%)	204	(24.7%)	445	(54.1%)	823	(100.0%)
Asset Income	56	(8.9%)	86	(13.5%)	493	(77.6%)	635	(100.0%)
Child Care Expense	42	(18.6%)	35	(15.4%)	149	(65.9%)	225	(100.0%)
Disability Expense	5	(46.2%)	3	(30.9%)	2	(22.9%)	10	(100.0%)
Medical Expense	165	(17.0%)	206	(21.2%)	601	(61.9%)	972	(100.0%)

Note: The numbers do not add up to the total due to rounding.

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Table 14b. Verification of Form 50058/59 Rent Components --Third Party Verbal or In Writing, or Documentation by Program Type

RENT COMPONENTS BY PROGRAM TYPE	NO VERIFICATION		VERIFICATION				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING								
Earned Income	39	(10.6%)	100	(27.1%)	229	(62.3%)	368	(100.0%)
Pension, Etc.	37	(5.8%)	115	(17.9%)	490	(76.3%)	642	(100.0%)
Public Assistance	21	(13.1%)	40	(25.3%)	99	(61.6%)	160	(100.0%)
Other Income	47	(24.3%)	52	(26.8%)	94	(48.9%)	193	(100.0%)
Asset Income	13	(10.7%)	20	(17.1%)	85	(72.2%)	118	(100.0%)
Child Care Expense	17	(33.9%)	7	(13.6%)	26	(52.5%)	49	(100.0%)
Disability Expense	2	(100.0%)	--	--	--	--	2	(100.0%)
Medical Expense	46	(17.4%)	57	(21.5%)	162	(61.1%)	265	(100.0%)
PHA-ADMINISTERED SECTION 8								
Earned Income	52	(8.0%)	135	(21.0%)	457	(71.0%)	644	(100.0%)
Pension, Etc.	36	(4.2%)	110	(13.0%)	698	(82.8%)	843	(100.0%)
Public Assistance	48	(13.0%)	107	(29.0%)	213	(57.9%)	368	(100.0%)
Other Income	77	(18.0%)	95	(22.2%)	256	(59.7%)	428	(100.0%)
Asset Income	25	(14.6%)	16	(9.1%)	132	(76.2%)	173	(100.0%)
Child Care Expense	15	(13.0%)	20	(18.1%)	77	(68.9%)	112	(100.0%)
Disability Expense	--	--	1	(100.0%)	--	--	1	(100.0%)
Medical Expense	52	(23.5%)	34	(15.4%)	135	(61.1%)	222	(100.0%)
OWNER-ADMINISTERED								
Earned Income	21	(6.5%)	78	(24.4%)	221	(69.1%)	320	(100.0%)
Pension, Etc.	99	(11.2%)	125	(14.1%)	659	(74.6%)	883	(100.0%)
Public Assistance	17	(13.5%)	25	(19.9%)	84	(66.6%)	126	(100.0%)
Other Income	50	(24.7%)	57	(28.1%)	95	(47.2%)	202	(100.0%)
Asset Income	19	(5.4%)	50	(14.4%)	276	(80.2%)	344	(100.0%)
Child Care Expense	11	(16.7%)	8	(12.1%)	46	(71.1%)	64	(100.0%)
Disability Expense	3	(36.2%)	2	(32.7%)	2	(31.1%)	7	(100.0%)
Medical Expense	67	(13.7%)	115	(23.7%)	304	(62.6%)	485	(100.0%)

Note: The numbers do not add up to the total due to rounding.

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Table 14c. Verification of Form 50058/59 Rent Components --Third Party In Writing

RENT COMPONENTS	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	392	(29.4%)	232	(17.4%)	708	(53.2%)	1,332	(100.0%)
Pension, Etc.	682	(28.8%)	230	(9.7%)	1,455	(61.5%)	2,367	(100.0%)
Public Assistance	223	(34.1%)	130	(19.9%)	301	(46.0%)	654	(100.0%)
Other Income	394	(47.8%)	136	(16.5%)	293	(35.6%)	823	(100.0%)
Asset Income	274	(43.1%)	42	(6.6%)	320	(50.4%)	635	(100.0%)
Child Care Expense	76	(33.7%)	29	(12.9%)	120	(53.4%)	225	(100.0%)
Disability Expense	7	(70.2%)	1	(6.9%)	2	(22.9%)	10	(100.0%)
Medical Expense	550	(56.5%)	80	(8.3%)	342	(35.2%)	972	(100.0%)

Note: The numbers do not add up to the total due to rounding.

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Table 14d. Verification of Form 50058/59 Rent Components --Third Party In Writing by Program Type

RENT COMPONENTS BY PROGRAM TYPE	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING								
Earned Income	117	(31.9%)	71	(19.3%)	180	(48.8%)	368	(100.0%)
Pension, Etc.	201	(31.3%)	67	(10.4%)	374	(58.3%)	642	(100.0%)
Public Assistance	69	(43.0%)	25	(15.8%)	66	(41.3%)	160	(100.0%)
Other Income	105	(54.7%)	36	(18.9%)	51	(26.4%)	193	(100.0%)
Asset Income	60	(50.7%)	10	(8.1%)	49	(41.2%)	118	(100.0%)
Child Care Expense	22	(43.9%)	5	(10.2%)	23	(45.8%)	49	(100.0%)
Disability Expense	2	(100.0%)	--	--	--	--	2	(100.0%)
Medical Expense	157	(59.3%)	23	(8.8%)	85	(31.9%)	265	(100.0%)
PHA-ADMINISTERED SECTION 8								
Earned Income	181	(28.1%)	109	(16.9%)	354	(55.0%)	644	(100.0%)
Pension, Etc.	183	(21.7%)	83	(9.8%)	578	(68.5%)	843	(100.0%)
Public Assistance	114	(31.1%)	84	(22.9%)	169	(46.0%)	368	(100.0%)
Other Income	181	(42.4%)	59	(13.7%)	188	(44.0%)	428	(100.0%)
Asset Income	75	(43.4%)	6	(3.6%)	92	(52.9%)	173	(100.0%)
Child Care Expense	36	(32.2%)	19	(17.2%)	57	(50.6%)	112	(100.0%)
Disability Expense	--	--	1	(100.0%)	--	--	1	(100.0%)
Medical Expense	108	(48.9%)	17	(7.7%)	96	(43.4%)	222	(100.0%)
OWNER-ADMINISTERED								
Earned Income	93	(29.2%)	52	(16.4%)	174	(54.4%)	320	(100.0%)
Pension, Etc.	299	(33.8%)	81	(9.1%)	503	(57.0%)	883	(100.0%)
Public Assistance	39	(31.3%)	21	(16.6%)	66	(52.2%)	126	(100.0%)
Other Income	107	(52.9%)	41	(20.3%)	54	(26.8%)	202	(100.0%)
Asset Income	139	(40.3%)	26	(7.6%)	180	(52.2%)	344	(100.0%)
Child Care Expense	18	(28.5%)	5	(7.5%)	41	(64.0%)	64	(100.0%)
Disability Expense	5	(68.9%)	--	--	2	(31.1%)	7	(100.0%)
Medical Expense	284	(58.5%)	40	(8.2%)	161	(33.3%)	485	(100.0%)

Note: The numbers do not add up to the total due to rounding.

HUD QC FY 2003
NATIONAL ESTIMATE

Table 15. Occupancy Standards on Form 50058/59

NUMBER OF BEDROOMS BY PROGRAM TYPE	UNDER-HOUSED		CORRECT		OVER-HOUSED		Total	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING								
0	6	(9.4%)	54	(90.6%)	--	--	60	(100.0%)
1	5	(1.2%)	444	(98.8%)	--	--	450	(100.0%)
2	6	(1.8%)	239	(77.6%)	63	(20.5%)	308	(100.0%)
3	1	(.5%)	171	(78.2%)	47	(21.3%)	219	(100.0%)
4	--	--	35	(59.1%)	24	(40.9%)	59	(100.0%)
5	--	--	4	(35.4%)	8	(64.6%)	12	(100.0%)
6	--	--	1	(100.0%)	--	--	1	(100.0%)
Total	18	(1.6%)	950	(85.6%)	142	(12.8%)	1,109	(100.0%)
PHA-ADMINISTERED SECTION 8								
0	1	(4.7%)	24	(95.3%)	--	--	26	(100.0%)
1	16	(2.9%)	543	(97.1%)	--	--	559	(100.0%)
2	12	(1.9%)	533	(88.8%)	56	(9.3%)	600	(100.0%)
3	6	(1.4%)	414	(93.6%)	22	(5.1%)	442	(100.0%)
4	5	(5.8%)	61	(78.8%)	12	(15.5%)	78	(100.0%)
5	2	(13.5%)	12	(86.5%)	--	--	14	(100.0%)
6	3	(100.0%)	--	--	--	--	3	(100.0%)
Total	44	(2.6%)	1,587	(92.2%)	90	(5.2%)	1,721	(100.0%)
OWNER-ADMINISTERED								
0	1	(1.8%)	69	(98.2%)	--	--	70	(100.0%)
1	1	(.1%)	725	(99.9%)	--	--	725	(100.0%)
2	12	(3.0%)	305	(78.2%)	73	(18.8%)	389	(100.0%)
3	7	(4.0%)	123	(73.9%)	37	(22.1%)	166	(100.0%)
4	--	--	15	(61.3%)	9	(38.7%)	24	(100.0%)
5	--	--	--	--	--	--	--	(100.0%)
6	--	--	--	--	--	--	--	(100.0%)
Total	20	(1.5%)	1,235	(89.9%)	119	(8.7%)	1,375	(100.0%)

Note: The numbers do not add up to the total due to rounding.

Appendix D

Consistency Errors

50058 - Consistency Errors

50058 ITEM	ERROR
General Information:	
1d. Program	Must equal P, CE, VO, MR, MC, or B
2a. Type of Action	Must equal 1 through 8
2b. Effective Date of Action	Cannot be earlier than Date of Admission to the Program (2c)
Household Composition:	
3g. Sex	Must equal M or F
3h. Relationship	Must equal H, S, K, F, Y, E, L, or A
3i. Citizenship	Must equal EC, EN, IN, PV, or XX
3k. Race	Must equal 1 through 4
3m. Ethnicity	Must equal 1 or 2
3s. Family Subsidy Status	Must equal C, E, F, N, P, T, or blank
3t. Effective Date	Should not be blank if 3s equals C or T
Net Family Assets and Income	
6a. Family Member No.	Must equal a number used in 3a.
7a. Family Member No.	Must equal a number used in 3a.
7b. Income Code	Must equal P, B, SS, M, S, F, T, HA, G, W, C, U, I, or N
8a. Total Annual Income	Must equal Total Annual Income (7m)
8e. Earnings Made Possible by Disability Assistance Expense	Must be <= the sum of Dollars per Year (7d) for Income Codes (7b) HA, F, W, B, or M
Allowances and Adjusted Income	
8d. Maximum Disability Allowance	Should only be completed if any member is disabled
8f. Allowable Disability Assistance Expense	Should be <= 8d (Maximum Disability Allowance) Should be 0 if 8c (Medical/Disability Threshold) is > 8d Should be 0 or blank if 8d is 0 or blank
8g. Total Medical Expenses	Should only be completed if the head or spouse is 62 or over, or disabled; otherwise it should be blank
8i. Medical/Disability Assistance Allowance	Should equal 8h minus 8c if 8d is blank or 8d is less than 8c Should equal 8c if 8d is >= 8c
8j. Elderly/Disability Allowance	Should be $400 if head or spouse is 62 or over, or disabled; otherwise it should be 0 or blank
8m. Dependent Allowance	Must be completed if the household contains a member under age 18, disabled, or a full-time student (excluding the head, spouse, foster child or adult, or live-in attendant)

50058 ITEM	ERROR
8p. Yearly Child Care Cost That Is Not Reimbursed (Child Care Allowance)	Should only be completed if any member is less than 13 years old
Family Rent and Subsidy Information	
10a., 11q, 12k, 13j, 14s TTP	Must equal TTP (9j) or blank
10a. through 14ag. Rent Calculations	- If Program (1d) = P, items 10a., 10c., and 10e. must be completed; items 11a. through 14ag. must be blank. - If Program (1d) = CE or MC, items 10a. through 10u. and 12a. through 13z. must be blank. - If Program (1d) = VO items 10a through 11an, and 13a. through 13z. must be blank. - If Program (1d) = MR, items 13f., 13g., 13h., 13j., 13k., and 13m must be completed; items 10a. through 12ak., and 14a through 14ag. must be blank.

50059 - Consistency Errors

50059 ITEM	ERROR
General Information:	
1. Effective Date	Cannot be earlier than Date Tenant Moved into Project (2.)
6a. Action Processed	Must equal 1 through 5
6b. Action Processed	Must equal 1 through 4, or blank
7. Type of Subsidy	Must equal 1 through 6
9a. Race of Head of Household	Must equal 1 through 4
9b. Ethnicity of Head of Household	Must equal 1 or 2
Household Composition	
16. Sex	Must equal M or F
19. Special Status Code	Must equal E, S, H, F, J, or blank; should be E if Age > 61
21. Eligibility Code (Citizenship)	Must equal EC, EN, IC, IN, IP, PV, or XX
Net Family Assets and Income	
26b. C or I	Must equal C or I
28. Family Member No.	Should not be greater than the total number of members listed in item 13 (Family Member Number)
28a. Care Code	If the family member is greater than 18 years of age, then this code should be C, H, CH, HC or blank

50059 ITEM	ERROR
Allowances and Adjusted Income	
36. Dependent Allowance	Must be completed if the household contains a member under age 18, disabled, or a full-time student (excluding the head, spouse, foster child or adult, or live-in attendant)
37. Child Care Allowance	Should only be completed if any member is less than 13 years old
39a. Total Handicapped Expenses	Should be 0 or blank if Item 28a (Care Code) is not equal to H, or CH
39b. Handicapped Allowance	Should be <= 39a (Handicap Expenses) Should be 0 if 38 (3% of Annual Income) is > 39a Should be 0 or blank if 39a is 0 or blank
40a. Total Medical Expenses	Should only be completed if the head or spouse = H or E, or age 62 years old or older
41. Elderly Household Allowance	Should be $400 if the Special Status Code for the head or spouse = H or E; otherwise it should be 0 or blank
Family Rent and Subsidy Information:	
51. Tenant Rent	Should equal the maximum of Item 50 (TTP) minus Item 45 (Utility Allowance) or 0
52. Utility Reimbursement	Should be blank if Item 45 < Item 50

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