FY 2014 Quality Control for Rental Assistance Subsidy Determinations

Final Report

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

Visit PD&R's website

huduser.gov

to find this report and others sponsored by HUD's Office of Policy Development and Research (PD&R). Other services of HUD User, PD&R's research information service, include listservs, special interest reports, bimonthly publications (best practices, significant studies from other sources), access to public use databases, and a hotline (800-245-2691) for help accessing the information you need.

Quality Control for Rental Assistance Subsidy Determinations

Final Report for FY 2014

Prepared for:

Office of Policy Development and Research
Department of Housing and Urban Development

Prepared by:

ICF International

September 25, 2015

Disclaimer

The contents of this publication are the views of the authors and do not necessarily reflect the views or policies of the U.S. Department of Housing and Urban Development or the U.S. government.

ICF International Staff Team

Project Manager:	Sophia Zanakos, PhD
Deputy Project Manager:	Sup Thanasombat, MPP
Managers:	Margaret (Peggy) Gregory Safal Khatri, MA, MEd Melanie Koehn Andrew Walton, MA Michelle Wilson, MS
Expert HUD Policy Consultants:	Judy Payne Jagruti Rekhi, MS
Statisticians, Analysts, and Developers:	Lee Harding, MS David Kiasi-Barnes Kelly Martin, MPH Davia Spado, MA Randy ZuWallack, MS
Field Supervisors, Rent Calculation Specialists, and Support Staff:	Sarah Baizer, MPP Leo Hageman Tichina Herbert Laura Neuhauser, MA Diana Oresky Liberty Pandey Rebecca Pyuzza Lindsey Redlin, MS Kregg Stovner Sneha Upadhyay, MS Rebecca Villagomez Caren Williams

TABLE OF CONTENTS

Appendices

List of Exhibits

List of Figures

EXECUTIVE SUMMARY

The Department of Housing and Urban Development (HUD) Quality Control for Rental Assistance Subsidy Determinations (HUDQC) Study provides national estimates of the extent, severity, costs, and sources of rent errors in tenant subsidies for the largest housing programs administered by the Office of Housing and the Office of Public and Indian Housing (PIH). These programs account for nearly all of HUD's current housing assistance outlays administered by the Office of Housing and PIH, as well as the large majority of units assisted by HUD. This study was designed to measure the extent of administrator income and rent determination error by housing providers. It does not involve an audit of individual Public Housing Authorities (PHAs) or projects, nor does it monitor the implementation of housing programs. Its singular focus is to identify households for which an error was made in the calculation of the amount of the household's rent and to provide nationally representative findings related to those errors.

The errors evaluated by ICF in this study affect the rent contributions that tenants should have been charged. The findings presented in this report are derived from data collected from December 2014 through May 2015 for actions taken by PHA and project staff during Federal fiscal year (FY) 2014 (October 2013 through September 2014). These findings show that 75 percent of households nationally paid the correct amount of rent in FY 2014. In 11 percent of cases, households paid too much rent, and in 14 percent of cases, households paid too little.[1]

HUD administers its rental housing assistance programs through third-party program administrators, including PHAs, public and private project owners, and contracted management agents. In the programs examined, eligible tenants are generally required to pay 30 percent of their adjusted income toward shelter costs (i.e., contract rent plus utilities), with HUD providing the balance of the rental payment. New program applicants are required to provide information on household characteristics, income, assets, and expenses, which is used to determine the amount of rent they need to pay. In most instances, current tenants must certify this information annually and, in some circumstances, must recertify the information when there are significant changes in the household's income or composition. Applicant or tenant failure to correctly report income may result in HUD's over- or underpayment of housing assistance. The failure of the responsible program administrator to correctly interview the tenant or process and calculate the tenant's rental assistance may also result in a HUD over- or underpayment.

In 2000, HUD established a baseline error measurement to cover the three major types of rental housing assistance payment errors: (1) program administrator income and rent determination error, (2) intentional tenant misreporting of income (the Income Match Study), and (3) errors in program administrator billings for assistance payments. Thirteen studies have been conducted to identify program administrator income and rent determination error. In addition to the 2000 study, studies were conducted in FY 2003 through FY 2014. The study referenced in this report covers FY 2014 and updates the FY 2013 measurement of errors in program administrator income and rent determinations. The tenant data collected for this study were also used to provide the sample for the Income Match Study to measure the extent of intentionally unreported tenant income. The findings

[1] Note that results may not total to 100 percent due to rounding.

from the Income Match Study are published as a separate report. This report relates solely to program administrator income and rent determination error.

For the 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 initial certification or annual recertification conducted in FY 2014. When appropriate, study findings are compared with findings from the previous studies.

Financial Impact of Identifying Rent Error. Reduction in the rent error associated with the programs included in this study does not mean there will be an overall savings in the costs associated with administering these programs. Given the large number of eligible households on waiting lists, if a household leaves the program because it is no longer eligible for a subsidy, another household will take its place, and the replacement household may be entitled to a smaller or a larger subsidy than the household that left the program. Therefore, the most direct benefit of identifying households with rent error is ensuring that the households eligible for the program are receiving the correct subsidy, rather than reducing the funds needed to administer the programs. The most appropriate use of this study is as a tool for strengthening HUD's procedures for ensuring administrative compliance with regulations. The implementation of the recommendations presented in this report may require greater resources in order to provide HUD, PHAs, and Owners with the written policy guidelines, training, standardized forms, and ongoing monitoring needed to ensure program compliance. The HUDQC Study assists the agency's objective of providing the right subsidies to the right families to sustain and support quality rental assistance programs for communities.

A. Methodology

HUD Requirements and Study Standards. Using the *Code of Federal Regulations* and official HUD handbooks and notices, we consolidated all HUD rules relevant to the determination of rent into a set of HUD requirements. We invited program experts to participate in establishing and reviewing the standards used in this study.

The Sample. A nationally representative sample of 600 projects in the United States and Puerto Rico was selected for this study. 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 Project Rental Assistance Contract (PRAC), Section 811 PRAC, and Section 202/162 Project Assistance Contract

A random sample of four households was selected for most projects, but more households were selected from unusually large projects. The final study data set includes responses from 2,400 households.

Out-of-Scope Projects. Certain programs were excluded from the study because their eligibility and rent calculation rules differed from the standards, including the Owner-administered Rental

Assistance Payment (RAP), Rental Supplement Program (SUP), and Below Market Interest Rate (BMIR) programs. Since the FY 2012 study, Moving to Work (MTW) agencies have been included in the sampling frame and the HUDQC Study sample. Rental Assistance Demonstration properties were excluded from the FY 2014 sample. Universe files requested from HUD either excluded out-of-scope projects or were identified by HUD for easy removal.

Weighting. Population counts per program were calculated based on the assisted housing universe files provided by HUD in June 2012 to compile weights for the study. Since the FY 2004 study, Owner-administered RAP/SUP and BMIR projects have been excluded from the population totals because of differences in their eligibility and rent calculation rules.

The same population totals per program, provided by HUD in the FY 2005 statement of work, were used from FY 2006 through FY 2010. Starting in FY 2011, the population totals were updated based on the FY 2012 HUDQC sample universe to better reflect the current population. Changes in total gross dollar error in FY 2011 and FY 2012 may be due to an increase in the population, not necessarily an increase in average dollar error. When comparing dollar error from FY 2011 to FY 2012, it is appropriate to compare average dollar error, as it is not affected by changes in population size. In order to increase comparability between years, the same population totals were used in the FY 2014, FY 2013, and FY 2012 studies.

The Data Collection Process. The data collection effort included creating and automating more than 30 data collection instruments, contacting and obtaining information from PHA/Owner staff, hiring and training 63 field interviewers, and selecting the project and household sample. Field interviewers obtained data from tenant files and interviewed tenants using computer-assisted personal interviewing 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 daily to ICF headquarters for review. Requested third-party verifications related to income, assets, and expenses were also processed at ICF's office in Rockville, MD.

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

B. Major Rent Error Findings

National Rent Error Estimates. The analysis of the FY 2014 tenant files, household interviews, and income verification data indicates that:[2]

- Seventy-six percent of all households paid the correct amount of rent within $5 (65 percent paid the exact amount).

[2] Note that results may not total to 100 percent due to rounding.

- Fourteen percent of all households paid at least $5 less than they should have (with an average error of $59 per month).
- Eleven percent of all households paid at least $5 more than they should have (with an average error of $51 per month).

Rent Error Estimates by Program Type. The rate of rent underpayments was highest, at 14 percent, in the PHA-administered Section 8 and Public Housing programs, followed by the Owner-administered program at 12 percent. The Public Housing program had the highest overpayment rate, at 13 percent, followed by PHA-administered Section 8 programs at 11 percent and Owner-administered programs with 8 percent. Exhibit ES-1 summarizes this information.

Exhibit ES-1
Frequency of Rent Error by Program Type

Program	Rent Underpayment (Subsidy Overpayment)	Rent Overpayment (Subsidy Underpayment)
Public Housing	14%	13%
PHA-administered Section 8	14%	11%
Owner-administered	12%	8%
Total	**14%**	**11%**

Dollar Error Effect of Rent Errors. All summary error estimates represent the summation of net case-level errors, meaning that a case was determined to have a net overpayment error, no error, or a net underpayment error. Major findings are as follows:[3]

- **Rent underpayments of approximately $458.4 million annually (up from $347.6 million in FY 2013).** For tenants who paid less monthly rent than they should have paid (14 percent), the average monthly underpayment was $59. For purposes of generalization, spreading total underpayment errors across all households (including those with no error and overpayment error) produces a program-wide average monthly underpayment error of $8.07 ($97 annually). Multiplying and weighting the $97 by the approximately 4.7 million units represented by the study sample resulted in an overall annual underpayment dollar error of approximately $458.4 million per year.
- **Rent overpayments of approximately $311.0 million annually (up from $260.3 million in FY 2013).** For tenants who paid more monthly rent than they should have paid (11 percent), the average monthly overpayment was $51. When this error is spread across all households, it produces an average monthly overpayment of $5.48 ($66 annually). Multiplying and weighting the $66 by the approximately 4.7 million units represented by the study sample resulted in an overall annual overpayment dollar error of approximately $311.0 million per year.

[3] National annual totals in the text and exhibits were calculated using exact values and were weighted. Although household-level numbers are presented below, using them to calculate national annual totals will result in different amounts due to both rounding and weighting. Similarly, the source tables in Appendix C were rounded to the nearest integer for formatting purposes.

- **Aggregate net rent error of $147.4 million annually.** When combined, the average Gross Rent Error per case was $13.55 ($8.07 + $5.48). Over- and underpayment errors partly offset each other; the net overall average monthly rent error was -$2.59 (-$8.07 + $5.48). HUD subsidies for Public Housing and PHA-administered 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 effect). The study found that the net subsidy cost of the under- and overpayments was approximately $147.4 million per year ($458.4 million – $311.0 million).

Subsidy over- and underpayment dollars are summarized in Exhibit ES-2.[4] This information responds to study Objective 1 (i.e., to identify the various types of errors, error rates, and related estimated variances).

Exhibit ES-2
Subsidy Dollar Error

Type of Dollar Error	Subsidy Overpayment	Subsidy Underpayment
Average Monthly per Tenant Error for Households with Errors	$59 (14% of cases)	$51 (11% of cases)
Average Monthly per Tenant Error Across All Households	$8.07	$5.48
Total Annual Program Errors	$458.4 million	$311.0 million
Total Annual Errors (95% Confidence Interval)	**$333.8 - $582.9 million**	**$238.9 - $383.1 million**

Exhibit ES-3 provides estimates of program administrator error by program type. These data respond to study Objective 3 (i.e., to provide estimates of national-level net costs for total errors and major error types), Objective 8 (i.e., to provide information on the extent to which errors are concentrated in projects and programs), and Objective 11 (i.e., to estimate total positive and negative errors in terms of HUD subsidies).

[4] Estimates should be viewed in conjunction with 95 percent confidence intervals. Based on the sample, estimates may vary from year to year. Variations in estimates may not be statistically significant.

Exhibit ES-3
Estimates of Error in Program Administrator Income and Rent Determinations (in $1,000s)

Program	Subsidy Overpayment	Subsidy Underpayment	Net Erroneous Payment	Gross Erroneous Payment
Public Housing	$126,065	$121,515	$4,550	$247,580
PHA-administered Section 8	$238,127	$154,190	$83,936	$392,317
Total PHA-administered	$364,191	$275,705	$88,486	$639,897
Owner-administered	$94,164	$35,289	$58,875	$129,452
Total	**$458,355**	**$310,994**	**$147,361**	**$769,349**
95% Confidence Interval	**±$124,510**	**±$72,064**	**±$115,252**	**±$167,657**

Comparison with Prior Studies. Twelve prior studies (the 2000 baseline study and the annual studies since FY 2003) estimated erroneous payments attributed to program administrator rent calculation and processing errors. The current FY 2014 study used similar methodology, sampling procedures, and sample sizes as all previous studies. Although the FY 2003 and FY 2004 studies demonstrated significant reductions in erroneous payments attributed to program administrator income and rent determinations, the studies since that time have shown less dramatic changes in gross error.

Although the gross erroneous payments increased from FY 2013, this change was not statistically significant. There were also no statistically significant overall changes or significant changes within program type. While the average dollar error increased between FY 2013 ($10.70) and FY 2014 ($13.55), it was lower than the FY 2012 average ($14.07). The following factors likely contributed to the $161.5 million increase in the gross erroneous payments between FY 2013 and FY 2014:

- In FY 2014, HUD changed the acceptable flat rent rate schedules used by projects to determine a tenant's flat rent amount. As a result, there was a substantial drop in the number of cases with flat rent (82 in FY 2014 compared with 141 in FY 2013). Based on the study methodology, flat rent cases cannot have rent error. As a result, this contributed to the error estimate for the Public Housing program.
- Sampling error contributes to the variation of estimates from year to year, as a new sample is drawn for each study in order to best represent the housing population at that point in time.

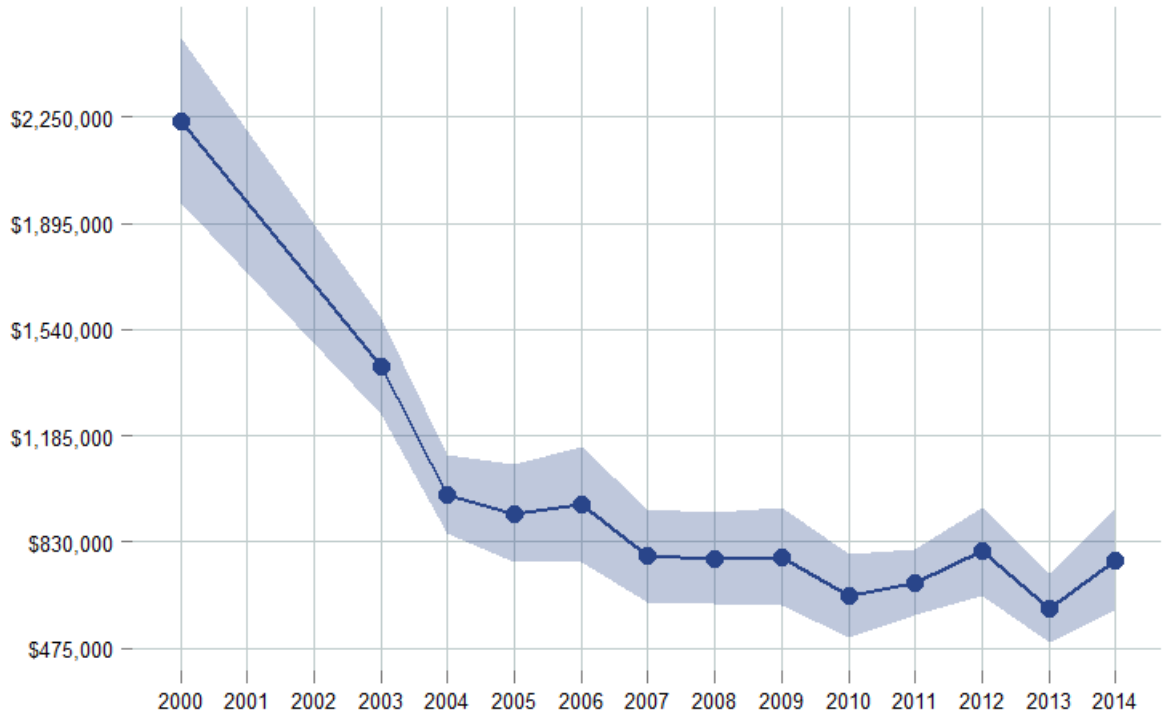
Exhibit ES-4 presents a review of the gross erroneous payments for the QC studies from 2000 to FY 2014. Figure ES-1 shows the progression of gross erroneous payments over time.

Exhibit ES-4
Comparative 2000 Through FY 2014 Gross Erroneous Payments*

Gross Erroneous Payments (in $1,000s)	Administration Type				Total
	Public Housing	PHA-administered Section 8	Total PHA-administered	Owner-administered	
FY 2014	$247,580	$392,317	$639,897	$129,452	$769,349 ±$167,657
FY 2013	$177,908	$324,293	$502,201	$105,628	$607,829 ±$112,660
FY 2012+	$190,849	$430,716	$621,566	$177,234	$798,800 ±$148,415
FY 2011#	$139,885	$436,156	$576,041	$119,168	$695,209 ±$108,728
FY 2010	$141,033	$341,515	$482,548	$167,719	$650,266 ±$137,235
FY 2009	$130,268	$440,288	$570,556	$209,455	$780,011 ±$162,116
FY 2008	$183,305	$400,248	$583,553	$191,723	$775,276 ±$153,447
FY 2007	$149,364	$435,012	$584,376	$199,104	$783,480 ±$157,292
FY 2006	$172,824	$520,020	$692,844	$261,324	$954,168 ±$192,264
FY 2005	$220,464	$456,240	$676,704	$248,580	$925,232 ±$164,206
FY 2004	$242,076	$521,220	$763,292	$224,460	$987,744 ±$131,201
FY 2003	$316,116	$730,956	$1,047,072	$368,796	$1,415,844 ±$163,000
2000	$602,556	$1,096,524	$1,699,092	$539,160	$2,238,252 ±$275,000
Percent Reduction from 2000 to FY 2014	58.76%	64.03%	62.16%	75.93%	65.63%

* Gross Rent Error is the sum of the absolute value of positive and negative rent error.
+ For FY 2012, the population totals were updated to reflect the population in FY 2012. In addition, the MTW program was included in the QC study for the first time.
# For FY 2011, the population totals were updated to reflect the population in FY 2011.
Note: Numbers may not add exactly due to rounding.

Figure ES-1
Comparative 2000 through FY 2014 Gross Erroneous Payments Over Time (in $1,000s)



Note: The dark blue line illustrates the estimate and the light blue shading reflects the statistical variance around the estimate.

A sharp decline in erroneous payments occurred from 2000 to FY 2004, from $2.2 billion to $988 million. From FY 2004 through FY 2014, the Gross Rent Error was relatively less varied and showed a general plateau.

C. Sources of Errors

Rent errors are often a result of a mix of different types of errors. In addition to dollar errors, this study also examined administrative and component errors. For the purposes of this study, administrative errors are analyzed separately from specific component errors.

Administrative Errors. Administrative errors are errors that result from administrative mistakes. They consist of the following:

- Consistency errors, which are errors in logical conformity between elements within Form HUD-50058/50059
- Calculation errors, which are arithmetic errors within subsections of Form HUD-50058/50059
- Transcription errors, which are errors in transferring information from documentation in the tenant file to Form HUD-50058/50059

- Failure to conduct a recertification in a timely manner
- Failure to verify information

Component Errors. Component errors are related to the income and expense components used to calculate rent. The income components are employment income, Social Security benefits and pensions, public assistance, other income, and asset income. The expense and allowance components are the elderly/disabled allowance, dependent allowance, medical allowance, child care allowance, and disability allowance. Component errors often occur 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. The discussion below responds to study Objective 1 (i.e., to identify the various types of errors, error rates, and related estimated variances) and Objective 2 (i.e., to identify the dollar costs of the various types of errors).

Consistency and Transcription Errors. The two most common administrative errors are transcription and consistency errors. The HUD Public and Indian Housing Information Center (PIC) and Tenant Rental Assistance Certification System (TRACS) data systems check the rent calculations on Form HUD-50058/50059. 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 that are returned to program administrators for correction may either be ignored or changed in HUD systems without the changes actually being implemented.

Overdue Recertifications. In general, HUD requires that every household be recertified annually. About 2 percent of households had overdue recertifications in FY 2014, which was slightly higher than in FY 2013.

Verification Errors. Recognizing the issues associated with verifying tenant information, HUD program staff have taken steps to clarify and—to some extent—simplify verification guidelines. PIH Notice 2010-19, dated May 2010, and Housing Notice H 2010-10, dated July 2010, delineated guidelines for new procedures for obtaining and using verification. The new HUD verification guidelines were implemented at the end of FY 2010, and FY 2011 was the first fiscal year in which they were applied. In FY 2012, based on a request from HUD staff, the acceptable verification date range for documents used by PHA/project staff was extended by approximately 2 months so that more documents in the tenant file met the HUDQC Study requirements. In FY 2013, the study's verification date range was revised (after discussion with HUD program staff) to provide a more accurate time frame for acceptable verification of documents. The changes included new criteria for selecting the Quality Control Month and narrowing the time frame for acceptable verification documents found in the tenant file to exclude any that were dated after the effective date of the transaction being reviewed.

Obtaining income verification is often difficult. Even when repeated requests are made, employers sometimes do not respond to requests for verification, or they require payment for the information. Some program sponsors do a much better job than others of achieving third-party compliance with written verification. The HUDQC Study shows that it is reasonable to expect all program administrators 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.

Component Error Findings. Incorrect income and allowance amounts were by far the most significant sources of error when determining rents; only about 7 percent of households with rent errors did not have an income or expense component error. Earned income (33 percent), medical allowances (17 percent), pensions (15 percent), and other income (13 percent) continued to have the highest percentage of households in error. Exhibit ES-5 shows the frequency of the most serious component errors and the average dollar amount for each type. The percentage of households represents households with any rent component error in which the specified rent component was responsible for the largest error. The average dollar amount reported represents the average dollar amount for the specified rent component for households in which the specified component was responsible for the largest error. For comparison purposes, findings from FY 2013 are provided in parentheses. While the percentage of households with specific rent component errors remained relatively consistent from FY 2013 to FY 2014, there are often large differences in the annual average dollar error from year to year.

Exhibit ES-5
Rent Components Responsible for the Largest Dollar Error for Households With Rent Error

Rent Component	Percent of Households	Annual Average Dollar Amount
Earned Income	33% (27%)	$4,528 ($4,410)
Medical Allowance	17% (17%)	$1,813 ($863)
Pensions	15% (17%)	$1,945 ($1,594)
Other Income	13% (15%)	$3,122 ($2,905)
Dependent Allowance	4% (4%)	$566 ($512)
Elderly/Disabled Allowance	4% (4%)	$422 ($400)
Public Assistance	3% (5%)	$1,519 ($3,289)
Asset Income	3% (4%)	$808 ($733)
Child Care Allowance	2% (2%)	$1,256 ($1,879)
No Rent Component Error	7% (6%)	$0
Total	**100%**	**$2,625 ($2,280)***

* Refers to the sum of the dollars associated with the largest component in error divided by the number of households with that error.
Note: FY 2013 findings are provided in parentheses. Rounding may result in totals not equal to 100 percent. The cell size for elderly/disabled allowance is small; therefore, estimates may not be reliable.

Exhibit ES-6 displays the impact of changes in the error threshold on the case error rate and gross dollar error. As noted above, a monthly error of less than $5 is currently ignored due to rounding. An increase in the error threshold of $5 to $10 would result in an increase in proper payments by about 5 percent, as well as a decrease in the estimate for gross dollar error by about $22.8 million. Based on the distribution of household error, most rent errors are within $100 per month, or $1,200 per year. At the individual household level, the gross error may seem insignificant; however, these errors can result in a substantial amount of gross dollar error for the assisted housing programs in aggregate. Although an increase in the error threshold to $100 per month would result in 97 percent of cases being proper payments, the increased error threshold would not capture most errors associated with improper payments.

Exhibit ES-6
Impact of Changes in the Error Threshold on Frequency and Estimates of Error (in $1,000s)

Monthly Error	Percentage of Households			Dollar Error Amount			
	Rent Under-payment	Proper Payment	Rent Over-payment	Rent Under-payment	Rent Over-payment	Gross Error	Net Error
Exact Match	17.8%	64.6%	17.5%	$464,191	$317,997	$782,188	$146,194
Within $5	13.8%	75.5%	10.7%	$458,355	$310,994	$769,349	$147,361
Within $10	11.3%	80.5%	8.2%	$447,805	$298,751	$746,556	$149,054
Within $15	10.0%	83.4%	6.6%	$438,247	$287,197	$725,444	$151,050
Within $25	7.5%	88.0%	4.5%	$408,710	$262,970	$671,680	$145,741
Within $50	4.1%	93.9%	2.0%	$339,392	$211,657	$551,050	$127,735
Within $100	2.1%	96.7%	1.2%	$263,646	$179,685	$443,331	$83,961

D. Additional Findings

Eligibility of Newly Certified Households. A separate analysis of newly certified households (11 percent) was conducted to determine whether the households were eligible for HUD housing assistance. Ninety-six percent of these households met all of the eligibility criteria—higher than the FY 2013 value of 90 percent. All but one certified household in the sample were income-eligible on the basis of the QC income determination.

One percent of newly certified households failed to document Social Security numbers for one or more household members, and 3 percent lacked the signed consent forms needed to authorize verification of income and assets (for each member of the household at least 18 years old). All households had the signed declaration forms or evidence accepted as proof of citizenship. These findings respond to study Objective 9 (i.e., to estimate the percentage of newly certified tenants who were incorrectly determined eligible for program admission).

Occupancy Standards. Study Objective 7 asks for the extent to which households are under- or over-housed, relative to HUD's occupancy standards. Seventeen percent of all households occupied a unit with too many or too few bedrooms in FY 2014, according to the guidelines used for this study. Historically, the percentage of households in units with the correct number of bedrooms according to study guidelines has fluctuated between 83 percent and 88 percent since FY 2004.

Rent Reasonableness. Study Objective 10 asks for the extent to which PHA-administered Section 8 Voucher rent comparability (reasonableness) determinations are found in the tenant file, and the method used to support the determinations. Ninety percent of new admission files contained rent reasonableness documents, as did 87 percent of the files for households for which data were collected for an annual recertification. However, the absence of documentation does not necessarily indicate a determination was not completed, only that it was not properly documented. Information was also collected at the PHA level to understand the method used to determine rent reasonableness. To determine whether the rent was reasonable, all PHAs in the study used unit-to-unit rent comparison, unit-to-market rent comparison, or a point system.

Utility Allowances. For PHA-administered Section 8 Voucher households, the utility allowances found on Form HUD-50058 were compared to the utility allowance worksheets found in the tenant file and to the utility allowance values calculated using the utility allowance schedules provided by the PHAs. For the first comparison, 81 percent of the utility allowance values matched. For the second comparison, 89 percent of the values matched between the QC utility allowance amount and that on the Form HUD-50058. However, nonmatching values may not necessarily mean the utility allowance found on Form HUD-50058 was incorrect.

Payment Standards. A special analysis was conducted to determine whether the correct payment standards were used for PHA-administered Section 8 Voucher households. The payment standard found on Form HUD-50058 was compared to the payment standard schedules provided by the PHA and to the Fair Market Rent (FMR) for the appropriate geographical area. For the first comparison, 75 percent of the payment standards matched. For the second comparison, 85 percent of the payment standards found on Form HUD-50058 fell within the 90 to 110 percent FMR band. As with the utility allowance analysis, the information needed to conduct the analysis was not always available. Therefore, because the payment standards did not match does not necessarily mean the incorrect payment standard was used when calculating the amount of the tenant rent.

Form HUD-50058/50059 Rent Calculation Error. The tenant rent was calculated using only the data on Forms HUD-50058/50059 to determine the relationship between errors detected using Forms HUD-50058/50059 and total rent errors found in the study (in response to study Objective 4). When using only Form HUD-50058/50059 data to calculate rent, errors were found in 8 percent of households. This is clearly different from the QC error calculation, in which calculation errors were found in 25 percent of households. Calculation error was found in both Forms HUD-50058/50059 and the QC calculation in only 3 percent of households.

Automated Rent Calculation Systems. Study Objective 12 asks whether error rates in projects that use an automated rent calculation system differ from errors in those using other or calculation methods. We did not find a difference between PHAs/projects that use automated rent calculation systems and those that do not. This is not surprising because nearly all PHAs/projects use an automated rent calculation system of some kind.

Tenant Characteristics and Project Characteristics and Practices. The multivariate modeling followed the conceptual approach used in previous years, but the analytical approach used was expanded from previous years. The analysis identified patterns in which rent errors related to project and household variables, particularly involving project-caused error such as transcription error and overdue recertification error and their association with Gross Rent Error. These findings were essentially similar to those reported in prior years' analyses—differences among program types were not found to be statistically significant with regard to Gross Rent Error, subsidy overpayment, subsidy underpayment, net of other project and household effects. (See Appendix F for more information on the Multivariate Analysis.)

Project-caused errors accounted for a large proportion of Gross Rent Error, controlling for other effects. Of the project-caused errors, administrative errors, transcription errors, overdue recertification errors, and the rate of items without third-party written verification predicted a higher gross error, which has been consistently found in prior analyses. Transcription error was a driver of overpayment, while the percentage of items without verification is a driver of underpayment.

Household background variables were strong predictors of Gross Rent Error, subsidy overpayment and underpayment. Variables indicative of complex financial conditions and income strongly predicted higher rent errors. The relationship between household financial or sociodemographic variables and rent error is highly consistent across models and years, a finding which indicates that PHA/project staff should emphasize quality control of these cases.

E. HUD Initiatives: 2000–2014

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 onsite monitoring. Actions taken by HUD included the following:

1. A Rental Housing Integrity Improvement Program committee, headed by the Office of the Chief Financial Officer with representatives from other affected offices, was formed to coordinate and monitor corrective actions. The committee meets to review progress and to identify and resolve impediments to progress in reducing errors.
2. The Office of Housing and PIH developed and issued new handbooks and instructional materials that detailed all current HUD program requirements and standardized them to the extent possible without regulatory or statutory change. The 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 more than 20 years and provided a defined methodology for calculating a number of complex requirements (e.g., the Earned Income Disallowance).
3. The Office of Housing and PIH substantially increased training efforts and held a number of national and regional training sessions. This contrasts with a less educational approach in the 1980s and 1990s.
4. The Office of Housing and PIH initiated comprehensive, large-scale, and onsite 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 perform detailed monitoring of agency compliance.
    - PIH initiated a system of Rental Integrity Monitoring (RIM) reviews to detect and reduce errors in income and rent calculations at targeted PHAs, reduce rent under- and overpayments by residents, and ensure that HUD's limited housing resources were being used to serve eligible families in a fair and equitable manner, as intended by Congress.

5. HUD initiated a legislative change that granted it access to the U.S. Department of Health and Human Services National Directory of New Hires (NDNH) income and wage database for income matching purposes. HUD uses 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 required the implementation of agreements and data systems. HUD also negotiated agreements with some States to obtain access to the same information. Access to the NDNH database is available through the Enterprise Income Verification (EIV) system.

6. The Office of Housing and PIH initiated a computer matching program with the Social Security Administration (SSA) that provides SSA data for tenants receiving assisted housing. SSA electronically provides HUD with benefit information on all active household members who have disclosed a valid Social Security number. HUD makes this information available to administrators of the Public Housing and Section 8 programs through the EIV system. This information allows PHAs to validate Social Security numbers and SSA benefits quickly and efficiently.
7. In 2010, HUD issued the *Implementation of Refinement of Income and Rent Rule*, which mandated the use of the EIV system (discussed in the previous two bullets) as a third-party source to verify tenant employment and income information during mandatory recertification of household composition and income. The use of EIV minimizes the need for traditional third-party verification forms. To make the EIV system as effective as possible, the rule was also revised to require all applicants and participants to disclose a Social Security number, no longer exempting children younger than age 6.

HUD's performance goals, which were developed in consultation with the Office of Management and Budget, called for reducing the 2000 benchmark assisted-housing error levels by 50 percent by the end of 2005. The study of program administrator error for FY 2005 showed that HUD exceeded this goal, and HUD has further decreased error since. It should be noted, however, that the reduction of errors and improper payments is unlikely to have an equivalent effect on budget outlays. HUD's experience has been that 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.

F. Recommendations

HUD's progress in decreasing improper payment since 2000 is impressive. However, findings from the study suggest general actions that should be continued or policies that should be considered to maintain or improve PHA/project performance in rent determination. As previously discussed, the errors associated with HUD programs included in this study decreased substantially in FY 2013. Whether this decrease was due to specific HUD policies, changes in local program administration, or other factors in the arena of affordable housing is not entirely certain. We present the following recommendations that may improve administrative error rates in HUD programs, based on insights we have gathered during this and other studies:

Continue Requiring the Use of EIV Reports. HUD should continue requiring the use of EIV information in the process of rent determination. Data that are systematically collected from NDNH and SSA provide a strong method of identifying specific sources of income information. The study shows that the majority of subsidy errors are associated with earned income. Although EIV provides a uniform and efficient method of verifying income sources that lessens the burden on program administrators, caution must be exercised when using information from the system. The

data are extremely helpful in identifying unreported sources of income, but they are not current and sometimes contain errors (including instances of identity theft and incorrect identification of disability status). HUD's EIV requirement should be coupled with policies aimed at addressing the challenges of using EIV for verification. HUD may want to consider forming additional relationships with State programs, organizations, and companies to collect other data not currently captured by the EIV system.

Perform Onsite Review of Rent Calculation. HUD should continue onsite monitoring of program administration, and PHA/Owners should be held accountable for implementing HUD regulations and calculating rent accurately. Onsite monitoring that includes reviews at both the local and Federal levels 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. Improved HUD monitoring was likely a key factor in reducing subsidy error between the 2000 study and the current study.

> We recommend that HUD require PHA/Owners to perform their own QC reviews on income determinations and rent calculations. Agencies that have aggressively sought to improve the performance of their programs have demonstrated success in this area, and one of the most frequently used error-reduction strategies includes the establishment of internal QC review procedures. Based on the Project Staff Questionnaire (PSQ) survey, it appears that programs that conduct QC on all their transactions have a significantly lower rent determination error rate than programs that do not perform QC on all their files. Of course, a comprehensive approach may not be feasible, given limited staffing resources, but even a review of a small percentage of transactions may be beneficial in supporting the reduction of rent determination error.
>
> In addition to internal agency reviews, HUD regional offices can support field offices by conducting a secondary review of transactions. This review would provide HUD Federal staff with more on-the-ground insights into the issues and challenges faced by local program administrators. In addition, this approach would demonstrate HUD's concern regarding program integrity and improper payments, thereby focusing PHA/Owner attention on accurately determining tenant income and rent.

Reduce Additional and New Program Requirements. Federal laws, regulations, and HUD requirements should be simplified and reduced to the extent possible. The current statutory environment poses substantial obstacles to efficient, accurate income and rent calculations. It includes requirements that may be well-intentioned and have potentially desirable impacts but that, taken as a whole, make the income and rent determination process more challenging. HUD has sought to issue guidance on virtually all aspects of current income and rent determination requirements, but some of the provisions create unintended administrative complexity. Because of the size of the administrative organizations and their ability to respond to policy changes, special and temporary provisions aimed at reducing administrative burden, although developed with the best intent, can create more work to implement with little improvement Examples of this include the requirement to review student status and the use of the past-income provision to determine income.

Implement Biennial Certifications for Some Tenant Populations. HUD should consider requiring some reexaminations to be completed less frequently than annually for certain populations. PIH Notice 2013-03(HA), which was issued on January 22, 2013, addressed this option for

elderly/disabled households, but on a temporary basis; HUD should consider implementing this policy on a permanent basis. With the time saved by this policy change, PHA/project staff could spend more time conducting required reexaminations, following up on suspected cases of fraud, and conducting more internal reviews of tenant files.

Create an Online Community to Share Best Practices and Tools. HUD should provide PHA/Owners with an online venue to support the sharing of best practices for its assisted housing programs. A Web-based resource could facilitate communication between HUD and program administrators regarding identifying ways to improve and address challenges related to proposed policies. Comprehensive supporting documents, including forms for interviewing tenants, obtaining verification, and determining rent, could be posted to the site for download. Manuals and training materials describing how to implement requirements and accurately calculate rent could also be available electronically, with webcasts providing an additional training resource for local program offices.

> HUD experts and local housing staff should be given the opportunity to work together to develop tools and systems that reduce rent error. Many local PHA/Owners have already developed forms, training materials, manuals, automated systems, and monitoring processes that enable them to provide accurate, efficient service to their tenants. HUD should create a platform for organizations to learn from each other.

In addition to providing general program recommendations to decrease error rates, we seek to improve the HUDQC Study that provides the estimates of the error rates. The current methodology used by ICF to conduct the study is based on established study objectives and builds on insights from previous studies. The following recommendations serve to expand the utility of the data collected, support HUD's research goals, and improve the overall efficiency of ongoing QC studies.

1. **Update Measurements of Improper Payment Associated with Billing Error.** HUD should conduct billing error studies to obtain a more accurate assessment of improper payments. In the *FY 2012 HUD Agency Financial Report*, billing error estimates are based on FY 2004 data for the Public Housing program and FY 2009 data for Owner-administered programs. An updated study would provide HUD with a better assessment of billing error associated with rental assistance programs in order to understand one of the main contributors to improper payments. The information from these billing studies could strengthen financial management controls so that HUD can better detect and prevent improper payments.

Incorporate Additional Objectives into the HUDQC Study. Data collected through the HUDQC Study provide details that are not available through other HUD sources (e.g., PIC/TRACS) and could be used to track trends, such as the extent to which income and expense items are verified or the number of sources of employment income for a particular household or household member. Furthermore, because a statistically valid nationwide sample of projects and households is created for the study, other HUD-related topics could be investigated using the HUDQC Study's research mechanisms and data collection processes. The RIM review validation, identified in the July 2013 issuance of the HUD Research Roadmap for FY 2014–FY 2018, is a task that could be incorporated into the HUDQC Study's data collection process. Additional topics could include a review of the changing demographics of HUD tenants, participant satisfaction surveys, and a more in-depth review and evaluation of MTW programs.

Conduct a Utility Allowance Comparison Study. In response to tightening budgets and overall concerns with energy efficiency, HUD should undertake a study to better understand utility costs and consumption in subsidized housing. HUD should consider conducting an in-depth QC study of how utility allowance values are calculated and used in rent calculation. This study could involve collecting data from utility companies regarding utility use for a given fiscal year and comparing actual consumption with the utility allowance subsidy calculated by program administrators. The investigation could also include an evaluation of the HUD Utility Schedule Model and its ability to accurately estimate utility costs for assisted housing participants.

Learn More About PHA/Project Policies and Practices. Each PHA establishes its own policies, procedures, and forms for collecting information that is ultimately used to calculate tenant rent. The differences in these practices should have some (possibly major) impact on the rent error, yet the analysis of the project practices and characteristics collected by the Project Staff Questionnaire does not demonstrate the expected impact. We recommend conducting focus groups, interviews, and discussion with program administrators to identify additional PHA/project-level factors that may impact error. This information could be used to revise the PSQ to include questions focused on the specific practices expected to influence errors. The analysis of more detailed, project-level data would assist in this process.

Continue Performing the HUDQC Study. The HUDQC Study provides a consistent, ongoing method of monitoring, managing, and improving HUD rent determination processes. The ongoing evaluation of HUD rental housing assistance programs is essential to program management and improvement, and rigorous research is important for understanding how well HUD programs are reaching their goals. The primary objective of the HUDQC Study is to measure rent calculation and improper payment error; however, the study also gives HUD the opportunity to learn more about methods to reduce rent calculation errors and better manage current and changing conditions at PHAs/projects. Annual evaluations facilitate more accurate, cross-year comparisons of rent errors.

I. INTRODUCTION

The U.S. Department of Housing and Urban Development (HUD) provides housing subsidies to multifamily project owners and Public Housing Authorities (PHAs) to administer housing assistance primarily to low-income households. The Office of Public and Indian Housing (PIH) and the Office of Multifamily Housing provide funding for rental subsidy through Public Housing, the Section 8 Housing Choice Voucher (HCV) program, and the Owner-administered Section 8 project-based programs. Collectively, these programs are referred to as HUD's Rental Housing Assistance Programs (RHAP). They are administered by more than 4,000 intermediary agencies and provide affordable housing for approximately 4.9 million households (i.e., 1.2 million though Public Housing, 2.2 million through the HCV program, and 1.5 million through project-based programs).[5]

Under the Improper Payments Elimination and Recovery Act (IPERA), signed into law in 2010, and the guidance of the Office of Management and Budget (OMB), agencies assess all programs they administer and identify those that may be susceptible to improper payments. An improper payment is any payment that should not have been made or that was made in an incorrect amount. In fiscal year (FY) 2013, $32 billion, or 23 percent, of HUD's total payments were attributed to HUD's rental assistance programs. These programs constitute a significant amount of HUD's total payments and continue to be assessed as being at high risk of significant improper payments.[6]

During this challenging economic period, it is more important than ever to evaluate program administration and internal controls to maintain sustainable, quality programs that meet the needs of communities. The reduction of improper payments directly increases the efficacy of HUD's housing programs and ensures that Federal dollars are being allocated fairly across the nation. This section outlines the purpose of the Quality Control for Rental Assistance Subsidy Determination Study (HUDQC Study), some background information on the study, and the organization of the report.

A. Purpose of the Quality Control for Rental Assistance Subsidy Determinations Study for FY 2014

ICF International was contracted to perform the HUDQC Study to support HUD's continued dedication to reducing the amount of annual improper payments in its programs and to comply with the reporting and administrative requirements under IPERA. The HUDQC Study provides national estimates of the level of improper payments and rent calculation error in tenant subsidies for Public Housing; Section 8 HCV and Moderate Rehabilitation programs; and the Owner-administered Section 8, Section 202, and Section 811 Project Rental Assistance Contracts (PRAC) and Section 202/162 Project Assistance Contracts (PAC) programs. For the purpose of this study, error is defined as any rent calculation or eligibility decision that is determined based on methods discrepant from HUD's income certification and rent calculation requirements. The study examines the sources, the

[5] U.S. Department of Housing and Urban Development. *Annual Report: FY 2014 Agency Financial Report.* Washington, DC: U.S. Department of Housing and Urban Development, 2013. pg. 14

[6] U.S. Department of Housing and Urban Development. *Annual Report: FY 2014 Agency Financial Report.* Washington, DC: U.S. Department of Housing and Urban Development, 2013. pg. 208

associated costs, and the frequency of subsidy errors in tenant certification and annual recertification processes for recertification transactions conducted during Federal FY 2014.[7]

This report examines a total of 16 objectives and outlines them in more detail in Section III. The main focus of this work involved collecting and analyzing information that pertained to eligibility and rent determination processes to identify possible causes of error in rent calculation. Throughout this report, information is reported for the three major housing programs separately and in combination. As a separate analysis, key error estimates are also provided for the 20 largest PHAs included in the study sample. In addition, some special analyses were conducted regarding PHA utility allowances, payment standards, and rent reasonableness practices. As part of our review, we also compared unit size to household size to identify any errors in the determination of unit size.

B. Study Background

HUD defines potential rental assistance improper payment based on three major error types. These error types include:

1. *Program administrator error* is the program administrator's failure to correctly determine eligibility and income and to apply all income exclusions and deductions when conducting the recertification.

2. *Tenant income reporting error* is a consequence of the tenant's failure to disclose all employment income and unemployment compensation sources.

3. *Billing error* occurs when there is incorrect billing and payment of subsidies between HUD and third-party program administrators and/or housing providers.

As an indicator of overall program health, HUD has annually reported the amount of improper rental assistance payments in their agency financial reports. The following exhibit shows findings from 2010 to 2013 and 2000 for comparison purposes.

[7] PHAs and owners of HUD-assisted housing are required to make an initial determination of eligibility and, thereafter, an annual recertification of each household's rent. In this report, the term recertification refers to the initial certification and annual recertification. This study does not include interim recertification transactions.

Exhibit I-1
Improper Rental Assistance Payments[8]
Dollars in Thousands

Administration/ Error Type	2013 Gross Erroneous Payments	2012 Gross Erroneous Payments	2011 Gross Erroneous Payments	2010 Gross Erroneous Payments	2000 Gross Erroneous Payments
Public Housing					
Administrator Error	$177,908	$190,850	$139,885	$141,033	$602,557
Income Reporting Error	$87,552	$203,685	$78,622	$45,433	$294,000
Billing Error	$49,000	$49,000	$49,000	$49,000	Not available
Subtotal:	**$314,460**	**$443,535**	**$267,507**	**$186,466**	**$896,557**
Section 8 Voucher					
Administrator Error	$324,293	$430,716	$436,155	$341,515	$1,096,535
Income Reporting Error	$153,785	$168,802	$265,696	$86,709	$418,000
Billing Error	-	-	-	-	Not available
Subtotal:	**$478,078**	**$599,518**	**$701,851**	**$428,224**	**$1,514,535**
Total PHA-administered					
Administrator Error	$502,201	$621,566	$576,040	$482,548	$1,699,092
Income Reporting Error	$241,337	$372,487	$344,318	$132,142	$712,000
Billing Error	$49,000	$49,000	$49,000	$49,000	Not available
Subtotal:	**$792,538**	**$1,043,053**	**$969,358**	**$614,690**	**$2,411,092**
Total Project-based/Owner-administered					
Administrator Error	$105,628	$177,234	$119,168	$167,719	$539,160
Income Reporting Error	$73,902	$46,713	$84,175	$71,056	$266,000
Billing Error	$57,000	$57,000	$57,000	$57,000	Not available
Subtotal:	**$236,530**	**$280,947**	**$260,343**	**$295,775**	**$805,160**
Total Improper Payments					
Administrator Error	$607,829	$798,800	$695,208	$650,267	$2,238,252
Income Reporting Error	$315,239	$419,200	$428,493	$203,198	$978,000
Billing Error	$106,000	$106,000	$106,000	$106,000	Not available
Total:	**$1,029,068**	**$1,324,000**	**$1,229,701**	**$959,465**	**$3,216,252**

[8]Data for 2000, 2010–2013: U.S. Department of Housing and Urban Development. *Annual Report: FY 2014 Agency Financial Report.* Washington, DC: U.S. Department of Housing and Urban Development, 2013. pg. 210.

As illustrated in Exhibit I-1, HUD has reduced the combined baseline gross improper payment estimates of $3.22 billion to $1.3 billion[9] from FY 2000 to FY 2013, a reduction of 68 percent.[10] Although HUD determined overall improper payments estimates in the chart, most of the data used to calculate these estimates derive from the annual HUDQC Study.

The FY 2014 HUDQC Study is the 13th in a series of studies designed to:

- Identify potential metrics for improper payments error, including HUD eligibility determination, income calculation, and rent calculation;
- Translate regulations for HUD programs (i.e., Public Housing, PHA-administered Section 8, and Owner-administered projects) into data collection and survey instruments;
- Develop an error detection system for flagging inconsistencies in household data and establishing an internal quality control process for data collectors; and
- Provide nationally representative estimates of rent subsidy errors.

Activities for the FY 2014 HUDQC Study commenced in December 2014, starting the review of recertification transactions effective November 1, 2013, to October 31, 2014. Tasks completed prior to data collection that have not been listed above included designing the research and survey methodology and automating the data collection process. Data were collected from a nationally representative sample of HUD-assisted housing projects, and participant household data were collected from tenant files, household interviews, and third-party verification when necessary.

C. Organization of This Report

This report is organized into the following sections:

- Section I: Introduction
- Section II: Methodology
- Section III: Study Objectives and Analytic Methods
- Section IV: Findings
- Section V: Recommendations
- Appendices
  - Appendix A: Rent Calculations
  - Appendix B: Weighting Procedures

[9] These figures combine the FY 2000 baseline estimate of $3.22 billion for all types of improper payments (i.e. program administrator error, tenant income reporting error, and billing error) with the FY 2013 baseline estimate of $1.3 billion, based on the same types of improper payments.

[10] U.S. Department of Housing and Urban Development. *Annual Report: FY 2014 Agency Financial Report.* Washington, DC: U.S. Department of Housing and Urban Development, 2013. pg. 192.

- Appendix C: Source Tables
- Appendix D: Consistency and Calculation Errors
- Appendix E: Project Staff Questionnaire Descriptive Analysis

D. Definitions of Key Terms

The HUDQC Study uses key terms for the study of RHAP rent calculation error and improper payments. These key terms are used throughout the report and can be referenced here:

- **Actual Rent**—The tenant rent listed on the Form HUD-50058 or Form HUD-50059
- **Administration Type**—PHA or owner
- **Abstract Month**—The month in which the data collection process for any given household was initiated
- **Calculation Errors**—Arithmetic errors within subsections of the Form HUD-50058 or Form HUD-50059
- **Case Type**—Certification, recertification, and overdue recertification
- **Component Errors**—The income components (i.e., employment income, Social Security and pensions, public assistance, other income, and asset income) and expense components (i.e., elderly/disabled allowance, dependent allowance, medical expenses, child care expenses, and disability expense) responsible for an error in rent calculation
- **Consistency Errors**—Errors in logical conformity between elements within the Form HUD-50058 or Form HUD-50059
- **Dollar Rent Error**—The difference between the household's QC Rent (see definition below) and the Actual Rent
- **Error Rate**—The sum of the dollar amount of Rent Error divided by the sum of the dollar amount of the QC Rent
- **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
- **Net Rent Error**—The arithmetic sum of underpayments and overpayments
- **(Rent) Overpayment**—Results when the household paid more than it should have paid, making HUD's contribution less than it should have been
- **Payment Type**—Underpayment, proper payment, or overpayment
- **Program Type**—Public Housing, Section 8 Housing Choice Voucher, Section 8 Moderate Rehabilitation, Section 8 project-based, Section 202 PRAC, Section 811 PRAC, or Section 202/162 PAC
- **Quality Control Month**—The month in which the PHA/owner completed the rent calculation; used during the household interview to obtain data for the correct time period

- **Quality Control Date**—The day the tenant rent was calculated by the project staff; this date used to determine whether verification is acceptable
- **Quality Control (QC) Rent**—Calculated by ICF using the tenant file, household interview, and verification data
- **Rent Component**—One of the five sources of income (i.e., earned, pensions, public assistance, other income, and assets) or the five types of deductions (i.e., medical, child care, 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, combined to provide an overall Total Dollars in Error and presented as an annual amount
- **Transcription Errors**—Errors in transferring information from documentation in the tenant file to the Form HUD-50058 or Form HUD-50059
- **(Rent) Underpayment**—Results when the household paid less than it should have paid, making HUD's contribution higher than it should have been

II. METHODOLOGY

A. HUD Requirements and Study Standards

ICF used the *Code of Federal Regulations* and official HUD handbooks and notices to consolidate all HUD rules relevant to the determination of rent into a set of HUD requirements. We used these requirements 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—follows the official HUD requirements. However, for some complex requirements, standardized procedures were developed to ensure a uniform manner of data collection. A complete list of the standards used in this study can be found in the *Final FY 2014 Quality Control for Rental Assistance Subsidy Determinations Data Collection Standards*.[11]

B. The Sample

The initial sampling design called for a nationally representative sample of 600 projects with 4 households randomly selected from each project, equaling 2,400 households. We selected projects with probabilities proportional to size, but 8, 12, or more households were selected from larger projects whose size exceeded the sampling interval; these were counted as more than one project for the purpose of determining the sample size. 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, Section 202 PRAC, Section 202/162 PAC, and Section 811 PRAC).

Project Sampling. Certain projects were excluded from the study because of their different eligibility and rent calculation rules, such as Owner-administered Rental Assistance Payment or Rental Supplement Program (RAP/SUP) projects. In FY 2014, Rental Assistance Demonstration (RAD) conversion sites were left in the frame, and those that were selected were replaced with eligible projects in the same geographic area. Based on a discussion with HUD, Owner-administered projects that are in the process of converting via RAD will be excluded from future project frame files. Universe files requested from HUD either excluded out-of-scope projects or those projects were identified for easy removal. Because some large projects were selected multiple times, the study sample included 538 distinct projects in 57 geographic areas in the United States and Puerto Rico. We sampled 200 projects from each major program type[12] and collected data for a multiple of 4 households from each project. An additional project was added to the sample to ensure that the sample would include a minimum of 2,400 households, even if unexpected circumstances were encountered. The final data set includes responses from 2,400 households in 538 projects.

Household Sampling. In contrast to previous years, in FY 2014, ICF selected households using HUD-provided PIH Information Center/Tenant Rental Assistance Certification System (PIC/TRACS) data. Previously, field interviewers selected the sample of households while onsite at PHAs/projects using PHA/project-supplied tenant rosters. ICF automated this process using

[11] ICF International unpublished report to HUD dated October 22, 2014.

[12] For the purpose of this study, a "project" for the Section 8 Voucher program is defined as the administration of the program in one county/township. Therefore, if a PHA administers vouchers in more than one county/township, the PHA could be represented in this study by more than one "project."

PIC/TRACS data that included all active non-Moving to Work (MTW) tenants who had been certified or recertified in FY 2014. Due to nonstandard recertification cycles permitted by various MTW PHAs, ICF's PIC/TRACS data request did not include MTW households. Certain MTW PHAs selected for the FY 2014 study allow tenants to have biennial or triennial recertifications, so those tenants would not be included in a list of all active and assisted tenants who were either certified or recertified in FY 2014. In order to not exclude eligible tenants from the study sample, ICF collected tenant rosters for MTW projects from the individual PHAs/projects and selected those samples using the previous method used for random sampling.

A random sample of 4 households was selected from most projects, with some larger projects having a larger random selection of 8, 12, or more households. For example, 16 PHA-administered Section 8 Voucher projects, including those in New York City (NYC) and Los Angeles, had household sample sizes of 12 or more. An equal number of "replacement" households were identified at each selected project as potential substitutes in the event that a selected household did not meet the study requirements or was unavailable to be interviewed.

Sampling for the 20 Largest PHAs. Once the sample for the QC study was identified, additional projects and households were selected for the 20 largest PHAs in the study sample. This additional sample allowed us to provide supplemental findings for these large PHAs. At least 32 cases were sampled per PHA. If a PHA's QC study sample size was sufficiently large, we did not supplement it; however, if only a few households were sampled from the PHA, we added substantially to the sample. As in the QC study, we allowed vouchers to be selected more than once. Since we selected households in groups of four, we aimed for eight projects per PHA, with possible multiple selections for the PHA-administered Section 8 Voucher and Moderate Rehabilitation projects. The resulting sample yielded 59 new projects that were not selected for the QC study and 312 new households. For additional information on the sampling procedures, see the *Sampling Plan for the FY 2014 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations*.[13]

Weighting. In studies from FY 2004 to FY 2011, Owner-administered RAP/SUP projects and MTW projects in Public Housing and Voucher programs were excluded from the population totals because of the differences in their eligibility and rent calculation rules. Beginning in FY 2012, however, MTW projects were included in the study, at HUD's request.

In studies from FY 2005 to FY 2010, the population totals from the June 13, 2005, request for proposal were used as the basis for the estimate of occupied units in each of the programs. In FY 2011, a comparison of the previous population totals to the frame population totals showed a change sufficient enough to warrant updating the population counts. In FY 2012, the inclusion of MTW projects led to an increase in the population. We used the same population totals in FY 2014 to ensure comparability to the FY 2012 and FY 2013 studies.

[13] ICF unpublished report to HUD dated July 3, 2014.

Exhibit II-1
Change in Frame Population Totals Used to Pull the Study Sample Over Time

Program Type	FY 2005–FY 2010 Population Totals*	FY 2011 Study Sample*	FY 2012–FY 2014 Study Sample**	Percent Increase in Population Totals From FY 2011 to FY 2014 Study Sample
Public Housing Total	955,000	1,052,503	1,154,796	+9.72%
Public Housing (non-MTW)	955,000	1,052,503	1,040,708	-1.12%
Public Housing (MTW)	0	0	114,088	
PHA-administered Section 8 Total	1,858,000	1,912,467	2,198,722	+14.97%
PHA-administered Section 8 (non-MTW)	1,858,000	1,912,467	1,935,597	+1.21%
PHA-administered Section 8 (MTW)	0	0	263,125	
Owner-administered	1,320,000	1,382,670	1,378,158	-0.33%
Total	**4,133,000**	**4,347,640**	**4,731,676**	+8.83%

* Excluding RAP/SUP and MTW populations
** Excluding RAP/SUP; including MTW

The use of the same population counts increases the comparability of data, so any change from year to year would not be due to a change in the number of households in the program but to an actual change in the average gross dollar error or percentage of households that are in error. However, maintaining constant population counts over time despite changes in the population itself may result in estimates for total dollar amounts and the proportion of the population represented by each program type not being representative of the current population. Based on these reasons and given the inclusion of MTW projects in the FY 2012 sample and with HUD's agreement, ICF updated the population counts for the FY 2012 study and has continued to use those counts for the FY 2014 study.[14]

C. Data Collection

This study used a multistage data collection process to obtain all required information. Web surveys provided project-level information from PHA/project staff. Tenant-level information was obtained by field interviewers who abstracted data from the household file, interviewed households, and requested tenant consent to verify income, expense, and household composition items from third parties.[15] Tenant income, expense, allowance, and third-party verification information was collected using HUD-sanctioned data collection procedures.

Project Level Data Collection

Project Level Web Surveys. The initial collection of project-level data began in October 2014 with the Web-based Project Specific Information (PSI) questionnaire. Using contact information obtained from HUD, this survey requested background information essential to the data collection process as well as specific data used for the calculation of QC rent. The rent calculation information requested

[14] For a more detailed discussion of population total updates, please reference Appendix B.

[15] Verification is a process of obtaining information about income or expenses from a third party that 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 using documents (e.g., printouts from the Enterprise Income Verification [EIV] system).

varied by program, but included questions relating to items such as passbook rate, utility allowance schedules, payment standards, minimum rent, and flat rent. PHA/project staff verified the project type and size and the location of project offices and files. Projects were also asked to indicate whether the selected project had been designated a "special demonstration project" by HUD. If a project answered "yes" to this question, and this status was confirmed, the project was replaced in the study. In addition, PHA-administered Section 8 Voucher projects and Public Housing projects were asked to provide their Administrative Plan and their Admissions and Continued Occupancy Policy (ACOP) documents. Public Housing projects were asked to identify the location of any information on permissible deductions. Administrative Plans and ACOPs were thoroughly reviewed for local discretionary policies that would impact QC rent determination.

The data requested from the PHA/project were essential to the calculation of the QC rent and to preparing interviewers to begin the process of data collection. For these reasons, a 100 percent response rate to our request for information was targeted. In FY 2014, 91 percent of the projects selected responded to the survey and supplied the necessary documents. Rigorous strategies were employed to ensure compliance and the completeness of requested information prior to field data collection.

Another Web-based survey, the Project Staff Questionnaire (PSQ), was sent to projects in February 2015. Field data collection began in December 2014 and ended in May 2015. This survey was designed to obtain information from PHA/projects about the processes that they use to calculate rent during certifications.

Because PHAs/projects have varying practices, ICF designed data collection instruments and guidelines for data collection that were flexible enough to obtain data from the variety of circumstances found in PHAs/projects. The major tasks accomplished during data collection and the instruments used to accomplish those tasks are discussed as follows.

Creating the Data Collection Instruments. For this study, more than 30 data collection instruments were used to collect data at both the project and tenant levels. These instruments were similar to those used for the previous data collection efforts, although instruments were modified to improve the data collection process. Project-level instruments were used to gather information to facilitate data collection, collect the data elements necessary to calculate QC rent, and gather information about certification and recertification practices. The tenant-level data collection instruments were created to collect data and determine whether:

(1) There were errors in the eligibility determination.

(2) The household rent was calculated correctly.

(3) Units were correctly assigned according to the study standards.

Each instrument was created by a survey research specialist and reviewed by a HUD policy expert. The Office of Management and Budget approved all data collection instruments.

Contacting the PHA/Project. PHA/project contact names were obtained from HUD headquarters staff. Emails were sent to PHA/project staff advising them of the study and requesting their

participation. When field data collection commenced, PHA/projects were sent communication introducing the field interviewer and requesting cooperation during their site visit.

Automating the Data Collection Process. This study used an enhanced version of the data collection system used in previous studies. Project-level data were collected through the PSI and PSQ Web surveys that were developed using Select Survey Software. Data from household files were entered directly into laptop computers, and a computer-assisted personal interviewing (CAPI) system was used to interview tenants. This system, referred to as the HUD Data Collection Software (HDCS) system, was developed by a special team of ICF survey specialists and computer systems experts.[16]

Household Level Data Collection

Hiring and Training Field Interviewers. Sixty-three field interviewers were hired to complete the field data collection, and each interviewer was assigned a group of projects. Field interviewers typically lived in the same general area as the projects selected for the study. Thirty-five field interviewers who had not worked on the previous year's study (for FY 2013) attended a 7-day training; 28 experienced interviewers who completed the FY 2013 study attended a 3-day training. The 7-day training covered:

- Project background
- HUD programs and requirements
- Survey procedures
- Automated data collection
- Administrative procedures

The 3-day training covered a review of the project background and data collection procedures and focused on changes implemented for the FY 2014 study.

Abstracting From Household Files. At certification and recertification, PHAs/projects must complete either Form HUD-50058 (for each household in Public Housing and PHA-administered Section 8 programs), a Form HUD-50058 MTW (for each household in MTW projects), or a Form HUD-50059 (for all other programs in the study). Data from Form HUD-50058/50059 were entered directly into 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, on the basis of internal calculations and consistency checks. These electronic checking procedures enabled field interviewers to make immediate corrections and updates.

This structured, automated process greatly reduced the need to edit, code, and clean the data after the close of data collection. HDCS data were securely transferred to study headquarters electronically on a daily basis. The incoming data were reviewed in an ongoing QC process. This continual data review during the collection process ensured data accuracy and permitted study

[16] The base of HDCS is the Census and Survey Processing System (CSPro) software package, which is used by the U.S. Agency for International Development to collect demographic and health information in many countries.

headquarters staff to resolve issues or request other clarifying documents while interviewers were still in the field.

HDCS was designed to collect data in the same format as the official Form HUD-50058 and Form HUD-50059 published by HUD. The NYC Housing Authority uses a Form HUD-50058 format that differs slightly from the standard. However, because of the large number of NYC Public Housing units and PHA-administered Section 8 Voucher cases in the study, copies of the corresponding PIH Information Center (PIC) 50058 data for these cases were requested and used for data collection when available. In previous study years, we encountered projects where Form HUD-50058 differed from the official HUD format. In those cases, ICF developed crosswalks by examining the data elements on the atypical forms and developing a plan that illustrated which fields corresponded to the standard Form HUD-50058. In the FY 2014 study, four nonstandard documents required crosswalks, compared to two in FY 2013. These four documents were used by three projects, two of which were MTW PHAs.

In addition to the data collected from Form HUD-50058/50059, field interviewers collected data from the household files to document the determination of tenant eligibility and the calculation of rent. A series of documents that supported the certification action was copied by the field interviewer to verify income, assets, household composition, expenses, and other items needed for accurate rent calculations. The documents may have been supplied by the tenant or by a third-party agency. When these documents met various study verification criteria, they were used in the QC rent determination.

Interviewing Tenants. For this study, an adult household member (preferably the head of household) was interviewed in person using CAPI. Interview questions focused on family composition as well as sources and amounts of income, assets, and applicable expenses. Data were collected for the same point in time that the recertification was conducted. HDCS compared data from Form HUD-50058/50059 with those entered during the interview to alert the interviewer to possible errors. While interviewing tenants, field interviewers also requested specific verification documents, which they then scanned and securely sent to study headquarters. Those documents were reviewed if the supporting documents from the tenant file did not meet study verification criteria.

Requesting Verification From Third-Party Sources. When there was no evidence in the household file that the PHA/Owner verified the information used for calculating rent, or the existing verification information did not meet the requirements for this study,[17] ICF requested verification from appropriate third-party sources. Verification was also requested from third parties when household interviews resulted in the identification of sources of income that were not found in the household files. Tenants signed release forms during the household interview so that third-party verification of income and expenses could be obtained. In addition, release form cover letters were also signed by all adult members of the household to ensure that third parties contacted for the verification of information would be satisfied with the validity of the request. Third-party entities completed the forms and returned them to study headquarters, where data were compared to other file information.

[17] For the purposes of this study, verification was acceptable if it was in writing, was received from a third party, and was dated with the Quality Control Month (QCM) date or within 119 days prior to that date. Acceptable verification could include documentation from a third party brought in by the tenant if the documents met specific date criteria.

Third-Party Verification Rules. Occasionally the verification documents found in the file for household composition, income, assets, and expense items were different from those required by HUD.

To ensure that data from the correct documents (i.e., those that were gathered to verify the information on the certification or recertification under review) were used to calculate QC rent, and to apply rules fairly and consistently across all households in the study, ICF developed a set of guidelines defining acceptable verification. For the purpose of this study, verification was considered acceptable if it was either given verbally or in writing, was from the relevant third party, and was dated within the 4 months leading up to the time period of interest. These documents were considered acceptable whether they were received directly from the third party, provided by tenants during the recertification process, or submitted during the household interview.

ICF study headquarters staff classified these documents and determined whether each document met the acceptability criteria. For items that did not meet the requirements, verification was requested from the appropriate third-party entity.

Matching Social Security Data. Sample household members were matched with Social Security Administration (SSA) files by HUD. The output from this match identified the Social Security and Supplemental Security Income (SSI) benefit, as well as the Medicare premium data, for all household members. These data were considered third-party verification during the final QC rent determination.

D. Field Data Collection Time Periods

Data were collected in the field between December 2014 and May 2015 for the certification or annual recertification that occurred during FY 2014 (November 2013 through October 2014). Field interviewers collected data related to actions that may have occurred up to 18 months prior to the file abstraction and household interview. In collecting data to document actions taken in the past, a major challenge was to develop methodologies to ensure that collected data reflect the situation that existed at the selected point in time. For the respondent in the household interview, it may be difficult to recall details of life situations at a past point in time. Some respondents in this population may have unstable situations resulting from inconsistent income or changes to household size, further complicating the collection of data from the past. In light of these challenges, ICF developed study constructs to ensure the consistent and accurate collection of data across program types, projects, and households in the study. The information below describes the two primary strategies developed for this purpose: the quality control month and third-party verification rules.

Quality Control Study Time Period. The month for which data were collected is referred to as the Quality Control Month (QCM), and was used during the household interview to obtain data for the correct time period. This time period refers to when an eligible action occurred during FY 2014. The Quality Control Date (QCD) refers to the day the tenant rent was calculated by the project staff. For most households in the Owner-administered program, the QCD is the date on which the project manager (or other authorized housing project staff member) or the tenant signed Form HUD-50059, certifying that the information on the form was correct. For most households in the PHA-administered programs, the QCD is the date on which the rent calculation worksheet was signed. If these pieces of information were not available, the field interviewer used other documentation in the household file to determine when the action was taken.

After the QCD was established, the data from Form HUD-50058/50059 corresponding to the selected action was entered into HDCS. The data from the documents used by project staff to verify information on Form HUD-50058/50059 on the QCD were also entered in a separate HDCS module. The household interview included frequent reminders to the respondent that the questions being asked pertained to the QCM.

Note: If the recertification was overdue by more than 12 months, 12-month intervals were added to the QCM so that the QCD fell within the FY 2014 review period. In this situation, during the household interview, the respondent was questioned about circumstances for the month in which the recertification would have been completed had housing project staff completed it on time. In rare situations when the rent was calculated after the effective date of the action (because of retroactive adjustments), the QCM is the date of that action.

E. Construction of the Analysis Files

The initial data files consisted of information obtained from the tenant file at the project site, information from the household interview, and third-party verification data. Data items were collected at both the member and household levels. ICF 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 sporadic employment or medical expenses, annualizing income or deductions was more complicated. A unique linking variable was created to compare information abstracted from file documentation with information obtained in the household interview and received from third-party verification. This variable specifically identified the income, asset, or expense and the household member to which the item belonged.

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 Form HUD-50058/50059 errors, and occupancy standards.

F. Rent Formula

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

- Thirty percent of a household's adjusted monthly income defined as 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 household dependents and deductions for disability, medical, and child care expenses
- Ten percent of a household's gross monthly income with no allowances or expense deductions
- The welfare rent in as-paid states (New York was the only as-paid state in this study)

- 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 202/16 PAC programs includes the first three items above, but there is no minimum rent requirement for those programs.

MTW programs have the flexibility of modifying their TTP calculation process from the standard formulas if the modification was established in their ACOP or Administrative Plan. In order to ensure that the MTW projects were not found in error if modifications to rent calculation processes had been approved, ICF reviewed the ACOPs and Administrative Plans for all MTW projects. Based on the review, modifications to the standard TTP calculations were implemented for specific projects. Some common modifications used by MTW projects were:

- Using 28 percent, or some other set percentage, of a household's adjusted monthly income to calculate TTP, instead of 30 percent
- Not deducting dependent or elderly/disability allowances from total annual income
- Using rent schedules for households within certain income bands
- Not counting income from assets if total assets were less than $50,000, or allowing for self-certification of assets when assets totaled less than $50,000
- Using a tiered schedule to determine the amount of child care, medical, or disability expense deductions
- Using non-standard or alternate disability, medical, or dependent allowances

Five different rent calculations were used to calculate the actual amount of the household's rent, depending on program type:

- Public Housing (MTW and non-MTW)
- Section 8 Project-based (including Moderate Rehabilitation) and Sections 202 PRAC, 811 PRAC, and 202/162 PAC
- Section 8 Vouchers (MTW and non-MTW)
- Section 8 Enhanced Vouchers (there were 18 Enhanced Voucher households in the study)
- Manufactured Home Space Rental for Section 8 Vouchers (there were no households in the FY 2014 study sample that met this criterion)

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 lesser of the gross rent or the payment standard; in the Public Housing program, this is the flat rent. If the flat rent was not available, the Ceiling Rent was used to cap the rent. The rent was not capped for the Sections 202 PRAC or 811 PRAC programs.

Additional rent calculations were necessary for households with ineligible noncitizens. Determining the correct rent for these households was a multistep process that first determined whether the

household is entitled to continued assistance or a temporary deferral of termination of assistance and then prorated the rent, if appropriate. Two proration formulas were used, one for Public Housing and one for all Section 8 programs.

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

G. Calculation of Rent Error

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

- **Actual Rent—**The Actual (AC) Rent is the monthly rent indicated on Form HUD-50058/50059. If this item was missing on Form HUD-50058/50059, the AC Rent was taken from another official document in the file.[18]
- **Quality Control Rent—**The Quality Control (QC) Rent is the monthly rent calculated by ICF using all verified household information.[19]

Rent error was calculated by subtracting the QC Rent from the AC Rent. A discrepancy of $5 or less between the monthly AC and QC rents was not considered an error. The $5 increment was used to allow for minor calculation and rounding errors and to focus the data analysis on major sources of error.

H. Quality Control Rent

ICF 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, ICF first used available verification from the household files. If acceptable verification was not available from the household file, verification was requested during the household interview. If verification was not available during the household interview, verification was requested from an appropriate third party (see Section II-D for a discussion of acceptable verification). If verification was not returned by a third-party entity, data from certain documents in the household file were used, even if those documents did not meet the verification criteria. The only documents used when acceptable verification was not available were verification documents from third-party entities whose date fell outside the acceptable date range (when documents were present with other verification documents in the file for a particular transaction) and tenant self-certification documentation collected during the household's recertification process. The following special procedures were followed when calculating the QC Rent, as appropriate:

[18] Rent Roll data were not used as a substitute for AC Rent because a previous study found that the Rent Roll sometimes included amounts to make up for previously unpaid rent, fines, or damages.

[19] Attempts were made to verify items that were not verified by PHA/Owner staff; however, verification was not always obtained. If verification was not available, other information from the household file or documentation obtained during the household interview that met study requirements was used to calculate the QC Rent.

- 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.
- Earned income bonuses were not counted unless it was clear that the bonus was paid on a regular basis.
- Temporary Assistance for 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 income (TANF and other welfare), child support income, and child care expenses were treated at the household level instead of the household member level so that the same source of income assigned to various household members would not be counted twice. For example, if one household member (e.g., the head of household) was assigned a source of income on one document and the same income was assigned to another household member (e.g., a child) on another form, the income would not be counted twice because it was assigned at the household level.
- Disability status was assigned to a household member based on EIV documentation if two items were evident on the EIV printout: (1) receipt of Social Security or SSI benefits and (2) a disability status of "yes."
- Passbook rates (for determining the imputed income from assets) for PHA-administered programs were taken from the project-level data provided by PHA/Owner staff. The passbook rate for Owner-administered programs was 2 percent.
- For new certifications, the low and very low income limits were obtained from HUD's website.
- When determining the prorated rent for Public Housing households with ineligible noncitizens, if the maximum rent was not present on Form HUD-50058, the Fair Market Rent was used instead of the 95th percentile of gross rent because the 95th percentile of gross rent was not available.
- The values from Form HUD-50058 were used for minimum rent, gross rent, payment standard, and flat rent unless the value was missing, in which case the missing value was taken from the PHA/project-level data collection information provided by PHA staff.
- The values from Form HUD-50059 were used for gross rent and contract rent unless the value was missing, in which case the missing value was taken from the project-level data collection information provided by owner staff.
- Welfare rent for the State of New York was taken from the project-level data collection information provided by PHA staff.
- A separate verification code was used to identify verification obtained from the EIV system. When Social Security, SSI, or Black Lung benefits were verified by EIV, the information was considered third-party in-writing verification. If EIV information was in the file for earned income or unemployment benefits, the dates associated with the form were examined

to determine whether PHA/project staff had access to the EIV information at the time of recertification. Copies of EIV reports (as well as other types of verification of earned income found in the household file) were sent to study headquarters and reviewed by data quality specialists to prevent mistakes in calculating the QC earned income value. *Note:* EIV was not considered an acceptable verification source for earned income.

- When working with Social Security and SSI benefit information obtained through the SSA data match, discrepancies were sometimes found between those data and EIV printouts contained in the household file. If the two sources of information were contradictory, the information found on the EIV printout (from the household file) was used in the QC calculation.

I. HUD Requirements Complicating the Analysis

Several HUD requirements affected the data collection methodology and subsequent analysis. As noted in Section II-A, relevant HUD requirements were incorporated into the study standards used to determine error. All data collection procedures and analyses were developed on the basis of these standards. Although most standards were easily implemented, several were more problematic, complicating the data collection process or the analysis, discussed as follows.

Anticipated Income. The amount of rent a household will pay is determined based on anticipated household income and deductions for the 12 months following recertification. For households with a stable income source, such as Social Security or steady employment, annual income estimates for the next 12 months are relatively accurate. However, many assisted households have members with sporadic employment or members who move in and out of the household. Also, certain expenses (e.g., medical expenses for elderly/disabled households, child care costs) are difficult to anticipate. Determining whether such income and expense amounts were calculated 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 manner they were treated by PHA/project staff. Several of the special procedures described in Section II-H were created for this purpose.

Third-Party Verification Requests. HUD regulations require the information supplied by residents at recertification to be verified by third parties (e.g., employers, SSA, banks, medical personnel). Field interviewers obtained release forms from the household when evidence of verification was not present in the tenant's file; the release forms were used to request verification from the appropriate third parties. However, some third parties did not respond, returned information for incorrect time periods, required payment for the information requested, or presented other challenges that prevented ICF staff from obtaining the correct verification. Follow-up requests for missing verifications were not made in all cases because of time constraints.

ICF and HUD established a set of verification rules to determine whether an item was verified. Section II-C identifies the rules used to determine whether verification was acceptable for each matched item used in the rent calculation. Tables 1a to 1h (in Appendix C) and Exhibit IV-19 in Section IV-D present the verification rates for different rent components.

Earned Income Disregard. The regulations governing the Public Housing and PHA-administered Section 8 Voucher programs require PHAs to exclude a portion of earned income for households meeting certain criteria. Only participants in these programs—not applicants entering the programs—are eligible for this income exclusion.

To identify households eligible for the earned income disregard, tenants were asked during the household interview about training and self-sufficiency programs. Fifty-six household members were identified as possibly entitled to an earned income disregard.

For these household members, we examined information on Form HUD-50058 and other household file documentation. We compared the QC-calculated earned income exclusion (using the household questionnaire information) with the earned income used by the PHA when calculating the total annual income.

From the original 56 cases identified from household interview data, QC calculations determined that 47 cases were possibly entitled to an earned income disregard. After investigating further for additional factors that affect EID, 23 of the 47 cases were eligible and 24 were not eligible for EID. In 14 of the 23 eligible cases, our QC calculation confirmed the PHA's earned income disregard determination. In the remaining nine cases, our QC review determined that an earned income disregard was appropriate, but the PHA did not provide the household with the income exclusion.

Training Programs. The regulations governing all housing programs included in this study require the PHA/Owners to exclude all amounts received under training programs funded by HUD as well as the incremental earnings and benefits resulting to any household member from participation in qualifying State or local employment training programs.

To identify households eligible for the training program exclusion, field interviewers documented training program information found in the household file and provided during the household interview. This process identified members of 13 households with indications of involvement in training programs, and 1 of those 13 households was found to be eligible for this income exclusion.

Permissible Deductions. Public Housing programs may adopt other deductions from annual income in addition to HUD's required deductions. To ensure that the appropriate additional permissible deductions were taken into consideration when determining the adjusted annual income, two sources of information were examined. First, ICF reviewed items 8b through 8e on Form HUD-50058, which records the type and amount of permissible deductions. Second, a copy of local discretionary policies from all PHAs was requested to identify additional exclusions adopted in their Public Housing program. In the review of these documents, few unique permissible deductions were found across Public Housing programs. The few special deductions that we found related to excluding the Federal Insurance Contributions Act tax in calculating earned income and excluding the full amount of child support provided to someone outside of the household. In FY 2014, this review found two households with permissible deductions using the local discretionary policies at the two PHAs.

Moving to Work Exceptions. As mentioned in Section II-F, MTW programs have the flexibility of modifying their TTP calculation process from the standard formulas if the modification was established in their ACOP or Administrative Plan. To ensure that all modifications were incorporated

into the QC rent calculation, policies on the various exceptions were extrapolated from each project's ACOP or Administrative Plan, and these policies were included in the QC rent calculation.

Flat Rent. Households that elected to pay 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. In FY 2014, there were 81 flat rent cases in the study sample. Determining whether a household is paying a flat rent is not always easy because of contradictory data within Form HUD-50058. In most cases, items 2a (i.e., Flat Rent Annual Update) and 10u (i.e., Type of Rent Selected) could be used to determine whether the household is paying a flat rent instead of an income-based rent. However, if these two items contradicted one another, information from other documents in the file was used to determine the type of rent a selected tenant paid.

Ineligible Noncitizens. HUD regulations require that rents be prorated for households with ineligible noncitizens unless the household meets certain criteria that allow the continuation of full assistance. ICF reviewed all households with ineligible noncitizens to ensure that the rent was calculated correctly. Twenty-seven households (just over 1 percent of households in this study) included an ineligible noncitizen and had a prorated rent amount per HUD regulations.

Reduced or Terminated TANF Benefits. The regulations governing Public Housing and PHA-administered Section 8 programs included in the study require using the amount of the TANF benefit before reduction or termination when such changes to TANF benefits resulted from fraud or failure to cooperate with the welfare family self-sufficiency program. To identify households with reduced or terminated TANF benefits, tenants were asked during the household interview about previous receipt of TANF and whether their TANF benefits were reduced.

If the TANF benefits were reduced or terminated because of fraud or failure to comply with the welfare family self-sufficiency requirements, the value of the TANF benefit before the reduction or termination was used in the QC Rent calculation.[20] TANF benefits in 28 households were reviewed, and we identified 2 households for which TANF amounts should have been imputed, but the PHA did not properly impute them in the household's income calculation.

Students. The regulations governing the PHA-administered Section 8 and Owner-administered programs included in the study require that students ages 17–24 meet certain criteria. If these criteria are not met, the parent's income must be included when determining whether the student meets the program's financial requirements. For households with students, field interviewers documented student enrollment and member characteristics found in the household file or provided during the household interview. These households were then reviewed to determine whether the student met the special student criteria as defined by HUD regulations. Nine cases were reviewed, and all cases were determined to be correctly receiving housing assistance.

[20] The value of the reduced or terminated TANF benefit is offset by the amount of additional income that the family received starting after the sanction was imposed.

III. STUDY OBJECTIVES AND ANALYTIC METHODS

This section identifies the 16 HUDQC Study objectives and a brief description of the methodology that was used to fulfill these objectives.[21] A summary of these objectives and the location of this information in the report is presented at the end of this section, in Exhibit III-2.

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

The FY 2014 study identified the error types and error rates that were previously analyzed and presented in the FY 2000 through FY 2013 studies. Using verified information as determined in the QC study standards, the tenant rent (QC Rent) was recalculated and subtracted from the tenant rent indicated on the Form HUD-50058/50059 (Actual Rent) to determine error. Rent error was categorized and described in a number of ways, including providing the percentage of households paying correct and incorrect rent, total dollar error amounts, and dollar error rates. Variance estimates (standard errors) were provided for selected error rates. Errors were determined by recalculating the tenant rent on the basis of verified QC information and subtracting this amount from the tenant rent indicated on the Form HUD-50058/50059 (Actual Rent). The following three types of dollar rent error estimates were calculated:

- **Dollar Rent Error**—The Dollar Rent Error is the difference between the monthly Actual Rent (AC Rent) and the monthly QC Rent (i.e., AC Rent minus QC Rent). A household rent was found to be in error if the difference between the AC Rent and QC Rent was greater than $5, while proper rent payments reflected differences of $5 or less. Rates of exactly matching AC and QC rents (within $1) were also presented. Simple percentages of the number of households paying the proper and exact rents were reported, as well as the percentage of households in error per program, the average gross dollars in error, and the percentage of rent dollars in error. For households that were ineligible when initially certified, the QC Rent was the flat rent for Public Housing households, or the Housing Assistance Payment (HAP) for Section 8 programs. The dollar error in these cases was also defined as the QC Rent amount minus the AC Rent.
- **Total Component Dollars in Error**—The Total Component Dollars in Error is 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 were combined to provide an overall Total Dollars in Error and were presented as annual amounts.[22] Each component of identified error contributed to a dollar amount of rent overpayment or underpayment; however, some of these errors overlapped or were offset. For example, earned income may have been underreported because of a calculation error or the Supplemental Security Income (SSI) may have been overstated. Thus, the net difference could be zero or a positive or negative amount.

[21] For a more detailed description of the methodology, see *Final Analysis Plan for the FY 2014 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations,* an unpublished ICF report to HUD dated September 26, 2014.

[22] Because dollar component errors (CE) are reported on an annual basis while dollar rent errors (RE) are reported on a monthly basis, and rents are generally set at 30 percent of adjusted income, component errors are usually 40 times the corresponding rent error (0.30 * CE = 12 * RE, or CE = (12/0.30) * RE = (120/3) x RE = 40 * RE).

Largest Component Dollar Error—The Largest Component Dollar Error is the annual dollar amount of error for the income or expense components with the largest error in a case. Income and expense components included the five sources of income (i.e., earned income, pension, public assistance, other income, and assets) and the five types of deductions (i.e., medical, childcare, and disability assistance expenses; and dependent allowance and elderly/disabled allowance). If, for example, the component with the largest error was earned income, the largest component dollar error was the difference between the earned income identified by the PHA/project and the earned income identified in the QC rent calculation.

The dollar error rate was 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. This information is used to support policies that promote better oversight and administrative practices of HUD rental 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 Form HUD-50058/50059 as well as PHA/project and tenant information from the tenant file were used to identify and measure each of the following error types:

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

Calculation errors were detected by recalculating section subtotals and the final rent based on the exact information on Form HUD-50058/50059. The tenant rent was calculated using the detailed information on Form HUD-50058/50059, and the amount was compared to the actual tenant rent on Form HUD-50058/50059. A difference in these two rents was identified as a calculation error.

Consistency errors identified a lack of logical conformity between elements within Form HUD-50058/50059. For example, the Effective Date of Action had to be on or after the Date of Admission; elderly status information had to be consistent with information about the age of the head of household or spouse.

Transcription errors are errors that were identified by comparing Form HUD-50058/50059 data with information in the tenant file. If the amount of a specific income or expense item on the Form HUD-50058/50059 did not match the tenant file data, a transcription error existed.

Incorrect determinations of allowances and income sources were also detected using tenant file information and comparing it to the Form HUD-50058/50059 data. Allowance errors were detected by calculating the allowances based on the tenant file information and comparing this QC allowance amount to the actual allowance on Form HUD-50058/50059. Similarly, income was calculated based

on the types and amounts of income identified in the tenant file. The improper application of allowances and the incorrect calculation of income were a subset of transcription errors.

Overdue recertifications often produced rent errors because rents were based on out-of-date information. For households with overdue recertifications, the QC information was based on the month the recertification should have been completed rather than the month that the recertification was completed.

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

This analysis included determining the national Rent Error Rate, the numbers and proportions of households found to be in error, 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 Form HUD-50058/50059 and total errors found in the study.

As discussed under Objective 2, calculation and consistency errors identified mistakes made by the housing PHA/project staff. Under Objective 4, households with calculation and consistency errors were compared to households with QC errors to determine whether errors found within Form HUD-50058/50059 could be used to predict QC errors.

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

This analysis presented differences in error rates by program type. Data were provided for three program groups: Public Housing, PHA-administered Section 8 (Section 8 Vouchers and Moderate Rehabilitation programs), and Owner-administered programs (Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC). The Gross and Net Error Rates were provided for each of these program types. The Gross Error Rate was the sum dollar amount of gross error divided by the sum dollar amount of QC Rent, and the Net Error Rate was the sum dollar amount of net error divided again by the sum dollar amount of QC Rent. Multivariate analyses were performed to determine whether differences from program to program are statistically significant.

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 in the previous studies, ICF provided descriptive information on the sources of discrepancies between housing file information and verified information, and described the incidence of administrative errors and their impacts. We also examined whether failure to verify sources of income and expenses contributed to QC error. Multivariate analyses using administrative errors and income components as independent variables were performed to identify how these errors affected the QC Dollar Rent Error.

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

This objective addressed whether households resided in units with the correct number of bedrooms. Exhibit III-1 shows HUD's generally accepted guidelines specifying the appropriate size unit for assisted households.[23]

For most programs, unit-size rules are not based solely on household size but allow for discretion on the part of PHA/project staff. All programs allow exceptions to these rules. This study replicated 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 outlined in Exhibit III-1.

Exhibit III-1
PHA-Administered 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	5	10

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

ICF conducts further descriptive analyses to examine whether errors are concentrated within or randomly distributed across PHAs/projects. Multivariate analyses are conducted with the tenant as the unit of analysis. Tenant and PHA/project characteristics are 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 help HUD evaluate 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 for assisted housing.

Five eligibility requirements reviewed at initial/move-in certification are not a part of the recertification process (and thus not confirmed on an ongoing basis): the definition of family, citizenship status, the verification of Social Security numbers, signed tenant consent forms, and low

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

to very low income limits. This study did not investigate the definition of family because it is determined by the PHA or owner. Therefore, findings were provided on four of the five initial certification criteria. This study also did not include suitability factors that PHA/owners may use in selecting tenants—factors such as tenant histories, and history of drug use or criminal activity.

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. Determine whether voucher payment standards are within 90 to 110 percent of fair market rents, and determine whether the correct utility allowances are being used in Section 8 Voucher households.

To comply with the rent reasonableness requirement, housing authorities must determine that Section 8 Voucher rents are reasonable in comparison with 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 rent 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 presented weighted proportions of voucher recipients with rent comparability data.

Additionally, payment standard data from Form HUD-50058 were compared with Fair Market Rent (FMR) data to identify the households whose payment standards fall outside the 90 to 110 percent FMR band. Utility allowance schedules were likewise matched to tenant files to evaluate the issues associated with independently evaluating utility allowances as a potential component of rent error.

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

Proper payments are those in which the Actual Rent (AC Rent) equals the Quality Control Rent (QC Rent). Errors can be either tenant overpayments (i.e., AC Rent is greater than QC Rent) or tenant underpayments (i.e., AC Rent is 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 investigated the relationship between using an automated rent calculation system and project-level gross error rate by using an analysis of variance. We also examined whether Gross Rent Error differed significantly by computer use between programs.

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

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

Objective 14: Determine whether cases for which Form HUD-50058/50059 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 Public and Indian Housing (PIH) Information Center/Tenant Rental Assistance Certification System (PIC/TRACS) data. Analysis was conducted to compare the average dollars in error for households included in PIC/TRACS with those that were not included.

Objective 15: Determine the extent of errors that were due to unreporting of income by tenants.

All adult household members in the QC study were matched with the National Directory of New Hires (NDNH) database to identify sources of earnings and unemployment compensation benefits received, but not reported, by tenants. Following the guidelines provided in the HUD Income Matching Procedures for Analyzing Income Match Data, unreported sources of income were identified along with the subsidy overpayment dollars associated with those unreported sources of income. The findings from this analysis will be presented in the *FY 2014 Income Match Report* dated September 25, 2015.

Objective 16: Determine the error rate for the 20 Largest PHAs.

For the 20 Largest PHAs sample, 32 households were selected per PHA. Since the desired error rate can use the households sampled in the QC study, we interpreted HUD's needs in terms of the total sample needed from these PHAs. Thus, if a PHA already had 32 households selected for the QC study, no further cases would be sampled. However, if fewer than 32 households were selected in the QC study, additional tenant files would be selected to achieve 32 households per PHA. Analysis for the 20 Largest PHAs will include tables regarding administrative error and payment error.

ICF addressed administrative error, and provided the percent of households with overdue recertification and transcription errors, the percent of income and expense items verified by PHA staff both with written third-party verification only, and with verbal or written third-party verification or documentation. Totals for the 20 Largest PHAs were compared to the PHA-administered projects supplied for the QC Study and the QC Study as a whole. Additionally, payment error information were provided. This includes proper payments, under- and overpayments of tenant rents, and the mean gross rent errors by PHA. As with administrative error, totals for the 20 Largest PHAs were compared to the PHA-administered projects supplied for the QC Study and the QC Study as a whole.

Exhibit III-2
Summary of Study Objectives

#	Objective	Where Objective Is Addressed in Section IV
1	Identify the various types of rent errors and rent error rates, and calculate their variance estimates. These include: • Dollar Rent Error • Total Component Dollars in Error • Largest Component Dollar Error	Exhibits 2–4; Exhibits 12–14; Exhibit 16; Exhibits 25a-25b
2	Identify the dollar costs of the various types of errors, including: • Calculation errors • Consistency errors • Transcription errors • Incorrect determination of allowances and income sources • Overdue recertifications	Exhibits 22a–23; Exhibits 11–12; Exhibit 8
3	Estimate the national-level costs for total error and major error types.	Exhibits 2–5; Exhibits15–16
4	Determine the relationship between errors detectable using the Form HUD-50058/50059 and total errors found in the study.	Exhibits 17–21
5	Determine whether error rates and error costs have statistically significant differences from program to program.	Exhibit 4
6	Determine the apparent cause of significant rent errors to provide HUD with information on whether the error was caused primarily by the tenant or by program administrator staff.	Exhibit 19-21, Exhibit 23
7	Determine the extent to which households are over-housed relative to HUD's occupancy standards.	Exhibits 24a–24c
8	Provide information on the extent to which errors are concentrated in projects and programs.	Exhibits 1–5
9	Identify the percentage of newly certified tenants who were incorrectly determined eligible for program admission.	Exhibit 6; Exhibits 7a–7b
10	For Section 8 Voucher households, determine • The extent to which rent comparability determinations are found in the tenant file, and indicate the method used to support the determination; • Whether payment standards are within 90%–110% of fair market rents; and • Whether the correct utility allowances are being used.	Exhibits 25-29d
11	Estimate the total positive and negative errors in terms of HUD subsidies.	Exhibits 9a–10

#	Objective	Where Objective Is Addressed in Section IV
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 use an automated rent calculation system.	Appendix F
13	Determine whether other tenant or project characteristics on which data are available are correlated with higher or lower error rates.	Appendix F
14	Determine whether cases for which Form HUD-50058/50059 data were submitted to HUD were more or less likely to have errors than those for which data was not submitted.	Exhibits 30a-30e
15	Determine the extent of errors that were due to unreporting of income by tenants.	These exhibits will appear in the HUDQC Income Match Report*
16	Determine the error rate for the 20 Largest PHAs.	Exhibit 31a-31b

**The HUDQC FY 2014 Income Match Report will be delivered on September 25, 2015.*

IV. FINDINGS

A. Overview

Analyses were conducted using nationally weighted sample data for 2,400 households.[24] Data are presented by the three program types that were the basis for the sampling design: PHA-administered Public Housing; PHA-administered Section 8 Housing Choice Voucher and Moderate Rehabilitation programs (PHA-administered Section 8); and Office of Housing-administered Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC programs (Owner-administered). The major study findings, the reasons for the errors, and other background information concerning these errors are discussed as follows. In many of the exhibits in this report, the data collected during the current study (referred to as the FY 2014 data) are compared with the data collected in the previous study (referred to as the FY 2013 data). Data were collected and the analysis was completed for the FY 2014 study in calendar year 2015.

Our discussion is divided into eleven parts:

1. The errors in the rent amount based on the QC data (rent error)
2. The errors in sources of income and expenses (component errors)
3. The errors found using only project-file data (administrative error)
4. Occupancy standards
5. Findings related to rent reasonableness determinations
6. Utility allowance analysis
7. Payment standard analysis
8. Comparisons with PIH Information Center/Tenant Rental Assistance Certification System (PIC/TRACS) data
9. Analysis of the responses received from PHA/project staff regarding PHA/project practices (based on the Project Staff Questionnaire)
10. Multivariate analysis
11. Errors in the 20 largest PHAs

The first three parts present different types of error, described as follows.

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

Component errors are errors in the income and expense components used to calculate rent. The income components are employment income, Social Security and pensions, public assistance, other

[24] Appendix B presents the procedure used in weighting the data.

income, and asset income. The expense/allowance components are elderly/disabled allowance, dependent allowance, medical expenses, child care expenses, and disability expenses.

Administrative errors are errors that result from administrative mistakes. They consist of the following:

- Consistency errors, which are errors in logical conformity between elements within Form HUD-50058/50059
- Calculation errors, which are arithmetic errors within subsections of Form HUD-50058/50059
- Transcription errors, which are errors in transferring information from documentation in the tenant file to Form HUD-50058/50059
- 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 an error occurred, while component errors tell us which income or expense caused the error. Data supporting this discussion are presented in the source tables found in Appendix C.

B. Rent Error

Overview. Rent errors were identified by subtracting the QC Rent from the Actual Rent.[25] The QC Rent was calculated using data obtained from one of several sources, including the tenant file, the household interview, and third-party verification. If acceptable verification was present in the tenant file, that information was used. If acceptable verification was not present in the tenant file, other sources were used. The Actual Rent is the Tenant Rent from Form HUD-50058/50059. As noted previously, 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 Exhibit IV-1) and all tables in Appendix C (except the supplemental tables) define households in which AC Rents and QC Rents matched within $5, indicating a proper payment. As noted, this is not the case for the supplemental tables in Appendix C (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 with what it was paying or by identifying the percentage 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

[25] Rent error is determined on the basis of Tenant Rent, not TTP. Error based on TTP may differ from error based on Tenant Rent because of the program-specific rent formulas applied when calculating Tenant Rent. These rent formulas are listed in Section II-F and presented in detail in Appendix A.

an underpayment, meaning that 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 that the household paid more than it should have paid and that 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 underpayments and overpayments) of the Rent Error.
- *Error Rate* is calculated by dividing the sum of the Rent Error (gross or net) by the sum of the QC Rent for the entire sample or a specified group of households.

Financial Impact of Identifying Rent Error. Reduction in the rent error associated with the programs included in this study does not mean there will be an overall savings in the costs associated with administering these programs. Given that there are large numbers of eligible households on waiting lists, if a household leaves the program because it is no longer eligible for a subsidy, another household will take its place, and the replacement household may be entitled to a smaller or a larger subsidy than the household that left the program. Therefore, the most direct benefit of identifying households with rent error is ensuring that the households that are eligible for the program are receiving the correct subsidy, rather than reducing the funds needed to administer the programs. 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 may require greater rather than fewer resources to provide HUD, PHAs, and Owners with the written policy guidelines and training, standardized forms, and ongoing monitoring needed to ensure that the programs are administered correctly.

Proper Payments. Exhibit IV-1 shows the percentage of households with proper payments by program, for households where the Actual Rent and QC Rent matched within $5 and where the Actual Rent and QC Rent matched exactly.

Exhibit IV-1
Percentage of Households With Proper Payments

Administration Type	Percent of Households Within $5			Standard Error	Percent of Households That Matched Exactly			Standard Error
	FY 2012	FY 2013	FY 2014	FY 2014	FY 2012	FY 2013	FY 2014	FY 2014
Public Housing	75%	77%	73%	2.1%	60%	67%	64%	2.6%
PHA-administered Section 8	70%	77%	74%	1.7%	53%	62%	63%	1.8%
Total PHA-administered	*71%*	77%	74%	*1.6%*	*55%*	*64%*	63%	*1.8%*
Owner-administered	75%	80%	80%	1.8%	61%	68%	69%	2.0%
Total	**72%**	**78%**	**75%**	**79%**	**57%**	**65%**	**65%**	**1.5%**

Source: Tables 2 and 2S, Appendix C

- At certification/recertification, the rent was calculated correctly (within $5) in 75 percent of households, a slight drop from the 78 percent of households for which rent was calculated correctly in FY 2013.
- There was an exact match of rent payment in 65 percent of households in FY 2014, which was the same percentage found in FY 2013.

Households With QC Rent Error. Exhibit IV-2 shows the percentage of households in error, average dollar amount in error, and error rate by program.

- Twenty-five percent of households had a rent error greater than $5, higher than the 22 percent recorded in FY 2013.

The average gross dollars in error is calculated by dividing the sum of the dollar amount of gross error (i.e., the sum of the absolute values of underpayments and overpayments) by the total number of households.

- The average gross dollars in error was $14 in FY 2014, higher than the $11 average gross dollar error in FY 2013.

The total gross dollar error rate was calculated by dividing the sum of the dollar amount of Gross Rent Error by the sum of the dollar amount of the QC Rent.

- The total gross dollar error rate increased by 1 percent, from 5 percent in FY 2013 to 6 percent in FY 2014.

Exhibit IV-2
Percentage of Households With Error, Average Dollars in Error, and Dollar Error Rate for All Households With Error

Administration Type	Percent of Households With Error		Average Gross Dollars in Error		Gross Dollar Error Rate	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Public Housing	23%	27%	$13	$18	5%	7%
PHA-administered Section 8	23%	26%	$12	$15	5%	7%
Total PHA-administered	*23%*	26%	*$12*	$16	*5%*	7%
Owner-administered	20%	20%	$6	$8	3%	4%
Total	**22%**	**25%**	**$11**	**$14**	**5%**	**6%**

Source: Tables 2 and 5, Appendix C

Underpayment and Overpayment Households. Exhibits IV-3a and IV-3b show the percentage of households and average dollar amount of error for all households when errors of $5 or less are excluded from the calculations; these exhibits present the error for underpayment and overpayment households, respectively.

- Fourteen percent of all households paid in excess of $5 less than they should have in FY 2014, greater than the 12 percent in FY 2013.
- For FY 2014 households, the average monthly underpayment error was $59, which falls between the means of $52 in FY 2013 and $60 in FY 2012.

Exhibit IV-3a
Underpayment Households: Percentage 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		
	FY 2012	FY 2013	FY 2014	FY 2012	FY 2013	FY 2014	FY 2012	FY 2013	FY 2014
Public Housing	13%	11%	14%	$68	$70	$63	$9	$7	$9
PHA-administered Section 8	17%	13%	14%	$62	$53	$63	$10	$7	$9
Total PHA-administered	*15%*	*12%*	*14%*	*$64*	*$58*	*$63*	*$10*	*$7*	*$9*
Owner-administered	16%	10%	12%	$49	$36	$46	$8	$4	$6
Total	**16%**	**12%**	**14%**	**$60**	**$52**	**$59**	**$9**	**$6**	**$8**

Source: Tables 2 and 4, Appendix C

- Eleven percent of all households paid in excess of $5 more than they should have in FY 2014, which is greater than the 10 percent found in FY 2013 and lower than the FY 2012 percentage of 12 percent.
- The average monthly overpayment for households with overpayment error was $51 in FY 2014, continuing the upward trend of the last 2 years. This value was $44 in FY 2012 and $39 in FY 2013.

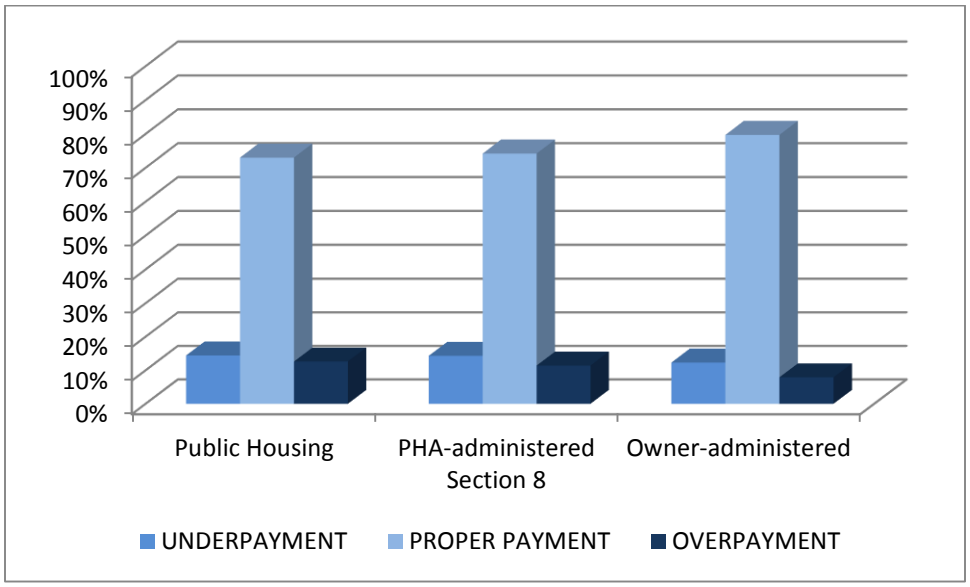
Exhibit IV-3b
Overpayment Households: Percentage of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households in Error			Average Dollar Amount of Error					
				For Overpayment Households (with errors >$5)			For All Households		
	FY 2012	FY 2013	FY 2014	FY 2012	FY 2013	FY 2014	FY 2012	FY 2013	FY 2014
Public Housing	13%	13%	13%	$41	$42	$70	$5	$5	$9
PHA-administered Section 8	14%	10%	11%	$43	$53	$51	$6	$5	$6
Total PHA-administered	*14%*	*11%*	*12%*	*$42*	*$49*	*$58*	*$6*	*$5*	*$7*
Owner-administered	9%	10%	8%	$30	$29	$27	$3	$3	$2
Total	**12%**	**10%**	**11%**	**$39**	**$44**	**$51**	**$5**	**$5**	**$5**

Source: Tables 2, 3, and 4, Appendix C

Figure IV-1 shows the percentage of underpayments, proper payments, and overpayments by program type. Programs were grouped into three categories: Public Housing, PHA-administered Section 8, and Owner-administered. For all program types, the majority of cases fall into the proper-payment category. 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-4 presents the gross and net average dollars in error and their associated standard error. To obtain the Gross Rent Error and the Net Rent Error, the dollar amount of overpayments was added to the dollar amount of underpayments, first using the absolute values for gross error and then the arithmetic values for the net error.

- Gross average dollar error increased slightly in FY 2014 for all program types.
- Gross average dollar error increased for Public Housing by $5, to $18, for FY 2014. PHA-administered Section 8 programs had a gross dollar error increased by $3, from $12 in FY 2013 to $15 in FY 2014. In Owner-administered programs, gross dollar error increased from $6 for FY 2013 to $8 for FY 2014. Total dollar error for all PHA-administered programs increased by $4, to $16, for FY 2014.
- In FY 2014, there were no statistically significant results between either Gross Rent Error or Net Rent Error for any program types across the current and previous year's results.
- The net error measures the dollar cost of the errors and was -$3 (indicating a tenant underpayment) for FY 2014; the average gross dollar error was $14 for FY 2014 and represents the dollars associated with the errors (the magnitude of the errors).

Exhibit IV-4
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	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Public Housing	$13	$18	$2.09	$2.09	-$2	-$0.33	$2.08	$2.44
PHA-administered Section 8	$12	$15	$2.37	$2.24	-$2	-$3	$1.57	$1.35
Total PHA-administered	*$12*	*$16*	*$1.39*	*$1.77*	*-$2*	*-$2*	*$1.14*	*$1.22*
Owner-administered	$6	$8	$0.84	$1.12	-$1	$4	$0.96	$1.26
Total	**$11**	**$14**	**$0.95**	**$1.42**	**-$2**	**-$3**	**$0.93**	**$0.97**

Source: Table 5, Appendix C

Error Rates by Program. Differences in error rates by program type were investigated, and the results are summarized in Exhibit IV-5.

Differences include the Gross Error Rate (i.e., the sum dollar amount of gross error divided by the sum dollar amount of QC Rent) and the Net Error Rate (i.e., the sum dollar amount of net error divided again by the sum dollar amount of QC Rent).

- The Gross Error Rate of 6.6 percent for PHA-administered Section 8 programs remained higher than the rate for either Public Housing or Owner-administered programs. PHA-administered Section 8 programs showed a slight increase in their Gross Error Rate in FY 2014 compared to FY 2013, increasing 1.4 percent.
- The Net Error Rates for all programs increased slightly from -0.7 percent to -1.1 percent from FY 2013 to FY 2014.

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

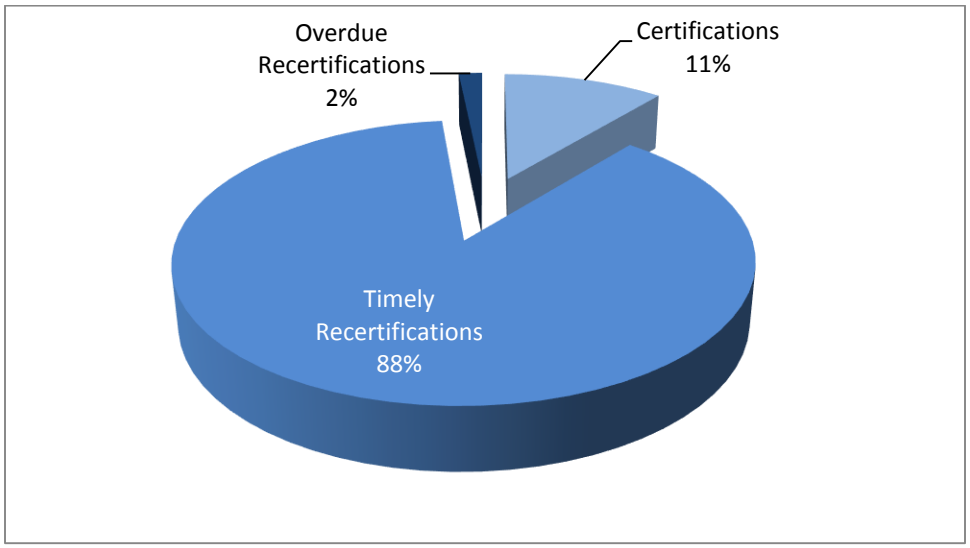
Administration Type	Error Rates			
	Gross Error Rate		Net Error Rate	
	FY 2013	FY 2014	FY 2013	FY 2014
Public Housing	4.7%	6.6%	-0.8%	-0.1%
PHA-administered Section 8	5.2%	6.6%	-0.7%	-1.4%
Total PHA-administered	*5.0%*	*6.6%*	*-0.7%*	*-0.9%*
Owner-administered	3.1%	3.6%	-0.4%	-1.7%
Total	**4.5%**	**5.8%**	**-0.7%**	**-1.1%**

Source: Table 5, Appendix C

Certifications/Recertifications. The sampled households included both certifications (i.e., newly admitted households) and recertifications. Certifications were analyzed to determine whether the households were eligible for HUD housing assistance, and recertifications were analyzed to determine whether they were overdue.

Figure IV-2 presents the breakdown of cases by case type: timely certifications, recertifications, and overdue recertifications.

Figure IV-2
Percentage of Cases by Case Type



Source: Table 6, Appendix C

Exhibit IV-6 shows the percentage of timely certifications, timely recertifications, and overdue recertifications, by program type.

- Eight-eight percent of households had timely recertifications, down from 90 percent in FY 2013.
- Two percent of households had overdue recertifications, which was slightly higher than the 1 percent found in FY 2013.
- There was a slight increase in the total percentage of certifications, from 9 percent in FY 2013 to 11 percent in FY 2014.

Exhibit IV-6
Certifications and Recertifications by Administration Type

Administration Type	Certifications		Timely Recertifications		Overdue Recertifications	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Public Housing	9%	11%	89%	87%	2%	2%
PHA-administered Section 8	7%	9%	91%	89%	2%	2%
Total PHA-administered	*8%*	*10%*	*91%*	*88%*	*2%*	*2%*
Owner-administered	13%	14%	87%	85%	<1%	<1%
Total	**9%**	**11%**	**90%**	**88%**	**1%**	**2%**

Source: Table 6, Appendix C

Certifications. Exhibit IV-7a presents a summary of the findings related to eligibility criteria, and Exhibit IV-7b shows the percentage of newly certified households meeting the certification criteria by program type.

The reviewed criteria included qualifying as low-income or very-low-income households, citizenship, Social Security number, and signing the appropriate consent form.

- However, only those households that do not meet the appropriate low- or very-low-income limit are ineligible for assistance. All but one household (according to the QC Rent calculation) fell within the low-income limit for total gross income.

A household met the citizenship criteria if there was evidence in the tenant file that citizenship had been verified.

- A citizenship code (indicating whether each household member was a citizen, eligible noncitizen, or ineligible noncitizen) was available from either the tenant file or the household interview for each household member.
- According to the citizenship codes, no households in FY 2014 had a household member for whom there was no verification of citizenship. This is unchanged since FY 2010.

To meet the citizenship verification requirement, the file must have contained one of the following for each household member: a signed declaration of U.S. citizenship or eligible immigration status, proof of age documentation, a U.S. Citizenship and Immigration Services (USCIS) card or USCIS system verification of citizenship status, or documentation that the household member was undergoing verification or an Immigration and Naturalization Service hearing.

To meet the Social Security number verification requirement, the file must have contained for each household member a copy of the Social Security card or statement from the SSA verifying the Social Security number.

- A Social Security number was available for 99 percent of all Public Housing households, while it was available for 100 percent of PHA-administered Section 8 households, and 98 percent of Owner-administered households.
- One percent of households had at least one member for whom there was no verification of their Social Security number.
- In 97 percent of households, there was a signed consent form dated within 15 months of the QCM (the date for which data were collected) for all members age 18 or older.

Note: Not meeting the citizenship, Social Security number, or consent form criteria may not mean that the household was not eligible for assistance; rather, it may mean that project staff did not follow HUD requirements in documenting the information.

Exhibit IV-7a
Percentage of Newly Certified Households Meeting Certification Criteria

Certification Criteria	Met Criterion	
	FY 2013	FY 2014
Citizenship	100%	100%
Social Security Number	95%	99%
Consent Form	94%	97%
Low and Very Low Income	100%	100%
Meets All Eligibility Criteria	90%	96%

Source: Table 7, Appendix C

Exhibit IV-7b
Percentage 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
Citizenship	100%	100%	100%
Social Security Number	99%	100%	98%
Consent Form	95%	97%	97%
Low and Very Low Income	99%	100%	100%
Meets All Eligibility Criteria	93%	97%	96%

Source: Table 7b, Appendix C

Underpayments and Overpayments for Certifications, Timely Recertifications, and Overdue Recertifications. Exhibit IV-8 presents a summary of the households with overpayments and underpayments by the type of case: certification, timely recertification, and overdue recertification.

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 (i.e., certification, timely recertification, or overdue recertification) divided by the number of households with that payment type.

- For example, the sum of monthly underpayment dollar amounts for new certifications ($3.3 million) was divided by the total number of certifications (0.52 million). The result is an underpayment average dollar amount of $6.
- The amount of underpayment and overpayment average dollar error in new certifications and timely recertifications in FY 2014 ranged from $3 to $8 each month.
- As might be expected, there is a large difference in the underpayment dollar error for overdue recertifications ($29) as well as the overpayment dollar error for overdue recertifications ($21).

It is important to note that the estimates for overdue recertifications can vary widely from year to year because of the small number of cases.

Exhibit IV-8
Average Monthly Underpayment and Overpayment:
Dollar Amounts Averaged Across All Households

Household Type	Underpayment Average Dollar Amount		Overpayment Average Dollar Amount	
	FY 2013	FY 2014	FY 2013	FY 2014
Certifications	$10	$6	$6	$3
Timely Recertifications	$5	$8	$4	$5
Overdue Recertifications	$28	$29	$48	$21
Total	**$6**	**$8**	**$5**	**$5**

Source: Table 8, Appendix C

Subsidies. The actual cost of errors to HUD is expressed in terms of subsidy payments. For the purpose of this study, HUD subsidies for the PHA-administered Section 8 Voucher program equal the lesser of the gross rent or the applicable payment standard minus the tenant share. For Public Housing, the subsidy is the applicable payment standard minus the TTP. For Owner-administered programs, the subsidy equals the gross rent minus the TTP. The subsidy is correct if the Actual Rent equals the QC Rent (within $5). A negative subsidy error occurs when the tenant paid too much rent (QC Rent < Actual Rent). A positive subsidy error occurs when the tenant paid too little rent (QC Rent > Actual Rent).

These subsidy errors by program type are summarized in Exhibits IV-9a and IV-9b. The subsidy errors by certification status are summarized in Exhibit IV-10.

- As shown in Exhibit IV-9a, the percentage of households with a positive subsidy error decreased for all program types between FY 2013 and FY 2014, from 12 percent to 11 percent.
- The average dollar amount of error also increased for all households between FY 2013 and FY 2014, from $6 to $8.

Exhibit IV-9a
Positive Subsidy Households (Tenant Underpayment)
Percentage 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	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Public Housing	11%	14%	$70	$63	$7	$9
PHA-administered Section 8	13%	14%	$53	$63	$7	$9
Total PHA-administered	*12%*	14%	*$58*	*$63*	*$7*	*$9*
Owner-administered	10%	12%	$36	$46	$4	$6
Total	**12%**	**14%**	**$52**	**$59**	**$6**	**$8**

Source: Tables 2 and 4, Appendix C
Note: Table results replicate Exhibit IV-3a for the convenience of the reader.

- As seen in Exhibit IV-9b, the percentage of households in error due to a negative subsidy remained stable for Public Housing households. The percentage of PHA-administered Section 8 households in error increased by 1 percent, and decreased for Owner-administered households.

Exhibit IV-9b
Negative Subsidy Households (Tenant Overpayment)
Percentage 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	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Public Housing	13%	13%	$42	$70	$5	$9
PHA-administered Section 8	10%	11%	$53	$51	$5	$6
Total PHA-administered	*11%*	*12%*	*$49*	*$58*	*$5*	*$7*
Owner-administered	10%	8%	$29	$27	$3	$2
Total	**11%**	**11%**	**$44**	**$51**	**$5**	**$5**

Source: Tables 2 and 4. Appendix C
Note: Table results replicate Exhibit IV-3b for the convenience of the reader.

- As seen in Exhibit IV-10, the average dollar amount of error for overpayment across program types was stable from FY 2013 to FY 2014. That amount increased for underpayment errors, from $6 in FY 2013 to $8 in FY 2014.
- Overdue recertifications remained the source of the highest average dollar amount for both underpayment and overpayment.

Exhibit IV-10
Average Monthly Underpayment and Overpayment:
Dollar Amount Averaged Across All Households

Household Type	Underpayment Average Dollar Amount		Overpayment Average Dollar Amount	
	FY 2013	FY 2014	FY 2013	FY 2014
Certifications	$10	$6	$6	$3
Timely Recertifications	$5	$8	$4	$5
Overdue Recertifications	$28	$29	$48	$21
Total	**$6**	**$8**	**$5**	**$5**

Source: Table 8, Appendix C
Note: Table results replicate Exhibit IV-8 for the convenience of the reader.

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, and that rents are generally computed at 30 percent of adjusted income. Therefore, every $100 of annual income or expense error generally translates into $2.50 of rent error.

In addition, the sum of the component errors is greater than Net Rent Errors because of offsetting errors. For example, the household presented in Figure IV-3 has earned income and child care costs with errors in both components. The total component error is $1,000 ($800 + $200); however, the adjusted net income error (the amount used to determine the household's rent) is only $600.

Figure IV-3
Example of the Impact of Component Errors

Component	File Data	QC Data	Dollar Error
Earned Income	$2,200	$3,000	$800
Child Care Expense	$400	$600	$200
Adjusted Income	$1,800	$2,400	$600

Exhibit IV-11 presents each income and expense component included in the rent calculation and the percentage of households in error[26] when each specific component contributed the most to the gross error.

- The exhibit indicates that the largest average dollar error continues to be in earned income, with an average error of $4,528. Thirty-three percent of households were in error when earned income was the largest component error.
- Other income was the next largest component error, with an average dollar error of $3,122 found in 13 percent of households in error.
- Pension income was a component of error in 15 percent of households, with an average associated dollar error of $1,945.
- The rent component with the greatest average dollar error increase was medical allowance, which experienced an increase of $863 from FY 2013 to $1,813 in FY 2014.

[26] The denominator in the percentage is the number of households with any component error, which was the percentage of total households in FY 2014.

Exhibit IV-11
Rent Components Responsible for the Largest Dollar Error for Households With Rent Error

Rent Component	Percent of Households in Error		Average Dollar Amount	
	FY 2013	FY 2014	FY 2013	FY 2014
Earned Income	27%	33%	$4,410	$4,528
Pensions, Etc.	17%	15%	$1,594	$1,945
Public Assistance	5%	3%	$3,289	$1,519
Other Income	15%	13%	$2,905	$3,122
Asset Income	4%	3%	$733	$808
Dependent Allowance	4%	4%	$512	$566
Elderly Household Allowance	4%	4%	$400	$422
Child Care Allowance	2%	2%	$1,879	$1,256
Medical Allowance	17%	17%	$863	$1,813
No Rent Component Error	6%	7%	$0	$0
Total*	**100%***	**100%**	**$2,280**	**$2,625**

Source: Table 9, Appendix C
*Totals may not add up 100% to due to rounding.

- For most rent components, the percentage of households in error remained relatively stable between years, with the exception of earned income as the source of rent error.
- Households in error because of earned income increased to 33 percent in FY 2014, from 27 percent in FY 2013.

Note: For some households, the rent error was not caused by any 1 of the 10 components listed. Rather, it was caused by other arithmetic errors or by the use of the wrong rent calculation formula.

Total and Largest Component Dollar Error by Program Type. Exhibit IV-12 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 increases in the Average Total Dollars in Error for Public Housing and Owner-administered households in FY 2014, with the largest increase evident in Owner-administered programs. PHA-administered Section 8 households had a small decrease in FY 2014, with a reduction of $393.
- This trend continued in Average Largest Dollars in Error, with Public Housing and Owner-administered households increasing and PHA-administered Section 8 reducing by $118.

Exhibit IV-12
Total and Largest Component Dollars in Error for Households With Rent Error

Administration Type	Average Total Dollars in Error		Average Largest Dollars in Error	
	FY 2013	FY 2014	FY 2013	FY 2014
Public Housing	$3,319	$4,222	$2,827	$3,523
PHA-administered Section 8	$2,865	$2,472	$2,426	$2,308
Total PHA-administered	*$3,023*	*$3,093*	*$2,565*	*$2,739*
Owner-administered	$1,704	$2,665	$1,461	$2,266
Total	**$2,682**	**$2,989**	**$2,280**	**$2,625**

Source: Table 10, Appendix C

QC Rent Components by Payment Type and Administration Type. Exhibit IV-13 shows the percentage of the total number of households with and without component error by component type and payment type. Exhibit IV-13 also provides these data by PHA- and Owner-administered households.

- For example, 4 percent of total households with underpayment rent error had errors in pensions, 9 percent of households with proper payment had errors in pensions, and 2 percent of households with overpayment rent error had errors in pensions.
- The exhibit indicates that when considering both underpayment and overpayment, pension income and earned income are the rent components with the highest percentage of error leading to improper payment, followed by medical allowance.

Exhibit IV-13 also reflects component errors in proper payment households when the component dollar error resulted in a tenant payment error of $5 or less.

- Considering all component errors, not just errors that resulted in tenant payment error, the pensions (15%), earned income (16%), and medical allowance (12%) components had the highest rates of error.

Exhibit IV-13
Percentage of Households With Rent Component Error by Payment Type

Rent Component	Underpayment			Proper Payment			Overpayment		
	PHA	Owner	Total	PHA	Owner	Total	PHA	Owner	Total
Earned Income	7%	4%	6%	7%	3%	6%	4%	2%	4%
Pensions	4%	3%	4%	8%	11%	9%	2%	2%	2%
Public Assistance	1%	1%	1%	2%	2%	2%	1%	<1%	1%
Other Income	3%	2%	2%	5%	4%	5%	2%	2%	2%
Asset Income	1%	2%	2%	3%	4%	3%	1%	1%	1%
Dependent Allowance	1%	<1%	1%	1%	<1%	1%	1%	<1%	1%
Elderly Household Allowance	1%	1%	1%	1%	<1%	1%	1%	2%	1%
Child Care Allowance	1%	1%	1%	<1%	<1%	<1%	<1%	<1%	<1%
Disability Allowance	—	—	—	—	—	—	—	—	—
Medical Allowance	3%	5%	3%	4%	10%	6%	2%	4%	3%
No Rent Component Error	1%	<1%	1%	52%	56%	53%	1%	0%	1%

Source: Table 11, Appendix C

Allowances. Elderly/disabled and dependent allowances were examined to determine whether these allowances were applied correctly.[27] The findings are summarized in Exhibit IV-14. The exhibit shows the percentage of elderly/disabled and non-elderly/disabled households for which allowances were correctly or incorrectly applied.

- Elderly/disabled allowances were incorrectly used in 2 percent of all households in FY 2014.
- Three percent of elderly/disabled households received an incorrect allowance.
- One percent of non-elderly/disabled households received an allowance erroneously.

The exhibit also shows the percentage of households with and without dependents for which a dependent allowance was correctly or incorrectly applied.

- The dependent allowances were incorrectly applied in 5 percent of all households with dependents. These households were given the wrong amount.
- In less than 1 percent of households, a dependent allowance was given to a household that did not have dependents.
- A total of 2 percent of all households had an incorrect dependent allowance in FY 2014.

[27] 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 household members other than the head of household or spouse).

Exhibit IV-14
Percentage of Households With Elderly/Disabled Allowances and Dependent Allowances

Allowance	Elderly/Disabled Allowance			Dependent Allowance		
	Non-Elderly/ Disabled Households	Elderly/ Disabled Households	All Households	Households Without Dependents	Households with Dependents	All Households
No Allowance	99%	—	44%	100%	—	57%
Incorrect Allowance	1%	3%	2%	<1%	5%	2%
Correct Allowance	—	97%	54%	—	96%	41%
Total	**100%**	**100%**	**100%**	**100%***	**100%***	**100%**

Source: Tables 12a and 12b, Appendix C
*Totals may not add up 100% to due to rounding.

D. Errors Detected Using Information Obtained From Project Files

To respond to HUD's interest in understanding the cause of errors, tenant rent was recalculated using only income and expense items documented in the tenant file. The source of information used for this analysis included only items that were documented clearly in the tenant file in a location other than Form HUD-50058/50059. If an item was recorded on Form HUD-50058/50059 but not documented elsewhere in the tenant file, it was not included when the tenant rent was calculated for this analysis. Therefore, it is possible that some of the discrepancies identified between Form HUD-50058/50059 tenant rents and tenant rents calculated solely on the basis of file data were not, in fact, due to incorrect determinations, but rather to program sponsor failure to maintain information supporting income or expense items.

Therefore, relying solely on information in tenant files may result in misstating the basis for the program sponsor income and rent determination and could lead to a determination that an error existed when the determination was actually correct. The fact remains that, even if a program sponsor made the correct income determination, failure to document the determination is a serious administrative problem. Also, in practice it appears that these types of discrepancies are often suggestive of subsidy determination errors, even if they cannot be assumed to prove the existence of such errors.

The findings from this analysis were compared with the QC findings where tenant rent was calculated based on all the information collected during the study (including household interview data and verification obtained by ICF through third-party sources).

Exhibit IV-15 shows the percentage of households in error and the average dollar error based on the tenant file, but without income and expense items identified during the household interview and verified by ICF through third-party sources.

The percentage of households with overpayment and underpayment errors are nearly identical if only the tenant file information or all sources of QC data were used. Findings varied considerably, however, for the average annual dollar error.

- There was a difference of $6 in subsidy overpayment average dollar error between what was discovered in the tenant file and what the QC review determined.
- For subsidy underpayment, the difference in error between the QC determination and what was found in the file was $2 in FY 2014.

The difference found in average dollar error using information other than the tenant file implies that there were income and expense items not listed in the file at the PHA/project.

Exhibit IV-15
Findings With and Without Information Obtained From Sources Other Than the Tenant File

Error Source	Percentage of Households in Error		Average Annual Dollar Error	
	Subsidy Overpayment	Subsidy Underpayment	Subsidy Overpayment	Subsidy Underpayment
Error Based on All Income and Expense Items Identified During the Study	14%	11%	$704	$615
Error Based on Tenant File Without Income and Expense Items Identified During the Household Interview and Verification Obtained by ICF Through Third-Party Sources	13%	12%	$630	$639

Source: QC Tables 2 and 4 and Tenant File Tables 2 and 4, Appendix C

Analysis of the errors on Form HUD-50058/50059 examined whether the errors identified using Form HUD-50058/50059 as the sole source of information are representative of the total errors in the program. These 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 Form HUD-50058/50059. This calculation did not take into account whether dollar amounts were verified or whether the recertification was conducted on time. This analysis identified errors resulting from arithmetic mistakes, the incorrect use of a formula, and items that were not completed but should have been. This analysis did not identify households in which items were recorded in the wrong place on Form HUD-50058/50059, although improper use of a field on Form HUD-50058/50059 can result in a calculation error. Table 13 in Appendix C presents the number of households with a Form HUD-50058/50059 that contained calculation errors by the rent component contributing to the error. The items considered when determining calculation error are listed in Appendix D.

Consistency errors were based on the logical conformity of elements in Form HUD-50058/50059. For example, the effective date of action must be on or after the date of admission, 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 14 in Appendix C shows the number of households with consistency errors on Form HUD-50058/50059, summarized by form subsections. Appendix D lists the data items by subsection that were included in this analysis.

Exhibit IV-16 shows the percentage of households with calculation and consistency errors by Form HUD-50058/50059 subsections. It is important to emphasize that Form HUD-50058 is formatted

differently from and contains more line items of information than Form HUD-50059. Consequently, the number and types of calculation and consistency errors on the forms differ, and findings from the two forms are not directly comparable. The Office of Housing has periodically implemented a new version of Form HUD-50059 (most recently in FY 2006 and FY 2009). A minor revision was made in FY 2011, and another new version was released in FY 2014. This further complicates the comparison between the Form HUD-50058/50059 elements.

- The large number of calculation errors (particularly in the allowances and adjusted income from Form HUD-50058) may be a contributing factor to QC errors.

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 yet still calculate the rent correctly.

Exhibit IV-16
Percentage of Households With Calculation and Consistency Errors

Form HUD-50058/50059 Item	Percentage of Households					
	Calculation Errors			Consistency Errors		
	Form HUD-50058	Form HUD-50059	Total	Form HUD-50058	Form HUD-50059	Total
General Information	n/a	n/a	n/a	1%	13%	4%
Household Composition	5%	—	3%	2%	21%	7%
Net Family Assets and Income	9%	4%	7%	4%	—	3%
Allowances and Adjusted Income	39%	—	28%	9%	<1%	6%
Family Rent and Subsidy Information	9%	—	7%	1%	0%	1%

Source: Tables 13 and 14, Appendix C

Comparison of Form HUD-50058/50059 Errors to QC Error. A comparison was made between the rent calculation errors on Form HUD-50058/50059 and errors identified through the QC Rent calculation process. The purpose of this comparison was to determine whether errors identified using only Form HUD-50058/50059 data could predict the rent errors found in a QC review.

- When using only Form HUD-50058/50059 data to calculate the Actual Rent, errors were found in 8 percent of the households in FY 2014. This was a slight decrease when compared with the findings in FY 2013, where this rate was 9 percent.
- The QC error calculation found errors in 25 percent of households in FY 2014, up from 23 percent in FY 2013. The results are quite different from the individual and joint comparison methods (which was 3% in both FY 2013 and FY 2014).

This comparison emphasizes that data from Form HUD-50058/50059 alone cannot accurately identify rent error. Exhibit IV-17 summarizes these results for FY 2013 and FY 2014.

Exhibit IV-17
Form HUD-50058/50059 Form Rent Calculation Error Compared With QC Rent Error

Rent Calculation	Percent of Households With Correctly Calculated Rent		Percent of Households With Incorrectly Calculated Rent	
	FY 2013	FY 2014	FY 2013	FY 2014
Using Information on Form HUD-50058/50059	92%	92%	9%	8%
According to the QC Rent Calculation	77%	75%	23%	25%
Both Form HUD-50058/50059 Calculation and QC Rent Calculation	71%	70%	3%	3%

Source: QC Table 2 and Tenant File Table 2, Appendix C

Verification errors were identified by whether an item was verified by the project and, if it was, whether the correct information was transferred to Form HUD-50058/50059. An error occurs when the verified amount obtained by the project was not recorded properly on Form HUD-50058/50059 (and, presumably, not used correctly in the rent calculation). When determining whether a verified income or expense item matched the amount used on Form HUD-50058/50059, we assumed a variance of $100 to accommodate potential rounding errors when annualizing data. In 2010, HUD issued the *Implementation of Refinement of Income and Rent Rule*, which mandated the use of EIV as a third-party source to verify tenant employment and income information during mandatory recertification of family composition and income. The use of EIV minimizes the need for traditional third-party verification forms. FY 2011, the first fiscal year affected by this rule, displayed significant verification rate decreases across the board when compared to FY 2010, as verification was required in fewer instances. In FY 2014, this trend was repeated, with modest decreases in items verified for the seven rent components.

The table series 15a through 15n in Appendix C shows the number of households with and without verification by type of verification (i.e., third-party in writing, third-party verbal, EIV, Upfront Income Verification (UIV), and documentation). These tables provide this information for each of the rent components and also by program type.

Verification Used in Determining the QC Rent. As indicated above, a set of rules was established for the use of third-party verification (see Section II-C). If an income or expense component was used for a rent calculation and was not verified by the PHA/Owner, ICF staff sought third-party verification. However, ICF verification could not be obtained for all PHA/Owner unverified items despite considerable effort.[28] In FY 2011, HUD issued new guidelines regarding verification. As a result, ICF modified its standards to accept third-party documentation submitted by the tenant if the documents met specific date criteria.[29]

[28] If third-party verification was not available, documentation from the tenant file was used to calculate the QC Rent. If neither third-party verification nor file documentation was available, documentation collected during the household interview that met study-specific date requirements was used to calculate the QC Rent. Information collected during the household interview that did not meet study-specific date requirements was not used.

[29] For more information, please refer to the *Data Collection Standards for the FY 2011 HUDQC Study*, an ICF unpublished report to HUD dated December 9, 2011.

Exhibit IV-18 shows the percentage of each rent component that was verified by either the PHA/Owner or ICF. Findings from FY 2014 are compared to findings from FY 2013.

The first two columns present the percentage of rent components that were verified using third-party in writing, third-party verbal, documentation, EIV, or UIV, which was counted as part of third-party in writing in studies prior to FY 2012.

- Verification of most rent component categories decreased slightly in FY 2014 compared to the previous year, which continues the downward trend from FY 2011. Asset income and public assistance components were an exception to this trend, both of which increased slightly from FY 2013 to FY 2014.
- Verification of child care expenses experienced the most marked decrease, from 91 percent in FY 2013 to 79 percent in FY 2014.

As of FY 2011, the category of third-party in writing only included written third-party verification forms, which are sent directly to the third-party and completed by the third-party.

- Verification using third-party in writing increased slightly in FY 2014 compared to FY 2013 for three of seven rent components. As the exhibit indicates, when compared to the previous study period, the use of third-party in-writing verification increased for earned income, other income, and child care expenses.

Exhibit IV-18
Percentage of Households Fully Verified by Either the PHA/Owner or ICF

Rent Component	Third-Party Verbal or in Writing, Documentation, EIV, or UIV		Third Party in Writing		Documentation	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Earned Income	91%	88%	30%	34%	48%	41%
Pensions	98%	97%	10%	9%	21%	24%
Public Assistance	96%	97%	21%	21%	48%	49%
Other Income	88%	80%	20%	25%	43%	37%
Asset Income	89%	93%	43%	41%	24%	24%
Child Care Expense	91%	79%	38%	42%	50%	34%
Medical Expense	94%	89%	45%	31%	22%	22%

Source: Tables 1a, 1b, and 1e, Appendix C

In FY 2011, HUD issued new guidelines regarding verification. This revised guideline indicated that documentation from a third party submitted by the tenant is acceptable, requiring fewer instances of direct third-party requests. Such documentation would, for example, include paystubs or letters from benefits agencies. Since FY 2011, there was a general trend showing increased use of documentation for verification. Between FY 2013 and FY 2014, this trend has stabilized, as shown in the exhibit.

- The use of documentation increased for two rent components, with a 3 percent increase in documentation for pensions and a 1 percent increase in public assistance documentation.

Tables 1c, 1d, 1e, 1f, and 1g in Appendix C provide additional verification information by rent component, including the number of households for which the income or expense component was not verified (i.e., no component items verified), partially verified (i.e., some component items verified), or fully verified (i.e., all component items verified) by different types of verification.

- Table 1c includes items verified by a third party in writing or by EIV/UIV.
- Table 1d provides data for items verified by verbal third-party information.
- Table 1e provides data for items verified via tenant file documentation.
- Table 1f includes items verified by EIV.
- Table 1g includes items verified by UIV.

Exhibit IV-19 summarizes the findings in Table 15a in Appendix C.

- In FY 2014, the number of households where verification was not obtained by the PHA/Owner increased for four of the seven rent components.
- Other income and child care expense both showed an increase in lack of verification, at 6 percent and 16 percent, respectively.
- There was modest improvement in project verification of asset income and public assistance, which increased by 1 percent and 3percent, respectively, over FY 2013, although the rest of the rent components either stayed the same or had a decreased percentage of project verification.
- Pension income continued to be the most commonly verified rent component item; it was verified in 96 percent of cases in FY 2014, which was the same percentage seen in FY 2013.
- Percentage of verifications found to match Form HUD-50058/50059 entries within $100 decreased for five of the seven rent components in FY 2014, with the exception of pensions and asset income.

Exhibit IV-19
Verification of Form HUD-50058/50059 Rent Components by PHA/Owners

Rent Component	Percent of Households With No Project Verification		Percent of Households With Item Verified by Project		Percent of Households Where Verification Matched Form HUD-50058/50059*	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Earned Income	15%	16%	86%	84%	64%	58%
Pensions	4%	4%	96%	96%	84%	86%
Public Assistance	17%	15%	83%	86%	74%	69%
Other Income	24%	30%	76%	71%	58%	56%
Asset Income	13%	12%	87%	88%	74%	76%
Child Care Expense	12%	28%	88%	73%	82%	60%
Medical Expense	11%	19%	89%	81%	68%	60%

Source: Table 15a, Appendix C
* Within $100

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

Exhibit IV-20
Verification of Form HUD-50058/50059 Rent Components by PHA/Owner Staff, by Form Type

Rent Component	Form HUD-50058				Form HUD-50059			
	Verified		Matched Within $100		Verified		Matched within $100	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Earned Income	85%	83%	62%	58%	86%	88%	70%	60%
Pensions	96%	96%	83%	85%	98%	97%	87%	89%
Public Assistance	84%	88%	73%	69%	78%	78%	77%	72%
Other Income	75%	71%	56%	56%	80%	68%	67%	58%
Asset Income	83%	79%	68%	64%	89%	97%	78%	86%
Child Care Expense	88%	66%	82%	55%	89%	93%	84%	75%
Medical Expense	84%	77%	56%	51%	94%	87%	79%	69%

Source: Table 15h, Appendix C

Rates of verification found in the file for Form HUD-50058 remained relatively stable for six out of the seven rent components between FY 2013 and FY 2014. For the Form HUD-50059 rent components, all rent component verification rates had minimal changes between years. The following changes are notable:

- For cases using the Form HUD-50058, the rent component of child care expense showed the largest decrease in households in error with missing verifications between FY 2013 and FY 2014, with a drop of 22 percent.

- Within Owner-administered programs using the Form HUD-50059, rates of verification stayed relatively stable from FY 2013 to FY 2014. Asset income had the largest increase verification, increasing by 8 percent.
- For all PHA-administered programs, the most commonly verified rent components were pension income, public assistance income, and earned income. The least verified rent components were other income items and child care expenses.
- On the Form HUD-50059, pension income and asset income were most commonly verified, while other income items were the least verified rent components.
- Across program types, other income showed the lowest percentage verified between Form HUD-50058/50059 and file documents.
- Medical expenses, earned income, and other income had the lowest percentage of items that were matched within $100 based on file documents across all program types.

Tenant File Verification Compared With QC Error. Errors identified through the QC process were investigated to determine 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 indicate that missing verification in both PHA- and Owner-administered programs continues to be strongly associated with households that have QC error. This was observed for every rent component for both the PHA- and Owner-administered programs.

- Within PHA-administered programs, the percentage of households in error with missing verification increased the most for those with child care expense rent components, with an increase of 31 percent. Rates across years stayed relatively stable for the remaining six of seven rent components.
- Owner-administered households in error with missing verification were most common within those with public assistance income rent components, closely followed by other income rent components. Households with asset income and child care expense rent components showed the largest decrease in households in error with missing verification between FY 2013 and FY 2014.

Across all program types, the percentage of households in error with missing verification was lowest among households with pension income rent components, which was also the lowest percentage in FY 2013. However, for some of these components, the number of households in error was relatively small; therefore, the estimates may vary substantially from year to year and may not be reliable.

Exhibit IV-21
QC Error Households With Missing Verification in the Tenant File

Rent Component	Form HUD-50058				Form HUD-50059			
	Percent of Households With QC Error		Percent of Households With QC Errors and Missing Verification		Percent of Households With QC Error		Percent of Households With QC Errors and Missing Verification	
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
Earned Income	8%	11%	56%	52%	4%	6%	45%	54%
Pensions	7%	6%	32%	33%	8%	5%	18%	36%
Public Assistance	2%	2%	59%	47%	1%	1%	71%	76%
Other Income	5%	5%	43%	52%	3%	3%	58%	73%
Asset Income	1%	2%	50%	62%	3%	3%	55%	39%
Child Care Expense	1%	1%	54%	85%	1%	1%	73%	53%
Disability Expense	<1%*	—	100%	—	<1%*	—	100%	—
Medical Expense	4%	6%	66%	69%	9%	8%	68%	62%
No Component Error	80%	77%			81%	82%		

Source: Tables 16a and 16b, Appendix C
* Cell sizes for these estimates are small; therefore, these estimates may not be reliable.

Summary of Form HUD-50058/50059 Errors. Exhibits IV-22a and IV-22b provide a summary of the errors identified from Form HUD-50058/50059. These included consistency errors, calculation errors, and overdue recertifications.

Note: Exhibit IV-22a excludes MTW cases, as these cases do not have Form HUD-50058/50059 recalculated rent error, and Exhibit IV-22b shows all cases with QC Rent error. Both exhibits show the percentage of households in error; the average dollar error; and the standard errors for both households with recalculated Form HUD-50058/50059 error (i.e., error determined using only Form HUD-50058/50059) and households with QC Rent error. This information is provided for households with error by each error type.

Beginning with the FY 2005 study, transcription error for any household was added to the source table, and the data that were described as an unduplicated count of Form HUD-50058/50059 error have been revised to an unduplicated count of any type of administrative error.

- Exhibit IV-22b shows that several individual types of Form HUD-50058/50059 errors were not closely associated with QC Rent error, such as allowance calculation, income calculation, and other calculation errors.
- Forms HUD-50058/50059 with only transcription errors were associated with QC Rent error in 81 percent of households.
- Any type of administrative error, which includes transcription, consistency, calculation, or overdue recertifications, was associated with QC Rent error in 85 percent of the households. This increase over those households in error with only transcription errors is primarily due to the small number of households with income calculation error, resulting in estimates with variances that are rather large from year to year.

- When compared to FY 2013, there is a small decrease in the percentage of households in error for both recalculated Form HUD-50058/50059 and for households with QC Rent error while the average dollars in error have slightly increased.
- The highest average dollar error increase for recalculated Form HUD-50058/50059 pertains to allowance calculations. This was $57 in FY 2013, and has increased to $106 in FY 2014.

This increase, however, is primarily due to a relatively small number of households in error in the previous year, which can result in extremely variable and potentially unreliable estimates from year to year.

- In addition, the average dollar error for households with any recalculated Form HUD 50058/50059 error was $22.
- In contrast, the average dollar error for households with QC Rent error was $55.

These values support the assertion that an administrative error on Form HUD-50058/50059 is not necessarily associated with a QC Rent error.

To understand the reason for the change in the average dollar error for households with recalculated Form HUD-50058/50059 error, it is important to review how this number is calculated. The number is the average dollar rent error for all cases with error in the category identified in the row header (based on recalculated Form HUD-50058/50059 rent error, not QC Rent error). So, for example, although the average rent error dollars for households with income calculation error is $106, because many of these cases have a large rent error (which may have nothing to do with the allowances) and the number of cases with income calculation error is small (3% of households in error), the average dollar error is large.

Exhibit IV-22a
Form HUD-50058/50059 Administrative Error: Percentage of Households, Average Dollars in Error (Non-MTW Households)

Error Type Based on Form HUD-50058/50059 Recalculation	Non-MTW Households With Recalculated Form HUD-50058/50059 Error			
	Percent of Households in Error	Standard Error of Percent	Average Dollar Error	Standard Error of Mean
Households With Transcription Error	38%	4.3%	$36	$15.04
Households With Consistency Error	20%	3.1%	$32	$16.11
Households With Allowance Calculation Error	3%	1.0%	$106	$47.47
Households With Income Calculation Error	3%	1.2%	$106	$43.92
Households With Other Calculation Error	5%	1.8%	$39	$27.02
Overdue Recertifications	3%	1.6%	$30	$36.51
Unduplicated Count, Any Type of Administrative Error	44%	4.4%	$37	$14.87
Total Households	**100%**		**$22**	**$8.01**

Note: Data exclude MTW households; MTW cases do not have Form HUD-50058/50059 recalculated rent error.
Source: Table 17a, Appendix C

Exhibit IV-22b
Form HUD-50058/50059 Administrative Error: Percentage of Households, Average Dollars in Error (Households With QC Rent Error)

Error Type Based on Form HUD-50058/50059 Recalculation	Households With QC Rent Error			
	Percent of Households in Error	Standard Error of Percent	Average Dollar Error	Standard Error of Mean
Households With Transcription Error	81%	3.4%	$55	$4.50
Households With Consistency Error	22%	2.0%	$68	$15.06
Households With Allowance Calculation Error	2%	0.9%	$71	$38.72
Households With Income Calculation Error	4%	1.0%	$88	$25.92
Households With Other Calculation Error	7%	1.3%	$62	$11.05
Overdue Recertifications	4%	1.2%	$86	$18.86
Unduplicated Count, Any Type of Administrative Error	85%	2.8%	$57	$6.10
Total Households	**100%**		**$55**	**$5.48**

Source: Table 17b, Appendix C

Summary of Administrative Errors. As outlined in the study objectives, calculation errors, consistency errors, transcription errors, failure to recertify on time, and failure to apply allowances appropriately produce administrative errors.

Exhibit IV-23 shows the Gross Rent Error and Net Rent Error for households with each type of administrative error. Starting in FY 2005, two major changes were made to this exhibit. First, the category of consistency errors was added to illustrate inconsistencies found within Form HUD-50058/50059. Second, the findings are now based on QC error rather than recalculated Form HUD-50058/50059 error.

Exhibit IV-23
Administrative Error: Percentage of Households Average Dollars in Error for All Households

Error Type	Percent of Households in Error	Gross Rent Error		Net Rent Error	
		Average Dollars in Error	Standard Error of Mean	Average Dollars in Error	Standard Error of Mean
Households With Transcription Error	40%	$27	$2.45	-$4	$1.83
Households With Consistency Error	20%	$19	$4.53	-$3	$3.29
Households With Allowance Calculation Error	2%	$27	$12.00	-$20	$13.57
Households With Income Calculation Error	2%	$41	$13.34	$5	$12.41
Households With Other Calculation Error	3%	$32	$6.58	-$5	$8.05
Overdue Recertifications	2%	$50	$11.84	-$8	$17.58
Unduplicated Count, Any Type of Administrative Error	51%	$23	$2.67	-$3	$1.55
Total Households	**100%**	**$14**	**$1.42**	**-$3**	**$0.97**

Source: Table 18, Appendix C

- The percentage of households in error was generally comparable to FY 2013 for all error types, though households with transcription error decreased by 7 percent between FY 2013 and FY 2014.
- Gross Rent Error calculated from specific types of error increased as compared to FY 2013 values for four of the seven categories.
- Net Rent Error calculated from the various types of error increased for the majority of error types as compared to FY 2013.
- Overdue recertifications had large differences in error amounts due to the small number of overdue cases.

E. Occupancy Standards

Exhibit IV-24a presents a summary of the analysis that determined whether households are assigned units with the correct number of bedrooms. It shows the percentage 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 HUD's rules. For example, the PHA-administered Section 8 Voucher program sometimes allows households to rent units with fewer or more bedrooms than specified by the guidelines.

- Seventeen percent of all households occupied a unit with too many or too few bedrooms in FY 2014, compared to 15 percent in FY 2013.
- Seventeen percent of Public Housing households were over-housed or under-housed in FY 2014.
- Twenty-two percent of PHA-administered Section 8 program households were under- or over-housed in FY 2014.
- Nine percent of Owner-administered households were under- or over-housed in FY 2014.

Exhibit IV-24a
Percentage of Households in Units With the Correct Number of Bedrooms (According to Study Guidelines)

Number of Bedrooms	PHA-administered				Owner-administered		Total	
	Public Housing		Section 8					
	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014	FY 2013	FY 2014
0	97%	98%	100%	100%	98%	96%	98%	98%
1	99%	98%	100%	100%	100%	99%	100%	99%
2	79%	73%	69%	63%	86%	78%	75%	69%
3	85%	78%	80%	83%	88%	79%	83%	81%
4	61%	68%	45%	46%	37%	57%	49%	53%
All Units	87%	83%	79%	78%	94%	91%	85%	83%

Source: Table 19, Appendix C

Exhibits IV-24b and IV-24c show the percentage of households that met these guidelines for each bedroom size for FY 2013 and FY 2014, respectively. The shaded cells indicate the percentage of households that fell within study guidelines.

Exhibit IV-24b
Percentage of All Households in FY 2013 by Number of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2013 Number of Household Members							
	1	2	3	4	5	6	7	8+
0	98%	2%						
1	90%	10%	<1%					
2	23%	48%	21%	6%	2%			
3	5%	11%	36%	28%	13%	6%	2%	<1%
4	6%	8%	11%	25%	23%	15%	6%	7%
5+		10%	4%	9%	14%		19%	45%

Source: Table 19a, Appendix D of the HUDQC Final Report for FY 2013, delivered on September 26, 2014

Exhibit IV-24c
Percentage of All Households in FY 2014 by Number of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2014 Number of Household Members							
	1	2	3	4	5	6	7	8+
0	98%	2%						
1	91%	8%	1%					
2	29%	40%	24%	5%	2%	1%		
3	7%	12%	35%	26%	13%	6%	1%	
4	2%	5%	14%	24%	25%	15%	4%	11%
5+	9%				26%	12%	6%	46%

Source: Table 19a, Appendix C

F. Rent Reasonableness

The PHA-administered Section 8 program assists low-income families in obtaining housing in the private market. A PHA responsible for administering the program must not approve a lease until the housing authority has determined that the initial rent paid to the owner is a reasonable amount. The PHA must also determine whether the rent to the owner is reasonable in comparison to rent for other comparable unassisted units.

Rent reasonableness is an important factor in determining participant subsidies and is critical for effective, PHA-administered Section 8 program operations. If a PHA approves rents that are too high, limited government funds are wasted and it may inadvertently raise private market rents. If PHAs approve rents that are low compared to the private market, landlords may only participate with their lowest cost, lowest quality units or not rent out their units at all to program participants. Furthermore, approval of lower rent amounts may inappropriately restrict where assisted tenants

may live. 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. Our analysis examines whether PHAs fulfilled the requirement for documenting rent reasonableness determinations, but does not investigate whether rents were in fact reasonable.

Methodology. We surveyed PHAs administering the Section 8 Voucher program in our study. This year, 143 projects[30] in our study fall into this category. The projects were asked about their standard rent reasonableness processes, and file documentation from the project's household sample were reviewed.

We instructed field interviewers to review tenant files for 770 Voucher households in order to locate the documents supporting the rent reasonableness certification. For 80 new certifications,[31] field interviewers reviewed the file for the initial rent reasonableness certification and recorded the date it was conducted. For the 690 annual recertifications we reviewed, field interviewers were asked to ascertain when the current rent to the owner became effective and to locate the relevant supporting rent reasonableness documentation. If this documentation (relative to the date the rent to the owner became effective) was not found, field interviewers were asked to search for any rent reasonableness certification in the file and enter the date of certification. The owner's rent certification on the Request for Tenancy Approval form was considered a certification of rent reasonableness.

Findings Pertaining to Rent Reasonableness Methods Used by PHAs. The most common method of determining rent reasonableness is the unit-to-unit comparison (see Exhibit IV-25). Sixty-four percent of the housing authorities that responded reported using unit-to-unit comparison as the predominant method for their rent reasonableness determination. The unit-to-unit method is similar to the standard real estate appraisal technique of comparing a unit to similar private, unassisted units in the same general location. Rent amounts are sometimes modified for differences in unit characteristics (e.g., size, age, amenities, housing services, maintenance, or utilities).

[30] For purposes of this study, a project for the Section 8 Voucher program is defined as a PHA/county combination. Therefore, if a PHA administers vouchers in more than one county, that PHA could be represented in this study by more than one project.

[31] Beginning in FY 2007, portability move-ins were classified as annual recertifications. In FY 2006, they were categorized as new admissions.

Exhibit IV-25
PHAs by Predominant Rent Reasonableness Method

Method	FY 2012		FY 2013		FY 2014	
	Number	Percent	Number	Percent	Number	Percent
Unit-to-unit Comparison	83	59%	96	69%	91	64%
Unit-to-market Comparison	22	16%	21	15%	25	17%
Point System	23	16%	17	12%	17	12%
Other or Rent Control	4	3%	6	4%	6	4%
No Single Predominant Method	7	5%	0	—	2	1%
No Information	1	1%	0	—	2	1%
Total	**140**	**100%**	**140**	**100%**	**143**	**100%***

*Numbers may not total to 100 percent because of rounding.

The unit-to-market comparison approach estimates the average and/or range of "market" rents for units with similar characteristics in the private, unassisted market. Seventeen percent of housing authorities reported primarily using this method. Valuation adjustments are based on typical units in the private market. Twelve percent of housing authorities indicated that their primary method of making rent reasonableness determinations was based on a point system. Using this system, units are assigned points based on their condition and attributes, and comparisons are made to unassisted units.

We asked PHA staff to identify only the primary method used to determine whether rents to owners were comparable to the private market, rather than enter a percentage use of various methods. When asked to identify a single predominant method, most PHAs selected only one. Two PHAs selected "no single method predominates" compared to none in FY 2013 and seven in FY 2012. PHAs were also asked whether they used a software program and/or an outside contractor to determine whether the rent to owner was reasonable. Ninety-six of the 143 voucher projects (67%) use rent reasonableness software. GoSection8.com remained the most commonly used software vendor, cited by 37 projects in FY 2014 and by 35 projects in FY 2013, followed by Nelrod EZ Reasonable Rent Determination, used by 10 projects in FY 2014, and 7 in FY 2013.

Seven PHAs reported using software and systems developed in house in FY 2014 compared with five in FY 2013.

Findings Pertaining to Rent Reasonableness Documentation Found in Tenant Files for New Admissions and Annual Recertifications. In FY 2014, 90 percent of new admission files contained rent reasonableness documents, down from 91 percent in FY 2013 and up from 81 percent in FY 2012 (see Exhibit IV-26a). Annual recertifications require rent reasonableness documents only when owners increase rental rates. We examined case files to determine when the current rent to owner first became effective and reviewed the file for the rent reasonableness documentation specific to that rent determination. If no rent reasonableness documentation was found within this specific timeframe, we reviewed any rent reasonableness documentation in the file. In FY 2014, 87 percent of these case files had certified rent reasonableness documents, compared to 82 percent in FY 2013 and 76 percent in FY 2012 (see Exhibit IV-26a).

Exhibit IV-26a
Rent Reasonableness Documentation for New Admissions and Annual Recertifications

Status	FY 2012		FY 2013		FY 2014	
	New Admissions	Recertifications	New Admissions	Recertifications	New Admissions	Recertifications
Determination Documented	81%	76%	91%	82%	90%	87%
No Determination Documented	19%	24%	9%	18%	10%	13%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

The absence of rent reasonableness documentation does not necessarily indicate a determination was not completed, only that it was not properly documented. Of new admission files that had documentation, 61 percent contained a statement signed by the PHA staff member certifying that the rent is reasonable. For recertifications with rent reasonableness documentation, 62 percent contained a statement signed by the PHA staff member certifying that the rent is reasonable (see Exhibit IV-26b).

Exhibit IV-26b
Type of Rent Reasonableness Documentation for New Admissions and Annual Recertifications

Type of Documentation	FY 2012		FY 2013		FY 2014	
	New Admissions	Recertifications	New Admissions	Recertifications	New Admissions	Recertifications
A Signed Statement Certifying the Rent Is Reasonable	55%	48%	50%	54%	61%	62%
Comparable Units Documented by the Property Owner in Section 12a of Form HUD-52517	12%	11%	14%	10%	12%	11%
Comparable Units Documented on Other Documents	31%	34%	33%	30%	22%	21%
Any Other Reference to Rent Reasonableness	3%	7%	3%	5%	6%	6%
Total	**100%***	**100%**	**100%**	**100%**	**100%***	**100%**

*Totals may not add up to 100% due to rounding.

HUD requires that rent reasonableness determinations be conducted before signing the contract and lease. The timeliness of the rent reasonableness determination was evaluated by comparing the lease date (depending on the type of transaction, the lease date is the effective date of the current contract rent or the lease start date) with the rent reasonable certification date in the case file. Since the PHA is required to conduct a rent reasonableness assessment when the contract rent is increased by the owner, the current contract rent is compared with the previous rent amount to determine when and whether there was a change in the contract rent. This data is used to determine whether there was a timely rent reasonableness assignment. Exhibit IV-27 provides a summary of how the date of the

rent reasonableness documentation relates to the initial lease date or contract rent change date for those households where a reference to the rent reasonableness determination was found in the file.

Exhibit IV-27
Timing of Most Recent Rent Reasonableness Determination—
New Admissions and Annual Recertifications

Determination: Certification Chronology	FY 2012		FY 2013		FY 2014	
	New Admissions	Recertifications	New Admissions	Recertifications	New Admissions	Recertifications
More than 4 Months Before Lease Date	5%	18%	7%	40%	5%	28%
Up to 4 Months Before Lease Date	90%	69%	82%	50%	86%	47%
Up to 2 Months After Lease Date	5%	5%	10%	3%	3%	3%
Greater than 2 Months After Lease Date	1%	4%	0%	2%	1%	15%
Date Missing	0%	4%	2%	5%	5%	7%
Total	**100%***	**100%**	**100%**	**100%**	**100%***	**100%**

*Totals may not add up to 100% due to rounding.

If the effective date of the lease with the current contract rent occurred prior to the date of the rent reasonableness documentation, rent reasonableness may not have been considered as a factor in approving the unit's rent. In FY 2013, ICF changed data collection methodology slightly, as discussed in Section II, and we collected the date the rent was in effect. This explains the greater number of cases with certifications occurring more than 4 months before the lease date in FY 2013, a trend that continued in FY 2014. The percentage of rent reasonable determinations made after the rent had been established as part of the initial lease agreement decreased for new admissions from 10 percent in FY 2013 to 4 percent in FY 2014. For annual recertifications in FY 2014, the percentage of rent reasonable documentation dated after the effective date of a lease increased from the previous study year, 18 percent in FY 2014 compared to 5 percent in FY 2013.

Conclusion. PHAs are not fully documenting rent reasonableness determinations as required by HUD regulations, and a large number of existing rent determinations may have been made on the basis of less formal means of evaluating rents. Timely reviews increased in FY 2014 compared to FY 2013 for new admissions and decreased for recertification transactions. The proportion of cases lacking any rent reasonableness decreased compared to FY 2013. Nine percent of new admissions and 18 percent of annual recertification transactions lacked a rent reasonableness document in FY 2013, compared to 10 percent and 13 percent, respectively, in FY 2014. These findings may be attributed in part to PIH 2003-12, issued May 16, 2003, which supports a more simplified rent reasonable determination process. PIH 2003-12 states that a PHA need not consider all nine criteria cited in 24 C.F.R. 982.507(b) to fully comply with the regulation. It justifies less formal methods of rent determination, stating that "each PHA should use appropriate and practical procedures for determining rental values in the local market."

G. Utility Allowance Analysis

As part of the FY 2014 HUDQC Study, ICF conducted two separate analyses on the utility allowances provided to households through the PHA-administered Section 8 Voucher program. For the first analysis, we focused on whether there was documentation in the tenant file indicating how the utility allowance amount used in rent determination was calculated, and whether those documents were used correctly in calculating the utility allowance amounts. For the second analysis, we focused on identifying discrepancies between the utility allowance on the Form HUD-50058 and the appropriate utility allowance as listed on a PHA staff-provided utility allowance schedule. These schedules often varied within a county by unit type, effective date of recertification, and location.

Documentation of Utilities and Utility Allowance Values. We asked PHAs to provide information about the forms that were used to document and calculate the utility allowance and to provide the utility allowance schedules that were used for actions effective in FY 2014. In addition, we asked field interviewers to copy documents showing calculation of utility allowances found in tenant files at the PHA office.

ICF staff selected 135 distinct PHA-administered Section 8 Voucher projects for the study sample. These projects, administered by 123 housing authorities (several of which administered projects in multiple counties), participated in the FY 2014 HUDQC Study. According to information provided at the PHA level by 134 projects, 34 percent of the projects used Form HUD-52517 (Request for Tenancy Approval) as the official source for identifying the utilities for which the households were responsible. This was a change from FY 2013, when Form HUD-52667 (Schedule of Allowances for Tenant Furnished Utilities) was the most common identification document. In FY 2014, 14 percent of projects used Form HUD-52641 (HAP Contract) for identification purposes, down from 25 percent in FY 2013. With respect to the document used to calculate utility allowance value, the most common document was the Form HUD-52667 (Schedule of Allowances for Tenant Furnished Utilities) in FY 2014. This was a drastic change from FY 2013 when 90 percent of respondents chose the "other" category indicating such methods as reviewing lease documents or using specific software that performs the calculation. In Exhibit IV-28a, we provide information on the type of documents used as the official source for identifying utilities for which the households were responsible, and the type of documents used to calculate the value of the utilities paid by the tenants.

Exhibit IV-28a
Types of Documents Used by PHAs to Identify Utilities and Calculate the Utility Allowance Value

Document Used	Identifying Utilities				Calculating the Utility Allowance Value			
	FY 2013		FY 2014		FY 2013		FY 2014	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Form HUD-52517 (Request for Tenancy Approval)	34	28%	46	34%	0	—	2	2%
Form HUD-52641 (HAP Contract)	30	25%	19	14%	2	2%	0	—
Form HUD-52667 (Allowance Schedule)	44	36%	43	32%	12	10%	94	70%
Other (e.g., lease, reports, comparisons)	5	4%	11	8%	108	89%	36	27%
Various combinations of documents above	11	9%	15	11%	0	—	3	2%
Total**	**124**	**100%***	**134**	**100%***	**122**	**100%***	**135**	**100%***

*Totals may not add up to 100% due to rounding.

Comparison of Form HUD-50058 Utility Allowance Values to Worksheets Found in the Household File. Seven hundred and eighty-two (782) households from the PHA-administered Section 8 Voucher program were selected for this study. Field interviewers were able to locate worksheets or other documents indicating how the utility allowance was calculated for 704 households (90%).

For each household with utility allowance documentation available, we compared the utility allowance amount from the Form HUD-50058 to the amount on the utility allowance worksheet obtained from the tenant file. For 569 households (81%) the Form HUD-50058 utility allowance amount matched the worksheet amount. For 17 percent of the households, the worksheet provided was for the incorrect period of time or was missing critical information. For these 118 households, we could not determine whether the utility allowance amount used in the rent calculation was correct. In the remaining 2 percent of the households, there were discrepancies between the amounts on the worksheet and on the Form HUD-50058. In FY 2013, there were more households with matching values (93%) and fewer inadequate worksheets (4%). Exhibit IV-28b presents a summary comparing the utility allowance listed on the Form HUD-50058 and the amount on worksheets found in tenant files.

Exhibit IV-28b
Comparison of Utility Allowance on the Form HUD-50058 to the Utility Allowance Worksheet

Outcome	Number	Percent
Form HUD-50058 (AC) amount matched with worksheet amount	569	81%
Worksheet in file for incorrect period of time or is missing critical information	118	17%
Discrepancy due to mathematical error or other clerical errors	10	1%
Discrepancy—Unable to determine reasons	7	1%
Total	**704**	**100%**

Comparison of Form HUD-50058 Utility Allowance Values to the Correct (QC) Utility Allowance Value. The ICF team calculated the QC utility allowance amount in two steps. In the first step, the utilities the tenant was responsible for were identified by using documents—usually PHA utility allowance worksheets—found in tenant files that indicated those specific utilities. In the second step, we mapped the identified household's specific utilities onto the utility allowance schedule and summed the total to determine the QC allowance amount.

We matched the utility allowance amount on Form HUD-50058 to the QC utility allowance amount. We were unable to calculate the QC utility allowance for 5 percent of the households (36 households) because worksheets were not available; consequently, the specific utilities paid by the household could not be identified. Furthermore, we were unable to calculate the QC utility allowance in an additional 5 percent of households because the worksheets in the files did not include specific utilities or other critical information needed for QC allowance calculation. Another 9 percent could not be calculated because the appropriate utility allowance schedule was not available. Exhibit IV-28c differentiates between the households in which we were able to calculate the QC allowance amount and lists the reasons and number of households where we were unable to calculate the QC utility allowance amount.

Exhibit IV-28c
Availability of All Information to Enable QC Utility Allowance (UA) Calculation

Outcome	QC UA Amount Calculated	Number	Percent
Appropriate worksheet and schedule available	Yes	632	81%
UA worksheet or other comparable document not available	No	36	5%
Appropriate UA schedule not available	No	72	9%
Worksheet was missing critical information	No	42	5%
Total		**782**	**100%**

We calculated the QC utility allowance amounts for 632 households and then compared the QC utility allowance to the Form HUD-50058 utility allowance amount. In 89 percent of these households, Form HUD-50058 and the QC utility allowance values matched. We categorized the remaining 11 percent of households where the values did not match into two broad categories: administrative error or unknown (i.e., ICF was unable to determine the reason for the discrepancy in utility allowance amounts). The majority of these errors were categorized as administrative. We present the findings from this analysis in Exhibit IV-28d.

Exhibit IV-28d
QC Utility Allowance Compared to Form HUD-50058 Utility Allowance

Outcome	Number	Percent
QC UA matched amount on Form HUD-50058	563	89%
Discrepancy due to math error/transfer error	53	8%
Discrepancy—Unable to determine reasons	16	3%
Total	**632**	**100%**

Note: The QC rent that is calculated for this study uses the utility allowance amount from Form HUD-50058 and not the QC allowance amount that was calculated for this comparison.

H. Payment Standard Analysis

As part of the FY 2014 HUDQC study, ICF conducted a special analysis to determine whether PHAs are using the correct payment standard amount. This special analysis was independent of the rent calculation error findings presented in another section in this chapter, and it did not affect rent calculation determinations. The payment standard analysis consisted of three parts:

(1) The payment standard on Form HUD-50058 was compared to the payment standard schedules provided by the PHA.

(2) The payment standard on Form HUD-50058 was compared to the Fair Market Rent (FMR) for the appropriate geographical area.

(3) The payment standards were compared to the FMRs to ensure that they fell between 90 percent and 110 percent of FMR for each project.

The findings from these comparisons are presented below.

Background. Payment standards are used in the PHA-administered Section 8 Voucher program to determine the tenant's portion of the rent to owner. Payment standards must be kept current and set between 90 percent and 110 percent of the FMR. If a PHA does not ensure that its payment standards are within this range or if program administrators fail to apply the current payment standards, this will result in errors in tenant rent determinations.

PHAs can apply payment standards incorrectly in a variety of ways that will result in errors in tenant rent. A PHA may have several payment standards for different geographic areas with complex borders, sometimes making it difficult to select the correct payment standard for any given address within the jurisdiction. Also, a household's payment standard amount is the lower of the payment standard based on family size or the payment standard for the size of the unit leased; program administrators could forget to use the payment standard based on family size if the household chooses to rent a larger unit size than the amount their voucher size provided.

Other potential areas for error include whether a PHA has been authorized to use FMRs based on the 50th percentile of the rents in the area; whether the PHA has been authorized to use Success Rate Payment Standards based on the 50th percentile of rents; and whether the PHA continues to be eligible for these higher subsidy standards. Moreover, PHAs are allowed to change a household's payment standard only at the time of the annual recertification or before the household moves to a

new address. Thus, even if a change in the family composition requires an interim recertification with several family members moving in or out, the payment standard used to determine the rent should not be changed at the interim recertification. Yet, despite the complexity of payment standard guidelines, most of the errors found in this review were not due to this reason.

Comparison of the Payment Standard on Form HUD-50058 With the Payment Standard Schedules Provided by the PHA. For the first analysis, we compared the payment standard on Form HUD-50058 (the actual, or AC, payment standard) with the payment standard schedule (the quality control, or QC, payment standard) provided by the PHA. For all Voucher households in the study, we selected the appropriate QC payment standard where able, and compared it with the AC payment standard. We selected the QC payment standard from the schedules provided by the PHA on the basis of:

- The lower of either the number of bedrooms in the unit or the number of authorized bedrooms for the household on the voucher
- The Effective Date of Action
- The determination and application of any special exception to payment standard guidelines provided by the PHA staff

In previous years, for every household where the AC and QC payment standard did not match, we placed a call to the PHA staff for clarification and collected payment standard schedules when appropriate. Historical discussions with projects on determination of the QC payment standard uncovered a host of other issues that required consideration when selecting the QC payment standard. While time restraints prevented us from conducting calls to PHA staff for FY 2014, types of past complications considered during the analysis included the following:

- Some PHAs use the previous (higher) payment standard amount for the first recertification after a decrease in the payment standard amount. Exceptions for special circumstances, such as living in a house with additional amenities or setting the payment standard to the gross rent for Enhanced Vouchers, may be granted to some households.
- Exception Rent Areas may have higher payment standards.
- Some PHAs use payment standards from the initial housing authority for port-in households, with the understanding that the rates would be adjusted at the next annual recertification.
- Some PHAs use software systems that identify the lessor of gross rent or the payment standard to populate the payment standard field on Form HUD-50058.

The study included 782 PHA-administered households. Of these, ICF was able to determine a QC payment standard for 670, or 86 percent. For the majority of these households (74%), the AC payment standard matched the QC payment standard. There were 171 households with discrepant payment standards; 84 (49%) of the households with discrepant payment standards were elderly or disabled households. Elderly and disabled households are identified separately because they are often entitled to individual exemptions to the payment standard rules. We attributed discrepancies to one of seven common reasons, as listed in Exhibit IV-29a. The most typical reason for a discrepancy between the AC and QC payment standard was for reasons categorized as Other: overdue recertifications, a PHA using the FMR rather than the payment standard, typographic errors, and/or

enhanced vouchers, etc. (32%). Also, the use of incorrect payment standard schedules accounted for a cumulative 31 percent of the discrepancies found. Exhibit IV-29a summarizes the number and percentage of households where the QC and AC payment standard did not match by the reason for the discrepancy.

Exhibit IV-29a
Number and Percentage of Households With Payment Standard Discrepancies

Reason	Number of Households (Elderly/ Disabled)	Number of Households (Non-Elderly/ Non-Disabled)	Percent of Households With Discrepancies
Used incorrect number of bedrooms/household members	5	3	5%
Used incorrect payment standard schedule	26	27	31%
Used FMR rent instead of the payment standard amount	11	5	9%
Project staff used enhanced rate for disabled/elderly tenant	0	4	2%
Project staff made a typographical error	3	4	4%
Project-based voucher: No payment standard (Section 11 filled out)	9	19	16%
Other reasons (e.g., overdue recertification, enhanced voucher)	33	22	32%
Total	**87**	**84**	**100%***

*Totals may not add up 100% to due to rounding.

Comparison of the Payment Standard on Form HUD-50058 to the Fair Market Rent for the Appropriate Geographic Area. In the second analysis, we compared the payment standard on Form HUD-50058 to the FMRs for the appropriate geographic area. The payment standard for 529 households (68%) fell within the 90 percent to 110 percent FMR band; 60 of the households (8%) that fell outside of the 90 percent to 110 percent band used an amount that exceeded 110 percent of the FMR; and 31 of the households (4%) used an amount that was less than 90 percent of the FMR. Exhibit IV-29b summarizes the number and percentage of households by the relationship of the payment standard to the acceptable FMR. The table is based on data for the 529 cases where we were able to determine correct payment standards.

Exhibit IV-29b
Payment Standard Compared With the Fair Market Rent

Characteristic	Fair Market Rent			Percent of Cases Outside the 90% to 110% Band
	Under 90%	90%–110%	Over 110%	
Non-elderly or Disabled	17	272	35	8%
Elderly or Disabled	14	257	25	6%
Total	**31**	**529**	**60**	**15%**

The analysis of cases that fell outside the 90 percent to 110 percent FMR band revealed that 12 percent of cases fell outside the FMR band for five general reasons: (1) the incorrect number of bedrooms or household members was used; (2) the incorrect payment standard schedule was used; (3) project staff used the enhanced rate for disabled/elderly tenants; (4) project staff made a typographical error; (5) or other reasons. Exhibit IV-29c summarizes the number and percentage of households that fall outside the 90 percent to 110 percent FMR band by category.

Exhibit IV-29c
Details of Cases Falling Outside 90%–110% of the Fair Market Rent

Reason	Fair Market Rent		Percent of Cases Outside the 90% to 110% Band
	Under 90%	Over 110%	
Used incorrect number of bedrooms or household members	3	2	5%
Used incorrect payment standard schedule	8	4	13%
Project staff used enhanced rate for disabled/elderly tenant	4	4	9%
Project staff made a typographical error	0	2	2%
Other reasons—overdue recertification, used 105% of FMR, software limitations, original payment standard over 110%, unable to determine a reason for the discrepancy	16	48	70%
Total	**31**	**60**	**100%***

*Totals may not add up 100% to due to rounding.

Comparison of the FY 2013 to the FY 2014 Payment Standard Analysis Results. ICF conducted the same payment standard analysis for the FY 2013 study. Of the 782 PHA-administered Section 8 Voucher households in FY 2014, 670 had a QC payment standard determination. Of these, the AC and the QC payment standard matched for 499 of the households (75%), compared to 63 percent in FY 2013. Also, 91 (14%) of the households had payment standards that did not fall within the 90 percent to 110 percent FMR band. Therefore, a total of 14 percent of the PHA-administered Section 8 Voucher households included in the FY 2014 study did not meet HUD's payment standard requirements, which indicates a 4 percent increase from FY 2013. Exhibit IV-29d summarizes the results from the FY 2013 and FY 2014 payment standard analysis.

Exhibit IV-29d
Comparison of the FY 2013 to FY 2014 Payment Standard Analysis

Characteristic	FY 2013		FY 2014	
	Number	Percent	Number	Percent
PHA-administered Section 8 Voucher sample	799	100%	782	100%
Households where QC payment standard was determined	799	100%	670	86%
Households where the AC and QC payment standard did not match	276	35%	171	25%
Households where the AC payment standard did not meet the 90% to 110% FMR threshold	60	8%	91	14%
Households that were not exempt from the 90% to 110% FMR threshold and did not meet HUD's payment standard requirements	59	7%	91	14%

I. PIC/TRACS Analysis

A special analysis was conducted to determine whether cases for which Form HUD-50058/50059 data had been submitted to HUD were more or less likely to have errors than those for which data had not been submitted. These households were compared using two methods. The first was based on whether household identifiers used by ICF were present in the PIC/TRACS data for the selected households (i.e., Social Security Number, name, and date of birth). The second method of comparison examined whether the specific Form HUD-50058/50059 certification or recertification action used by ICF for the selected households was present in the PIC/TRACS data.

In previous years, HUD provided PIC/TRACS head of household data for only those households in the HUDQC Study. In contrast to this, ICF requested PIC/TRACS data for all assisted households with transaction data present within the FY 2014 study period in November 2014. This data was used for both household sampling and the PIC/TRACS analysis. Due to nonstandard recertification cycles permitted by various MTW PHAs, the PIC/TRACS data for MTW households was not requested. Certain MTW PHAs selected for the FY 2014 study allow tenants to have biennial or triennial recertifications, so those tenants would not have been included on the data file if included in the request. For this reason, 2,147 of the 2,400 households (89%), were included in the PIC/TRACS analysis (i.e., analytical sample).

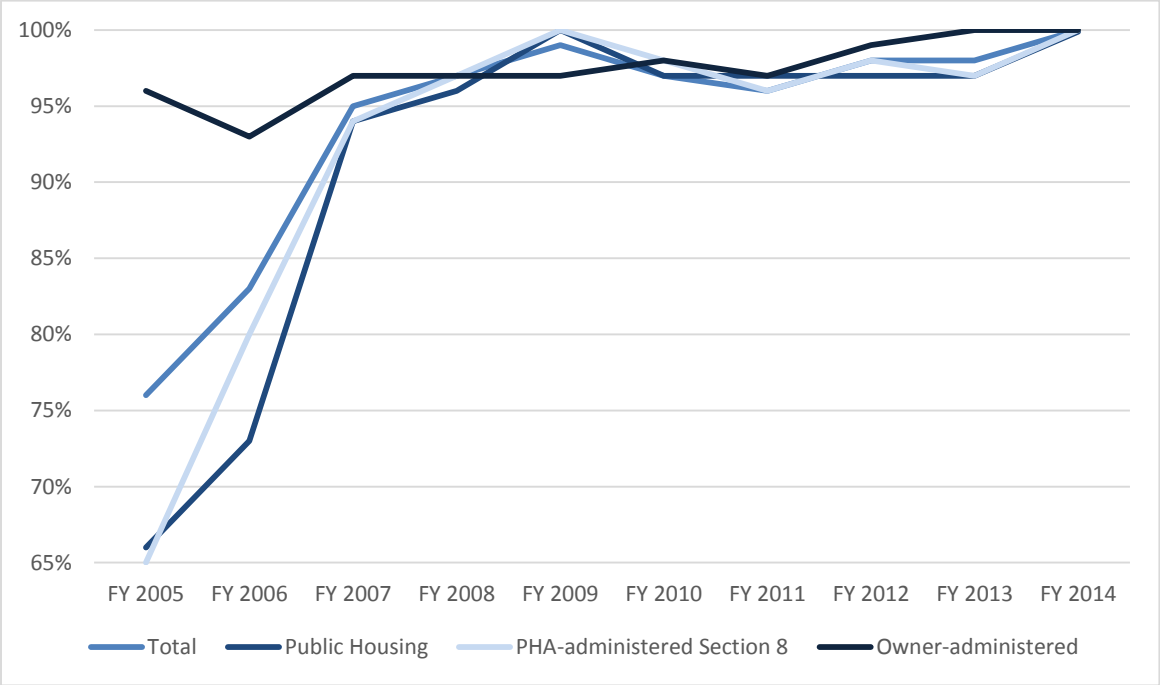
Matching the QC Study to the PIC/TRACS Data. Head of household data were provided for all actions and updates from November 1, 2013, to October 31, 2014, resulting in multiple observations per household. The households included in the QC study were matched against these PIC/TRACS data using identifying information (a combination of the Social Security number, name, and date of birth) for each head of household in the analytical sample. Using these criteria, PIC records were found for just under 100 percent of households in PHA-administered projects (99.9%), while TRACS records were found for exactly 100 percent of households in Owner-administered projects. However, due to the use of PIC/TRACS data for household sample selection, a near 100 percent match rate was anticipated. Figure IV-4 identifies the change in percentage of households in which PIC/TRACS was present over time, as identified in the HUDQC Study, beginning in FY 2005. PHA-

administered percentages have increased since FY 2005, while Owner-administered percentages have remained fairly steady over time.

In addition to the match described above, ICF further compared household data obtained during the HUDQC study to PIC/TRACS data with the following certification information: program type, type of action, and effective date. If duplicate observations for each head of household remained, the transaction with the closest PIC/TRACS update date following the certification effective date was selected. Using this more explicit matching technique and including the additional certification elements, 2,037 of the 2,147 QC households in the PIC/TRACS analysis, or about 95 percent, were fully represented by both head of household identifying information and certification data. This matching rate was a slight decrease from the previous rate of 98 percent in FY 2013 and FY 2012, but was still an increase from FY 2011 and FY 2010, in which 70 and 71 percent of households, respectively, were fully represented by a match on both identifying information and certification data.

In past years, most of the PIC/TRACS analysis was based on the broader match using identifying information to maintain consistency with past years. However, with the new PIC/TRACS data request for FY 2014 and nearly all households matching on identifying information, the PIC/TRACS analysis presented in this report is based on the more explicit matching technique. Using these criteria, PIC action records were found for 94 percent of the households in PHA-administered projects, while TRACS action records were found for 97 percent of the households in Owner-administered projects. Of the 2,147 households in this analysis, 2,037 households (or 95%) were successfully matched with PIC/TRACS.

Figure IV-4
PIC/TRACS Data Present by Program Type for All Households Over Time



Analysis was conducted to compare the average dollars in Gross Rent Error for households that had the QC selected action in PIC/TRACS (i.e., matching action type and effective date) with those that did not. Exhibit IV-30a provides the percentage of households in each of the three program types by whether or not the action data for the household were available in PIC/TRACS (present or absent), and the average dollars in gross error based on all households in the study. Exhibit IV-30b provides the same information, but only for those households that had rent error. Exhibits IV-30a & 30b illustrate that the rate for which PIC/TRACS action data were present was reasonably comparable between all households, and only those households with rent error.

Exhibit IV-30a
PIC/TRACS Data by Program Type and Average Gross Dollars in Error for All Households

Administration Type	PIC/TRACS Action Present		PIC/TRACS Action Absent	
	Percent of Households	Average Dollars in Error	Percent of Households	Average Dollars in Error
Public Housing	93%	$17	7%	$44
PHA-administered Section 8	94%	$15	6%	$16
Total PHA-administered	*94%*	*$15*	*6%*	*$27*
Total Owner-administered	97%	$7	3%	$10
Total	**95%**	**$13**	**5%**	**$24**

As presented in Exhibit IV-30b, the average dollars in Gross Rent Error for PHA-administered projects was higher for households in error when PIC/TRACS action data were absent ($73) than when PIC/TRACS action data were present ($63). More specifically, the largest difference in average gross error dollars was found for Public Housing households, with and without PIC/TRACS action data present ($71 and $99, respectively). However, because the number of households with actions absent from PIC/TRACS is relatively low, these estimates are less reliable and more volatile from year to year. This year, 98 percent of Owner-administered households in error had PIC/TRACS data present, a slight decrease from FY 2013 and FY 2012 (99% and 100%, respectively) and a slight increase from FY 2011 and FY 2010 (97% and 98%, respectively).

Exhibit IV-30b
PIC/TRACS Data by Program Type and Average Gross Dollars in Error for Households in Error

Administration Type	PIC/TRACS Action Present		PIC/TRACS Action Absent	
	Percent of Households	Average Dollars in Error	Percent of Households	Average Dollars in Error
Public Housing	87%	$71	13%	$99
PHA-administered Section 8	93%	$59	7%	$51
Total PHA-administered	*91%*	*$63*	*9%*	*$73*
Total Owner-administered*	98%*	$38	3%*	$55
Total	**93%**	**$56**	**7%**	**$72**

*Totals may not add up 100% to due to rounding.

Exhibit IV-30c presents the percentage of households and average dollars in error for households action matched/not action matched with PIC/TRACS by payment type. Although the percentage of

underpayment, overpayment, and proper payment are similar, both where PIC/TRACS action was present and where it was absent, there was a large difference in overpayment amounts (i.e., $49 average overpayment error when PIC/TRACS action data could be matched, compared to $97 overpayment error when PIC/TRACS action data were not matched). Interestingly, for households with underpayments, average dollar in error was slightly less when PIC/TRACS action was absent than when it was present (i.e., $60 compared to $61). However, because there are fewer households where PIC/TRACS data were absent, the average dollars in error amounts can vary substantially from year to year.

Exhibit IV-30c
Average Gross Dollars in Error by Payment Type and PIC/TRACS Data

Payment Type	PIC/TRACS Action Present		PIC/TRACS Action Absent	
	Percent of Households	Average Dollars in Error*	Percent of Households	Average Dollars in Error*
Underpayment	13%	$61	23%	$60
Overpayment	10%	$49	10%	$97
Proper payment	77%	N/A	67%	N/A
Total	**100%**	**$13**	**100%**	**$24**

* Average dollar error per under- and overpayment subgroups.

Exhibit IV-30d examines net and gross errors by program type and whether there was a PIC/TRACS action match. This exhibit illustrates the importance of reviewing net error and gross error separately, as their average dollar errors are substantially different.

Exhibit IV-30d
Average Net and Gross Dollars in Error by Administration Type and PIC/TRACS Data for All Households

Administration Type	Average Net Rent Error		Average Gross Rent Error	
	PIC/TRACS Action Present	PIC/TRACS Action Absent	PIC/TRACS Action Present	PIC/TRACS Action Absent
Public Housing	$0	$2	$17	$44
PHA-administered Section 8	-$4	-$5	$15	$16
Total PHA-administered	*-$2*	*-$3*	*$15*	*$27*
Total Owner-administered	-$3	-$10	$7	$10
Total	**-$3**	**-$4**	**$13**	**$24**

To further illuminate details of those households in which PIC/TRACS data matched on specific study effective date and type of action (2,037 of 2,147 households), an additional analysis was conducted to determine whether certain key variables matched. The key variables included gross income, net income, total tenant payment, and tenant rent. Exhibit IV-30e provides the percentage of households in which the data gathered through the QC process matched those in PIC/TRACS.

Exhibit IV-30e
Percentage of Matched and Non-Matched Dollar Amounts for Key Variables
Matching Variables From the Form HUD-50058/50059 and PIC/TRACS

	Gross Income		Net Income		Total Tenant Payment		Tenant Rent	
Match Status	PIC	TRACS	PIC	TRACS	PIC	TRACS	PIC	TRACS
No Match	3.5%	2.1%	3.8%	2.8%	2.7%	10.6%	15.0%	29.7%
Match	96.5%	97.9%	96.2%	97.2%	97.3%	89.4%	85.0%	70.3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

J. Project Staff Questionnaire Analysis

The purpose of the PSQ, a self-administered, Web-based questionnaire, was to obtain project-level information concerning the characteristics and processes that enable PHA/project staff to precisely calculate rent during certification transactions, including both initial/move-in and annual certifications. PHAs and project staff identified as the point of contact for the FY 2014 study were surveyed on topics related to PHA/project characteristics, certification staff training and development, and performance management during the study period of November 1, 2013, to October 31, 2014. The results were analyzed separately for the three major program types: Public Housing, PHA-administered Section 8, and Owner-administered programs.

A brief summary of the key findings from this analysis follows. A more detailed summary of the PSQ information can be found in Appendix E: Project Staff Questionnaire Descriptive Analysis.

1. PHA/Project Characteristics. The PSQ surveyed respondents on PHA/project characteristics that may help explain differences in error rates. Questions in this section included questions about the number and types of staff, number of project units/tenants and certifications conducted, staff work experience, certification staff work assignments and workload, and staff use of software and computer technology. The findings of this section show the following:

- Of the PHA/projects that answered the survey based on project-specific information, they reported 12 employees and served an average of 1,277 households during the study period. It is worth noting that each of the program types differed markedly in average size. PHA-administered Section 8 projects averaged 22 employees and administered rental assistance to 4,066 households, Public Housing projects had an average of 12 employees and served 453 units on average, and Owner-administered projects averaged 5 employees with 164 rental assistance units. Furthermore, the ratio of household units to a single staff member has increased substantially in recent years.
- PHAs/projects reported an average of seven certification staff members on site, with an average of six having more than 1 year of certification experience at the project. The percentage of PHAs/projects in the study that had at least one staff member leave during the study period was 31 percent, which increased from 25 percent in FY 2013. On average, PHAs/projects had two certification staff leave the PHA/project during the study period.
- The most frequently used case assignment methods for employees working with certifications were assignment by transaction type (e.g. initial certifications, annual

certifications, moves, and interims) and by random assignment based on staff availability. Seventeen percent of PHAs/projects distributed certification work by transaction type or randomly. PHA/projects were evenly divided between reporting high and not too low or too high workload with 49 percent each. However, answers varied based on program type. PHA-administered Section 8 projects were most likely to report a high workload with 62 percent, while Owner-administered projects were most likely to report a steady workload with 58 percent. Less than 1 percent of respondents in all program types reported low average certification staff workload.

- During the study period, private companies were reported as having performed certification activities in Owner-administered programs at the highest rate (6.4%), followed by PHA-administered Section 8 (6.0%) and Public Housing (2.6%). Eighty-nine percent of all programs responded that they did not outsource certification activities to outside organizations.
- Automated systems and computer software continue to play an increasingly integral part in the daily tasks of PHAs/projects. During the study period, almost all PHAs/projects used computers and computer software when performing rent calculations (96%). Additionally, a majority of PHAs/projects used computers for other administrative tasks, including to store household data from previous Form HUD-50058/50059 (95%), to annualize income or expenses (92%), and to submit data to PIC/TRACS (88%).
- The most common use of computer systems was printing letters to tenants (96 percent), followed by calculating income, expenses and allowances (95%); printing Form HUD-50058/50059 (94%); and recording tenant demographics (90%). Fifty-nine percent of respondents stated that they used computer systems to keep track of pending verification documents, and 44 percent reported that they stored verification documents electronically. There was an increase in inputting certification interview and application responses from 74 percent in FY 2013 to 82 percent in FY 2014. FY 2014 saw an increase in the use of computer systems to conduct interviews with tenants. In FY 2013, about 32 percent of PHAs/projects indicated that they used a software program for assistance with interviews, compared to 39 percent in FY 2014.

2. Training and Development. The PSQ collected information on an array of topics about the training and development provided to new and experienced certification staff, including the nature and extent of rent calculation training, implementation of rent calculation policies, and certification staff work practices.

- Sixty-five percent of Public Housing projects reported having a training department or staff trainer for certification staff, compared to 61 percent in PHA-administered Section 8 and 73 percent of Owner-administered projects. The average number of hours of training received by a newly hired certification staff member decreased to 50 hours per staff member from 55 hours in FY 2013; 65 hours of training in FY 2012 and an average of 89 hours of training in FY 2011.[32]

[32]Training hour averages for FY 2012, FY 2011, and FY 2010 were calculated as the average for new (re)certification staff and reassigned staff because of a change in the question for FY 2013.

- Most PHAs/projects trained new certification staff members by providing them with policies and procedural guides to read independently and having them shadow more experienced staff members (96%and 91%, respectively). During the study period, PHAs/projects reported that a typical new certification employee spent an average of 35 hours self-training with manuals and 98 hours shadowing experienced staff, compared to 44 hours of self-training and 120 hours of shadowing in FY 2013. The number of hours spent in classroom-style training also decreased while the number of hours spent watching training videos increased.
- More than 90 percent of PHAs/projects trained a typical new certification employee in EIV reports and EIV security, calculating fixed income sources, earned income sources, and deductions. On average, PHAs/projects dedicated 25 hours to training a new certification staff member on calculating earned income sources and 24 hours to calculating fixed income sources.
- The vast majority of PHAs/projects trained a typical experienced staff member by providing policies and procedural guides to read (88 percent), while more than 50 percent also used in-house or outsourced classroom training and shadowing or mentoring by other experienced staff. A typical experienced certification staff member in the Public Housing program spent an average of 18 hours training on the job with other experienced staff, compared to an average of 26 hours in Owner-administered and 50 hours in PHA-administered Section 8.
- PHAs/projects most frequently endorsed training an experienced certification staff member on the topics of EIV reports and EIV security and calculating earned income sources (84% and 71%, respectively). It was reported that the most training hours were spent on interviewing tenants, with 12 hours being the average. An experienced certification staff member received approximately 13 fewer hours of training for each topic on average than a new certification staff member. This is a substantial increase from FY 2013 when experienced staff received 7 fewer hours of training than new staff. For both experienced and new staff, Public Housing sites provided the most training hours in almost all topics, while Owner-administered sites provided the least.
- Twenty-six percent of PHAs/projects implemented a new rent calculation policy immediately after a PIH Notice or Housing Notice was issued, and 69 percent implemented a new rent calculation policy in 30 days or less on average. In January 2013, PIH Notice 2013-03 (HA)[33] was issued, affecting Public Housing, Moderate Rehabilitation, and Housing Choice Voucher programs. These programs reported that the primary method used to notify certification staff about the policy change was discussing the policy with staff in a meeting and providing a paper or electronic copy of the notice (63% and 57%). Twelve percent of Public Housing respondents stated that there was no discussion of this policy with staff, and they did not receive a notice of the policy, compared to only 6 percent of PHA-administered Section 8 projects responding in the same way to the question about PIH Notice 2013-03 (HA).

[33] The PIH Notice 2013-03 (HA) allows PHAs to verify income using actual past income and allows households with less than $5,000 in assets to self-certify their asset amount and asset income amount. It also allows PHAs to conduct streamlined reexaminations for elderly/disabled families with fixed income and to establish a payment standard of no more than 120 percent of Fair Market Rent as a reasonable accommodation.

- Certification staff work behaviors were overwhelmingly rated as average or above. Ninety-five percent of PHAs/projects rated their certification staff as either organized or very organized when working on certification activities. Ratings of the quality of time management of certification staff found that 94 percent of PHAs/projects reported staff as having either good or very good time management skills, and 72 percent of PHAs/projects rated staff as paying a lot of attention to detail.

3. Performance Management. The PSQ also collected information regarding performance management of certification activities and QC reviews. Questions addressed the timing of reviews, methods used to select cases for review, type of information reviewed for QC, prevalence of various types of rent calculation errors, and performance feedback methods and timing.

- Ninety percent of PHAs/projects reviewed move-in and annual certifications as a QC measure, with 46 percent of certifications being reviewed on average. In determining which cases to select for review, PHAs/projects most frequently randomly selected files for QC review and conducted the reviews prior to Form HUD-50058/50059 approval (81% and 27%, respectively).
- Twenty-six percent of PHAs/projects reported that they reviewed not only move-in and annual certifications, but all tenant files during QC. By program type, 16 percent of PHA-administered Section 8 projects selected all cases for QC review, compared to 21 percent for Public Housing and 38 percent for Owner-administered sites.
- Seventy-four percent of PHAs/projects had a dedicated QC staff member to monitor tenant files and certification activities. Most often, PHAs/projects had a team leader or supervisor conducting QC checks (81 percent), averaging 326 file reviews during the study period.
- For those PHAs/projects that conducted dedicated QC reviews, more than 85 percent had reviewers check tenant files for correct income calculation, the presence of verification documents, and proper core household documentation. Seven percent or less of PHAs/projects reported that verification, income calculation, expense calculation, or human errors were made often or very often by certification staff. Errors related to attention to detail and incorrect calculation of earned income were most likely to sometimes be made by staff (29% and 26%, respectively).
- In order to provide performance feedback to staff regarding errors found during the QC process, PHAs/projects overwhelmingly required that the certification staff member who made the error be responsible for making file corrections (83%), frequently had one-on-one conversations with staff to discuss quality control findings (65%), and provided monthly rent calculation performance feedback to staff (29%).
- Late recertification transactions (73%), earned income calculation (57%), and tenant file documentation (53%) were most frequently monitored during QC reviews, while 26 percent of all PHAs/projects did not monitor any certification errors. The majority of PHAs/projects, however, had error mitigation strategies in place; 70 percent had a formal or informal goal-setting process related to rent calculations for certification staff; and 77 percent required certification staff to review a household's previous Form HUD-50058/50059 before beginning a new certification transaction. By program type, 83 percent for

Owner-administered respondents required review, 75 percent for Public Housing, and 73 percent for PHA-administered Section 8 respondents.

K. Multivariate Analysis

The FY 2014 HUDQC multivariate modeling followed the conceptual approach used in previous years by analyzing variables representing project characteristics, project practices, tenant characteristics, and project-caused errors as they relate to gross rent error, subsidy underpayments, and subsidy overpayments. However, we took a different approach in constructing the models. In FY 2014, we used a two-part model that first models the probability of a rent error and then models the amount of the errors, given that an error occurred. The analysis identified key patterns in which rent errors related to project and household variables. Consistent with previous years, project-caused errors and household characteristics were the primary predictors of rent errors. Because project-caused errors are strong predictors of rent errors, the analysis also examined project and household factors that account for project-caused errors. (See Appendix F for more information on the multivariate analysis.)

Project-Caused Errors. Project-caused errors represented the largest effects in measuring rent error. Four indicators were most salient: (1) administrative errors, or those errors that result from administrative mistakes, (highly correlated with transcription errors), (2) overdue recertification errors (very few cases), (3) the rate of items without third-party written verification, and (4) the rate of items with transcription errors. Each predicted substantially higher rent error, particularly administrative errors, which was the largest effect in measuring the probability for all three rent error measures. Additionally, the percentage of items without verification is a driver of underpayment, while the percentage of items with transcription errors is a driver of overpayment.

Given the high correlation of project-caused errors with improper rent payment, high priority should be placed on reducing project-caused errors. The significant project-caused errors we evaluated are highly related to household characteristics (e.g., sources of income/expenses, household size). Households with more complex financial situations are more susceptible to project errors and thus more susceptible to rent errors. Households with earned income, or a larger number of income and expense sources, are susceptible to an increased risk of both administrative error and a lack of written verification.

Household Characteristics. Household background variables were strong predictors of gross rent error and subsidy overpayment and underpayment. Variables indicative of complex financial conditions and income strongly predicted higher rent errors. Further, these complex financial situations increase the risk of project-caused errors, which are the strongest predictors of gross rent error. The relationship between many of the household characteristics (e.g., having earned income, relatively high number of income/expense sources, relatively high total income) are consistent with FY 2013. Using these models to assess the risk of a rent error would allow the PHA/project staff to emphasize quality control of these cases.

Project Characteristics and Practices. The impact of project characteristics and project practices on improper payments remained elusive within the current data analysis. As in previous years, most key indicators of project resources, staff capacity, training, certification procedures, computer

application, and a broad array of quality control efforts were not found to be statistically significant, and no substantial relationships were found with rent error measures.

Of the numerous project practices examined, a few emerged as somewhat predictive of rent error, after controlling for all the modeled factors. However, the project practices that were significant in FY 2014 are not the same as those significant in FY 2013. A comparison of significant variables in the gross rent model in each year follows.

Exhibit IV-31
Comparison Between Variables Used in Gross Rent Error Models in FY 2013 & FY 2014

FY 2013	FY 2014
• EIV training for experienced staff (public housing) • Review by OIG auditor • Forms HUD-50058/50059 training • Self-perceived propensity for rent calculation errors • Certification review rate	• EIV training for new staff • Dedicated QC staff • Goal-setting process for performing certifications • Certification staff turnover rate • Review prior Forms HUD-50058/50059 • Move-in cases per certification experienced staff (public housing)

As was the case in FY 2013, the project practices are much less predictive of rent error than project-caused errors and household characteristics. Further, the project practices that emerged from the modeling seem to be inconsistent in their relationship with rent errors (e.g., increased training associated with increased rent error). Investigating these counterintuitive effects could help identify whether the effect is truly associated with rent error or whether there are underlying factors that are confounded with rent error. This will improve clarity on specific challenges facing certification staff that lead to processing errors and payment errors.

This research presents a new way of evaluating the effects of rent errors by examining the probability of a rent error combined with the dollar value of those rent errors. While a number of results are consistent with prior studies, there are a number of new predictors that have emerged. Increasing our understanding of these effects on rent errors as well as their relationship with other predictors (e.g., project-caused errors) will allow focused efforts to reduce errors. Numerous housing characteristics are predictors of rent error as well as underlying predictors of project-caused errors. Using these characteristics (e.g., large sources of income, large households) to identify cases that could be at risk for improper payment in advance of the (re)certification process could allow for increased quality control of these cases, or the development of specific training around these at-risk units.

L. The 20 Largest PHAs Study

The 20 Largest PHAs Study aims to provide additional information about the 20 largest PHAs. Included in this study were the 18 largest PHAs and the 2 largest State PHAs in the project-level sample selected for the HUDQC Study. There were 32 households selected from most PHAs, with the exception of GA006, which had 30 households; NY005, which had 208; NY110, which had 31; PA002, which had 36; and TX006, which had 31. The study of the 20 largest PHAs ultimately included a total of 816 households.

Most PHAs represented both Public Housing and PHA-administered Section 8 households. MA901, NY904, and NY110 only represented PHA-administered Section 8 households. Weights for the 20 Largest PHAs Study were not calculated, and as a result all data presented in the exhibits in this section that pertain to the 20 largest PHAs are not weighted.[34]

Administrative Error. Exhibit IV-32a provides the percentage of households that had overdue recertification and transcription errors and the percentage of income and expense items that were verified by PHA staff using both written third-party verification only and verbal or written third-party verification, documentation, or EIV/UIV. These types of administrative errors were examined because they are typically associated with overall Gross Rent Error and Net Rent Error.

[34] For a more detailed discussion regarding weighting for the 20 Largest PHAs Study, please refer to Appendix B.

Exhibit IV-32a
Administrative Errors in the 20 Largest PHAs

PHA	Number of Households	Overdue Recertification Error	Transcription Error	Percent of Verified Items	
				Third-Party Verbal or In-Writing, Documentation, or EIV/UIV	Third-Party In-Writing
CA002	32	—	41%	84%	8%
CA004	32	—	28%	77%	16%
DC001	32	—	34%	90%	12%
FL005	32	9%	44%	85%	6%
GA006	30	3%	73%	97%	29%
IL002	32	—	25%	93%	9%
IL025	32	—	19%	86%	8%
KY001	32	—	31%	74%	24%
MA901	32	—	41%	81%	6%
MD002	32	16%	38%	83%	7%
NY005	208	6%	53%	88%	14%
NY110	31	6%	55%	86%	2%
NY904	32	12%	47%	84%	4%
OH001	32	—	38%	100%	17%
OH003	32	3%	19%	79%	8%
PA002	36	—	39%	85%	11%
TX006	31	—	26%	82%	8%
TX009	32	6%	31%	90%	2%
WA001	32	—	53%	75%	5%
WA002	32	—	19%	73%	0%
Total	**816**	**8%**	**38%**	**85%**	**10%**
QC Study Total*	**2,400**	**2%**	**41%**	**86%**	**13%**

Note: Data in this exhibit for the 20 largest PHAs are not weighted (see Appendix B), though QC Study total data are weighted.

- Compared to all QC study PHAs selected, the 20 largest PHAs had a higher percentage of overdue recertification errors (2% and 8%, respectively) and a slightly higher transcription error rate (38% and 41%, respectively).
- Overdue recertification errors were relatively scarce, with a notable exception being NY904 and MD002, which had 12 percent and 16 percent of households with overdue recertification transactions.
- While most of the 20 largest PHAs had slightly lower transcription error percentages than the QC study mean of 41 percent, GA006 had a markedly higher transcription error rate (73%).
- The 20 largest PHAs verified items using third-party verbal or in-writing, documentation, or EIV/UIV at a slightly lower rate than the QC study overall, at 86 percent compared to 85 percent.
- Items were verified using third-party verbal or in-writing, documentation, or EIV/UIV by OH001 for 100 percent of households, whereas WA002 used these methods in 73 percent of households.
- The 20 largest PHAs verified items using only third-party in-writing verification, slightly less than the PHAs in the QC study overall (10% and 13%, respectively).
- KY001 verified items using only third-party in-writing verification at the greatest rate (24%), while WA002 did not use this method (0%).

Payment Error. Exhibit IV-32b provides payment error information. This exhibit includes proper payments, underpayments and overpayments of tenant rents, and the mean Gross Rent Errors by PHA.

- Compared to PHAs in our QC Study as a whole, the 20 largest PHAs had a slightly lower percentage of households with proper payments (75 percent and 73 percent, respectively), as well as a higher average gross dollar error (about $18 for the 20 largest PHAs versus about $14 for the QC Study).
- The PHA with the highest percentage of proper payments was IL025, which had proper payments for 94 percent of households.
- TX006 had the lowest average gross dollar error, at $3.81.

Exhibit IV-32b
Dollar Rent Errors in the 20 Largest PHAs

PHA	Underpayment	Proper Payment	Overpayment	Average Gross Dollar Error
CA002	16%	81%	3%	$7.41
CA004	9%	88%	3%	$12.13
DC001	13%	72%	16%	$31.66
FL005	9%	78%	13%	$7.19
GA006	53%	43%	3%	$9.00
IL002	16%	84%	0%	$6.91
IL025	6%	94%	0%	$2.88
KY001	31%	63%	6%	$12.34
MA901	3%	91%	6%	$23.19
MD002	3%	81%	16%	$11.28
NY005	16%	71%	13%	$35.90
NY110	19%	68%	13%	$19.39
NY904	16%	72%	13%	$13.41
OH001	16%	84%	0%	$13.00
OH003	6%	84%	9%	$3.91
PA002	17%	53%	31%	$13.56
TX006	10%	81%	10%	$3.81
TX009	13%	75%	13%	$9.91
WA001	9%	69%	22%	$25.25
WA002	16%	50%	34%	$9.34
Total/Average	**15%**	**73%**	**12%**	**$18.40**
QC Study Total/Average	**14%**	**75%**	**11%**	**$13.55**

Note: Data in this exhibit for the 20 largest PHAs are not weighted (see Appendix B), though QC Study total data are weighted.

In FY 2014, a smaller proportion of proper payments seemed to lead to a higher average gross dollar error within the PHA.

- The PHA with the lowest percentage of proper payments was GA006, with 43 percent of households, and the average gross dollar error for GA006 was $9. This indicates that although there was a large rate of mispayment within GA006, the amount of dollars in errors was relatively low for most tenants.
- Alternatively, the PHA with the lowest average gross dollar amount, TX006 ($3.81), had a higher rate of proper payments than the average across the 20 largest PHAs, at 81 percent.

These results imply that when the percentage of proper payments increases, the average gross dollar error may decrease. Consequently, policies that increase proper payment rates may have some effect on decreasing rent errors (and vice versa). These seemingly related problems may sometimes require different approaches targeted to specific PHAs.

V. RECOMMENDATIONS

The HUDQC Study was originally conducted in 2000 and has been conducted on an annual basis since the FY 2003 review. A major goal of the study is to provide a snapshot of HUD national improper payment error. However, another important objective is to understand the causes of error and identify policies that reduce improper payments. As we executed the study, we identified general areas that could be improved in PHA/project rent calculation; we present these insights in this chapter of the report. Section A outlines general policy recommendations that could potentially reduce administrative error and tenant misreporting of income.

In addition to program recommendations, we examined how the QC studies can be improved. Each year, changes and improvements are made in the execution of the study to achieve aims such as increased efficiency, reduced burden on project staff and households, and a better understanding of program practices and discretionary policies. Section B provides recommendations for improving the data collection process and the quality of the data used in the analysis of improper payments.

A. Recommended Policy Actions

It should be noted that the study was not designed to provide recommendations regarding program policies and procedures. However, findings from the study suggest general actions that should be continued or policies that should be considered to maintain or improve PHA/project performance in rent determination. Below we present recommendations that may improve administrative error rates in HUD programs, based on insights we have gathered during this and previous studies:

Continue Requiring the Use of EIV Reports. HUD should continue requiring the use of EIV information in the process of rent determination. Data systematically collected from the National Database of New Hires and SSA provide a strong method of identifying specific sources of income information. The study shows that the majority of subsidy errors are associated with earned income. HUD may also want to consider forming relationships with State programs, organizations, and companies to collect other data not currently captured by the EIV system. Although EIV provides a uniform and efficient method of verifying income sources that lessens the burden on program administrators, caution must be exercised when using information from the system. The data are extremely helpful in identifying unreported sources of income, but they are not current and sometimes contain errors (including instances of identity theft and incorrect identification of disability status). HUD's EIV requirement should be coupled with policies aimed at addressing the challenges of using EIV for verification.

Perform Onsite Review of Rent Calculation. HUD should continue onsite monitoring of program administration, and PHA/Owners should be held accountable for implementing HUD regulations and calculating rent accurately. Onsite monitoring that includes reviews at both the local and Federal levels 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. Improved HUD monitoring was likely a key factor in reducing subsidy error between the 2000 study and the current study.

> We recommend that HUD require PHA/Owners to perform their own QC reviews on income determinations and rent calculations. Agencies that have aggressively sought to improve the

performance of their programs have demonstrated success in this area, and one of the most frequently used error-reduction strategies includes the establishment of internal QC review procedures. Based on the PSQ survey, it appears that programs that conduct QC on all their transactions have a significantly lower rent determination error rate than programs that do not perform QC on all their files. Of course, a comprehensive approach may not be feasible, given limited staffing resources, but even a review of a small percentage of transactions may be beneficial in supporting the reduction of rent determination error.

In addition to internal agency reviews, HUD regional offices can support field offices by conducting a secondary review of transactions. This review would provide HUD Federal staff with more on-the-ground insights into the issues and challenges faced by local program administrators. In addition, this approach would demonstrate HUD's concern regarding program integrity and improper payments, thereby focusing PHA/Owner attention on accurately determining tenant income and rent.

Reduce Additional and New Program Requirements. Federal laws, regulations, and HUD requirements should be simplified and reduced to the extent possible. The current statutory environment poses substantial obstacles to efficient, accurate income and rent calculations. It includes requirements that may be well-intentioned and have potentially desirable impacts, but that, taken as a whole, make the income and rent determination process more challenging. HUD has sought to issue guidance on virtually all aspects of current income and rent determination requirements, but some of the provisions create unintended administrative complexity. Because of the size of the administrative organizations and their ability to respond to policy changes, special and temporary provisions aimed at reducing administrative burden or simplifying policies, although developed with the best intent, can create more work to implement with little improvement. Examples of this include the requirement to review student status and the use of the past-income provision to determine income.

Implement Biennial Certifications for Some Tenant Populations. HUD should consider requiring some reexaminations to be completed less frequently than annually for certain populations. PIH Notice 2013-03(HA), which was issued on January 22, 2013, addressed this option for elderly/disabled households, but on a temporary basis; HUD should consider implementing this policy on a permanent basis. With the time saved by this policy change, PHA/project staff could spend more time conducting required reexaminations, following up on suspected cases of fraud, and conducting more internal reviews of tenant files.

Create an Online Community to Share Best Practices and Tools. HUD should provide PHA/Owners with an online venue to support the sharing of best practices for its assisted housing programs. A Web-based resource could facilitate communication between HUD and program administrators regarding identifying ways to improve and address challenges related to proposed policies. Comprehensive supporting documents, including forms for interviewing tenants, obtaining verification, and determining rent, could be posted to the site for downloading. Manuals and training materials describing how to implement requirements and accurately calculate rent could also be available electronically, with online webcasts providing an additional training resource for local program offices.

HUD experts and local housing staff should be given the opportunity to work together to develop tools and systems that reduce rent error. Many local PHA/Owners have already

developed forms, training materials, manuals, automated systems, and monitoring processes that enable them to provide accurate, efficient service to their tenants. HUD should create a platform for organizations to learn from each other.

B. Modifying the Quality Control Study

In addition to providing general program recommendations to improve error rates, we endeavored to improve the HUDQC Study that provides the estimates of the error rates. The current methodology used by ICF to conduct the quality control study is based on meeting established study objectives and builds on insights from previous studies. The following recommendations serve to expand the utility of the data collected, support HUD's research goals, and improve the overall efficiency of ongoing quality control studies:

Update Measurements of Improper Payment Associated With Billing Error. HUD should conduct billing error studies to obtain a more accurate assessment of improper payments. In the *FY 2013 HUD Agency Financial Report*, billing error estimates are based on FY 2004 data for the Public Housing program and FY 2009 data for Owner-administered programs. Current error estimates could be obtained by conducting primary data collection or by using statistical modeling to update the existing data. However, an updated study would provide HUD with a better assessment of billing error associated with rental assistance programs in order to understand one of the main contributors to improper payments. The information from these billing studies could strengthen financial management controls so that HUD can better detect and prevent improper payments.

Incorporate Additional Objectives in the HUDQC Study. Data collected through the HUDQC Study provide details that are not available through other HUD sources (e.g., PIC/TRACS) that could be used to track trends, such as the extent to which income and expense items are verified or the number of sources of employment income for a particular household or household member. Furthermore, because a statistically valid nationwide sample of projects and households is created for the study, other HUD-related topics could be investigated using the HUDQC Study's research mechanisms and data collection processes. The rental integrity monitoring (RIM) review validation, identified in the July 2013 issuance of the HUD Research Roadmap for FY 2014–FY 2018, is a task that could be incorporated into the HUDQC Study's data collection process. Additional topics could include a review of the changing demographics of HUD tenants, participant satisfaction surveys, and a more in-depth review and evaluation of MTW programs.

Conduct a Utility Allowance Comparison Study. In response to tightening budgets and overall concerns with energy efficiency, HUD should undertake a study to better understand utility costs and consumption in subsidized housing. HUD should consider conducting an in-depth quality control study of how utility allowance values are calculated and used in rent calculation. This study could involve collecting data from utility companies regarding utility use for a given fiscal year and comparing actual consumption with the utility allowance subsidy calculated by program administrators. The investigation could also include an evaluation of the HUD Utility Schedule Model and its ability to accurately estimate utility costs for assisted housing participants.

Learn More About PHA/Project Policies and Practices. Each PHA establishes its own policies, procedures, and forms for collecting information that is ultimately used to calculate tenant rent. The differences in these practices should have some (possibly major) impact on rent error, yet the analysis of the project practices and characteristics collected by the PSQ does not demonstrate the expected

impact. We recommend conducting focus groups, interviews, and discussions with program administrators to identify additional PHA/project-level factors that may impact error. This information could be used to revise the PSQ to include questions focused on the specific practices expected to influence errors. The analysis of more detailed, project-level data would assist in this process.

Continue Performing the HUDQC Study. The HUDQC Study provides a consistent ongoing method of monitoring, managing, and improving HUD rent determination processes. The ongoing evaluation of HUD rental housing assistance programs is essential to program management and improvement, and rigorous research is important for understanding how well HUD programs are reaching their goals for the communities served. The primary objective of the HUDQC Study is to measure rent calculation and improper payment error; however, the study also gives HUD the opportunity to learn more about methods to reduce rent calculation errors and better manage current and changing conditions at PHAs/projects. Annual evaluations facilitate more accurate, cross-year comparisons of rent errors. They also allow data collection and data analysis staff to develop specific expertise in HUD policy areas, supporting the development of tailored solutions for improving data quality.

Appendix A: Rent Calculations

APPENDIX A: RENT CALCULATIONS

1. Public Housing

a. Obtain the Total Tenant Payment (TTP).

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

c. Determine whether the family includes any citizens or eligible noncitizens. IF YES, **go to #6 (continuation of assistance).** IF NO, **go to #7 (temporary deferral).**

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

d. Determine whether the tenant selected Flat Rent. IF NO, **go to e.** IF YES, **the QC RENT equals the Flat Rent. Go to g.**

e. Obtain the Utility Allowance.

f. The amount of the tenant's rent (QC RENT) is the lower of: a. (TTP) minus e. (Utility Allowance), or the Flat Rent.[35]

g. Determine whether any additional Moving to Work rent calculation policies apply. IF YES, **recalculate the tenant's rent (QC RENT) according to the policy outlined in the Public Housing Authority (PHA) Admissions and Continued Occupancy Policy (ACOP), Administrative Plan, or Other Policy Guidance Documents; continue.** IF NO, **continue.**

h. Determine whether the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

2. Section 8 Voucher Program

a. Obtain TTP.

b. Obtain the Gross Rent.

c. Obtain Utility Allowance.

d. Determine whether a. (TTP) is greater than b. (Gross Rent). IF YES, **set TTP to Gross Rent.** IF NO, **TTP is equal to a.**

e. Obtain Payment Standard[36] (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 b. (Gross Rent). If the Payment Standard is higher than the Gross Rent, use 0.

[35] If there is no Flat Rent, the QC RENT will be the lower of the Ceiling Rent or a. (TTP) minus e. (Utility Allowance) to determine the dollar amount of error. If there is also no Ceiling Rent, the QC RENT will be a. (TTP) minus e. (Utility Allowance).

[36] For Project-Based Vouchers, the Payment Standard equals the Gross Rent.

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

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

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

k. Determine whether 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; continue.** IF NO, **procedural error. Family Share is equal to h; continue.**

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

m. Determine whether the family includes any citizens or eligible noncitizens. IF YES, **go to #6 (continuation of assistance).** IF NO, **go to #7 (temporary deferral).**

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

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

o. Determine whether any additional Moving to Work rent calculation policies apply. IF YES, **recalculate the tenant's rent (QC RENT) according to the policy outlined in the PHA ACOP, Administrative Plan, or Other Policy Guidance Documents; continue.** IF NO, **continue.**

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

3. Section 8 Enhanced Voucher

a. Determine whether household is receiving an Enhanced Voucher. IF YES, **continue.** IF NO, **use #2 (the regular Section 8 Voucher formula).**

b. Obtain the TTP.

c. Obtain the Gross Rent.

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

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

f. Determine whether the family includes any citizens or eligible noncitizens. IF YES, **go to #6 (continuation of assistance).** IF NO, **go to #7 (temporary deferral).**

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

g. Obtain the Utility Allowance.

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

i. Determine whether any additional Moving to Work rent calculation policies apply. IF YES, **recalculate the tenant's rent (QC RENT) according to the policy**

outlined in the PHA ACOP, Administrative Plan, or Other Policy Guidance Documents; continue. IF NO, **continue.**

j. Determine whether the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

4. Project-Based Section 8, 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 whether the family includes any ineligible noncitizens. IF YES, **continue.** IF NO, **go to e.**

d. Determine whether the family includes any citizens or eligible noncitizens. IF YES, **go to #6 (continuation of assistance).** IF NO, **go to #7 (temporary deferral).**

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

e. Obtain the Utility Allowance.

f. Determine whether Subsidy Type on Form HUD-50059 = PRAC. IF NO, **continue.** IF YES, **go to h.**

g. Subtract e. (Utility Allowance) from b. (TTP) or a. (Gross Rent), whichever is lower. This is the QC RENT. **Go to i.**

h. Subtract e. (Utility Allowance) from b. (TTP). This is the QC RENT.

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

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). If Space Rent is less than the Payment Standard, use 0.

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

i. Determine whether this is the initial occupancy for this dwelling unit. (Item 12b on the Form HUD-50058). IF YES, **continue.** IF NO, **the Family Share equals 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 whether k. (40 percent of Adjusted Monthly Income) is equal to or greater than h. (TTP plus Space Rent minus Payment Standard). IF YES, **the Family Share is equal to h.; go to m.** IF NO, **procedural error. The family is not entitled to assistance in this unit.**

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

n. Determine whether the family includes any citizens or eligible noncitizens. IF YES, **go to #6 (continuation of assistance).** IF NO, **go to #7 (temporary deferral).**

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

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

p. Determine whether any additional Moving to Work rent calculation policies apply. IF YES, **recalculate the tenant's rent (QC RENT) according to the policy outlined in the PHA ACOP, Administrative Plan, or Other Policy Guidance Documents; continue.** IF NO, **continue.**

q. Determine whether the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

Special Calculations for Household With Ineligible Noncitizens

6. Continuation of Assistance

a. Determine whether the family was receiving assistance on June 19, 1995. IF YES, **continue.** IF NO, **the FAMILY is eligible for prorated assistance; go to #8 (proration formula for Public Housing).**

b. Determine whether the FAMILY head or spouse is a citizen or eligible noncitizen. IF YES, **continue.** IF NO, **the FAMILY is eligible for prorated assistance; go to #8 (proration formula for Public Housing).**

c. Determine whether the FAMILY includes any ineligible members other than the head, spouse, and child or parent of the head or spouse. IF NO, **continue.** IF YES, **the FAMILY is eligible for prorated assistance; go to #8 (proration formula for Public Housing).**

d. Determine whether the FAMILY was granted continuation of assistance before November 29, 1996. IF YES, **the FAMILY is eligible for full continuation of assistance. Return to MARKER for the appropriate program type.** IF NO, **the FAMILY is eligible for prorated assistance; go to #8 (proration formula for Public Housing).**

7. Temporary Deferral of Termination of Assistance

a. Determine whether Temporary Deferral of Termination of Assistance has been granted. IF YES, **continue.** IF NO, **go to c.**

b. Determine whether 18 months have passed since Temporary Deferral was granted. IF YES, **continue.** IF NO, **the Family continues to be eligible for Temporary Deferral of Termination of Assistance; return to MARKER for the appropriate program type.**

c. Determine whether 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 NO, **continue.** IF YES, **the Family is entitled to ongoing Deferral of Termination of Assistance; go to MARKER for the appropriate program type.**

d. Determine whether the FAMILY was receiving assistance on June 19, 1995. IF NO, **continue.** IF YES, **the Family is eligible for Temporary Deferral of Termination of Assistance; go to MARKER for the appropriate program type.**

e. Determine whether the FAMILY is exercising its hearing rights (waiting for a decision from INS or PHA/Owner appeal). IF NO, **continue.** IF YES, **go to MARKER for the appropriate program type.**

f. Determine whether the PHA is making reasonable efforts to evict. IF YES, **go to MARKER for the appropriate program type.** IF NO, **procedural error, HOUSEHOLD IS INELIGIBLE.**

8. Proration Formula for Public Housing

a. Determine whether this is a Public Housing case. IF YES, **continue.** IF NO, **go to #9 (proration formula for all Section 8 programs).**

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.[37]

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

g. Obtain the Flat Rent.

h. If g. (Flat Rent) is greater than or equal to e. (Maximum Rent), there is no prorated rent. Use the Flat Rent; **go to n.** If g. (Flat Rent) is less than the e. (Maximum Rent), 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 FAMILY members) to determine the Eligible Subsidy for the FAMILY.

[37] If Maximum Rent is not available, Fair Market Rent is used as a substitution for Maximum Rent.

k. Subtract j. (Eligible Subsidy) from e. (Maximum Rent) to obtain the prorated 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. Determine whether any additional Moving to Work rent calculation policies apply. IF YES, **recalculate the tenant's rent (QC RENT) according to the policy outlined in the PHA ACOP, Administrative Plan, or Other Policy Guidance Documents; continue.** IF NO, **continue.**

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

9. Proration Formula for All Section 8 Programs

a. *For Voucher Projects Only*: Obtain the Rent to Owner.

b. Obtain the Utility Allowance.

c. Obtain the Gross Rent.
Voucher: Gross Rent = Rent to Owner plus the Utility Allowance.
Owner-administered: Gross Rent= Contract Rent plus the Utility Allowance.

d. Obtain the TTP.

e. *For Voucher Projects Only*: Obtain the Payment Standard.

f. Obtain the Housing Assistance Payment (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. Determine if Manufactured Home Space Rental. IF NO, **continue.** IF YES, **return to MARKER for the appropriate program type.**

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. *For PHA-administered Projects Only:* Determine whether any additional Moving to Work rent calculation policies apply. IF YES, **recalculate the tenant's prorated rent (QC RENT) according to the policy outlined in the PHA ACOP, Administrative Plan, or Other Policy Guidance Documents; continue.** IF NO, **continue.**

n. Determine whether the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

Appendix B: Weighting Procedure

APPENDIX B: WEIGHTING PROCEDURE

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

Study Population. The universe of the HUD Quality Control for Rental Assistance Subsidy Determination Study included all projects and households located in the continental United States, Alaska, Hawaii, and Puerto Rico. In FY 2014, Moving to Work (MTW) Public Housing Authorities (PHAs) were included in the study population.

The following programs were included in the sample:

- PHA-administered Public Housing (Public Housing)
- PHA-administered Section 8 (PHA-administered Section 8)
  - Moderate Rehabilitation
  - Housing Choice Voucher (HCV) program
- Office of Housing-administered projects (Owner-administered)
  - Section 8 New Construction/Substantial Rehabilitation
  - Section 8 Loan Management
  - Section 8 Property Disposition
  - Section 202 Project Rental Assistance Contracts (PRAC)
  - Section 202/162 Project Assistance Contracts (PAC)
  - Section 811 PRAC

The initial universe files used to draw the sample occasionally reflected out-of-date or incorrect information, including out-of-scope projects such as demolished projects, projects undergoing renovation, projects that were no longer assisted, projects that had merged or split, and other special circumstances. Many of these projects were identified prior to drawing the sample; however, others were identified later during data collection. Depending on the circumstance of those identified during data collection, sampling decisions were made to either replace the project, to subselect the project, or to make adjustments during weighting. In FY 2014, several projects were replaced because of their inclusion in the Rental Assistance Demonstration (RAD) program. They were replaced since it would be difficult to determine which program type subsidized the project as they transitioned from one program type to another. The use of replacement projects for out-of-scope projects complicated the sample weight calculations. The determination of an actual probability of selection for these replacements was impossible to make. A sampling weight that is proportional to what the probability would have been had the project been selected originally was used as a reasonable estimate.

Population Totals. The population totals used in FY 2014 were the same totals used in the previous three studies. The use of the same population counts from year to year has had the advantage of increasing comparability of gross dollar estimates; any change from year to year would not have been due to a change in the number of households in the program, but to an actual change in the average gross dollar error or percentage of households. **In FY 2012, the** population counts used to

produce the weights were updated from those used in FY 2011. As programs may grow or shrink over time, it is desirable to update population counts. Estimates of total dollar amounts and estimates of the proportion of the population represented by each program type run the risk of not being representative of the current population if the population counts are outdated or if the population changes significantly. Due to the inclusion of the MTW PHAs in FY 2012, the nature of the population itself had changed. Because the FY 2011 population totals and sample did not include the MTW population, using them to produce FY 2012 weights would produce invalid estimates.

The use of the same population counts from year to year has increased the comparability of gross dollar estimates; any change from year to year would not have been due to a change in the number of households in the program, but to an actual change in the average gross dollar error or percentage of households. Estimates of averages and percentages within program types have the advantage of being comparable regardless of changes in population counts from year to year. This approach of using the same population counts for multiple study years was used for FY 2005 through FY 2010 to allow for comparability across years.

The following table provides the population totals by program type for the FY 2012 through FY 2014 studies.

Exhibit B-1
Population Totals Used for Weighting by Program Type

Administration Type	FY 2012 - FY 2014 Population
Public Housing, non-MTW	1,040,708
Public Housing, MTW	114,088
PHA-administered Section 8, non-MTW	1,935,597
PHA-administered Section 8, MTW	263,125
Owner-administered	1,378,158
Total	**4,731,676**

Weighting Methodology. The procedure to determine the final weights involved several steps, including: 1) calculating the project weight (w_1); 2) calculating the household weight (w_3); 3) accounting for nonresponding households (f_n); 4) poststratifying (f_p); and, 5) finally, trimming the weights.

1. Calculating the Project Weight (w_1). The first step to determine the final weights was calculating the project weight by compiling the sampling probabilities calculated during the cluster and project sampling and the initial data collection process. These probabilities were then used to calculate each project's probability of selection. The probability of selection of a project was the product of the following:

1) The probability of selection of the cluster (p_1)

2) The probability of selection of the subcluster if the cluster was divided (p_2)

3) The probability of selection of the project from its respective cluster (p_3)

Each cluster was sampled with probabilities proportional to size. The measure of size used was the number of households adjusted to obtain equal expectation for the three major types of programs in the study. The number of households of each program in a cluster was multiplied by an inflation factor to make all three numbers equal. The probability of selection of the cluster (p_1) was calculated in three steps. First, the proportion of the households in each of the three programs in a particular cluster was obtained. These proportions were defined as the number of households in each program within a cluster divided by the number nationwide (program's population count). Next, the three proportions in each cluster were averaged and finally, the proportions were multiplied by 60, the number of clusters to be selected nationwide.

In some instances, clusters were geographically too large to collect data in a cost-effective manner. To accommodate this logistical problem, clusters were divided into two or more subclusters or smaller geographic areas. A subcluster was then sampled from the group of subclusters using probabilities proportional to size. This resulted in the same probability that would have ensued had the division taken place before drawing the sample, or the probability of selection of the subcluster (p_2). If the cluster was not divided into smaller clusters, then the subcluster probability of selection was one. The formula to calculate the project weight was:

$$\left(w_1 = \frac{1}{minimum[p_1, 1] \times minimum[p_2, 1] \times minimum[p_3, 1]}\right)$$

Clusters with probabilities greater than one could have been selected more than once (Sampling With Minimal Replacement). These clusters were certainty clusters, meaning that their selection into the sample was guaranteed. For the purposes of calculating the project weight, the certainty clusters' probability of selection was set to one.

The probability of selection of a project from its respective cluster (p_3) was calculated in two steps. First, the number of households in a program type within a project was divided by the total number of households in a program type within the project's cluster. This proportion was then multiplied by the number of projects in a program type to be selected from the cluster. The PHA-administered Section 8 projects could have had a probability greater than one for sampling purposes (meaning they could be sampled more than once). However, for the other two major program types, if the calculated probability exceeded one, it was set to one and all the other probabilities were readjusted so that they added to the allocation for the program in the cluster. For weighting purposes, probabilities greater than one among PHA-administered Section 8 projects were set to one.

2. Calculating the Household Weight *(w_3).* The second step to determine the final weights was to calculate the household weight. To calculate the household weight, the number of households in the project (N_p) and the number of households sampled from the project (n_p) were identified. The household probability of selection within the sampled project was the number of sampled households divided by the number of households in the project (p_4):

$$\left(p_4 = \left(\frac{n_p}{N_p}\right)\right)$$

The household within project weight (w_2) was the inverse of the probability of selecting the household within the sampled project:

$$\left(w_2 = \frac{1}{p_4}\right)$$

The household base weight (w_3) was the product of the project weight and the household within project weight:

$$(w_3 = w_1 \times w_2)$$

3. Account for Nonresponding Households (f_n). The third step in the weighting process was to account for nonresponding households within the sampled project. To do this, the number of eligible sampled households (n_{p_e}), the number of responding households (n_{p_r}) and the eligibility adjusted household weight was needed. The sum of the eligibility-adjusted household weights for all eligible households in the project and the sum of eligibility-adjusted household weights for only the responding households in a project was then calculated. A nonresponse adjustment factor (f_n) was calculated as:

$$f_n = \frac{\sum_{n_{p_e}} w_3}{\sum_{n_{p_r}} w_3}$$

The nonresponse, adjusted household weight (w_4) was the eligibility-adjusted household weight multiplied by the nonresponse adjustment factor:

$$(w_4 = w_3 \times f_n)$$

4. Poststratification (f_p). The fourth step in the weighting process was poststratification. The sample was designed to obtain similar numbers of households in each of the following three program types:

1) Public Housing projects

2) PHA-administered Section 8 projects

3) Owner-administered projects

Population totals for each of the programs were obtained from the FY 2012 sampling frame. The population estimates after weighting did not correspond exactly to these FY 2012 population totals and required adjustments. The weights were adjusted to sum to the known external population totals, so the sum of the weights would have been the same had a different sample been selected. In the past, this was due partially to special circumstances, such as the exclusion of geographic areas affected by the 2005 hurricanes and the Owner-administered projects from Alaska excluded from the frame but included during the weighting process. Alaska was excluded from the sample frame in the past because the state typically did not meet the parameters for creating a sample cluster. Prior to FY 2012, all Public Housing and PHA-administered Section 8 projects in the state were out of the scope of the study since they were part of the MTW program, leaving just Owner-administered projects. With the inclusion of MTW projects, more Alaska projects were considered in the scope of

the study, and, therefore, Alaska was once again included. In FY 2014, Alaska was included in the frame but was not selected.

To poststratify the weights, the nonresponse adjusted household weights within program type were summed to estimate the population totals from the HUD sample. For example, the sum of weights for all Owner-administered households in the sample is an estimate of the total number of Owner-administered households in the nation. A poststratification factor (f_p) was calculated by dividing the known external population totals ($N_{program\ type}$) by the estimated population totals from the HUD sample ($\sum_{program\ type} w_4$):

$$f_p = \frac{N_{program\ type}}{\sum_{program\ type} w_4}$$

A poststratification factor was calculated for each program type. This factor was then multiplied to the household weight within each program type, ensuring that the sum of the household weights by program type was the same as the external population totals.

Trimming the Weights. The final step was the trimming of the weights. Weights more than three times the median weight were set to three times the median weight, and all the weights were readjusted. Large weights usually resulted from incorrect frame information.

Effective Sample Size Due to Weighting. In FY 2014, the weights led to an effective sample size (because of the weighting) of 763 (down from an actual size of 798) for the Owner-administered projects, 764 for the Public Housing projects (down from 804), and 748 for the PHA-administered Section 8 projects (down from 798). The effective sample size is the size of a random sample that would yield confidence intervals of the same size as the current sample. The design effect calculates what the sample size would be when the variance produced by weighting is accounted for, and this calculation yielded the same effective sample sizes as those cited above. The effective sample size will often be smaller than the actual sample, partly because of clustering and partly because of weighting.

Variance Estimation. Standard errors were obtained for a number of estimates using a delete-a-group Jackknife procedure. This was implemented by using 20 replicate groups and creating 20 sets of replicate weights. This procedure is available starting with SAS 9.4, and is considered more robust with respect to design characteristics than the Taylor Series method.[38]

The 20 Largest PHAs Weighting. As in previous studies, the data for the 20 largest PHAs sample were not weighted. The sample is approximately a self-weighting sample. The term *self-weighting* refers to a sample where all units being sampled (in this case households) have the same weight, assuming that the frame is accurate and that a 100 percent response is achieved.

[38] Kott, P. S. (1998). Using the Delete-a-Group Jackknife Variance Estimator in Practice. *Proceedings of the Annual Meeting of the American Statistical Association, Section on Survey Research Methods* (pp. 763–768). Alexandria, VA: American Statistical Association.

A self-weighting sample has several advantages, including:

- Permitting more precise estimates for the 20 largest PHAs. To the extent that the sample departs from equal weights, the design effect will increase, causing correspondingly less precise estimates.
- Facilitating reporting because unweighted means and proportions for the sample will be estimates of the same means and proportions for the weighted population so as not to confuse the reader.

Appendix C: Source Tables

Source Tables Based on Quality Control Data

Throughout these Source Tables, empty cells indicate that either the result was zero or the analysis was not applicable.

The following tables include all data collected for the Quality Control study.

HUDQC FY 2014
Table 1a. Verification of QC Rent Components
Third-Party Verbal or in Writing, Documentation, or EIV/UIV

Rent Component	Not Verified		Partially Verified		Fully Verified	
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	86	(6.1%)	80	(5.7%)	1,241	(88.2%)
Pension, Etc.	6	(0.2%)	74	(2.6%)	2,737	(97.2%)
Public Assistance	13	(2.9%)			427	(97.1%)
Other Income	107	(12.1%)	68	(7.7%)	712	(80.2%)
Asset Income	3	(0.7%)	27	(6.6%)	379	(92.7%)
Child Care Expense	37	(20.6%)			141	(79.4%)
Disability Expense	3	(45.8%)			3	(54.2%)
Medical Expense	26	(2.2%)	106	(9.0%)	1,041	(88.8%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 1b. Verification of QC Rent Components
Third Party in Writing

Rent Component	Not Verified		Partially Verified		Fully Verified	
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	830	(57.5%)	116	(8.1%)	496	(34.4%)
Pension, Etc.	2,337	(82.8%)	233	(8.2%)	252	(8.9%)
Public Assistance	381	(79.1%)			101	(20.9%)
Other Income	676	(67.8%)	76	(7.7%)	244	(24.5%)
Asset Income	127	(30.6%)	117	(28.1%)	171	(41.3%)
Child Care Expense	100	(56.1%)	3	(2.0%)	75	(41.9%)
Disability Expense	6	(100.0%)				
Medical Expense	466	(39.7%)	349	(29.8%)	357	(30.5%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 1c. Verification of QC Rent Components
Third Party in Writing or EIV/UIV

Rent Component	Not Verified		Partially Verified		Fully Verified	
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	755	(52.3%)	122	(8.4%)	566	(39.2%)
Pension, Etc.	710	(25.2%)	331	(11.7%)	1,781	(63.1%)
Public Assistance	294	(61.0%)			188	(39.0%)
Other Income	615	(61.7%)	76	(7.6%)	306	(30.7%)
Asset Income	127	(30.6%)	112	(26.9%)	176	(42.5%)
Child Care Expense	100	(56.1%)	3	(2.0%)	75	(41.9%)
Disability Expense	6	(100.0%)				
Medical Expense	319	(27.2%)	365	(31.1%)	489	(41.7%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 1d. Verification of QC Rent Components
Third Party Verbal

Rent Component	Not Verified		Partially Verified		Fully Verified	
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,427	(98.9%)	3	(0.2%)	12	(0.9%)
Pension, Etc.	2,811	(99.6%)	9	(0.3%)	1	(0.1%)
Public Assistance	478	(99.1%)			4	(0.9%)
Other Income	989	(99.2%)			8	(0.8%)
Asset Income	407	(98.2%)	7	(1.8%)		
Child Care Expense	175	(98.6%)			2	(1.4%)
Disability Expense	6	(100.0%)				
Medical Expense	1,156	(98.6%)	14	(1.2%)	3	(0.3%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 1e. Verification of QC Rent Components Documentation

Rent Component	Not Verified		Partially Verified		Fully Verified	
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	736	(51.0%)	114	(7.9%)	592	(41.1%)
Pension, Etc.	1,852	(65.6%)	282	(10.0%)	688	(24.4%)
Public Assistance	247	(51.3%)			235	(48.7%)
Other Income	568	(57.0%)	56	(5.6%)	373	(37.4%)
Asset Income	196	(47.4%)	119	(28.7%)	99	(23.9%)
Child Care Expense	114	(63.9%)	3	(2.0%)	61	(34.1%)
Disability Expense	3	(45.8%)			3	(54.2%)
Medical Expense	555	(47.3%)	356	(30.3%)	262	(22.3%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 1f. Verification of QC Rent Components EIV (Enterprise Income Verification)

Rent Component	Not Verified		Partially Verified		Fully Verified	
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,441	(99.9%)			1	(0.1%)
Pension, Etc.	1,069	(37.9%)	375	(13.3%)	1,378	(48.8%)
Public Assistance	482	(100.0%)				
Other Income	997	(100.0%)				
Asset Income	413	(99.5%)	2	(0.5%)		
Child Care Expense	178	(100.0%)				
Disability Expense	6	(100.0%)				
Medical Expense	884	(75.4%)	213	(18.2%)	75	(6.4%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 1g. Verification of QC Rent Components
UIV (Upfront Income Verification)

Rent Component	Not Verified		Partially Verified		Fully Verified	
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,322	(93.9%)	23	(1.7%)	63	(4.4%)
Pension, Etc.	2,778	(98.6%)	29	(1.0%)	11	(0.4%)
Public Assistance	352	(80.2%)			87	(19.8%)
Other Income	816	(92.0%)	15	(1.6%)	56	(6.4%)
Asset Income					4	(100.0%)
Medical Expense					7	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 2. 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	167	(14.4%)	(25.6%)	843	(73.0%)	(23.6%)	145	(12.6%)	(28.7%)	1,155	(100.0%)	(24.4%)
	Section 8	315	(14.3%)	(48.4%)	1,632	(74.2%)	(45.7%)	251	(11.4%)	(49.7%)	2,199	(100.0%)	(46.5%)
	Total	482	(14.4%)	(74.0%)	2,475	(73.8%)	(69.3%)	396	(11.8%)	(78.4%)	3,354	(100.0%)	(70.9%)
Owner-administered	Owner-administered	170	(12.3%)	(26.0%)	1,099	(79.7%)	(30.7%)	110	(7.9%)	(21.6%)	1,378	(100.0%)	(29.1%)
	Total	170	(12.3%)	(26.0%)	1,099	(79.7%)	(30.7%)	110	(7.9%)	(21.6%)	1,378	(100.0%)	(29.1%)
Total		651	(13.8%)	(100.0%)	3,574	(75.5%)	(100.0%)	506	(10.7%)	(100.0%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 2(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	211	(18.2%)	(25.0%)	734	(63.6%)	(24.0%)	210	(18.2%)	(25.3%)	1,155	(100.0%)	(24.4%)
	Section 8	395	(18.0%)	(46.9%)	1,378	(62.7%)	(45.1%)	425	(19.4%)	(51.2%)	2,199	(100.0%)	(46.5%)
	Total	606	(18.1%)	(71.9%)	2,112	(63.0%)	(69.1%)	636	(19.0%)	(76.5%)	3,354	(100.0%)	(70.9%)
Owner-administered	Owner-administered	237	(17.2%)	(28.1%)	947	(68.7%)	(30.9%)	195	(14.1%)	(23.5%)	1,378	(100.0%)	(29.1%)
	Total	237	(17.2%)	(28.1%)	947	(68.7%)	(30.9%)	195	(14.1%)	(23.5%)	1,378	(100.0%)	(29.1%)
Total		842	(17.8%)	(100.0%)	3,059	(64.6%)	(100.0%)	830	(17.5%)	(100.0%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 3. 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)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	1,155	(24.4%)	313,489	271.47	1,155	(24.4%)	313,865	271.79	1,155	(24.4%)	20,632	17.87
	Section 8	2,199	(46.5%)	486,595	221.31	2,199	(46.5%)	493,530	224.46	2,199	(46.5%)	32,693	14.87
	Total	3,354	(70.9%)	800,084	238.58	3,354	(70.9%)	807,395	240.76	3,354	(70.9%)	53,325	15.90
Owner-administered	Owner-administered	1,378	(29.1%)	290,782	210.99	1,378	(29.1%)	295,653	214.53	1,378	(29.1%)	10,788	7.83
	Total	1,378	(29.1%)	290,782	210.99	1,378	(29.1%)	295,653	214.53	1,378	(29.1%)	10,788	7.83
Total		4,732	(100.0%)	1,090,865	230.55	4,732	(100.0%)	1,103,048	233.12	4,732	(100.0%)	64,112	13.55

2015.09.09 [Weighted]

HUDQC FY 2014
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)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	167	(25.6%)	10,505	63.03	145	(28.7%)	10,126	69.83	1,155	(24.4%)	313,865	271.79
	Section 8	315	(48.4%)	19,844	62.95	251	(49.7%)	12,849	51.11	2,199	(46.5%)	493,530	224.46
	Total	482	(74.0%)	30,349	62.98	396	(78.4%)	22,975	57.95	3,354	(70.9%)	807,395	240.76
Owner-administered	Owner-administered	170	(26.0%)	7,847	46.28	110	(21.6%)	2,941	26.85	1,378	(29.1%)	295,653	214.53
	Total	170	(26.0%)	7,847	46.28	110	(21.6%)	2,941	26.85	1,378	(29.1%)	295,653	214.53
Total		651	(100.0%)	38,196	58.63	506	(100.0%)	25,916	51.22	4,732	(100.0%)	1,103,048	233.12

2015.09.09 [Weighted]

HUDQC FY 2014
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)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	211	(25.0%)	10,631	50.48	210	(25.3%)	10,255	48.82	1,155	(24.4%)	313,865	271.79
	Section 8	395	(46.9%)	20,031	50.70	425	(51.2%)	13,096	30.78	2,199	(46.5%)	493,530	224.46
	Total	606	(71.9%)	30,662	50.62	636	(76.5%)	23,351	36.74	3,354	(70.9%)	807,395	240.76
Owner-administered	Owner-administered	237	(28.1%)	8,020	33.88	195	(23.5%)	3,149	16.17	1,378	(29.1%)	295,653	214.53
	Total	237	(28.1%)	8,020	33.88	195	(23.5%)	3,149	16.17	1,378	(29.1%)	295,653	214.53
Total		842	(100.0%)	38,683	45.92	830	(100.0%)	26,500	31.92	4,732	(100.0%)	1,103,048	233.12

2015.09.09 [Weighted]

HUDQC FY 2014
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)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	1,155	(24.4%)	20,632	17.87	1,155	(24.4%)	-379	-0.33	1,155	(24.4%)	313,865	271.79
	Section 8	2,199	(46.5%)	32,693	14.87	2,199	(46.5%)	-6,995	-3.18	2,199	(46.5%)	493,530	224.46
	Total	3,354	(70.9%)	53,325	15.90	3,354	(70.9%)	-7,374	-2.20	3,354	(70.9%)	807,395	240.76
Owner-administered	Owner-administered	1,378	(29.1%)	10,788	7.83	1,378	(29.1%)	-4,906	-3.56	1,378	(29.1%)	295,653	214.53
	Total	1,378	(29.1%)	10,788	7.83	1,378	(29.1%)	-4,906	-3.56	1,378	(29.1%)	295,653	214.53
Total		4,732	(100.0%)	64,112	13.55	4,732	(100.0%)	-12,280	-2.60	4,732	(100.0%)	1,103,048	233.12

2015.09.09 [Weighted]

HUDQC FY 2014
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)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	1,155	(24.4%)	20,886	18.09	1,155	(24.4%)	-376	-0.33	1,155	(24.4%)	313,865	271.79
	Section 8	2,199	(46.5%)	33,127	15.07	2,199	(46.5%)	-6,935	-3.15	2,199	(46.5%)	493,530	224.46
	Total	3,354	(70.9%)	54,013	16.11	3,354	(70.9%)	-7,311	-2.18	3,354	(70.9%)	807,395	240.76
Owner-administered	Owner-administered	1,378	(29.1%)	11,169	8.10	1,378	(29.1%)	-4,871	-3.53	1,378	(29.1%)	295,653	214.53
	Total	1,378	(29.1%)	11,169	8.10	1,378	(29.1%)	-4,871	-3.53	1,378	(29.1%)	295,653	214.53
Total		4,732	(100.0%)	65,182	13.78	4,732	(100.0%)	-12,183	-2.57	4,732	(100.0%)	1,103,048	233.12

2015.09.09 [Weighted]

HUDQC FY 2014

Table 6. Certifications and Recertifications by Administration 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	121	(10.5%)	(23.3%)	1,006	(87.1%)	(24.3%)	28	(2.4%)	(37.2%)	1,155	(100.0%)	(24.4%)
	Section 8	199	(9.0%)	(38.3%)	1,959	(89.1%)	(47.3%)	41	(1.9%)	(55.1%)	2,199	(100.0%)	(46.5%)
	Total	320	(9.5%)	(61.6%)	2,965	(88.4%)	(71.6%)	69	(2.1%)	(92.3%)	3,354	(100.0%)	(70.9%)
Owner-administered	Owner-administered	199	(14.4%)	(38.4%)	1,174	(85.2%)	(28.4%)	6	(0.4%)	(7.7%)	1,378	(100.0%)	(29.1%)
	Total	199	(14.4%)	(38.4%)	1,174	(85.2%)	(28.4%)	6	(0.4%)	(7.7%)	1,378	(100.0%)	(29.1%)
Total		519	(11.0%)	(100.0%)	4,138	(87.5%)	(100.0%)	75	(1.6%)	(100.0%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014

Table 7. Percent of Newly Certified Households Meeting Certification Criteria

Certification Criteria	Met Criterion		Did Not Meet Criterion	
	# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households
Citizenship	519	(100.0%)		
Social Security Number	513	(99.0%)	5	(1.0%)
Consent Form	501	(96.7%)	17	(3.3%)
Low and Very Low Income	517	(99.7%)	1	(0.3%)
Meets All Eligibility Criteria	497	(95.8%)	22	(4.2%)

2015.09.09 [Weighted]

HUDQC FY 2014

Table 7b. Percent of Newly Certified Households Meeting Certification Criteria by Program Type

Certification Criteria		Met Criterion		Did Not Meet Criterion	
		# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households
Public Housing	Citizenship	121	(100.0%)		
	Social Security Number	120	(98.8%)	1	(1.2%)
	Consent Form	115	(95.4%)	6	(4.6%)
	Low and Very Low Income	120	(98.9%)	1	(1.1%)
	Meets All Eligibility Criteria	113	(93.1%)	8	(6.9%)
PHA-administered Section 8	Citizenship	199	(100.0%)		
	Social Security Number	199	(100.0%)		
	Consent Form	193	(97.2%)	6	(2.8%)
	Low and Very Low Income	199	(100.0%)		
	Meets All Eligibility Criteria	193	(97.2%)	6	(2.8%)
Owner-administered	Citizenship	199	(100.0%)		
	Social Security Number	195	(98.1%)	4	(1.9%)
	Consent Form	193	(96.9%)	6	(3.1%)
	Low and Very Low Income	199	(100.0%)		
	Meets All Eligibility Criteria	191	(96.2%)	8	(3.8%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 8. Dollar Error Amount by Payment Type and Case Type

Case Type		Underpayment (Monthly)				Overpayment (Monthly)				QC Rent (Monthly)			
		# of Cases (in 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount	# of Cases (in 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount	# of Cases (in 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount
Certification	Total	57	(8.8%)	3,278	57.04	74	(14.5%)	1,629	22.13	519	(11.0%)	104,099	200.76
Recertification	Non-Overdue	567	(87.1%)	32,761	57.76	416	(82.2%)	22,728	54.62	4,138	(87.5%)	979,106	236.58
	Overdue	27	(4.1%)	2,157	80.50	16	(3.2%)	1,558	95.96	75	(1.6%)	19,842	265.82
	Total	594	(91.2%)	34,918	58.79	432	(85.5%)	24,287	56.17	4,213	(89.0%)	998,949	237.10
Total		651	(100.0%)	38,196	58.63	506	(100.0%)	25,916	51.22	4,732	(100.0%)	1,103,048	233.12

2015.09.09 [Weighted]

HUDQC FY 2014
Table 8(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 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount	# of Cases (in 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount	# of Cases (in 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount
Certification	Total	83	(9.9%)	3,358	40.46	115	(13.9%)	1,735	15.03	519	(11.0%)	104,099	200.76
Recertification	Non-Overdue	720	(85.5%)	33,124	45.98	699	(84.1%)	23,207	33.22	4,138	(87.5%)	979,106	236.58
	Overdue	39	(4.6%)	2,201	56.28	16	(2.0%)	1,558	95.96	75	(1.6%)	19,842	265.82
	Total	759	(90.1%)	35,325	46.52	715	(86.1%)	24,765	34.64	4,213	(89.0%)	998,949	237.10
Total		842	(100.0%)	38,683	45.92	830	(100.0%)	26,500	31.92	4,732	(100.0%)	1,103,048	233.12

2015.09.09 [Weighted]

HUDQC FY 2014

Table 9. Largest Component Error for Households With Rent Error (Annual Dollars)

Rent Component	# of Households (in 1,000s)	Col. % of Households	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount
Earned Income	386	(33.3%)	1,747,280	4,528
Pension, Etc.	172	(14.9%)	334,820	1,945
Public Assistance	38	(3.3%)	57,167	1,519
Other Income	144	(12.5%)	450,675	3,122
Asset Income	35	(3.0%)	28,310	808
Dependent Allowance	48	(4.1%)	26,928	566
Elderly Household Allowance	41	(3.6%)	17,443	422
Child Care Allowance	23	(2.0%)	28,781	1,256
Disability Allowance				
Medical Allowance	191	(16.5%)	347,084	1,813
No Error	79	(6.8%)	0	0
Total	1,157	(100.0%)	3,038,487	2,625

2015.09.09 [Weighted]

HUDQC FY 2014

Table 10. 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 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount	# of Cases (in 1,000s)	Col. % of Cases	Sum Dollar Amount (in 1,000s)	Avg. Dollar Amount
PHA-administered	Public Housing	312	(26.9%)	1,315,900	4,221.71	312	(26.9%)	1,098,085	3,522.91
	Section 8	567	(49.0%)	1,400,482	2,471.53	567	(49.0%)	1,307,879	2,308.11
	Total	878	(75.9%)	2,716,381	3,092.62	878	(75.9%)	2,405,963	2,739.21
Owner-administered	Owner-administered	279	(24.1%)	743,722	2,664.88	279	(24.1%)	632,524	2,266.43
	Total	279	(24.1%)	743,722	2,664.88	279	(24.1%)	632,524	2,266.43
Total		1,157	(100.0%)	3,460,104	2,989.48	1,157	(100.0%)	3,038,487	2,625.21

2015.09.09 [Weighted]

HUDQC FY 2014

Table 11. QC Rent Components by Payment Type and Administration Type

Rent Component		PHA-administered			Owner-administered			Total		
		# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases
Underpayment	Earned Income	224	(6.7%)	(80.6%)	54	(3.9%)	(19.4%)	278	(5.9%)	(100.0%)
	Pension, Etc.	131	(3.9%)	(74.4%)	45	(3.3%)	(25.6%)	177	(3.7%)	(100.0%)
	Public Assistance	19	(0.6%)	(73.0%)	7	(0.5%)	(27.0%)	26	(0.5%)	(100.0%)
	Other Income	89	(2.6%)	(80.3%)	22	(1.6%)	(19.7%)	111	(2.3%)	(100.0%)
	Asset Income	45	(1.3%)	(60.6%)	29	(2.1%)	(39.4%)	74	(1.6%)	(100.0%)
	Dependent Allowance	25	(0.7%)	(84.2%)	5	(0.3%)	(15.8%)	30	(0.6%)	(100.0%)
	Elderly Household Allowance	21	(0.6%)	(75.7%)	7	(0.5%)	(24.3%)	28	(0.6%)	(100.0%)
	Child Care Allowance	23	(0.7%)	(67.3%)	11	(0.8%)	(32.7%)	35	(0.7%)	(100.0%)
	Disability Allowance									
	Medical Allowance	86	(2.6%)	(56.8%)	65	(4.7%)	(43.2%)	151	(3.2%)	(100.0%)
	No Error	32	(0.9%)	(84.8%)	6	(0.4%)	(15.2%)	37	(0.8%)	(100.0%)
Proper Payment	Earned Income	233	(7.0%)	(85.0%)	41	(3.0%)	(15.0%)	274	(5.8%)	(100.0%)
	Pension, Etc.	264	(7.9%)	(64.5%)	145	(10.5%)	(35.5%)	409	(8.6%)	(100.0%)
	Public Assistance	66	(2.0%)	(76.2%)	20	(1.5%)	(23.8%)	86	(1.8%)	(100.0%)
	Other Income	171	(5.1%)	(76.4%)	53	(3.8%)	(23.6%)	224	(4.7%)	(100.0%)
	Asset Income	85	(2.5%)	(59.2%)	59	(4.3%)	(40.8%)	144	(3.0%)	(100.0%)
	Dependent Allowance	24	(0.7%)	(86.9%)	4	(0.3%)	(13.1%)	27	(0.6%)	(100.0%)
	Elderly Household Allowance	29	(0.9%)	(90.8%)	3	(0.2%)	(9.2%)	32	(0.7%)	(100.0%)
	Child Care Allowance	11	(0.3%)	(88.9%)	1	(0.1%)	(11.1%)	12	(0.3%)	(100.0%)
	Disability Allowance									
	Medical Allowance	140	(4.2%)	(51.0%)	135	(9.8%)	(49.0%)	275	(5.8%)	(100.0%)
	No Error	1,726	(51.5%)	(69.1%)	770	(55.9%)	(30.9%)	2,497	(52.8%)	(100.0%)

HUDQC FY 2014

Table 11. QC Rent Components by Payment Type and Administration Type (continued)

Rent Component		PHA-administered			Owner-administered			Total		
		# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases
Overpayment	Earned Income	142	(4.2%)	(84.3%)	26	(1.9%)	(15.7%)	168	(3.5%)	(100.0%)
	Pension, Etc.	75	(2.2%)	(74.7%)	25	(1.8%)	(25.3%)	100	(2.1%)	(100.0%)
	Public Assistance	35	(1.0%)	(91.4%)	3	(0.2%)	(8.6%)	38	(0.8%)	(100.0%)
	Other Income	72	(2.1%)	(76.3%)	22	(1.6%)	(23.7%)	94	(2.0%)	(100.0%)
	Asset Income	35	(1.0%)	(67.3%)	17	(1.2%)	(32.7%)	51	(1.1%)	(100.0%)
	Dependent Allowance	41	(1.2%)	(89.6%)	5	(0.3%)	(10.4%)	45	(1.0%)	(100.0%)
	Elderly Household Allowance	23	(0.7%)	(52.9%)	21	(1.5%)	(47.1%)	44	(0.9%)	(100.0%)
	Child Care Allowance	14	(0.4%)	(82.1%)	3	(0.2%)	(17.9%)	17	(0.4%)	(100.0%)
	Disability Allowance									
	Medical Allowance	75	(2.2%)	(59.3%)	51	(3.7%)	(40.7%)	126	(2.7%)	(100.0%)
	No Error	42	(1.2%)	(100.0%)				42	(0.9%)	(100.0%)
Total with Rent Error Calculation		3,354	(100.0%)	(70.9%)	1,378	(100.0%)	(29.1%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014

Table 12a. Elderly/Disabled Allowances

Allowances	Non-Elderly/Disabled Household			Elderly/Disabled Household			Total		
	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases
No Allowance	2,079	(99.3%)	(100.0%)				2,079	(43.9%)	(100.0%)
Incorrect Allowance	15	(0.7%)	(14.7%)	89	(3.4%)	(85.3%)	104	(2.2%)	(100.0%)
Correct Allowance				2,549	(96.6%)	(100.0%)	2,549	(53.9%)	(100.0%)
Total	2,094	(100.0%)	(44.3%)	2,638	(100.0%)	(55.7%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 12b. Dependent Allowances

Allowances	Households Without Dependent(s)			Households With Dependent(s)			Total		
	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases	# of Cases (in 1,000s)	Col. % of Cases	Row % of Cases
No Allowance	2,700	(99.6%)	(100.0%)				2,700	(57.1%)	(100.0%)
Incorrect Allowance	11	(0.4%)	(10.7%)	91	(4.5%)	(89.3%)	102	(2.2%)	(100.0%)
Correct Allowance				1,929	(95.5%)	(100.0%)	1,929	(40.8%)	(100.0%)
Total	2,711	(100.0%)	(57.3%)	2,020	(100.0%)	(42.7%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 13. Calculation Errors on Form HUD-50058/50059

Items	Form HUD-50058		Form HUD-50059		Total	
	# of Errors	# of Households (in 1,000s)	# of Errors	# of Households (in 1,000s)	# of Errors	# of Households (in 1,000s)
Household Composition	160	159		0	160	159
Net Family Assets and Income	420	294	96	49	516	343
Allowances and Adjusted Income	1,559	1,300		0	1,559	1,300
Family Rent and Subsidy Information	539	306		0	539	306

2015.09.09 [Weighted]

HUDQC FY 2014
Table 14. Consistency Errors on Form HUD-50058/50059

Items	Form HUD-50058		Form HUD-50059		Total	
	# of Errors	# of Households (in 1,000s)	# of Errors	# of Households (in 1,000s)	# of Errors	# of Households (in 1,000s)
General Information	27	27	223	176	250	203
Household Composition	90	60	331	290	421	351
Net Family Assets and Income	225	119		0	225	119
Allowances and Adjusted Income	295	293	7	3	302	296
Family Rent and Subsidy Information	38	38		0	38	38

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15a. Verification of Form HUD-50058/50059 Rent Components
Third-Party Verbal or in Writing, Documentation, or EIV

Rent Component	No Verification		Verification				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	234	(16.3%)	365	(25.5%)	836	(58.2%)	1,436	(100.0%)
Pension, Etc.	114	(4.1%)	277	(9.8%)	2,430	(86.1%)	2,822	(100.0%)
Public Assistance	70	(14.5%)	79	(16.3%)	335	(69.2%)	484	(100.0%)
Other Income	292	(29.5%)	141	(14.3%)	556	(56.2%)	990	(100.0%)
Asset Income	44	(11.7%)	48	(12.8%)	282	(75.5%)	373	(100.0%)
Child Care Expense	47	(27.5%)	21	(12.7%)	102	(59.9%)	170	(100.0%)
Disability Expense	3	(45.8%)	2	(27.0%)	2	(27.2%)	6	(100.0%)
Medical Expense	170	(18.6%)	200	(21.9%)	545	(59.5%)	915	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15b. Verification of Form HUD-50058/50059 Rent Components
Third Party in Writing

Rent Component	No Verification		Verification				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,081	(75.3%)	81	(5.7%)	273	(19.0%)	1,436	(100.0%)
Pension, Etc.	2,805	(99.4%)			17	(0.6%)	2,822	(100.0%)
Public Assistance	409	(84.7%)	11	(2.2%)	64	(13.2%)	484	(100.0%)
Other Income	783	(79.1%)	29	(3.0%)	177	(17.9%)	990	(100.0%)
Asset Income	251	(67.3%)	4	(1.2%)	118	(31.5%)	373	(100.0%)
Child Care Expense	111	(65.7%)	9	(5.4%)	49	(28.9%)	170	(100.0%)
Disability Expense	6	(100.0%)					6	(100.0%)
Medical Expense	831	(90.9%)	9	(1.0%)	74	(8.1%)	915	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15c. Verification of Form HUD-50058/50059 Rent Components
Third Party in Writing or EIV/UIV

Rent Component	No Verification		Verification				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,005	(70.0%)	96	(6.7%)	335	(23.3%)	1,436	(100.0%)
Pension, Etc.	1,216	(43.1%)	148	(5.2%)	1,459	(51.7%)	2,822	(100.0%)
Public Assistance	320	(66.2%)	29	(6.0%)	135	(27.8%)	484	(100.0%)
Other Income	718	(72.6%)	41	(4.1%)	231	(23.3%)	990	(100.0%)
Asset Income	246	(66.0%)	4	(1.2%)	123	(32.8%)	373	(100.0%)
Child Care Expense	111	(65.7%)	9	(5.4%)	49	(28.9%)	170	(100.0%)
Disability Expense	6	(100.0%)					6	(100.0%)
Medical Expense	701	(76.7%)	48	(5.2%)	166	(18.1%)	915	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15d. Verification of Form HUD-50058/50059 Rent Components
Third Party Verbal

Rent Component	No Verification		Verification				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,421	(99.0%)			15	(1.0%)	1,436	(100.0%)
Pension, Etc.	2,820	(99.9%)			1	(0.1%)	2,822	(100.0%)
Public Assistance	480	(99.2%)			4	(0.8%)	484	(100.0%)
Other Income	979	(98.9%)	4	(0.4%)	7	(0.7%)	990	(100.0%)
Asset Income	373	(100.0%)					373	(100.0%)
Child Care Expense	167	(98.5%)			2	(1.5%)	170	(100.0%)
Disability Expense	6	(100.0%)					6	(100.0%)
Medical Expense	912	(99.7%)			3	(0.3%)	915	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15e. Verification of Form HUD-50058/50059 Rent Components
Documentation

Rent Component	No Verification		Verification				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	731	(50.9%)	243	(16.9%)	462	(32.2%)	1,436	(100.0%)
Pension, Etc.	1,985	(70.3%)	75	(2.7%)	762	(27.0%)	2,822	(100.0%)
Public Assistance	238	(49.1%)	50	(10.3%)	196	(40.5%)	484	(100.0%)
Other Income	591	(59.7%)	84	(8.5%)	315	(31.8%)	990	(100.0%)
Asset Income	241	(64.5%)	32	(8.6%)	100	(26.9%)	373	(100.0%)
Child Care Expense	107	(63.2%)	12	(7.2%)	50	(29.5%)	170	(100.0%)
Disability Expense	3	(45.8%)	2	(27.0%)	2	(27.2%)	6	(100.0%)
Medical Expense	580	(63.4%)	96	(10.5%)	238	(26.1%)	915	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15f. Verification of Form HUD-50058/50059 Rent Components
EIV (Enterprise Income Verification)

Rent Component	No Verification		Verification				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,434	(99.9%)			1	(0.1%)	1,436	(100.0%)
Pension, Etc.	1,320	(46.8%)	122	(4.3%)	1,380	(48.9%)	2,822	(100.0%)
Public Assistance	484	(100.0%)					484	(100.0%)
Other Income	990	(100.0%)					990	(100.0%)
Asset Income	373	(100.0%)					373	(100.0%)
Child Care Expense	170	(100.0%)					170	(100.0%)
Disability Expense	6	(100.0%)					6	(100.0%)
Medical Expense	813	(88.9%)	31	(3.4%)	71	(7.7%)	915	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15g. Verification of Form HUD-50058/50059 Rent Components
UIV (Upfront Income Verification)

Rent Component	No Verification		Verification				Total	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Earned Income	1,367	(95.2%)	11	(0.7%)	58	(4.0%)	1,436	(100.0%)
Pension, Etc.	2,811	(99.6%)			11	(0.4%)	2,822	(100.0%)
Public Assistance	394	(81.6%)	18	(3.8%)	71	(14.7%)	484	(100.0%)
Other Income	926	(93.6%)	11	(1.1%)	53	(5.3%)	990	(100.0%)
Asset Income	369	(98.8%)	2	(0.4%)	3	(0.7%)	373	(100.0%)
Child Care Expense	170	(100.0%)					170	(100.0%)
Disability Expense	6	(100.0%)					6	(100.0%)
Medical Expense	908	(99.3%)			7	(0.7%)	915	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15h. Verification of Form HUD-50058/50059 Rent Components
Third-Party Verbal or in Writing, Documentation, or EIV

Rent Component by Program Type		No Verification		Verification				Total	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Public Housing	Earned Income	105	(22.4%)	133	(28.4%)	230	(49.2%)	467	(100.0%)
	Pension, Etc.	23	(3.7%)	60	(9.6%)	538	(86.6%)	621	(100.0%)
	Public Assistance	23	(18.3%)	24	(18.7%)	80	(63.1%)	126	(100.0%)
	Other Income	88	(37.2%)	41	(17.3%)	108	(45.5%)	236	(100.0%)
	Asset Income	15	(23.6%)	10	(15.0%)	39	(61.4%)	64	(100.0%)
	Child Care Expense	13	(29.4%)	13	(29.0%)	18	(41.7%)	44	(100.0%)
	Disability Expense								
	Medical Expense	33	(19.2%)	58	(33.3%)	83	(47.5%)	174	(100.0%)
PHA-administered Section 8	Earned Income	97	(14.0%)	155	(22.5%)	437	(63.5%)	689	(100.0%)
	Pension, Etc.	59	(4.7%)	148	(11.6%)	1,067	(83.7%)	1,274	(100.0%)
	Public Assistance	25	(9.7%)	48	(19.0%)	181	(71.3%)	254	(100.0%)
	Other Income	125	(24.8%)	76	(15.0%)	303	(60.2%)	504	(100.0%)
	Asset Income	24	(20.0%)	17	(14.1%)	78	(65.9%)	119	(100.0%)
	Child Care Expense	31	(36.3%)	1	(1.8%)	52	(61.9%)	85	(100.0%)
	Disability Expense								
	Medical Expense	77	(26.0%)	63	(21.3%)	155	(52.6%)	295	(100.0%)
Owner-administered	Earned Income	33	(11.8%)	78	(27.8%)	169	(60.4%)	280	(100.0%)
	Pension, Etc.	32	(3.5%)	69	(7.5%)	825	(89.1%)	926	(100.0%)
	Public Assistance	22	(21.7%)	7	(6.8%)	74	(71.5%)	103	(100.0%)
	Other Income	79	(31.8%)	25	(9.9%)	146	(58.3%)	250	(100.0%)
	Asset Income	5	(2.6%)	22	(11.3%)	164	(86.1%)	191	(100.0%)
	Child Care Expense	3	(7.5%)	7	(17.7%)	31	(74.8%)	42	(100.0%)
	Disability Expense								
	Medical Expense	60	(13.4%)	79	(17.8%)	307	(68.8%)	446	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15i. Verification of Form HUD-50058/50059 Rent Components
Third Party in Writing

Rent Component by Program Type		Verification						Total	
		No Verification		Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Public Housing	Earned Income	354	(75.8%)	27	(5.7%)	86	(18.5%)	467	(100.0%)
	Pension, Etc.	620	(99.8%)			2	(0.2%)	621	(100.0%)
	Public Assistance	109	(86.4%)	5	(3.8%)	12	(9.8%)	126	(100.0%)
	Other Income	188	(79.8%)	9	(4.0%)	38	(16.2%)	236	(100.0%)
	Asset Income	45	(70.8%)			19	(29.2%)	64	(100.0%)
	Child Care Expense	29	(66.7%)	3	(6.5%)	12	(26.7%)	44	(100.0%)
	Disability Expense								
	Medical Expense	165	(95.1%)	1	(0.9%)	7	(4.1%)	174	(100.0%)
PHA-administered Section 8	Earned Income	558	(81.1%)	27	(4.0%)	103	(14.9%)	689	(100.0%)
	Pension, Etc.	1,269	(99.6%)			6	(0.4%)	1,274	(100.0%)
	Public Assistance	223	(87.6%)	5	(1.8%)	27	(10.6%)	254	(100.0%)
	Other Income	433	(86.0%)	11	(2.2%)	60	(11.8%)	504	(100.0%)
	Asset Income	101	(84.8%)			18	(15.2%)	119	(100.0%)
	Child Care Expense	67	(78.9%)	1	(1.8%)	16	(19.4%)	85	(100.0%)
	Disability Expense								
	Medical Expense	281	(95.0%)			15	(5.0%)	295	(100.0%)
Owner-administered	Earned Income	169	(60.1%)	27	(9.8%)	84	(30.1%)	280	(100.0%)
	Pension, Etc.	916	(98.9%)			10	(1.1%)	926	(100.0%)
	Public Assistance	78	(75.2%)	1	(1.2%)	24	(23.6%)	103	(100.0%)
	Other Income	162	(64.7%)	9	(3.6%)	79	(31.7%)	250	(100.0%)
	Asset Income	105	(55.2%)	4	(2.3%)	81	(42.5%)	191	(100.0%)
	Child Care Expense	16	(37.9%)	5	(11.6%)	21	(50.5%)	42	(100.0%)
	Disability Expense	6	(100.0%)					6	(100.0%)
	Medical Expense	385	(86.4%)	8	(1.8%)	53	(11.8%)	446	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15j. Verification of Form HUD-50058/50059 Rent Components
Third Party in Writing or EIV/UIV

Rent Component by Program Type		No Verification		Verification				Total	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Public Housing	Earned Income	325	(69.6%)	32	(6.8%)	110	(23.6%)	467	(100.0%)
	Pension, Etc.	300	(48.3%)	25	(4.0%)	297	(47.7%)	621	(100.0%)
	Public Assistance	79	(63.0%)	15	(11.7%)	32	(25.3%)	126	(100.0%)
	Other Income	174	(73.7%)	13	(5.4%)	49	(20.9%)	236	(100.0%)
	Asset Income	45	(70.8%)			19	(29.2%)	64	(100.0%)
	Child Care Expense	29	(66.7%)	3	(6.5%)	12	(26.7%)	44	(100.0%)
	Disability Expense								
	Medical Expense	137	(79.1%)	14	(7.8%)	23	(13.1%)	174	(100.0%)
PHA-administered Section 8	Earned Income	520	(75.6%)	36	(5.3%)	132	(19.1%)	689	(100.0%)
	Pension, Etc.	537	(42.1%)	92	(7.2%)	645	(50.6%)	1,274	(100.0%)
	Public Assistance	169	(66.6%)	13	(5.1%)	72	(28.4%)	254	(100.0%)
	Other Income	392	(77.7%)	17	(3.4%)	95	(18.9%)	504	(100.0%)
	Asset Income	98	(82.4%)			21	(17.6%)	119	(100.0%)
	Child Care Expense	67	(78.9%)	1	(1.8%)	16	(19.4%)	85	(100.0%)
	Disability Expense								
	Medical Expense	238	(80.8%)	15	(5.1%)	42	(14.1%)	295	(100.0%)
Owner-administered	Earned Income	160	(57.1%)	27	(9.8%)	93	(33.1%)	280	(100.0%)
	Pension, Etc.	378	(40.9%)	31	(3.3%)	517	(55.8%)	926	(100.0%)
	Public Assistance	72	(69.3%)	1	(1.2%)	31	(29.6%)	103	(100.0%)
	Other Income	153	(61.2%)	11	(4.3%)	86	(34.6%)	250	(100.0%)
	Asset Income	103	(54.1%)	4	(2.3%)	83	(43.5%)	191	(100.0%)
	Child Care Expense	16	(37.9%)	5	(11.6%)	21	(50.5%)	42	(100.0%)
	Disability Expense	6	(100.0%)					6	(100.0%)
	Medical Expense	326	(73.1%)	19	(4.2%)	101	(22.7%)	446	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15k. Verification of Form HUD-50058/50059 Rent Components
Third-Party Verbal

Rent Component by Program Type		Verification						Total	
		No Verification		Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Public Housing	Earned Income	459	(98.4%)			8	(1.6%)	467	(100.0%)
	Pension, Etc.	620	(99.8%)			1	(0.2%)	621	(100.0%)
	Public Assistance	125	(98.8%)			1	(1.2%)	126	(100.0%)
	Other Income	235	(99.6%)	1	(0.4%)			236	(100.0%)
	Asset Income	64	(100.0%)					64	(100.0%)
	Child Care Expense	44	(100.0%)					44	(100.0%)
	Disability Expense								
	Medical Expense	174	(100.0%)					174	(100.0%)
PHA-administered Section 8	Earned Income	683	(99.2%)			5	(0.8%)	689	(100.0%)
	Pension, Etc.	1,274	(100.0%)					1,274	(100.0%)
	Public Assistance	252	(99.0%)			3	(1.0%)	254	(100.0%)
	Other Income	497	(98.7%)	3	(0.6%)	3	(0.7%)	504	(100.0%)
	Asset Income	119	(100.0%)					119	(100.0%)
	Child Care Expense	82	(97.1%)			2	(2.9%)	85	(100.0%)
	Disability Expense								
	Medical Expense	295	(100.0%)					295	(100.0%)
Owner-administered	Earned Income	279	(99.4%)			2	(0.6%)	280	(100.0%)
	Pension, Etc.	926	(100.0%)					926	(100.0%)
	Public Assistance	103	(100.0%)					103	(100.0%)
	Other Income	246	(98.6%)			4	(1.4%)	250	(100.0%)
	Asset Income	191	(100.0%)					191	(100.0%)
	Child Care Expense	42	(100.0%)					42	(100.0%)
	Disability Expense	6	(100.0%)					6	(100.0%)
	Medical Expense	443	(99.3%)			3	(0.7%)	446	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15l. Verification of Form HUD-50058/50059 Rent Components Documentation

Rent Component by Program Type		Verification						Total	
		No Verification		Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Public Housing	Earned Income	279	(59.7%)	85	(18.3%)	103	(22.0%)	467	(100.0%)
	Pension, Etc.	408	(65.7%)	17	(2.7%)	196	(31.6%)	621	(100.0%)
	Public Assistance	71	(56.4%)	9	(6.9%)	46	(36.6%)	126	(100.0%)
	Other Income	155	(65.7%)	24	(10.3%)	57	(24.0%)	236	(100.0%)
	Asset Income	42	(65.6%)	8	(12.3%)	14	(22.0%)	64	(100.0%)
	Child Care Expense	27	(62.7%)	10	(22.4%)	6	(14.9%)	44	(100.0%)
	Disability Expense								
	Medical Expense	95	(54.5%)	32	(18.6%)	47	(27.0%)	174	(100.0%)
PHA-administered Section 8	Earned Income	297	(43.2%)	107	(15.5%)	284	(41.3%)	689	(100.0%)
	Pension, Etc.	901	(70.7%)	35	(2.7%)	339	(26.6%)	1,274	(100.0%)
	Public Assistance	112	(44.2%)	35	(13.9%)	106	(41.9%)	254	(100.0%)
	Other Income	256	(50.8%)	46	(9.1%)	202	(40.1%)	504	(100.0%)
	Asset Income	47	(39.6%)	17	(14.1%)	55	(46.3%)	119	(100.0%)
	Child Care Expense	51	(60.4%)			34	(39.6%)	85	(100.0%)
	Disability Expense								
	Medical Expense	171	(58.0%)	34	(11.6%)	90	(30.4%)	295	(100.0%)
Owner-administered	Earned Income	155	(55.3%)	51	(18.1%)	75	(26.7%)	280	(100.0%)
	Pension, Etc.	675	(72.9%)	24	(2.6%)	227	(24.5%)	926	(100.0%)
	Public Assistance	54	(52.5%)	6	(5.6%)	43	(41.9%)	103	(100.0%)
	Other Income	180	(72.1%)	14	(5.6%)	56	(22.3%)	250	(100.0%)
	Asset Income	152	(79.5%)	8	(4.0%)	31	(16.5%)	191	(100.0%)
	Child Care Expense	29	(69.6%)	3	(6.1%)	10	(24.3%)	42	(100.0%)
	Disability Expense	3	(45.8%)	2	(27.0%)	2	(27.2%)	6	(100.0%)
	Medical Expense	314	(70.5%)	30	(6.7%)	102	(22.8%)	446	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15m. Verification of Form HUD-50058/50059 Rent Components
EIV (Enterprise Income Verification)

Rent Component by Program Type		No Verification		Verification				Total	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Public Housing	Earned Income	466	(99.7%)			1	(0.3%)	467	(100.0%)
	Pension, Etc.	310	(49.8%)	20	(3.2%)	292	(47.0%)	621	(100.0%)
	Public Assistance	126	(100.0%)					126	(100.0%)
	Other Income	236	(100.0%)					236	(100.0%)
	Asset Income	64	(100.0%)					64	(100.0%)
	Child Care Expense	44	(100.0%)					44	(100.0%)
	Disability Expense								
	Medical Expense	149	(85.9%)	12	(7.0%)	12	(7.1%)	174	(100.0%)
PHA-administered Section 8	Earned Income	689	(100.0%)					689	(100.0%)
	Pension, Etc.	573	(45.0%)	81	(6.3%)	621	(48.7%)	1,274	(100.0%)
	Public Assistance	254	(100.0%)					254	(100.0%)
	Other Income	504	(100.0%)					504	(100.0%)
	Asset Income	119	(100.0%)					119	(100.0%)
	Child Care Expense	85	(100.0%)					85	(100.0%)
	Disability Expense								
	Medical Expense	253	(85.7%)	15	(5.1%)	27	(9.2%)	295	(100.0%)
Owner-administered	Earned Income	280	(100.0%)					280	(100.0%)
	Pension, Etc.	437	(47.2%)	21	(2.3%)	467	(50.5%)	926	(100.0%)
	Public Assistance	103	(100.0%)					103	(100.0%)
	Other Income	250	(100.0%)					250	(100.0%)
	Asset Income	191	(100.0%)					191	(100.0%)
	Child Care Expense	42	(100.0%)					42	(100.0%)
	Disability Expense	6	(100.0%)					6	(100.0%)
	Medical Expense	411	(92.2%)	4	(0.8%)	31	(7.0%)	446	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 15n. Verification of Form HUD-50058/50059 Rent Components
UIV (Upfront Income Verification)

Rent Component by Program Type		Verification						Total	
		No Verification		Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases	# of Cases (in 1,000s)	Row % of Cases
Public Housing	Earned Income	441	(94.5%)	5	(1.1%)	21	(4.4%)	467	(100.0%)
	Pension, Etc.	621	(100.0%)					621	(100.0%)
	Public Assistance	97	(76.6%)	10	(7.9%)	20	(15.5%)	126	(100.0%)
	Other Income	222	(93.9%)	3	(1.4%)	11	(4.7%)	236	(100.0%)
	Asset Income	62	(97.4%)	2	(2.6%)			64	(100.0%)
	Child Care Expense	44	(100.0%)					44	(100.0%)
	Disability Expense								
	Medical Expense	172	(99.0%)			2	(1.0%)	174	(100.0%)
PHA-administered Section 8	Earned Income	654	(95.0%)	5	(0.8%)	29	(4.2%)	689	(100.0%)
	Pension, Etc.	1,263	(99.1%)			11	(0.9%)	1,274	(100.0%)
	Public Assistance	201	(78.9%)	8	(3.3%)	45	(17.8%)	254	(100.0%)
	Other Income	462	(91.7%)	6	(1.3%)	35	(7.0%)	504	(100.0%)
	Asset Income	116	(97.7%)			3	(2.3%)	119	(100.0%)
	Child Care Expense	85	(100.0%)					85	(100.0%)
	Disability Expense								
	Medical Expense	290	(98.4%)			5	(1.6%)	295	(100.0%)
Owner-administered	Earned Income	272	(97.0%)			9	(3.0%)	280	(100.0%)
	Pension, Etc.	926	(100.0%)					926	(100.0%)
	Public Assistance	97	(94.1%)			6	(5.9%)	103	(100.0%)
	Other Income	242	(96.9%)	2	(0.6%)	6	(2.4%)	250	(100.0%)
	Asset Income	191	(100.0%)					191	(100.0%)
	Child Care Expense	42	(100.0%)					42	(100.0%)
	Disability Expense	6	(100.0%)					6	(100.0%)
	Medical Expense	446	(100.0%)					446	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014

Table 16a. QC Rent Component for Households With QC Rent Error (>$5)

Rent Component		Form HUD-50058		Form HUD-50059		Total	
		# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households
Earned Income	No Error	2,988	(89.1%)	1,298	(94.2%)	4,286	(90.6%)
	With Error	366	(10.9%)	80	(5.8%)	446	(9.4%)
Pension, Etc.	No Error	3,147	(93.8%)	1,308	(94.9%)	4,455	(94.1%)
	With Error	206	(6.2%)	71	(5.1%)	277	(5.9%)
Public Assistance	No Error	3,300	(98.4%)	1,368	(99.3%)	4,668	(98.7%)
	With Error	54	(1.6%)	10	(0.7%)	64	(1.3%)
Other Income	No Error	3,193	(95.2%)	1,334	(96.8%)	4,527	(95.7%)
	With Error	160	(4.8%)	44	(3.2%)	204	(4.3%)
Asset Income	No Error	3,274	(97.6%)	1,332	(96.7%)	4,606	(97.3%)
	With Error	80	(2.4%)	46	(3.3%)	126	(2.7%)
Child Care Expense	No Error	3,316	(98.9%)	1,365	(99.1%)	4,682	(98.9%)
	With Error	37	(1.1%)	13	(0.9%)	50	(1.1%)
Disability Expense	No Error	3,354	(100.0%)	1,378	(100.0%)	4,732	(100.0%)
	With Error						
Medical Expense	No Error	3,166	(94.4%)	1,268	(92.0%)	4,434	(93.7%)
	With Error	188	(5.6%)	110	(8.0%)	298	(6.3%)
All Components	No Error	2,578	(76.9%)	1,130	(82.0%)	3,708	(78.4%)
	With Error	776	(23.1%)	248	(18.0%)	1,024	(21.6%)
Total		3,354	(100.0%)	1,378	(100.0%)	4,732	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014

Table 16b. QC Error Households With Missing Verification in Tenant File

Rent Component		Form HUD-50058		Form HUD-50059		Total	
		# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households
Earned Income	Verified	175	(47.9%)	37	(46.0%)	212	(47.6%)
	Not Verified	190	(52.1%)	43	(54.0%)	234	(52.4%)
Pension, Etc.	Verified	139	(67.5%)	45	(63.7%)	184	(66.6%)
	Not Verified	67	(32.5%)	26	(36.3%)	93	(33.4%)
Public Assistance	Verified	28	(52.8%)	3	(24.5%)	31	(48.3%)
	Not Verified	25	(47.2%)	8	(75.5%)	33	(51.7%)
Other Income	Verified	76	(47.6%)	12	(27.0%)	88	(43.2%)
	Not Verified	84	(52.4%)	32	(73.0%)	116	(56.8%)
Asset Income	Verified	30	(38.0%)	28	(61.2%)	59	(46.5%)
	Not Verified	49	(62.0%)	18	(38.8%)	67	(53.5%)
Child Care Expense	Verified	6	(14.8%)	6	(46.8%)	12	(23.0%)
	Not Verified	32	(85.2%)	7	(53.2%)	38	(77.0%)
Disability Expense	Verified						
	Not Verified	58	(30.7%)	42	(38.5%)	100	(33.6%)
Medical Expense	Verified	130	(69.3%)	68	(61.5%)	198	(66.4%)
	Not Verified						

2015.09.09 [Weighted]

HUDQC FY 2014

Table 17a. Administrative Error: Number and Percent of Households, Average Dollars in Error For Non-MTW Households With Recalculated Form HUD-50058/50059 Rent Error by Administrative Error Type

Error Type	Non-MTW Households with Recalculated Form HUD-50058/50059 Rent Error		
	# of Households in Error	% of Households in Error	Average Gross Dollar Error
Transcription Error	98	(38.2%)	35.93
No Transcription Error	159	(61.8%)	13.62
Consistency Error	50	(19.5%)	31.78
No Consistency Error	208	(80.5%)	19.81
Allowances Calculation Error	8	(3.2%)	106.28
No Allowances Calculation Error	250	(96.8%)	19.40
Income Calculation Error	8	(3.2%)	106.14
No Income Calculation Error	250	(96.8%)	19.40
Other Calculation Error	14	(5.4%)	39.34
No Other Calculation Error	244	(94.6%)	21.16
Overdue Recertification	8	(2.9%)	29.85
On-time Recertification	233	(90.3%)	23.48
Certification	17	(6.8%)	1.00
Any Administrative/Procedural Error	113	(44.0%)	37.09
No Administrative/Procedural Error	144	(56.0%)	10.41
Total Households	258	(100.0%)	22.14

Note: Data presented above exclude Moving to Work households.

2015.09.09 [Weighted]

HUDQC FY 2014
Table 17b. Administrative Error: Number and Percent of Households, Average Dollars in Error For Households With QC Rent Error by Administrative Error Type

Error Type	Households with QC Rent Error		
	# of Households in Error	% of Households in Error	Average Gross Dollar Error
Transcription Error	932	(80.5%)	54.59
No Transcription Error	225	(19.5%)	58.70
Consistency Error	257	(22.2%)	68.16
No Consistency Error	900	(77.8%)	51.75
Allowances Calculation Error	26	(2.3%)	70.90
No Allowances Calculation Error	1,131	(97.7%)	55.03
Income Calculation Error	44	(3.8%)	88.39
No Income Calculation Error	1,113	(96.2%)	54.09
Other Calculation Error	82	(7.1%)	62.42
No Other Calculation Error	1,075	(92.9%)	54.86
Overdue Recertification	43	(3.7%)	86.33
On-time Recertification	983	(85.0%)	56.43
Certification	131	(11.3%)	37.44
Any Administrative/Procedural Error	984	(85.0%)	57.16
No Administrative/Procedural Error	173	(15.0%)	45.37
Total Households	1,157	(100.0%)	55.39

2015.09.09 [Weighted]

HUDQC FY 2014
Table 18. Administrative Error: Number and Percent of Households, Average Dollars in Error For All Households by Administrative Error Type

Error Type	Gross QC Rent Error			Net QC Rent Error		
	# of Households	% of Households	Average Dollar Error	# of Households	% of Households	Average Dollar Error
Transcription Error	1,904	(40.2%)	26.72	1,904	(40.2%)	-3.96
No Transcription Error	2,828	(59.8%)	4.68	2,828	(59.8%)	-1.68
Consistency Error	930	(19.6%)	18.85	930	(19.6%)	-3.21
No Consistency Error	3,802	(80.4%)	12.25	3,802	(80.4%)	-2.44
Allowances Calculation Error	69	(1.5%)	27.34	69	(1.5%)	-20.23
No Allowances Calculation Error	4,663	(98.5%)	13.35	4,663	(98.5%)	-2.34
Income Calculation Error	94	(2.0%)	41.37	94	(2.0%)	5.09
No Income Calculation Error	4,637	(98.0%)	12.98	4,637	(98.0%)	-2.75
Other Calculation Error	159	(3.4%)	32.27	159	(3.4%)	-4.69
No Other Calculation Error	4,573	(96.6%)	12.90	4,573	(96.6%)	-2.52
Overdue Recertification	75	(1.6%)	49.78	75	(1.6%)	-8.02
On-time Recertification	4,138	(87.5%)	13.41	4,138	(87.5%)	-2.42
Certification	519	(11.0%)	9.46	519	(11.0%)	-3.18
Any Administrative/Procedural Error	2,413	(51.0%)	23.31	2,413	(51.0%)	-3.33
No Administrative/Procedural Error	2,319	(49.0%)	3.39	2,319	(49.0%)	-1.83
Total	4,732	(100.0%)	13.55	4,732	(100.0%)	-2.60

2015.09.09 [Weighted]

HUDQC FY 2014

Table 19. Occupancy Standards on Form HUD-50058/50059

Number of Bedrooms by Occupancy Standard		Public Housing		PHA-administered Section 8		Owner-administered		Total	
		# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households	# of Households (in 1,000s)	% of Households
Under-Housed	0	1	(2.0%)			4	(3.9%)	5	(2.4%)
	1	7	(1.9%)			9	(1.2%)	16	(0.9%)
	2	9	(2.2%)	19	(2.5%)	9	(2.7%)	36	(2.5%)
	3	3	(1.0%)	6	(0.9%)	1	(0.8%)	10	(0.9%)
	4			5	(3.6%)			5	(2.3%)
	5+								
	All Units	19	(1.7%)	30	(1.4%)	23	(1.7%)	72	(1.5%)
Correct	0	65	(98.0%)	58	(100.0%)	103	(96.1%)	227	(97.6%)
	1	349	(98.1%)	577	(100.0%)	746	(98.8%)	1,671	(99.1%)
	2	290	(72.5%)	479	(63.3%)	250	(78.3%)	1,019	(69.0%)
	3	206	(77.8%)	527	(82.6%)	141	(79.0%)	873	(80.8%)
	4	43	(67.9%)	67	(46.0%)	11	(57.2%)	121	(53.0%)
	5+	4	(76.1%)	10	(46.8%)			15	(52.7%)
	All Units	956	(82.8%)	1,719	(78.2%)	1,251	(90.7%)	3,926	(83.0%)
Over-Housed	0								
	1								
	2	101	(25.3%)	259	(34.2%)	61	(19.0%)	421	(28.5%)
	3	56	(21.3%)	105	(16.5%)	36	(20.2%)	198	(18.3%)
	4	20	(32.1%)	74	(50.4%)	8	(42.8%)	102	(44.7%)
	5+	1	(23.9%)	12	(53.2%)			13	(47.3%)
	All Units	179	(15.5%)	450	(20.5%)	104	(7.6%)	734	(15.5%)

2015.09.09 [Weighted]

HUDQC FY 2014
Table 19a. Frequency and Percent of All Households
by Number of Bedrooms and Number of Household Members

Number of Bedrooms	Number of Household Members																					
	1		2		3		4		5		6		7		8		9		10		11	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0	227	97.6%	5	2.4%																		
1	1541	91.4%	130	7.7%	16	0.9%																
2	421	28.5%	594	40.2%	348	23.6%	77	5.2%	25	1.7%	11	0.8%										
3	71	6.6%	127	11.7%	378	34.9%	283	26.2%	143	13.2%	69	6.4%	10	0.9%								
4	5	2.4%	10	4.5%	33	14.2%	54	23.6%	58	25.4%	34	15.0%	9	3.8%	20	8.8%	5	2.3%				
5+	2	8.9%							7	26.0%	3	12.4%	2	6.4%	4	13.7%	7	24.2%	2	8.4%		

2015.09.09 [Weighted]

Source Tables Based on Tenant File Data

Throughout these Source Tables, empty cells indicate that either the result was zero or the analysis was not applicable.

The following tables are based solely on data collected from tenant files.

HUDQC FY 2014 [Tenant File]
Table 2. 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	158	(13.7%)	(25.7%)	864	(74.8%)	(24.2%)	133	(11.5%)	(24.4%)	1,155	(100.0%)	(24.4%)
	Section 8	290	(13.2%)	(47.2%)	1,683	(76.6%)	(47.1%)	226	(10.3%)	(41.3%)	2,199	(100.0%)	(46.5%)
	Total	448	(13.4%)	(72.9%)	2,547	(75.9%)	(71.3%)	359	(10.7%)	(65.7%)	3,354	(100.0%)	(70.9%)
Owner-administered	Owner-administered	166	(12.1%)	(27.1%)	1,024	(74.3%)	(28.7%)	188	(13.6%)	(34.3%)	1,378	(100.0%)	(29.1%)
	Total	166	(12.1%)	(27.1%)	1,024	(74.3%)	(28.7%)	188	(13.6%)	(34.3%)	1,378	(100.0%)	(29.1%)
Total		614	(13.0%)	(100.0%)	3,571	(75.5%)	(100.0%)	546	(11.5%)	(100.0%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014 [Tenant File]
Table 2(S). Percent of Households by Payment Type and Program Type
(Proper Payment Based on Exact Match of Actual and DC 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	194	(16.8%)	(24.6%)	761	(65.9%)	(24.6%)	200	(17.3%)	(23.4%)	1,155	(100.0%)	(24.4%)
	Section 8	374	(17.0%)	(47.4%)	1,438	(65.4%)	(46.6%)	387	(17.6%)	(45.3%)	2,199	(100.0%)	(46.5%)
	Total	568	(16.9%)	(72.0%)	2,199	(65.6%)	(71.2%)	587	(17.5%)	(68.7%)	3,354	(100.0%)	(70.9%)
Owner-administered	Owner-administered	221	(16.0%)	(28.0%)	889	(64.5%)	(28.8%)	268	(19.4%)	(31.3%)	1,378	(100.0%)	(29.1%)
	Total	221	(16.0%)	(28.0%)	889	(64.5%)	(28.8%)	268	(19.4%)	(31.3%)	1,378	(100.0%)	(29.1%)
Total		789	(16.7%)	(100.0%)	3,088	(65.3%)	(100.0%)	855	(18.1%)	(100.0%)	4,732	(100.0%)	(100.0%)

2015.09.09 [Weighted]

HUDQC FY 2014 [Tenant File]
Table 3. Dollar Rent Error by Program Type

Program Type		Actual Rent (Monthly)				C Rent (Monthly)				Gross Rent Error (Monthly)			
		# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	1,155	(24.4%)	313,489	271.47	1,155	(24.4%)	310,885	269.21	1,155	(24.4%)	21,154	18.32
	Section 8	2,199	(46.5%)	486,595	221.31	2,199	(46.5%)	490,076	222.89	2,199	(46.5%)	25,876	11.77
	Total	3,354	(70.9%)	800,084	238.58	3,354	(70.9%)	800,961	238.84	3,354	(70.9%)	47,030	14.02
Owner-administered	Owner-administered	1,378	(29.1%)	290,782	210.99	1,378	(29.1%)	292,967	212.58	1,378	(29.1%)	14,325	10.39
	Total	1,378	(29.1%)	290,782	210.99	1,378	(29.1%)	292,967	212.58	1,378	(29.1%)	14,325	10.39
Total		4,732	(100.0%)	1,090,865	230.55	4,732	(100.0%)	1,093,928	231.19	4,732	(100.0%)	61,355	12.97

2015.09.09 [Weighted]

HUDQC FY 2014 [Tenant File]
Table 4. Dollar Error Amount by Payment Type and Program Type

Program Type		Underpayment (Monthly)				Overpayment (Monthly)				DC Rent (Monthly)			
		# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	158	(25.7%)	9,282	58.76	133	(24.4%)	11,872	89.06	1,155	(24.4%)	310,885	269.21
	Section 8	290	(47.2%)	14,683	50.65	226	(41.3%)	11,192	49.63	2,199	(46.5%)	490,076	222.89
	Total	448	(72.9%)	23,965	53.51	359	(65.7%)	23,064	64.28	3,354	(70.9%)	800,961	238.84
Owner-administered	Owner-administered	166	(27.1%)	8,280	49.74	188	(34.3%)	6,045	32.23	1,378	(29.1%)	292,967	212.58
	Total	166	(27.1%)	8,280	49.74	188	(34.3%)	6,045	32.23	1,378	(29.1%)	292,967	212.58
Total		614	(100.0%)	32,246	52.49	546	(100.0%)	29,109	53.28	4,732	(100.0%)	1,093,928	231.19

2015.09.09 [Weighted]

HUDQC FY 2014 [Tenant File]
Table 4(S). Dollar Error Amount by Payment Type and Program Type
(Proper Payment Based on Exact Match of Actual and DC Rent)

Program Type		Underpayment (Monthly)				Overpayment (Monthly)				DC Rent (Monthly)			
		# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	194	(24.6%)	9,392	48.34	200	(23.4%)	11,996	60.07	1,155	(24.4%)	310,885	269.21
	Section 8	374	(47.4%)	14,895	39.85	387	(45.3%)	11,414	29.47	2,199	(46.5%)	490,076	222.89
	Total	568	(72.0%)	24,287	42.76	587	(68.7%)	23,410	39.88	3,354	(70.9%)	800,961	238.84
Owner-administered	Owner-administered	221	(28.0%)	8,414	38.06	268	(31.3%)	6,228	23.24	1,378	(29.1%)	292,967	212.58
	Total	221	(28.0%)	8,414	38.06	268	(31.3%)	6,228	23.24	1,378	(29.1%)	292,967	212.58
Total		789	(100.0%)	32,701	41.44	855	(100.0%)	29,638	34.67	4,732	(100.0%)	1,093,928	231.19

2015.09.09 [Weighted]

HUDQC FY 2014 [Tenant File]
Table 5. Gross and Net Rent Error by Program Type

Program Type		Gross Rent Error (Monthly)				Net Rent Error (Monthly)				DC Rent (Monthly)			
		# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	1,155	(24.4%)	21,154	18.32	1,155	(24.4%)	2,590	2.24	1,155	(24.4%)	310,885	269.21
	Section 8	2,199	(46.5%)	25,876	11.77	2,199	(46.5%)	-3,491	-1.59	2,199	(46.5%)	490,076	222.89
	Total	3,354	(70.9%)	47,030	14.02	3,354	(70.9%)	-901	-.27	3,354	(70.9%)	800,961	238.84
Owner-administered	Owner-administered	1,378	(29.1%)	14,325	10.39	1,378	(29.1%)	-2,236	-1.62	1,378	(29.1%)	292,967	212.58
	Total	1,378	(29.1%)	14,325	10.39	1,378	(29.1%)	-2,236	-1.62	1,378	(29.1%)	292,967	212.58
Total		4,732	(100.0%)	61,355	12.97	4,732	(100.0%)	-3,137	-.66	4,732	(100.0%)	1,093,928	231.19

2015.09.09 [Weighted]

HUDQC FY 2014 [Tenant File]
Table 5(S). Gross and Net Rent Error by Program Type
(Proper Payment Based on Exact Match of Actual and DC Rent)

Program Type		Gross Rent Error (Monthly)				Net Rent Error (Monthly)				DC Rent (Monthly)			
		# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Avg. Dollar Amount
PHA-administered	Public Housing	1,155	(24.4%)	21,388	18.52	1,155	(24.4%)	2,604	2.25	1,155	(24.4%)	310,885	269.21
	Section 8	2,199	(46.5%)	26,309	11.97	2,199	(46.5%)	-3,481	-1.58	2,199	(46.5%)	490,076	222.89
	Total	3,354	(70.9%)	47,697	14.22	3,354	(70.9%)	-878	-.26	3,354	(70.9%)	800,961	238.84
Owner-administered	Owner-administered	1,378	(29.1%)	14,642	10.62	1,378	(29.1%)	-2,185	-1.59	1,378	(29.1%)	292,967	212.58
	Total	1,378	(29.1%)	14,642	10.62	1,378	(29.1%)	-2,185	-1.59	1,378	(29.1%)	292,967	212.58
Total		4,732	(100.0%)	62,339	13.17	4,732	(100.0%)	-3,063	-.65	4,732	(100.0%)	1,093,928	231.19

2015.09.09 [Weighted]

Appendix D: Consistency and Calculation Errors

APPENDIX D: CONSISTENCY AND CALCULATION ERRORS

Form HUD-50058—Consistency Errors

Form HUD-50058 Item		Error
General Information		
1c.	Program	Must equal P, CE, VO, or MR
2a.	Type of Action	Must equal 1 through 15
2b.	Effective Date of Action	Cannot be earlier than Date of Admission to the Program (2h)
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
3k.	Race	Must equal 1 through 5
3m.	Ethnicity	Must equal 1 or 2
3u.	Family Subsidy Status	Must equal C, E, F, P
3v.	Effective Date	Should not be blank if 3u equals C
Net Family Assets and Income		
6a.	Family Member No.	Must equal a number used in Section 3. Household
7a.	Family Member No.	Must equal a number used in Section 3. Household
7b.	Income Code	Must equal B, F, HA, M, W, G, IW, T, P, S, SS, C, E, I, N, or U
8a.	Total Annual Income	Must equal Total Annual Income recorded in 7i
8i.	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		
8h.	Maximum Disability Allowance	Should only be completed if any member is disabled
8j.	Allowable Disability Assistance Expense	• Should be ≤ Maximum Disability Allowance (8h) • Should be 0 if Medical/Disability Threshold (8f) is > Maximum Disability Allowance (8h) • Should be 0 or blank if Maximum Disability Allowance (8h) is 0 or blank
8k.	Total Medical Expenses	Should only be completed if the head, spouse, or co-head is 62 or over, or disabled; otherwise it should be blank
8n.	Medical/Disability Assistance Allowance	• Should equal Total Annual Disability Assistance and Medical Expense (8m) minus Medical/Disability Threshold (8f) if Allowable Disability Expense (8j) is blank or if the Total Annual Unreimbursed Disability Assistance Expense (8g) is less than the Medical/Disability Threshold (8f) • Should equal Total Annual Disability Assistance and Medical Expense (8m) if Total Annual Unreimbursed Disability Assistance Expense (8g) and Allowable Disability Expense (8j) is ≥ Medical/Disability Threshold (8f)
8p.	Elderly/Disabled Allowance	Should be $400 if head, spouse, or co-head is 62 or over, or disabled; otherwise it should be 0 or blank
8s.	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)

Form HUD-50058—Consistency Errors (continued)

Form HUD-50058 Item	Error
8t. 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. TTP (Public Housing and Turnkey III) 11q. TTP (Section 8: Project Based Certificates and Vouchers) 12r. TTP (Housing Choice Vouchers: Tenant Based Vouchers) 13j. TTP (Section 8: Moderate Rehabilitation [Mod Rehab]) 14s. TTP (Manufactured Home Owner Renting the Space)	Items 10a, 11q, 12r, 13j, or 14s must equal TTP (9j) or be blank
Rent Calculations (item numbers include 10a. through 14ag.)	• If Program (1c) = P: ▪ TTP (10a), must be completed ▪ Flat Rent (10b), Tenant Rent (10f), or Mixed Family Tenant Rent (10s) must be completed ▪ Sections 11 through 14 must be blank • If Program (1c) = VO or C: ▪ Section 11 or 12 must be completed ▪ Tenant Rent (11s or 12k) or Mixed Family Tenant Rent (11ak, or 12ai) must be completed ▪ Sections 10, 13, and 14 must be blank • If Program (1c) = MR: ▪ Contract Rent to Owner must be completed ▪ Tenant Rent (13k) or Mixed Family Tenant Rent (13x) must be completed ▪ Sections 10, 11, 12, and 14 must be blank

Form HUD-50058 MTW*—Consistency Errors

Form HUD-50058 MTW Item	Error
General Information	
1c. Program	Must equal P, PR, or T
2a. Type of Action	Must equal 1 through 15
2b. Effective Date of Action	Cannot be earlier than Date of Admission to the Program (2h)
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
3k. Race	Must equal 1 through 5
3m. Ethnicity	Must equal 1 or 2
3u. Family Subsidy Status	Must equal C, E, F, P
3v. Eligibility Effective Date	Should not be blank if 3u equals C

*For the purpose of the study, we implemented a Moving to Work (MTW) exception if a case was flagged as using the Form HUD-50058 MTW. As a result, there were 112 MTW cases (representing 27 projects) that did not use the Form HUD-50058 MTW, but did adhere to MTW policies. There were no non-MTW cases that used the Form HUD-50058 MTW.

Form HUD-50058 MTW*—Consistency Errors (continued)

Form HUD-50058 MTW Item	Error
Net Family Assets and Income	
18a. Family Member No.	Must equal a number used in Section 3. MTW Household
19a. Family Member No.	Must equal a number used in Section 3. MTW Household
19b. Income Code	Must equal B, F, HA, M, W, G, IW, T, P, S, SS, C, E, I, N, U, or X

Form HUD-50059—Consistency Errors

Form HUD-50059 Item	Error
General Information	
2. Subsidy Type	Must equal 1 through 9
13. Effective Date	Cannot be earlier than Date Tenant Moved into Project (16)
18. Certification Type	Must equal 1 through 5
19. Action Processed	Must equal 1 through 4, or blank
40. Race of Head of Household	Must equal 1 through 4
41. Ethnicity of Head of Household	Must equal 1 or 2
Household Composition	
39. Sex	Must equal M or F
44. Special Status Code	Must equal E, S, H, F, I, J, or blank; should be E if Age > 61
46. Eligibility Code (Citizenship)	Must equal EC, EN, IC, IN, IP, PV, or XX
Net Family Assets and Income	
66. Member No.—Income Info 75. Member No.—Asset Info	Should not be greater than the total number of members listed in item 34 (Family Member Number)
Allowances and Adjusted Income	
97. Deduction for Dependents	Must be completed if Number of Dependents (55) is greater than 0
98. Child Care Expense (work) 99. Child Care Expense (school)	Should only be completed if any member is less than 13 years old
102. Disability Allowance	• Should be ≤ Disability Expenses (101) • Should be 0 if 3% of Annual Income (100) is > Total Disability Assistance Expenses (101) • Should be 0 or blank if Total Disability Expenses (101) is 0 or blank
103. Total Medical Expenses	Should only be completed if the Special Status Code (43) for the head, spouse or co-head = H or E, or if the head, spouse, or co-head is age 62 years old or older
105. Elderly Household Allowance	Should be $400 if the Special Status Code (43) for the head or spouse or co-head = H or E; otherwise it should be 0 or blank
Family Rent and Subsidy Information	
109. Tenant Rent	Should equal the maximum of TTP (108) minus the Utility Allowance (32) or 0, or be blank if the Utility Reimbursement (110) > 0
110. Utility Reimbursement	Should be blank if Item 32 < Item 108

Form HUD-50058—Calculation Errors

Form HUD-50058 Item		Error Calculation
Household Composition		
3f.	Age	Must equal the age calculated based on Date of Birth (3e) and Effective Date of Action (2b)
8q.	Number of Dependents	Must equal the number of household members under 18, with a disability, or a full-time student (other than head, spouse co-head, foster child/adult, or live-in aide)
Net Family Assets and Income		
6f.	Total Asset Value	Must equal the sum of all values in Cash Value of Asset (6d)
6i.	Imputed Asset Income	Must equal Total Cash Value of Asset (6f) times the Passbook Rate (6h) if Total Value of Assets (6f) is > $5,000. If Total Value of Assets (6f) is ≤ $5,000 Imputed Asset Income (6i) = 0
6j.	Income From Asset	Must equal the larger of Total Anticipated Income (6g) or Imputed Asset Income (6i)
7g.	Total Non-Asset Income	Must equal the sum of all values in Income After Exclusions (7f)
7i.	Total Annual Income	Must equal Final Asset Income (6j) + Total Income Other Than Assets (7g)
Allowances and Adjusted Income		
8e.	Total Permissible Deductions	Must equal the sum of all values in Amount of Permissible Deduction (8d)
8f.	3% of Annual Income	Must equal 3% * Total Annual Income (8a)
8h.	Disability Allowance	Must equal Total Annual Unreimbursed Disability Assistance Expense (8g) minus Medical/Disability Threshold (8f) if there is a disabled household member and an earned income greater than or equal to the disability expense
8n.	Medical Allowance	Must equal Total Annual Disability Assistance and Medical Expense (8m) minus Medical/Disability Threshold (8f) if Allowable Disability Assistance Expense (8j) is blank or Total Annual Unreimbursed Disability Assistance Expense (8g) is less than Medical/Disability Threshold (8f); or equal Total Annual Disability Assistance and Medical Expense (8m) if Total Annual Unreimbursed Disability Assistance Expense (8g) and Allowable Disability Assistance Expense (8j) is ≥ Medical/Disability Threshold (8f); if the head, spouse, or co-head is elderly or disabled
8p.	Elderly/Disabled Allowance	Must equal $400 if head, spouse, or co-head is elderly or disabled
8s.	Dependent Allowance	Must equal Number of Dependents (8q) * $480
8t.	Child Care Costs	Must be 0 or blank if no household member is under age 13
8x.	Total Allowance	Must equal Total Permissible Deductions (8e) + Medical / Disability Assistance Allowance (8n) + Elderly / Disability Allowance (8p) + Dependent Allowance (8s) + Total Annual Unreimbursed Childcare Costs (8t) + Total Annual Travel Cost to Work/School (8u)
8y.	Adjusted Annual Income	Must equal Total Annual Income (8a) minus Total Allowances (8x)
Family Rent and Subsidy Information		
9j.	Total Tenant Payment	Must equal the highest of TTP if Based on Annual Income (9c), TTP if Based on Adjusted Annual Income (9f), Welfare Rent (9g), Minimum Rent (9h), or Enhanced Voucher Minimum Rent (9i)
12p.	Gross Rent	Must equal Rent to Owner (12k) + Utility Allowance (12m)
Tenant Rent (item number varies by program)		Tenant Rent must equal the recalculated tenant rent based on the Rent Calculation rules provided in Appendix A

Note: With the exception of tenant rent, negative numbers are always converted to 0.

Form HUD-50058 MTW—Calculation Errors

Form HUD-50058 MTW Item		Error Calculation
Household Composition		
3f.	Age	Must equal the age calculated based on Date of Birth (3e) and Effective Date of Action (2b)
Net Family Assets and Income		
18f.	Total Asset Value	Must equal the sum of all values in Cash Value of Asset (18d)
18i.	Imputed Asset Income	Must equal Total Cash Value of Asset (18f) times the Passbook Rate (18h) if Total Value of Assets (18f) is > $5,000. If Total Value of Assets (18f) is ≤ $5,000 Imputed Asset Income (18i) = 0
18j.	Income from Asset	Must equal the larger of Total Anticipated Income (18g) or Imputed Asset Income (18i)
19h.	Total Non-Asset Income	Must equal the sum of all values in Income After Exclusions (19f)
19i.	Total Annual Income	Must equal Final Asset Income (18j) + Total Income Other Than Assets (19h)
Allowances and Adjusted Income		
19k.	Adjusted Annual Income	Must equal Total Annual Income (19i) minus Total Deductions (19j)
Family Rent and Subsidy Information		
21k.	Gross Rent	Must equal Rent to Owner (21i) + Utility Allowance/estimate (21j)

Note: With the exception of tenant rent, negative numbers are always converted to 0.

Form HUD-50059—Calculation Errors

Form HUD-50059 Item		Error Calculation
Household Composition		
48.	Age	Must equal the age calculated based on Date of Birth (42) and Effective Date of Action (13)
53.	Number of Family Members	Must equal the number of family members listed
54.	Number of Non-Family Members	Must equal the number of family members listed with a relationship code of “L” or “F”
55.	Number of Dependents	Must equal the number of household members under 18, with a disability, or a full-time student (other than head, spouse co-head, foster child/adult, or live-in aide)
Net Family Assets and Income		
81.	Total Asset Value	Must equal the sum of the asset values in Cash Value of Assets (78)
82.	Actual Income From Asset	Must equal the sum of the income values in Actual Yearly Income From Assets (79)
84.	Imputed Asset Income	Must equal Total Asset Value (81) * 2%, if Total Value of Assets is > $5,000
70.	Earned Income Sum	Must equal the sum of income values (in item 68) for items with codes B, F, M, or W in Income Type Code (67)
71.	Pension Income Sum	Must equal the sum of the income values (in item 68) for items with codes PE, SI, or SS in Income Type Code (67)
72.	Public Assistance Income Sum	Must equal the sum of the income values (in item 68) for items with codes TA or G in Income Type Code (67)
73.	Other Income Sum	Must equal the sum of the income values (in item 68) for items with codes CS, I, N, or U in Income Type Code (67)

Form HUD-50059 Form—Calculation Errors (continued)

Form HUD-50059 Item		Error Calculation
74.	Total Non-Asset Income	Must equal Earned Income Sum (70) + Pension Income Sum (71) + Public Assistance Income Sum (72) + Other Income Sum (73)
85.	Asset Income	Must equal the greater of Imputed Asset Income (84) or Actual Income from Asset (82)
86.	Total Annual Income	Must equal Total Non-Asset Income (74) + Income from Asset (85)
Allowances and Adjusted Income		
97.	Dependent Allowance	Must equal Number of Dependents (55) * $480
98. 99.	Child Care Expense (work) Child Care Expense (school)	Must be 0 or blank if no household member is under age 13
100.	3% of Annual Income	Must equal Total Annual Income (86) * .03
102.	Disability Allowance	Must equal Total Disability Expenses (101) minus 3% of Annual Income (100) if there is a disabled household member and if there is earned income greater than or equal to the disability expense
104.	Medical Allowance	Must equal Total Medical Expenses (103) minus 3% of Annual Income (100) if Total Disability Expense (101) = 0; or if (Disability Deduction (102) = 0, then Medical Deduction (104) = Total Medical Expenses (103) + Total Disability Expenses (101) - 3% of Annual Income (86), if the head, spouse, or co-head is elderly or disabled
105.	Elderly Household Allowance	Must equal $400 if head, spouse, or co-head is elderly or disabled
106.	Total Allowance	Must equal Deduction for Dependents (97) + Child Care Expense Allowance (98 + 99) + Allowance for Disability Expenses (101) + Deduction for Medical Expenses (104) + Elderly Family Deduction (105)
107.	Adjusted Annual Income	Must equal Total Annual Income (86) minus Total Allowances (106)
Family Rent and Subsidy Information		
33.	Gross Rent	Must equal Contract Rent (31) + Utility Allowance (32)
108.	Total Tenant Payment	Must equal the higher of 30% of Adjusted Income (107), 10% of Total Annual Income (86), Welfare Rent (112), or $25 (Minimum Rent)
109.	Tenant Rent	Tenant Rent must equal the recalculated tenant rent based on the Rent Calculation rules provided in Appendix A

Note: With the exception of tenant rent, negative numbers are always converted to 0.

Appendix E: Project Staff Questionnaire Descriptive Analysis

APPENDIX E: PROJECT STAFF QUESTIONNAIRE DESCRIPTIVE ANALYSIS

The Project Staff Questionnaire (PSQ) was designed to obtain project-level information about the characteristics and processes that support the Public Housing Authority (PHA) and project staff's calculation of rent during certification transactions, including initial and annual certifications. The questionnaire aimed to identify structural procedures, standards, and policies that may hinder accurate rent determination to uncover potential areas of improvement. The PSQ is a self-administered online questionnaire sent to managers and executive directors of PHAs/projects included in the FY 2014 QC study.

A. Methodology

The PSQ was administered as a Web questionnaire using a survey package called SelectSurvey. In February 2015, ICF staff contacted PHAs/projects via email with instructions on how to access and complete the survey. Follow-up emails and telephone calls were made through the end of May to PHAs/projects, reminding staff to complete the PSQ survey. Assistance was requested from HUD to encourage some of the nonresponsive PHAs/projects to complete the questionnaire. Overall, these efforts led to a response rate of 96.1 percent; 517 out of 538 PHAs/projects completed the PSQ. After data collection, we examined the data to confirm the completeness and validity of responses. PSQ surveys containing questionable responses or skip patterns were individually investigated and data issues were resolved. Four cases were removed due to missing data, which resulted in 513 cases and a response rate of 95.3 percent.[39] Further, the PSQ responses were analyzed separately for three major program types: Public Housing (193 projects), PHA-administered Section 8 (133 projects), and Owner-administered Section 8 (187 projects). This analysis was conducted using SPSS, |version 22.

The content of the FY 2014 PSQ was similar to the FY 2013 PSQ. It maintained a combination of open-ended and closed-ended questions. Topics included project characteristics, software usage, training and development, performance management, and quality control (QC) procedures. The results presented in this report reflect the project's response for the study period of November 1, 2013, to October 31, 2014.

B. Results

The results of the PSQ are presented in three sections, corresponding to the sections in the survey.

1. **PHA/Project Characteristics.** The PSQ surveyed respondents on PHA/project characteristics that may help to explain differences in error rates. This section included questions about the number and types of staff, number of project units/tenants and certifications conducted, staff work experience, staff work assignments and workload, and staff use of software and computer technology related to certification tasks.
2. **Training and Development.** The second section of the survey gathered information about the nature and extent of rent calculation training for new and experienced certification staff,

[39] These projects only responded to the first question of the PSQ on the context of their responses.

procedures for implementing new policies related to rent calculation, and certification staff work practices.

3. **Performance Management.** The PSQ also inquired about various aspects of performance management of certification activities and QC reviews. Questions related to the timing of reviews, methods used to select cases for review, the type of certification information reviewed for QC, the prevalence of various types of rent calculation errors, and performance feedback methods and timing.

We continue with a highlight of a few findings from the survey, by the sections outlined above.

1. PHA/Project Characteristics

Type and Number of Staff

Beginning in FY 2008, the PSQ collected information from projects about whether or not they could provide information about the administration of rental assistance in the project specifically selected for the QC study review. Some PHAs/projects cannot provide information about practices for a specific project because PHA/project staff work across multiple counties or across a number of assisted housing units, beyond the site or county selected for QC review. In FY 2014, organizations that could not provide information specific to a project but offered information about their entire organization indicated that they employed an average of 26 staff members who supported an average total of 3,546 units/households (see Exhibit E-1a). These organizations reported an average ratio of 106 assisted units/households per total staff. PHA-administered Section 8 projects had the highest ratio of units per total staff in the entire organization at 240, Owner-administered projects had the smallest ratio at 22, and Public Housing projects were in the middle with an average of 71 units per total staff in the organization.

In FY 2014, PHAs and management companies that could provide information on a specific project averaged 12 employees (see Exhibit E-1a). PHA-administered Section 8 projects averaged 22 employees, followed by Public Housing with 12 employees, and Owner-administered projects with 5 employees. On average, PHA/project staff supported about 1,277 units across all three program types over a 12-month period, with an average ratio of 89 units per total staff. PHA-administered Section 8 projects had the highest ratio of units per total staff at 168, Owner-administered projects had the smallest ratio at 44, and Public Housing averaged 80 units per total staff.

In addition to the general ratio of total employed staff to units/households served, the PSQ collected information about the specific certification of staff members who performed move-in and annual certifications, the QC of certification transactions, and the supervision of certification staff at the PHA/project. In FY 2014, the PHA/project averaged seven certification staff members who conducted an average of 133 move-in/initial certifications and 1,261 annual certifications over a 12-month period (see Exhibit E-1a). PHA-administered Section 8 projects had the highest average number of certification staff at 18, but these sites also performed the most work overall, with an average of 420 initial certifications and 3,992 annual certifications completed during the study period. Owner-administered projects and Public Housing projects both had the smallest average with three staff members. Owner-administered projects managed 23 initial certifications and 143 annual certifications, while Public Housing projects managed 40 initial certifications and 425 annual certifications conducted in FY 2014.

Exhibit E-1a: Average Number of Staff and Certifications, by Program Type

Average Number of Staff and Average Number of Certifications Performed	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Entire Organizations				
Total Number of Staff the Entire Organization Employs	11.3	67.8	4.1	25.5
Total Number of Assisted Units Supported by These Staff	463.9	11,834.4	80.3	3,545.6
Units per Entire Organization Staff Ratio	70.5	239.9	22.3	105.7
Individual Projects				
Total Number of Staff the Individual Project Employs	12.3	22.0	5.2	12.0
Total Number of Assisted Units Supported by These Staff	452.6	4,065.7	163.6	1,276.9
Units per Individual Project Staff Ratio	80.3	167.6	43.8	88.9
Entire Organizations and Individual Projects				
Number of Certification Staff Who Work at the PHA/Project	3.4	17.5	2.8	6.9
Number of Initial/Move-in Certifications Conducted Over a 12-Month Period	40.1	420.3	23.0	132.6
Number of Annual Certifications Conducted Over a 12-Month Period	425.4	3,992.0	143.0	1,260.8

Note: Averages were calculated based on the number of PHAs/projects that responded to the specific items.

Experienced Certification Staff and Certification Staff Turnover

The PSQ collected information about the number of experienced certification staff at the PHA/project. In the survey, experienced certification staff was defined as certification staff members with more than 1 year of certification experience at the project. On average, PHA-administered Section 8 projects reported having 16 experienced staff, while Public Housing had 3 experienced certification staff, and Owner-administered projects had 2 experienced staff during the study period (see Exhibit E-1b).

PHAs/projects were also asked about the rate of certification staff turnover. Thirty-one percent of PHAs/projects in the study indicated that they had staff turnover of at least one certification employee from November 1, 2013, to October 31, 2014 (see Exhibit E-1b). This was an increase from 25 percent in FY 2013. For PHAs/projects overall, there was an average turnover of two certification staff during the study period. PHA-administered Section 8 projects were most likely to have certification staff turnover during the study period (36%) and reported the largest turnover (four certification staff). Public Housing projects were least likely to have certification staff turnover (28%) and reported turnover of two certification staff. Thirty percent of Owner-administered projects had some turnover with an average of one certification staff leaving the project in FY 2014.

Exhibit E-1b: Experienced Certification Staff and Staff Turnover, by Program Type

Average Number of Certification Staff	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Experienced Certification Staff				
Certification Staff With More Than One Year of Experience	2.7	16.1	2.4	6.1
Certification Staff Turnover				
PHAs/Projects with One or More Certification Staff that Stopped Working on Certification Activities	27.5%	36.1%	29.9%	30.6%
Average Number of Certification Staff that Stopped Working on Certification Activities*	1.6	3.8	1.4	2.2

Note: Averages and percentages were calculated based on the number of PHAs/projects that responded to the specific items.
* Averages were calculated based on the PHAs/projects that had staff turnover.

Basic descriptive statistics were used to determine differences between projects with staff turnover and those without staff turnover.[40] Projects with turnover had a higher ratio of units per staff member (96) compared to those without turnover (90) (see Exhibit E-1c). Accordingly, projects with turnover were more likely to report a heavy workload (54%) compared to those without turnover (48%). Furthermore, projects with turnover were slightly less likely to contract out certification activities (92%) than those without turnover (89%).

Exhibit E-1c: Exploratory Analyses of Project Characteristics, by Turnover

Project Characteristics	Turnover	
	0 Staff	1+ Staff
Units to Staff Ratio	89.7	96.4
High Workload	47.7%	54.1%
Does Not Contract Out Certification Activities	89.1%	91.7%

Certification Staff Assignments and Workload

The FY 2014 PSQ asked PHAs/projects to explain how work was assigned to certification staff. The most frequently employed methods for dividing work were by certification transaction type (17%) and by random assignment of cases based on staff availability (17%) (see Exhibit E-1d). Case assignments by certification activity type and assignments based on tenant last name were methods with the least amount of reported use (11% and 9%, respectively), while there was almost no reported work assigned by household characteristics (1%). Although the question provided a variety of case assignments methods, nearly half of PHAs/projects reported that they use a case assignment method other than those provided in the survey (43%).

[40] These analyses were completed for exploratory purposes and, due to their independent nature, should not be considered causation. There could be other variables, such as size of the project or location, that influence both turnover and the other characteristics analyzed. Therefore, the following findings should be taken as the first step in the long process of analysis, and should not lead to premature conclusions.

Exhibit E-1d: Certification Staff Case Assignment Methods, by Program Type

Certification Staff Case Assignment Methods	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
By Transaction Type (i.e., Some Staff Work on Move-Ins Only, Some Staff Work on Annual Certifications Only, Some Work on Interims and Transfers Only, etc.)	12.4%	17.3%	22.5%	17.3%
Random Assignment Based on Staff Availability	14.0%	15.0%	21.9%	17.2%
By Activity Type (i.e., Some Certification Staff Perform Interviews and Send Out Initial Third-Party Verifications, While Other Staff Perform Rent Calculations and Data Enter Form HUD-50058/50059)	9.3%	5.3%	17.1%	11.1%
Alphabetical By Tenant Last Name (e.g., Households with a Last Name that Starts with Any Letter Between "A" Through "E" Belong to One Certification Staff/Staff Team)	1.6%	32.3%	0.5%	9.2%
By Household Characteristic (i.e., More Complicated Cases Go to Particular Staff)	1.0%	0.8%	1.1 %	1.0%
Other Assignment Method Not Listed	59.6%	29.3%	35.3%	42.9%

Note: Percentages were calculated based on the number of PHAs/projects that responded to the specific items.

A look at program-specific breakdowns indicates that PHA-administered Section 8 projects were considerably more likely to assign work alphabetically by tenant last name (32%), while less than one percent of Owner-administered projects and about two percent of Public Housing projects relied on this method (see Exhibit E-1d). Public Housing projects were most likely to use a case assignment method other than the options provided in the survey (60%). Owner-administered projects were most likely to assign work by certification transaction type (23%), randomly (22%), and by certification activity type (17%).

In addition to methods of assigning work, PHAs/projects were asked to comment on the average workload for certification staff at the project. The results show that certification staff were almost evenly divided between having either a manageable workload (i.e., a workload that is neither too low nor too high) or a high workload (both 49%), indicating that more than 98 percent of PHAs/projects typically have a moderate to high workload (see Exhibit E-1e). With respect to program type, Owner-administered projects were most likely to report a manageable workload (58%) from November 1, 2013, to October 31, 2014, while PHA-administered Section 8 projects were most susceptible to heavy workloads (62%).

Exhibit E-1e: Certification Staff Average Workload, by Program Type

Certification Staff Average Workload	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
The Workload Was High	49.2%	61.7%	40.1%	49.1%
The Workload Was Not Too Low or Too High	48.2%	38.3%	57.8%	49.1%
The Workload Was Low	0.5%	0.0%	0.5%	0.4%

Note: Percentages were calculated based on the number of PHAs/projects that responded to the specific item.

Organizations Contracted to Perform Certification Activities

Despite the moderate to heavy workloads experienced by certification staff, a large majority of PHAs/projects (89%) indicated that they do not outsource certification activities to outside organizations (see Exhibit E-1f). The small portion of projects that did have a certification contractor in the past year was most likely to hire a private company to handle certifications (5%), instead of government administration (3%) or a nonprofit entity (2%). With respect to program type, PHA-administered Section 8 projects were least likely to use a contractor, with 90 percent of projects performing certifications themselves; however, Owner-administered projects and Public Housing projects reported similar numbers (88% and 89%, respectively). When Owner-administered sites chose to contract out certification activities, they were most likely to choose private companies (6%). When Public Housing sites chose to contract out certification activities, they were most likely to choose government contractors (6%).

Exhibit E-1f: Organizations Contracted to Perform Certification Activities, by Program Type

Organizations Contracted to Perform Certifications	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
PHA/Project Does Not Contract Out Certification Activities	89.1%	89.5%	88.2%	88.9%
Private Company	2.6 %	6.0%	6.4%	4.9%
Government	6.2%	1.5%	0.5%	2.9%
Nonprofit Organization	0.0%	3.0%	3.2%	1.9%

Note: Percentages were calculated for PHAs/projects that responded to the specific item.

Utilization and Capabilities of Computer Software in the Certification Process

Automated systems and computer software continued to play an integral part in a PHA/project's daily tasks. PHAs/projects were asked to describe for which tasks certification staff used computer systems. Virtually all of the PHAs/projects (at least 90%) reported using computers to print letters to tenants, to print Form HUD-50058/50059, to calculate income, expenses, and allowances and to record tenant demographics (see Exhibit E-1g). The majority also acknowledged using computer software to input certification interview information (82%), to determine certification dates/appointments (74%), to record other types of statistics (72%), and to keep track of pending verification documents (59%). Less than half of PHAs/projects reported using computer systems to store electronic copies of verification documents (44%), to conduct rent reasonableness comparisons

(41%), or to conduct computer-assisted interviews with tenants (39%). The largest increase from FY 2013 to FY 2014 was found in inputting certification interview or application responses (from 74% to 82%) and determining certification appointment dates (from 66% to 74%). PHA-administered Section 8 sites were the most likely to use software in every category.

Exhibit E-1g: Use of Computer Systems for Key Tasks, by Program Type

Use of Computer Systems	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Printing Letters to Tenants	96.9%	97.7%	93.6%	95.9%
Calculating Income, Expenses, and Allowances	95.9%	96.2%	93.0%	94.9%
Printing Form HUD-50058/50059	90.7%	97.0%	96.3%	94.3%
Recording Tenant Age, Ethnicity, Family Size, or Other Demographics	86.5%	97.7%	88.8%	90.3%
Inputting Certification Interview or Application Responses	80.8%	82.0%	81.8%	81.5%
Determining Certification Appointment Dates	75.6%	76.7%	70.1%	73.9%
Keeping Other Types of Statistics	69.9%	84.2%	65.2%	71.9%
Keeping Track of Pending Verification Documents	58.5%	59.4%	58.3%	58.7%
Storing Electronic Verification Documents	42.5%	49.6%	41.7%	44.1%
Conducting Rent Reasonableness Comparisons	28.0%	82.0%	25.1%	40.9%
Conducting Computer-Assisted Interviews with Tenants	48.2%	33.1%	32.6%	38.6%

Note: Percentages were calculated for PHAs/projects that responded to the specific items.

In addition to the tasks shown in Exhibit E-1g, 96 percent of PHAs/projects indicated that they have used computer software to help calculate tenant rent, with PHA-administered Section 8 being most likely (99%) (see Exhibit E-1h). Of that 96 percent, a great portion reported that their software was capable of assisting staff by storing household-specific information from previous Form HUD-50058/50059 (95%), annualizing individual sources of income/expenses (92%), submitting data to PIC/TRACS (88%), and containing pre-loaded information that identifies the appropriate payment standard or utility allowance (86%). In addition, 71 percent of PHAs/projects reported that their software was limited in its capabilities by requiring users to enter Form HUD-50058/50059 after its manual completion.

Program-specific results show that PHA-administered Section 8 and Owner-administered projects were about equally likely to report using software that is capable of submitting data to PIC/TRACS (92%); conversely, only 82 percent of Public Housing projects had software with this ability (see Exhibit E-1h). Also, PHA-administered Section 8 and Owner-administered projects were about equally likely to report using software containing pre-loaded information that identifies the appropriate payment standard or utility allowance (92% and 91%, respectively); conversely, only 77 percent of Public Housing projects had software with this ability.

Exhibit E-1h: Functionalities of Computer Software, by Program Type

Tasks Performed Using Computer Software	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Certification Staff Use Computer Software to Help Calculate Tenant Rent	93.8%	99.2%	96.3%	96.1%
Functionalities				
Stores Household-Specific Information From Previous Form HUD-50058/50059s and Allows Updating With Current Information*	91.7%	95.5%	97.2%	94.7%
Annualizes Individual Sources of Income/Expenses When Information Is Entered*	89.0%	93.2%	93.9%	91.9%
Submits Data to PIC/TRACS*	82.3%	92.4%	91.7%	88.4%
Contains Pre-Loaded Information that Identifies the Appropriate Payment Standard/Utility Allowance for Each Household Based on Information Entered*	76.8%	92.4%	90.6%	86.0%
User Must Enter Form HUD-50058/50059 Data After Its Manual Completion*	64.6%	74.2%	73.9%	70.6%

Note: Percentages were calculated for PHAs/projects that responded to the specific item.
* Percentages were calculated based on PHAs/projects that indicated using computer software to help calculate rent.

2. Training and Development

Certification Staff Training and Development

The PSQ collected information about the amount and type of training provided to certification staff during the study period. Sixty-seven percent of PHAs/projects reported having a training department or staff trainer that provided guidance to staff working on rent calculation activities, with more Owner-administered programs having this (73%) than either Public Housing (65%) or PHA-administered Section 8 (61%) (see Exhibit E-2a). Questions about training methods, topics, and hours were asked both for new staff and experienced certification st*Training for New Staff*

The average number of hours of training provided to each new certification staff member prior to performing rent calculations unassisted varied greatly by program type. Public Housing programs provided the least number of training hours (35), followed by Owner-administered sites (40) and PHA-administered Section 8 who provided an average of 84 hours of training for new certification staff (see Exhibit E-2a). The overall average for all program types was 50 hours of training, and is the lowest in the last five years; 55 average hours were provided to staff in FY 2013, 65 average hours in FY 2012, 89 hours on average in FY 2011, and about 85 training hours in FY 2010.[41]

[41] Training hour averages for FY 2012, FY 2011, and FY 2010 were calculated as the average for new recertification staff and reassigned staff due to a change in the question for FY 2013 and FY 2014.

Exhibit E-2a: Presence of Training Staff in PHA/Project and Average Training Hours for Certification Staff, by Program Type

Training Staff Present in PHA/Project and Average Training Hours for Certification Staff	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Training Department				
PHA/Project Has a Training Department or Staff Trainer for Certification Staff	64.8%	60.9%	72.7%	66.7%
Training Hours				
Average Number of Training Hours Before Staff Can Perform Rent Calculations Unassisted	35.4	84.4	39.6	49.8

Note: Percentages and averages were calculated for PHAs/projects that responded to the specific item

PHAs/projects were asked to explain in further detail the number of training hours typically provided to one certification staff member. PHAs/projects reported the approximate number of rent calculation training hours a typical new staff member is provided via various training methods (see Exhibit E-2b). The reported hours were used to calculate the average percentage of PHAs/projects that have used the various methods during the study period, where zero hours indicated that the method was not used. The most used training method was reading policies and procedural guides on their own (96%), followed by shadowing or mentorship with experienced staff (91%), and classroom-style training administered in-house (69%). The methods least likely to be used were a training activity that was not listed (30%) and Web-based or recorded training video created in-house (28%).

In FY 2012, FY 2011, and FY 2010, PHAs/projects were asked to rank the three most frequently used training methods so that percentages of training utilization within each PHA/project could be calculated. In FY 2013 and FY 2014, any training hours reported for the various methods indicated utilization. The calculated percentages for FY 2014 imply that there was a marked increase in the use of Web-based or recorded training video created by an outside organization compared to FY 2013 (from 33% to 40%). The data also suggest increased use of Web-based or recorded training video created in-house, from 15 percent in FY 2013 to 28 percent in FY 2014. Reliance on self-guided training, classroom-style training administered in-house, and shadowing or mentorship with more experienced staff have remained stable and well used since FY 2013.

In FY 2014, nearly all PHA-administered Section 8 projects prepared new certification employees by having them read policies and procedural guides (99%) or shadow experienced staff (97%) (see Exhibit E-2b). PHA-administered Section 8 projects were much less likely to use Web-based or recorded training videos created in-house (15%). Public Housing projects were least likely to use classroom-style training administered by an outside organization (42%), while Owner-administered projects were least likely to use a Web-based or recorded training video created by HUD (30%).

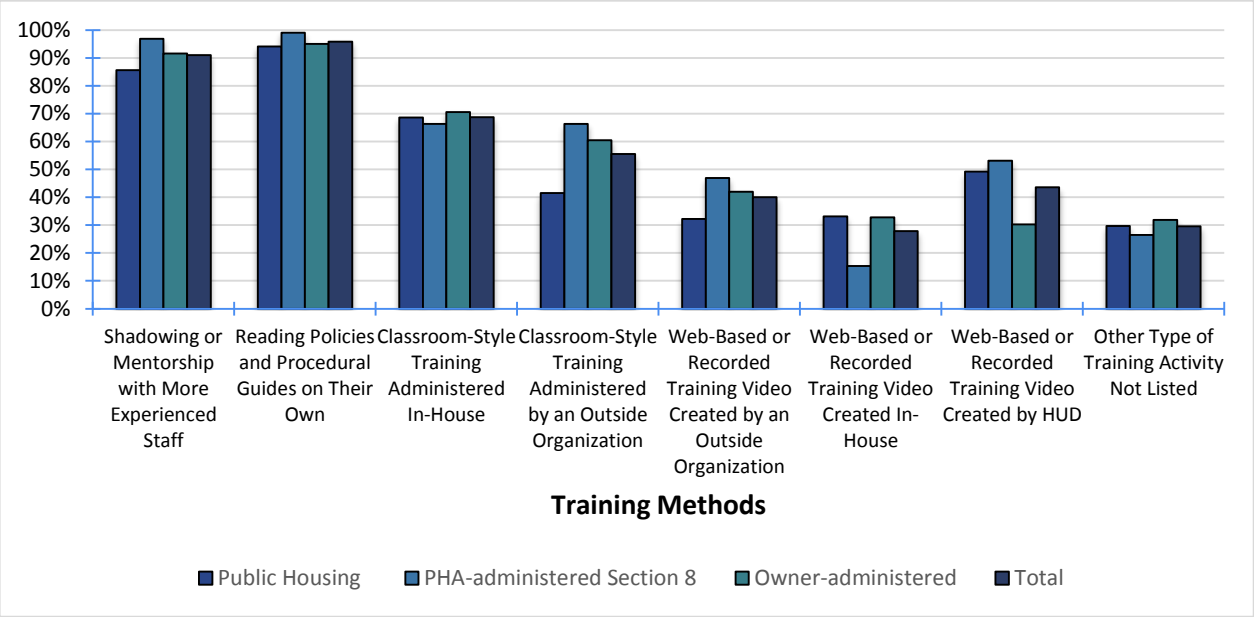
Exhibit E-2c: Average Training Hours per Training Method for New Certification Staff, by Program Type

Training Methods for New Staff	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Shadowing or Mentorship With More Experienced Staff	61.6	137.5	103.2	98.4
Reading Policies and Procedural Guides on Their Own	24.4	68.9	18.5	35.3
Classroom-Style Training Administered In-House	19.9	24.0	16.2	19.8
Classroom-Style Training Administered by an Outside Organization	14.3	17.8	11.1	14.2
Web-Based or Recorded Training Video Created by an Outside Organization	8.4	5.0	22.1	12.3
Web-Based or Recorded Training Video Created In-House	7.4	1.5	22.8	11.1
Web-Based or Recorded Training Video Created by HUD	9.1	4.0	1.7	5.0
Other Type of Training Activity Not Mentioned Above	10.5	17.1	4.2	10.2

Note: Averages calculated for those PHAs/projects that had new certification staff in FY 2014.

Although most PHAs/projects relied on new staff to self-train by reading policies and procedural guides, an average of only 35 total hours per staff member was spent on this training method (see Exhibit E-2c). PHAs/projects dedicated the most training hours to shadowing and mentorship with more experienced staff, with an average of approximately 98 hours for each new certification staff member from November 1, 2013, to October 31, 2014. This was a decrease from FY 2013 when 44 hours were spent self-training and 120 hours on shadowing. The fewest hours of training were spent using a Web-based or recorded training video created by HUD (5 hours).

Exhibit E2-b: Methods Used to Train New Certification Staff, by Program Type



Note: Percentages calculated for those PHAs/projects that had new certification staff in FY 2014.

PHA/project training topics used to educate staff on conducting certifications are also important in determining activities that support proper rent calculation. PHAs/projects reported the approximate number of rent calculation training hours for a typical new staff member on various training topics. These hours were used to calculate the average percentage of PHAs/projects that provided various training topics related to certification activities from November 1, 2013, to October 31, 2014, where zero hours indicated that the training topic was not presented to certification staff. For new certification staff, virtually all (at least 88%) of PHAs/projects provided training in every topic area listed (see Exhibit E-2f). The average number of hours spent on each topic per staff member, was, for the most part, evenly distributed among the topic areas with averages from about 16 to 25 hours during the study period, with the most time spent on calculating earned income sources (see Exhibit E-2g).

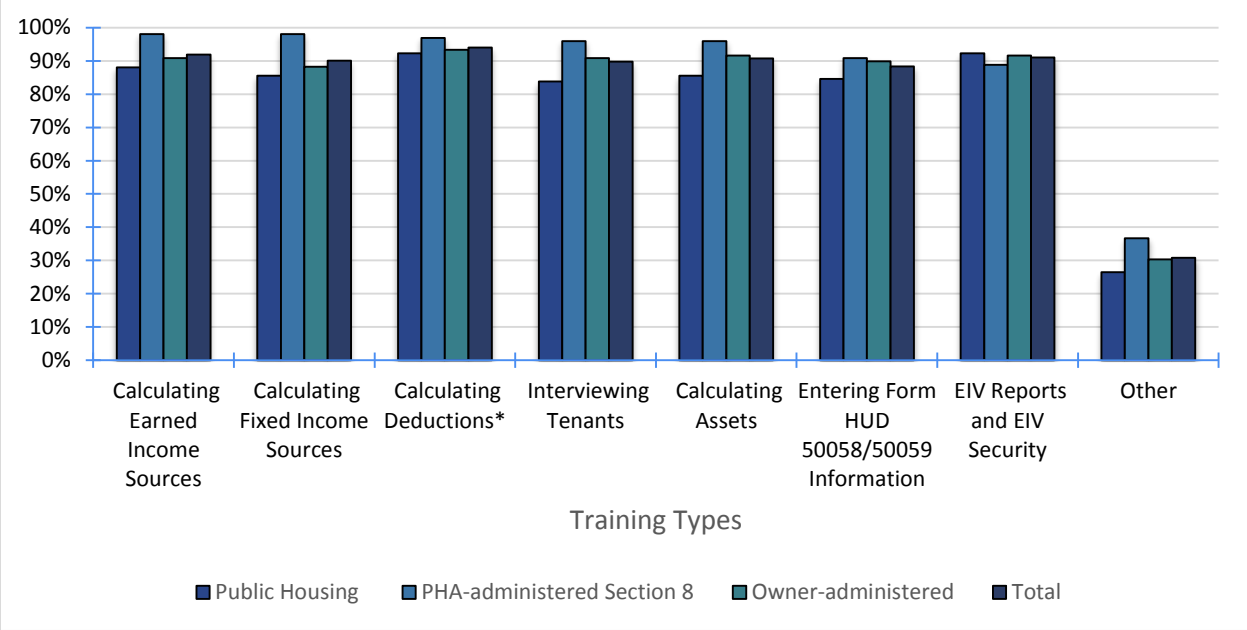
With respect to program type, PHA-administered Section 8 projects were most likely to provide training in calculating earned and fixed income sources, deductions, interviewing tenants, calculating assets, and entering Form HUD-50058/50059 information (at least 90% in each) (see Exhibit E-2d). However, Public Housing sites had the highest number of training hours in six out of eight topics, ranging from 4 hours to 15 hours more than other program types (see Exhibit E-2e). PHA-administered Section 8 projects spent more hours, relative to other program types, on training topics that were not listed (38 hours) and entering Form HUD-50058/50059 information (26 hours). In total, hours spent training on calculating earned income sources, fixed income sources, deductions, and assets, as well as on Enterprise Income Verification (EIV) reports and security, has increased substantially since FY 2013, and hours spent training on conducting interviews has remained stable.

Exhibit E-2e: Average Training Hours per Training Topic for New Certification Staff, by Program Type

Training Topics for New Staff	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Calculating Earned Income Sources	30.3	25.6	19.4	25.0
Calculating Fixed Income Sources	29.2	24.3	19.5	24.3
Calculating Deductions (Medical, Disability, Childcare)	29.6	23.9	19.2	24.2
Interviewing Tenants	28.4	24.5	15.3	22.6
Calculating Assets	26.6	21.5	19.3	22.5
Entering Form HUD-50058/50059 Information	20.5	26.0	15.3	20.3
EIV Reports and EIV Security	24.8	9.8	13.6	16.4
Other	5.5	38.3	16.0	19.1

Note: Averages calculated for those PHAs/projects that had new certification staff in FY 2014.

Exhibit E-2d: Training Topic Areas for New Certification Staff, by Program Type



Note: Percentages calculated for those PHAs/projects that had new certification staff in FY 2014.
* Deductions refer to medical, disability, and childcare deductions.

Training for Experienced Staff

PHAs/projects were also asked to report the approximate number of rent calculation training hours for a typical experienced staff member for each training method. These reported hours were used to calculate the average percentage of PHAs/projects that have used the various methods, where zero hours indicated that the method was not used. Similar to new certification staff, PHAs/projects were most likely to train an experienced staff member through self-training by reading policies and

procedural guides on their own (88%), shadowing or mentorship with more experienced staff (58%), and classroom-style training administered in-house (53%) (see Exhibit E-2f).

Compared to FY 2013, the data implied a pronounced increase in the use of shadowing or mentorship with more experienced staff (52% in FY 2013). In addition, the largest increase was seen in the use of Web-based or recorded training video created in-house from 13 percent to 34 percent (see Exhibit E-2f). There appeared to have been a decrease in the use of Web-based or recorded training video created by HUD from the previous year (40% to 22%), while the use of classroom-style training administered in-house and Web-based or recorded training video created by an outside organization to train experienced certification staff has remained stable.

An analysis by program type found that PHA-administered Section 8 projects were most likely to provide policies and procedural guides to experienced staff for self-training (90%), to have staff shadow and be mentored by other experienced staff (62%), and to use classroom-style training administered in-house (57%) (see Exhibit E-2f). Owner-administered projects were most likely to have an experienced employee attend classroom-style training administered by an outside organization (62%), Web-based or recorded training video created by an outside organization (40%), and Web-based or recorded training video created by HUD (28%). Interestingly, these methods were also most used by Owner-administered sites in FY 2013 (classroom-style training administered by an outside organization (64%), Web-based and recorded training videos created by an outside organization (40%), and Web-based and recorded training video created in-house (20%)). Conversely, Public Housing projects were least likely to use self-training with policies and procedural guides (87%), outsource training classes (42%), shadowing or mentorship (55%), outsourced training video (24%), and to use a training activity that was not listed (24%).

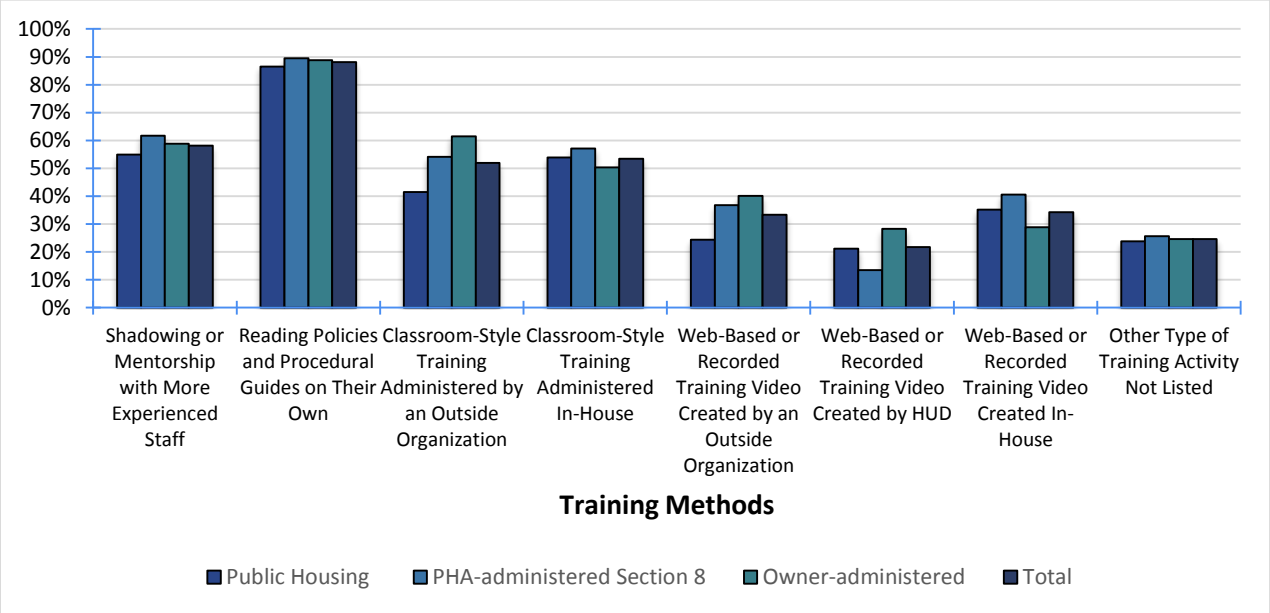
Exhibit E-2g: Average Training Hours per Training Method for Experienced Certification Staff, by Program Type

Training Methods for Experienced Staff	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Shadowing or Mentorship With More Experienced Staff	17.7	50.4	26.3	29.4
Reading Policies and Procedural Guides on Their Own	17.6	51.6	14.4	25.4
Classroom-Style Training Administered by an Outside Organization	9.4	10.4	10.8	10.2
Classroom-Style Training Administered In-House	11.1	9.8	5.9	8.9
Web-Based or Recorded Training Video Created by an Outside Organization	5.0	3.6	3.1	3.9
Web-Based or Recorded Training Video Created by HUD	5.6	3.3	1.6	3.6
Web-Based or Recorded Training Video Created In-House	4.7	1.8	3.5	3.5
Other (Activity Not Listed)	5.8	3.9	4.1	4.7

Note: Averages were calculated for PHAs/projects that responded to the specific items.

The average number of training hours provided to an experienced certification staff member was less than that provided to a new staff member. PHAs/projects dedicated the most training hours to shadowing and mentorship with other experienced staff, with an average of approximately 29 hours for experienced certification staff over the study period (see Exhibit E-2g). This is a noticeable decrease from 43 hours in FY 2013. The rest of the training for experienced staff throughout the study period comprised an average of 25 hours of self-training, as well as less than 11 hours in classroom-style (irrespective of administrator) and less than 4 hours in Web-based and recorded trainings (irrespective of creator). These results show that PHAs/projects training hours dedicated to shadowing/mentorship and self-training have notably decreased and training videos and classes have increased slightly.

Exhibit E-2f: Methods Used to Train Experienced Certification Staff, by Program Type



Note: Percentages were calculated for PHAs/projects that responded to the specific items.

As aforementioned, PHA/project training topics used to educate staff on conducting certifications are also important in determining activities that support proper rent calculation. PHAs/projects reported the approximate number of rent calculation training hours for a typical experienced staff member on various training topics. These hours served to calculate the average percentage of PHAs/projects that provided various training topics related to certification activities from November 1, 2013, to October 31, 2014, where zero hours indicated that the training topic was not presented to certification staff. For experienced certification staff, at least 59 percent of PHAs/projects provided training in the topics listed (see Exhibit E-2h). The average number of hours spent on each topic, including those not listed, was evenly distributed among the topic areas with an average of 9 hours of training during the study period, with the most time spent on interviewing tenants (see Exhibit E-2i).

PHAs/projects were most likely to train experienced certification staff in EIV reports and EIV security (84%), calculating earned income sources (71%), and calculating deductions and assets (70% each) (see Exhibit E-2h). Of the topics listed, PHAs/projects were least likely to train on

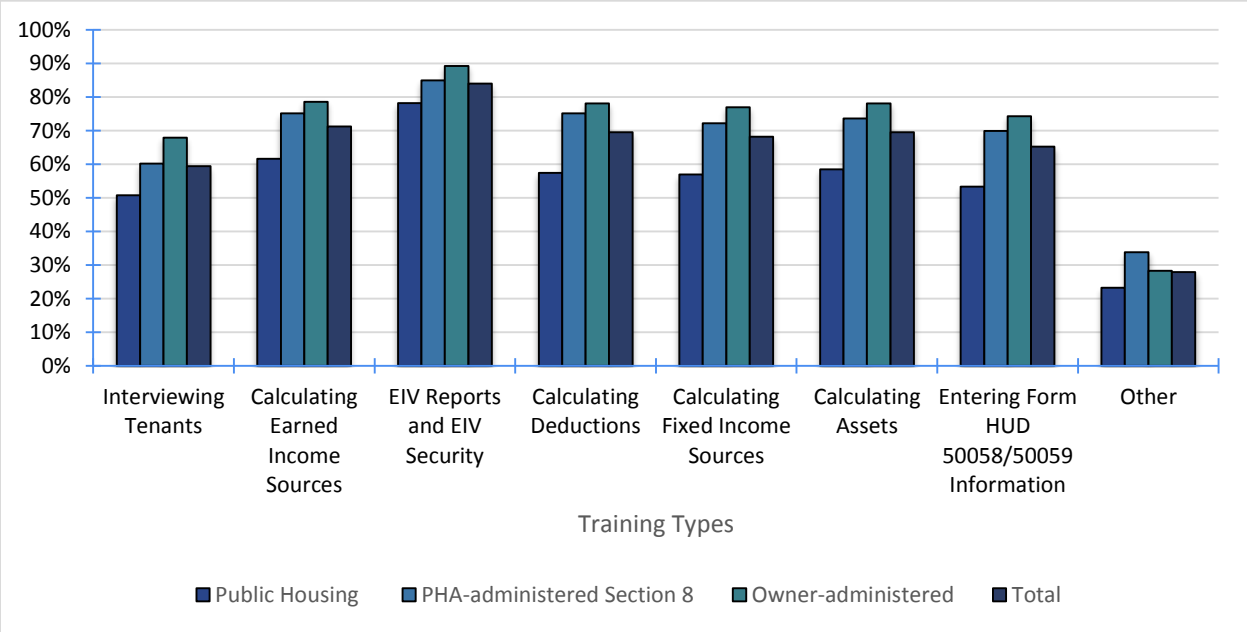
interviewing tenants (60%). Owner-administered projects were most likely to train on all topic areas listed. In comparison to a new certification staff member, an experienced certification staff member received approximately 13 fewer hours of training for each topic (see Exhibit E-2i). This was a considerable increase from FY 2013 when experienced staff received 7 fewer hours of training than new staff. This demonstrates that the number of training hours given to new staff slightly increased while the training hours given to experienced staff was decreased. In concordance with new staff training, Public Housing sites had the most training hours in all topics listed. Conversely, Owner-administered projects provided the least training to an experienced certification staff member, with less than 6 hours of training spent in every topic, except for EIV reports and security (8 hours).

Exhibit E-2i: Average Training Hours per Training Topic for Experienced Certification Staff, by Program Type

Training Topics for Experienced Staff	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Interviewing Tenants	17.7	13.2	5.0	11.9
Calculating Earned Income Sources	16.6	7.9	5.7	10.3
EIV Reports and EIV Security	14.1	4.7	8.0	9.4
Calculating Deductions (Medical, Disability, Childcare)	15.0	6.8	5.4	9.3
Calculating Fixed Income Sources	14.3	6.8	5.7	9.2
Calculating Assets	12.9	5.8	5.6	8.3
Entering Form HUD-50058/50059 Information	11.0	8.0	5.5	8.2
Other	3.3	8.0	4.8	5.1

Note: Averages were calculated for PHAs/projects that responded to the specific items.

Exhibit E-2h: Training Topic Areas for Experienced Certification Staff, by Program Type



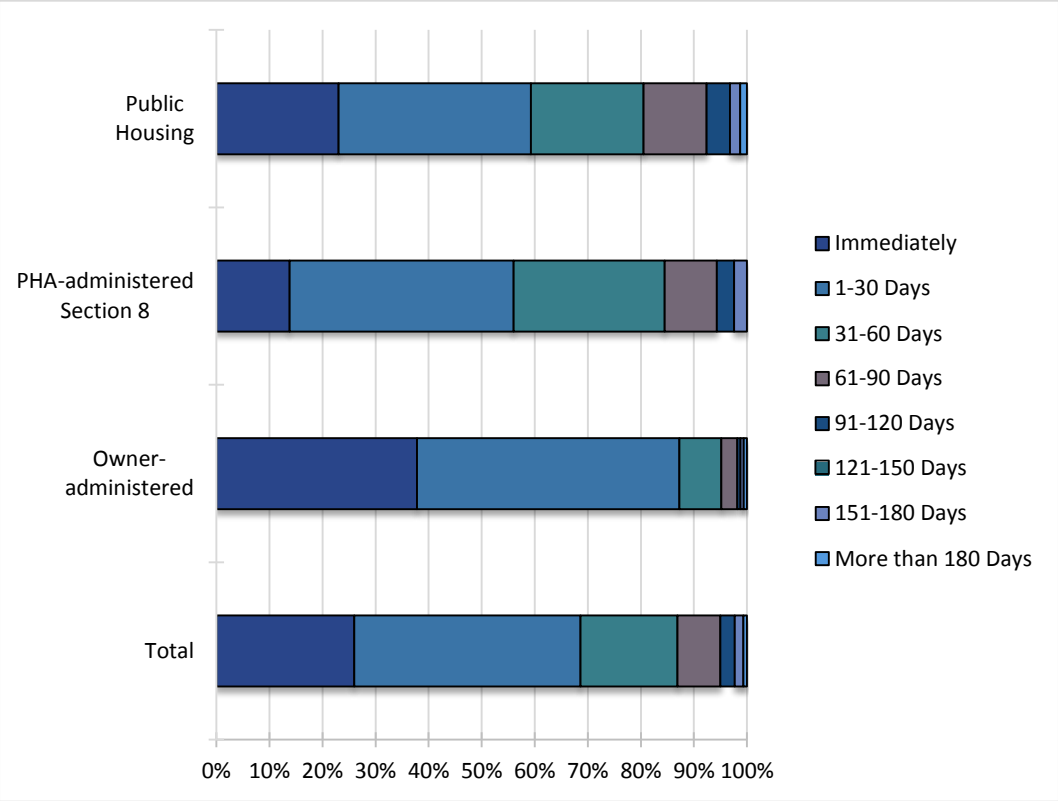
Note: Percentages were calculated for PHAs/projects that responded to the specific items.
* Deductions refer to medical, disability, and childcare deductions.

Policy Implementation

In FY 2014, the PSQ aimed to capture information from PHAs/projects on the average time it takes to implement a new policy related to rent calculation. Qualitative data were collected and an analysis of the responses found that most PHAs/projects implement a new policy between 1 and 30 days once an Office of Public and Indian Housing (PIH) Notice or Housing Notice is issued (43%) (see Exhibit E-2j). Many PHAs/projects also stated that implementation of a new policy related to rent calculation began immediately after issuance of a notice (26%), and only 5 percent of projects reported that they take longer than 90 days to implement a new rent calculation policy.

With respect to program type, Owner-administered projects were most likely to immediately implement a new policy and most likely to have full implementation of a new policy by 30 days (38% and 87%, respectively) (see Exhibit E-2j). PHA-administered Section 8 projects were least likely to have new policies in place by 30 days (56%).

Exhibit E-2j: Average Implementation Time for a New Rent Calculation Policy, by Program Type



To further explore the nature of policy implementation, the PSQ asked Public Housing and PHA-administered Section 8 projects to provide information on which methods were used to inform certification staff of PIH Notice 2013-03 (HA). This notice, issued in January 2013, provided programs with the option to change adjusted income verification procedures, the option to have households self-certify assets less than $5,000, and the option to streamline fixed-income household reexaminations, among other policies. PHAs/projects were most likely to hold a meeting to alert certification staff about the new policy (63%) or provide a paper or electronic copy of the PIH notice (57%) (see Exhibit E-2k). Forty-five percent of PHAs/projects provided additional guidance related to the PIH notice and less than 20 percent of certification staff were notified of the new policy through an email from the HUD listserv. Only 10 percent of PHAs/projects reported that they did not discuss the new policy with their staff nor did staff receive a notice of the policy.

PHA-administered Section 8 projects were most likely to discuss the notice with certifications staff during a meeting (77%), provide paper or electronic copies of the notice and provide additional guidance about the policy to staff (62% each) (see Exhibit E-2k). Public Housing projects were most likely to rely on the HUD listserv to notify staff directly (21%) and were most likely not to discuss the policy with certification staff or not provide the PIH notice (12%). Note that since the

policies outlined in the Notice were optional and intended to reduce staff workload, project staff were not required to implement or enforce any of the policies if they chose not to adhere to them.

Exhibit E-2k: Method Used to Inform Staff of PIH Notice 2013-03 (HA), by Program Type

Method Used to Inform Staff of PIH Notice 2013-03 (HA)	Program Type		All Program Types
	Public Housing	PHA-administered Section 8	
The PIH Notice Was Discussed with Certification Staff or Certification Supervisors at a Meeting	52.3%	77.4%	62.6%
The PIH Notice (Paper or Electronic Copy) Was Provided to Staff	53.9%	61.7%	57.1%
Additional Procedures/Guidance Related to the PIH Notice Was Provided to Staff	33.7%	61.7%	45.1%
Staff Members are Signed Up to the HUD Listserv and They Received This PIH Notice Directly	21.2%	16.5%	19.3%
There Was No Discussion of This Policy With Staff and They Did Not Receive a Notice of This Policy	12.4%	6.0%	9.8%

Note: Percentages were calculated for Public Housing, Moderate Rehabilitation, and Housing Choice Voucher programs only.

Certification Staff Work Behaviors

Another goal of the FY 2014 PSQ was to gain some insight into PHA/project assessments of the quality of certification staff work behaviors. Ninety-five percent of PHAs/projects rated their certification staff as either organized or very organized when working on certification activities (see Exhibit E-2l). Owner-administered projects were most likely to rate staff as very organized (59%), but were also most likely to be very unorganized (2%), while no Public Housing sites or PHA-administered Section 8 sites reported their staff to be very unorganized.

Similarly, about 94 percent of PHAs/projects reported certification staff as having either good or very good time management (see Exhibit E-2l). As with organization, Owner-administered projects were most likely to select a rating of very good (47%), while PHA-administered Section 8 projects were most likely to have good time management (69%) and Public Housing sites were most likely to report poor time management (5%). No sites reported very poor time management.

Only 1 percent of PHAs/projects reported that certification staff had little attention to detail with no sites reporting very little or no attention to detail when working on certification activities (see Exhibit E-2l). Seventy-two percent of PHAs/projects rated staff as having a lot of attention to detail, which is down from 77 percent in FY 2013. Twenty-six percent reported only some attention to detail. Following trends from the previous questions, Owner-administered projects had the highest positive ratings with 81 percent stating that staff had a lot of attention to detail.

Exhibit E-2l: Certification Staff Work Behaviors, by Program Type

Certification Staff Organization, Attention to Detail, and Quality of Time Management	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Certification Staff Organization				
Very Organized	33.7%	33.1%	58.8%	42.7%
Organized	61.1%	66.2%	34.2%	52.6%
Unorganized	3.1%	0.8%	3.2%	2.5%
Very Unorganized	0.0%	0.0%	1.6%	0.6%
Certification Staff Attention to Detail				
A Lot	66.3%	66.2%	80.7%	71.5%
Some	29.5%	33.8%	16.6%	25.9%
Little	2.1%	0.0%	0.5%	1.0%
Very Little/None	0.0%	0.0%	0.0%	0.0%
Certification Staff Quality of Time Management				
Very Good	30.6%	28.6%	47.1%	36.1%
Good	62.2%	69.2%	46.5%	58.3%
Poor	5.2%	2.3%	4.3%	4.1%
Very Poor	0.0%	0.0%	0.0%	0.0%

Note: Percentages were calculated for PHAs/projects that responded to the specific items.

3. Performance Management

Quality Control Review and Timing of Reviews

The PSQ inquired about PHA/project practices on the review of tenant files as a quality control (QC) measure. Most PHAs/projects indicated that they reviewed move-in and annual certifications as a QC measure (90%) (see Exhibit E-3a). PHA-administered Section 8 projects were most likely to review tenant files (96%), while Owner-administered projects were the least likely to review cases (85%) for QC. Overall, from November 1, 2013, to October 31, 2014, PHAs/projects reviewed an average of 46 percent of all move-in and annual certifications, and were most likely to conduct reviews prior to the approval of Form HUD-50058/50059 (27%) or within 30 days of submitting Form HUD-50058/50059 to PIC/TRACS (21%).

Owner-administered projects had the highest average percentage of certifications reviewed (56%), while PHA-administered Section 8 projects had the lowest percentage of certifications reviewed (32%) (see Exhibit E-3a). Furthermore, Owner-administered projects were most likely to conduct reviews prior to Form HUD-50059 approval and within 1 year of submitting Form HUD-50059 (40% and 22%, respectively) and were the least likely to review within 1 month or 6 months of Form HUD-50059 submission (14% and 3%, respectively). Conversely, PHA-administered Section 8 projects were the most likely to review cases within 1 month of submitting Form HUD-50058 (27%), but were the least likely to review prior to Form HUD-50058 approval, within 7 calendar days, and

within 1 year of submission (16%, 2%, and 14%, respectively). Public Housing also indicated a high rate of conducting QC reviews prior to Form HUD-50058 approval (23%), compared to other review periods.

Exhibit E-3a: Quality Control Reviews and Timing of Reviews, by Program Type

Percentage and Timing of Quality Control Reviews	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Percentage of PHAs/Projects That Perform QC Reviews of Move-in and Annual Certification transactions	90.2%	96.2%	84.5%	89.7%
Average Percentage of Move-in and Annual Certification Transactions Reviewed for QC*	47.7%	32.1%	55.8%	46.1%
Primary Period QC Review Was Conducted				
Prior to Form HUD-50058/50059 approval*	22.9%	15.9%	39.6%	26.7%
Within 7 calendar days of Form HUD-50058/50059 submission*	9.4%	1.6%	1.9%	4.7%
Within 30 calendar days of Form HUD-50058/50059 submission*	22.4%	27.0%	13.6%	20.7%
Within 60 calendar days of Form HUD-50058/50059 submission*	9.4%	16.7%	7.8%	10.9%
Within 3 months of Form HUD-50058/50059 submission*	7.6%	15.1%	12.3%	11.3%
Within 6 months of Form HUD-50058/50059 submission*	8.8%	9.5%	2.6%	6.9%
Within 1 year of Form HUD-50058/50059 submission*	19.4%	14.3%	22.1%	18.9%

Note: Percentages were calculated for PHAs/projects that responded to the specific items.
* Percentages were calculated for PHAs/projects that reviewed certification transactions as a QC measure.

Selecting Cases for Review

Twenty-six percent of PHAs/projects reported that they reviewed not only move-in and annual certifications but all tenant files as a QC measure (see Exhibit E-3b). This was a slight decrease from FY 2013, where 28 percent reviewed all cases. Similar to FY 2013 and FY 2012, Owner-administered projects were most likely to review all cases, and PHA-administered Section 8 projects were least likely to do so (38% and 16%, respectively) during the study period. However, there is evidence of a larger steadily increasing trend. In FY 2013, 36 percent of Owner-administered projects and 17 percent of PHA-administered Section 8 projects reviewed all cases. In FY 2012, the same results were found with 34 percent of Owner-administered projects and 12 percent of PHA-administered Section 8 projects completing comprehensive reviews.

PHAs/projects that did not report performing QC on all tenant files stated that they used the following methods most frequently to select cases for QC: randomly selecting cases for review, selecting move-in transactions, and selecting annual certification transactions (81%, 44%, and 39%, respectively) (see Exhibit E-3b). With respect to program type, nearly all PHA-administered Section

8 projects endorsed selecting a random sample of tenant files for QC review (92%), and were most likely to check files processed by new staff and staff with high error rates (43% and 28%, respectively). Owner-administered projects were more likely to review move-in transactions (54%) than other program types. However, they were least likely to review annual certification transactions (28%) or transfer/move transactions (17%), compared to Public Housing (37% and 25%, respectively) and PHA-administered Section 8 (49% and 39%, respectively).

Exhibit E-3b: Methods Used by PHAs/Projects to Select Cases for Review, by Program Type

Methods Used to Select Cases for Review	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
All Transactions that Were Processed Were Reviewed by Another Staff Member	21.2%	15.9%	38.3%	25.6%
All Transactions were Not Reviewed				
Files Were Randomly Sampled*	73.1%	91.5%	78.9%	80.6%
Move-In Transactions Were Chosen for Review*	34.3%	47.2%	53.7%	43.9%
Annual Certification Transactions Were Chosen for Review*	37.3%	49.1%	28.4%	38.5%
Transfer/Move Transactions Were Chosen for Review*	25.4%	38.7%	16.8%	27.2%
Interim Transactions Were Chosen for Review*	24.6%	28.3%	21.1%	24.8%
Files were Chosen From New Staff*	11.2%	43.4%	4.2%	19.4%
Files were Chosen from Staff With High Error Rates or Who Seem to Have More Trouble*	9.7%	28.3%	4.2%	14.0%
Files Were Chosen Based on Household Income, Asset, and Expense Characteristics*	1.5%	4.7%	3.2%	3.0%
PHA/Project Chose Another Method of Selecting Cases for Review That Is Not Listed*	9.0%	0.9%	4.2%	5.1%

Note: Percentages were calculated for PHAs/projects that indicated they review tenant files as a QC measure.
* Percentages were calculated based on PHAs/projects that indicated they did not review all (100%) tenant files.

File Reviewers

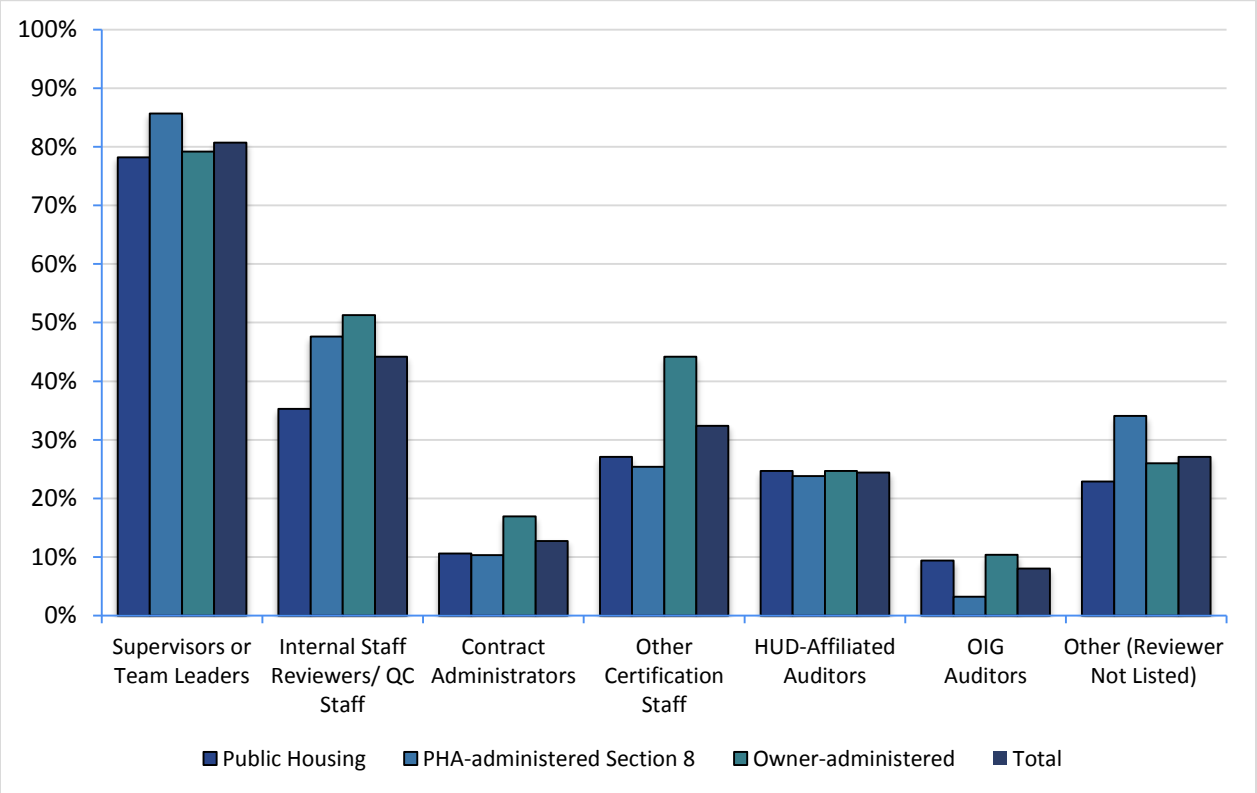
The majority of PHAs/projects indicated that they have dedicated QC staff to review data submitted on Form HUD-50058/50059 (74%) (see Exhibit E-3c). PHA-administered Section 8 projects were most likely to have QC staff (83%), while Public Housing projects were least likely (69%). PHAs/projects reported that, during the study period, the review or monitoring of tenant files was conducted primarily by the team leader or supervisor (81%) or internal QC staff (44%), who reviewed a yearly average of 326 and 187 tenant files, respectively (see Exhibits E-3d and E-3c). PHA-administered Section 8 projects were the most likely to rely on a supervisor or other type of reviewer (86% and 34%, respectively) when compared to other program types. Supervisors in this program reviewed an average of 979 files a year, compared to only 103 files in Public Housing and 44 files in Owner-administered programs. Owner-administered projects were most likely to use internal staff reviewers (51%), but PHA-administered Section 8 projects reported having internal staff review the most files (585) compared to Public Housing sites (42) and Owner-administered (24).

Exhibit E-3c: Quality Control Staff and Average Number of Tenant Files Reviewed, by Program Type

Quality Control Staff and Files Reviewed	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Percentage of PHAs/projects With a Dedicated QC Staff	69.4%	82.7%	71.1%	73.5%
Average Number of Files Reviewed				
Supervisors or Team Leaders*	102.6	978.5	44.2	326.4
Internal Staff Reviewers/QC*	42.3	585.3	23.9	187.1
Contract Administrators*	2.1	141.0	5.3	41.9
Other Certification Staffs*	21.7	84.1	25.4	40.3
HUD-Affiliated Auditors*	1.9	9.1	4.4	4.7
OIG Auditors*	0.5	1.8	1.1	1.1
Other Type of Reviewers Not Listed Above*	4.8	19.2	5.4	9.0

Note: Percentages and averages were calculated for PHAs/projects that responded to the specific items.
* Averages were calculated for the PHAs/projects that indicated that they review tenant files as a QC measure.

Exhibit E-3d: Sources of Monitoring or Reviewing of Tenant Files, by Program Type



Note: Data presented in the figure were calculated for the PHAs/projects that indicated that they review tenant files as a QC measure.

File Information Reviewed

For those PHAs/projects that conduct dedicated QC reviews, more than 87 percent typically check for correct income calculation, presence of verification documents in the tenant file, and proper core household documentation in the file (see Exhibit E-3e). PHAs/projects were least likely to report that a general spot check of the file was performed (19%) indicating that specific file information was confirmed during QC checks. This number was a decrease from FY 2013 when 40 percent of PHAs/projects reported a general spot check. Exhibit E-3e provides a complete breakdown of documentation, verification, calculations, and other information categories typically checked during the QC process. The exhibit illustrates that PHA-administered Section 8 projects were more likely to review file information for almost every category than other program types, while Public Housing sites were least likely to review file information for almost every category.

Exhibit E-3e: File Information Typically Reviewed During Quality Control, by Program Type

File Information Typically Reviewed During QC	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Documentation				
Proper Core Household Documentation in the Tenant File	82.1%	91.3%	87.6%	86.5%
Accurate Completion Of Documentation in the Tenant File	80.4%	88.9%	83.9%	83.9%
Consistency of a Household's Certification/Interview Application to Tenant File Documentation	62.0%	78.6%	80.7%	73.0%
Proper Unit Documentation in the Tenant File	55.3%	91.3%	64.0%	68.0%
Verification				
Presence of Verification Documents in the Tenant File	81.6%	93.7%	88.2%	87.1%
Appropriate Type of Verification Documentation (Follows Verification Policy) Is in the Tenant File	72.6%	88.9%	85.7%	81.5%
Verification Documents Meet Your Program's Timeframe for Acceptable Documentation	69.8%	84.9%	79.5%	77.3%
Calculations				
Correct Income Calculation	82.7%	95.2%	89.4%	88.4%
Correct Medical Expense Calculation	77.1%	88.9%	87.6%	83.9%
Correct Disability Expenses Calculation	77.1%	88.1%	80.1%	81.1%
Correct Child Care Expense Calculation	73.7%	88.1%	58.4%	72.3%
Other Information				
Correct Payment Standard Amount Applied to Rent Calculation, if Applicable to Your Program Type	N/A	93.7%	N/A	93.7%
Properly Entered Data on the Form HUD-50058/50059	75.4%	87.3%	82.0%	80.9%

File Information Typically Reviewed During QC	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Correct Utility Allowance Amount Applied to Rent Calculation, if Applicable to Your Program Type	57.0%	93.7%	64.0%	69.3%
Accuracy of the Rent Adjustment or HAP Amendment Letter in the Tenant File	55.3%	82.5%	73.3%	68.9%
General Spot Check of the File Is Performed	22.3%	17.5%	15.5%	18.7%

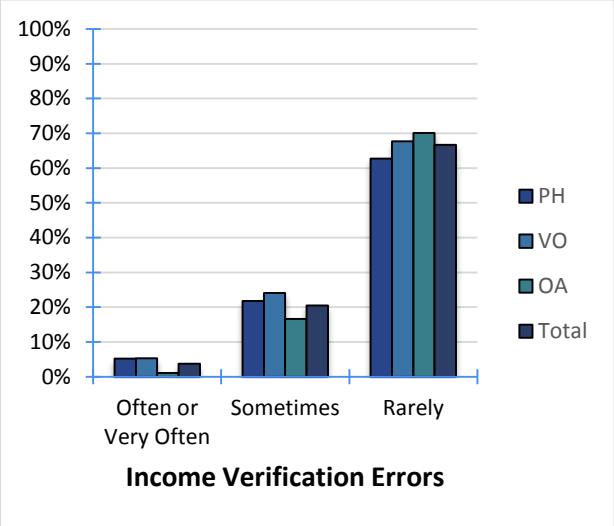
Note: Percentages were calculated for PHAs/projects that indicated they review tenant files as a QC measure.

Prevalence of Various Types of Errors

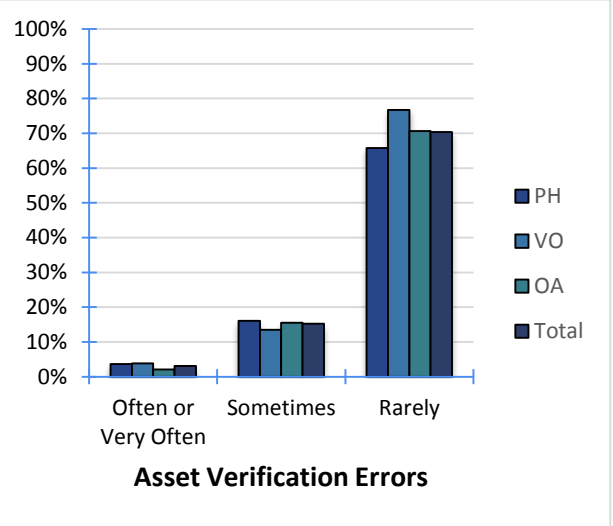
All PHAs/projects, regardless of whether they conduct quality reviews, were asked to rate the frequency of errors made by the staff as a whole for various types of rent calculation activities during the study period. They were asked whether errors in verifications, errors in calculations, or human errors were made very often, often, sometimes, or rarely. On errors related to verifications, each type of error had at least 1 percent of the PHAs/projects reporting errors occurred often or very often (see Exhibit E-3f). Missing, incomplete, or incorrect verification of income was most likely to be reported as often or very often with 4 percent. These findings were a substantial increase from FY 2013 when overall less than 1 percent of all PHAs/projects indicated that staff often or very often made errors when performing verifications. Errors in verification of income were also sometimes found (21%) followed by errors in verification of deductions (17%).

Exhibit E-3f: Frequency of Missing, Incomplete, or Incorrect Verifications, by Program Type
(PH = Public Housing, VO = PHA-administered Section 8, OA = Owner-administered)

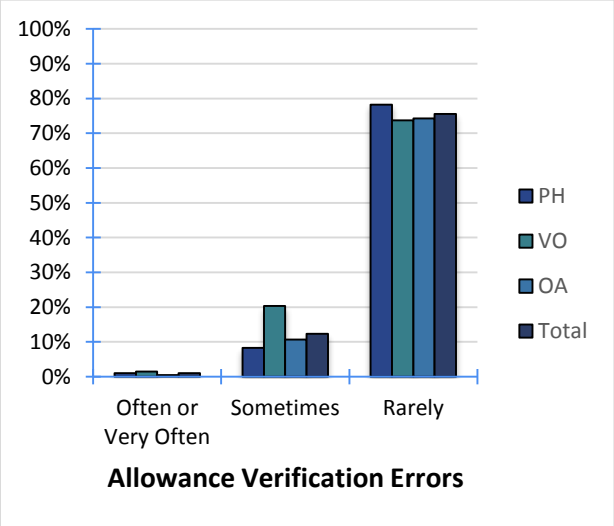
Income Verifications



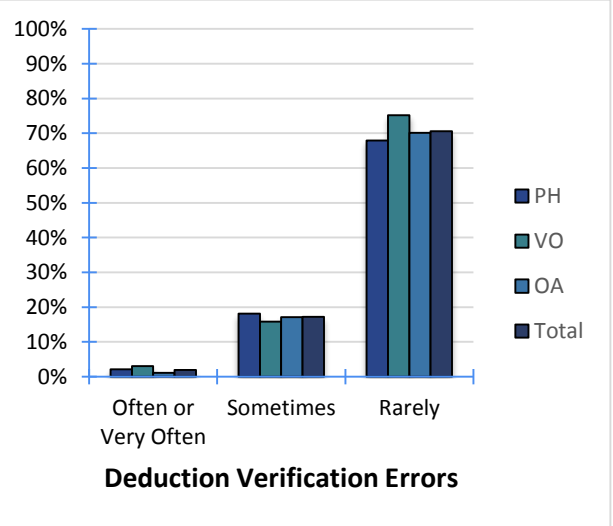
Asset Verifications



Allowance Verifications



Deduction Verifications



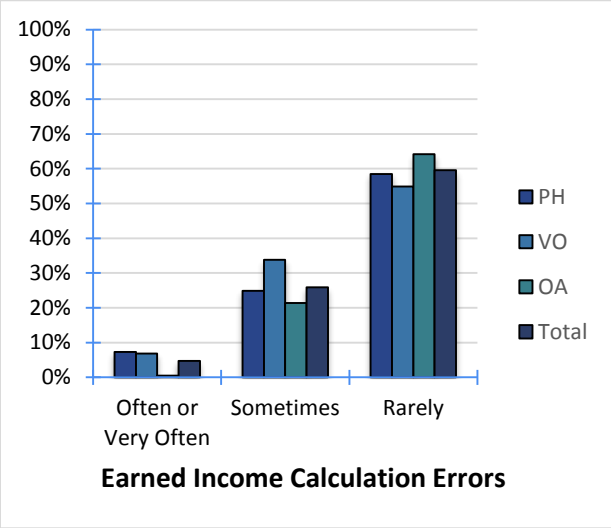
Note: Percentages were calculated for PHAs/projects that responded to the specific items.

By program type, PHA-administered Section 8 sites were most likely to report errors occurring often or very often in every verification category (between 2% and 5%); these results were also found in FY 2013 (see Exhibit E-3f). Public Housing projects were most likely to report occasional errors found in deduction and asset verification (18% and 16%, respectively). PHA-administered Section 8 projects were most likely to report occasional income verification errors (24%) and errors in allowance verification (20%). Owner-administered projects were least likely to report errors often or very often in any category; furthermore, they were least likely to report occasional errors in income verifications (17%).

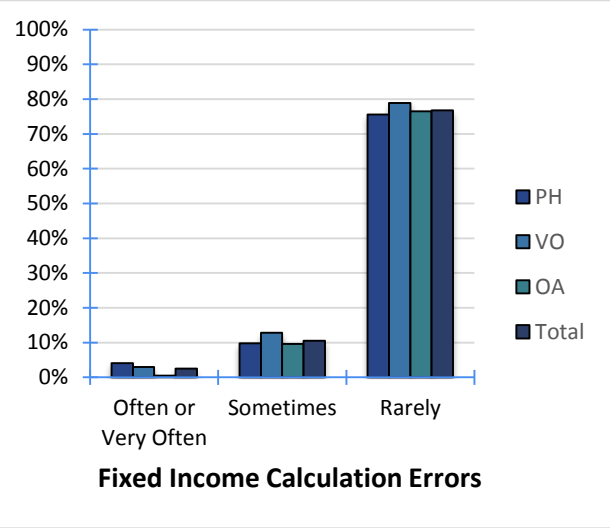
For calculation errors, earned income was most likely to have errors reported often or very often (5%), as well as occasionally (26%). Calculation errors were also found often or very often in fixed income (3%), assets (2%), and student income or financial aid (1%) (see Exhibit E-3g). In FY 2013, 2 percent was the highest rate of PHAs/projects reporting often or very often errors in any category of calculations. By program type, Public Housing projects were most likely to report incorrect calculation of earned income (7%), fixed income (4%), assets (3%), and student income (2%) often or very often. PHA-administered Section 8 projects were the most likely to report occasional errors in calculation of earned income (34%), fixed income (13%), and student income or financial aid (18%). Owner-administered projects were most likely to report occasional errors in asset calculations (21%).

Exhibit E-3g: Frequency of Missing, Incomplete, or Incorrect Income Calculations, by Program Type
(PH = Public Housing, VO = PHA-administered Section 8, OA = Owner-administered)

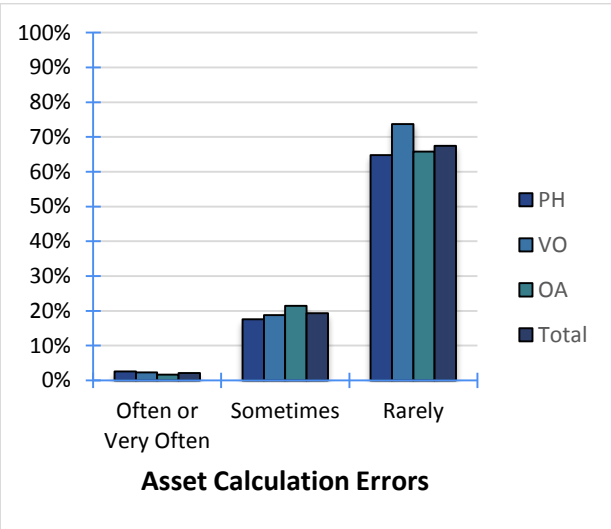
Earned Income Calculations



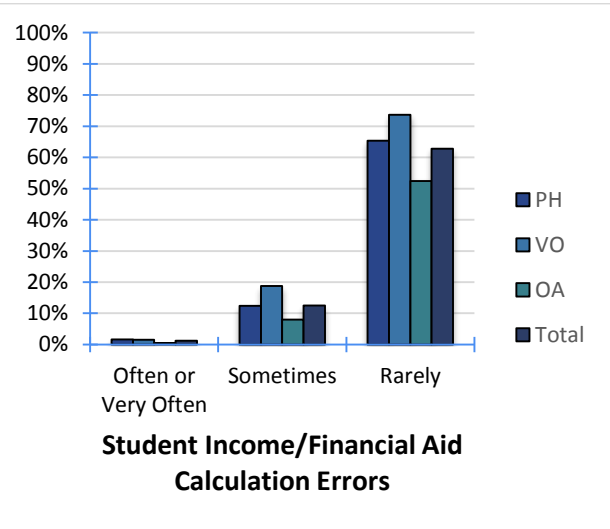
Fixed Income Calculations



Asset Calculations



Student Income/Financial Aid Calculations

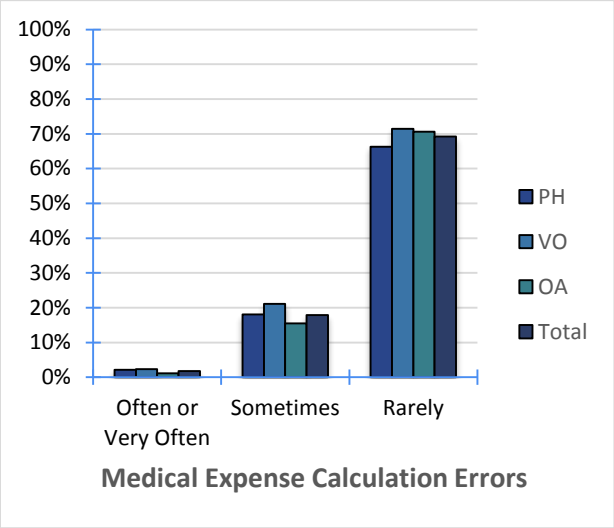


Note: Percentages were calculated for PHAs/projects that responded to the specific items.

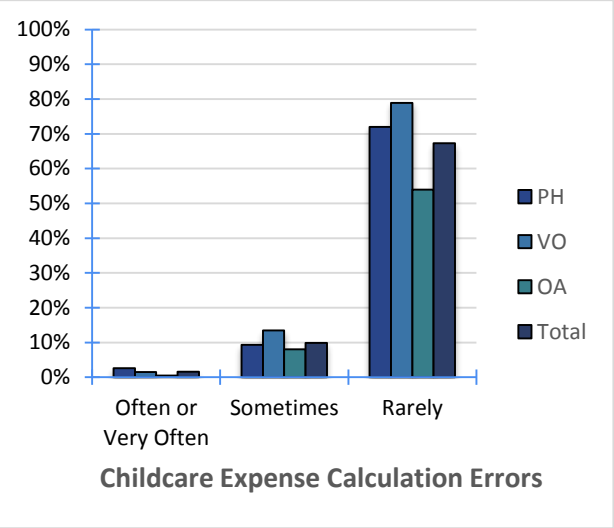
On errors related to expenses, all categories reported more than 1 percent occurring often or very often with incorrect calculation of medical expenses most likely (<2%) (see Exhibit E-3h). Additionally, medical expense calculations were identified as having highest occasional error rate (18%). PHA-administered Section 8 projects reported the highest rate of occasional errors in childcare and medical expense calculations (14% and 21%, respectively) compared to other program types. Public Housing sites reported the highest rate of occasional errors in disability expenses (10%) compared to other program types.

Exhibit E-3h: Frequency of Missing, Incomplete, or Incorrect Expense Calculations, by Program Type
(PH = Public Housing, VO = PHA-administered Section 8, OA = Owner-administered)

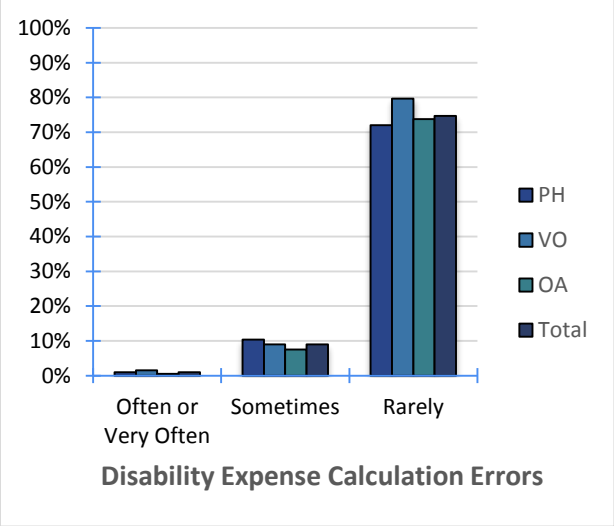
Medical Expense Calculations



Childcare Expense Calculations



Disability Expense Calculations

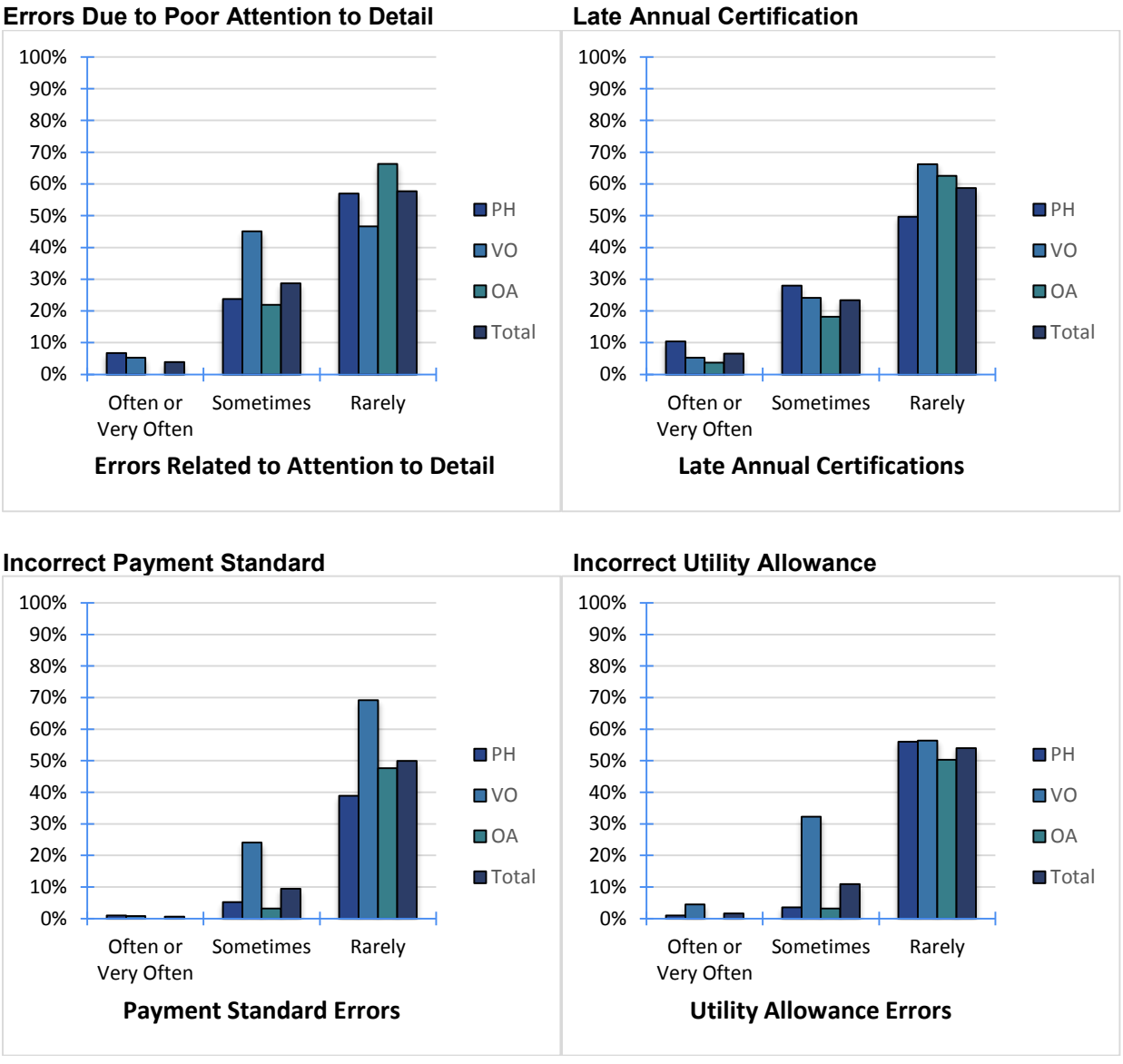


Note: Percentages were calculated for PHAs/projects that responded to the specific items.

Four percent of PHAs/projects reported that errors due to poor attention to detail occur often or very often; however, no Owner-administered sites reported this issue often or very often while Public Housing and PHA-administered Section 8 sites reported relatively higher numbers (7% and 5%, respectively) (see Exhibit E-3i). Furthermore, these errors were the most likely to occur occasionally compared to other types of calculation and verification errors (29%). Most notable, late annual certifications had the highest reported often or very often error rates of all rent calculation activities among PHAs/projects (7%). Public Housing projects were most likely to have certification staff frequently complete late annual certification transactions (10%) and frequently make human errors related to attention to detail (7%). These findings were approximately double

what was reported for the same activities causing errors in FY 2013 (4% seen in both in Public Housing projects). On the calculation of payment standards and utility allowances, errors were made very often or often less than 2 percent of the time (1% and 2%, respectively). Payment standard and utility allowance errors were identified as being made sometimes less than 15 percent of the time (9% and 11%, respectively).

Exhibit E-3i: Frequency of Other Errors, by Program Type
(PH = Public Housing, VO = PHA-administered Section 8, OA = Owner-administered)



Note: Percentages were calculated for PHAs/projects that responded to the specific items.

Performance Feedback to Staff

In order to provide performance feedback to staff on errors found during QC, PHAs/projects are most likely to have one-on-one conversations to discuss QC findings with staff (65%) or record

file errors and make that information available to certification staff (48%) (see Exhibit E-3j). Many PHAs/projects also conducted team/group meetings to discuss QC issues (32%) and provided general reports of QC findings to staff (18%). PHA-administered Section 8 projects were most likely to use each performance feedback method compared to other program types.

Exhibit E-3j: Methods of Feedback to Staff Regarding Errors Found During QC, by Program Type

Methods of Feedback	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
One-On-One Conversations to Discuss QC Findings (Phone or In-Person)	59.1%	82.7%	57.8%	64.7%
Specific Deficiencies for Each File Are Recorded and Made Available to Certification Staff	46.6%	54.9%	45.5%	48.3%
Team/Group Meetings to Discuss QC Issues	25.4%	54.9%	21.4%	31.6%
A General Report on QC Findings Is Provided to All Certification Staff	17.1%	25.6%	14.4%	18.3%
Other Feedback Method Not Mentioned Above	8.8%	7.5%	9.6%	8.8%

Note: Percentages were calculated for PHAs/projects that reviewed tenant files as a QC measure.

PHAs/projects were asked to comment on the frequency with which they provided feedback to staff on their performance in calculating rent. Twenty-nine percent of PHAs/projects reported they provided monthly feedback, followed by another time period that was not listed (17%), weekly (14%), annually (12%), quarterly (11%), daily (10%), and semi-annually (3%) (see Exhibit E-3k). Only 5 percent of PHAs/projects reported that they did not provide any performance feedback to staff with Public Housing being most likely to withhold feedback (8%). However, Public Housing projects were also most likely to provide daily feedback (12%), Owner-administered projects were most likely to provide feedback quarterly (13%) or annually (18%), and PHA-administered Section 8 projects were most likely to provide weekly or monthly feedback (18% and 41%, respectively).

Exhibit E-3k: Frequency of Rent Calculation Performance Feedback to Staff, by Program Type

Frequency of Feedback to Certification Staff	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Daily	12.4%	6.3%	9.1%	9.6%
Weekly	12.4%	17.5%	13.6%	14.2%
Monthly	27.1%	40.5%	21.4%	28.9%
Quarterly	11.2%	9.5%	13.0%	11.3%
Semi-Annually	1.8%	4.0%	3.2%	2.9%
Annually	10.0%	5.6%	18.2%	11.6%
Other Time Period	17.1%	14.3%	18.2%	16.7%
Performance Feedback Is Not Provided to Staff	8.2%	1.6%	3.2%	4.7%

Note: Percentages were calculated for PHAs/projects that responded to the specific items.

PHAs/projects were asked which staff were responsible for file corrections when errors were found during QC review and, overwhelmingly, the certification staff member who made the error was responsible for making the file corrections (83%), while only 12 percent of PHAs/projects required the file reviewer to make the correction (see Exhibit E-3l). PHA-administered Section 8 projects were most likely to have the certification staff member who made the error complete the file corrections (92%), compared to Owner-administered projects (74%) and Public Housing projects (85%). Owner-administered projects were most likely to have the QC reviewer correct file errors (20%), compared to other program types (7% for PHA-administered Section 8 and 8% for Public Housing).

Exhibit E-3l: Staff Members Responsible for File Corrections During Quality Control, by Program Type

Staff Responsible for File Corrections When Errors Were Found During Quality Control	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
The Certification Staff Who Made the Error	85.3%	92.1%	74.0%	83.3%
The Person Who Performed QC of the File	8.2%	7.1%	20.1%	12.0%
Other Correction Staff Member Not Mentioned Above	0.6%	0.0%	1.9%	0.9%

Note: Percentages were calculated for PHAs/projects that reviewed certification transactions as a QC measure.

Error Tracking and Mitigation

Twenty-six percent of PHAs/projects reported that they do not track any of the provided list of certification errors (see Exhibit E-3m). On the specific types of errors tracked among those PHAs/projects that engaged in tracking, late annual certification transactions (73%), errors in earned income calculations (57%), errors in maintaining accurate documentation (53%), and errors related to verification of income, assets, and expenses (51%) were most frequently monitored.

PHA-administered Section 8 projects were most likely to track certification errors in all categories at considerably higher rates than both Public Housing and Owner-administered projects. PHA-administered Section 8 projects were also least likely to report that they do not track certification errors (15%), compared to Owner-administered projects (35%) and Public Housing projects (24%).

Exhibit E-3m: Types of Rent Calculation Errors Tracked, by Program Type

Types of Certification Errors Tracked or Recorded	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
None—The Project Does Not Track Any of the Listed Information	23.8%	15.0%	35.3%	25.7%
Projects That Tracked Rent Calculation Errors				
Late Annual Certification Transactions*	74.1%	81.4%	63.6%	73.0%
Errors in Earned Income Calculation*	54.4%	76.1%	41.3%	56.7%
Errors in Maintaining Accurate Tenant File Documentation That Is Not Related to Verification Of Income, Assets, and Expenses*	47.6%	69.9%	43.0%	52.8%
Errors Related to Accurate Verification of Income, Assets, and Expenses*	48.3%	66.4%	40.5%	51.2%
Errors in Medical Expense Calculation*	38.1%	62.8%	40.5%	46.2%
Errors in Asset Calculation*	37.4%	60.2%	43.8%	46.2%
Errors in Fixed Income Calculation*	38.1%	61.1%	37.2%	44.6%
Errors in Elderly/Disability Allowance Determination*	35.4%	59.3%	33.1%	41.7%
Errors in Childcare Expense Calculation*	31.3%	58.4%	25.6%	37.5%
Errors in Dependent Allowance Determination*	27.9%	58.4%	23.1%	35.4%
Errors in Disability Expense Calculation*	25.9%	50.4%	27.3%	33.6%

* Percentages were calculated based on PHAs/projects that indicated they track rent calculation errors.

Overall, the majority of PHAs/projects, regardless of whether they conducted quality checks, had a formal or informal goal setting process in place during the study period (70%) (see Exhibit E-3n). Furthermore, 77 percent of PHAs/projects required certification staff to review a household's previous Form HUD-50058/50059 before beginning a new certification transaction. With respect to program type, Owner-administered projects were least likely to have a goal-setting process in place but most likely to require certification staff to review the previous Form HUD-50058/50059 (62% and 83%, respectively). While neither of these strategies are formal or thorough QC measures, implementing and enforcing these performance targets may help reduce rent calculation error.

Exhibit E-3n: Percentage of PHAs/Projects With Certification Performance Goals and Form HUD-50058/50059 Review Requirements, by Program Type

Rent Calculation Error Mitigation Strategies	Program Type			All Program Types
	Public Housing	PHA-administered Section 8	Owner-administered	
Percentage of Certification Staff That Undergo a Formal or Informal Goal-Setting Process Related to Performing Certifications	75.1%	72.9%	61.5%	69.6%
PHA/Project Requires Certification Staff to Review Household's Previous Form HUD-50058/50059 Prior to Starting New Certification Transaction	75.1%	70.7%	82.9%	76.8%

Note: Percentages were calculated for PHAs/projects that responded to the specific items.

C. Conclusion

Overall, PSQ questions on PHA/project characteristics, certification staff training and development, and performance management reveal a detailed, complex, and interesting picture of PHAs/projects. Demographically, there was an increase in the number of units/households from past years, with a slight and steady decrease in the number of certification staff. This resulted in a rapidly growing ratio of units per individual staff member. Not surprisingly, there has been an increase in projects reporting a too-high workload (47% to 49%) and at least one staff member leaving the project when compared to FY 2013 (25% to 31%). In addition, staff were much less likely to be rated as very organized (50% compared to 43%), to have very good time management (41% compared to 36%), and to pay a lot of attention to detail (77% to 72%). With respect to project characteristics, virtually all of the PHA/project respondents indicated that they did not contract out their certification activities. Also, almost all of the PHAs/projects indicated that they used computer software to help calculate tenant rents and reported that the software conducts a wide variety of tasks, with minimal limitations. Furthermore, PHAs/projects were likely to have a dedicated training department or staff trainer for certification staff.

There has been a pronounced downward trend in the average number of hours of training provided to each new certification staff member, with FY 2014 contributing the lowest average in the last 5 years. Furthermore, while self-training and mentorship were still the most likely training methods, training videos created by an outside organization or in-house are becoming more popular. For both new and experienced certification staff, the number of training hours dedicated to shadowing/mentorship and self-training has decreased substantially while training videos and classes has increased slightly. Simultaneously, the difference in average numbers of training hours on specific topics given to a new staff member and an experienced staff member has almost doubled. With respect to implementing QC procedures, about the same percentage of PHA/projects as historically found reported performing QC reviews, with the percentage of transactions reviewed increasing slightly. The PSQ also provided some specific information on the experiences and issues of PHAs/projects with the certification process. For instance, during the QC monitoring of certifications, the majority of PHAs/projects reported randomly sampling files for review and, furthermore, that the most effective QC technique was to review the files prior to Form HUD-50058/50059 approval. As in FY 2013, most of these files were reviewed by supervisors or team leaders. These results, among others, suggest that QC has become more

systematic; for example, only 19 percent reported that a general spot check was performed, compared to 40 percent in FY 2013. Overall, rent calculations errors are not found very often, but the most common type of error made by certification staff were late annual certification transactions and incorrect calculations of earned income. Compared to FY 2013, projects were more likely to report errors occurring often or very often in almost every category. When errors did occur, they were usually discussed monthly in one-to-one conversations and corrected by the staff member who made the error.

For future HUDQC studies, it would be helpful to develop and validate additional items that specifically target potential difficulties or barriers to conducting training, managing staff performance, and collecting best practices for error mitigation. Specifically, a dual approach could be used for training methods and hours. Questions about the desired amount of training and the actual amount of training could determine the perceived importance of each topic and method. The discrepancy between the two would likely be due to barriers that would be discussed in an open-ended question. In addition, to provide a richer view of project practices to HUD, the development of questions that directly link staffing and staff performance to certification and QC procedures is desirable. Moreover, it may be useful to reinitiate questions that were asked in previous years and dropped, particularly for project characteristics. Currently, the survey is lacking a question on no new staff, which resulted in projects having to answer questions that may not have applied. Furthermore, considering the upward trend in turnover, it may be constructive to ask about the reasons behind staff turnover. While focus groups and cognitive interviewing may be optimal in supporting the revision of the PSQ items by focusing attention on the specific circumstances and issues faced by the PHAs/projects, open-ended questions also help identify and explain these issues. For example, given the number of projects reporting that another case assignment method is used (42%), transforming this question to an open-ended format may glean more insights to assignment methods. Gathering detailed descriptions of these aspects of the certification process would lead to a more complete and detailed picture of the issues faced by the PHAs/projects and would provide a better link between PHA/project practices and characteristics and the estimation of payment and income error.

Appendix F: Multivariate Analysis

APPENDIX F: MULTIVARIATE ANALYSIS

Introduction

As required under Objective 13, ICF International conducted multivariate analyses to identify project and household factors related to rent error and project-caused errors in the certification/recertification process. The multivariate analyses also aimed to address the extent to which error rates in projects that use an automated rent calculation system differ from errors in those that do not (Objective 12), and to determine whether error rates and error costs had statistically significant difference between program types (Objective 5). Multivariate analysis allows us to examine characteristics related to rent error and determine corrective actions that can be taken to lessen improper payment.

Using measures of project characteristics and practices combined with household variables, the multiple regression analysis sought to systematically assess the net effects of project and household variables *on the rent error and project-caused errors*.[42] To meet the study objectives, we addressed two research questions:

1. Other things being equal, what project characteristics, project practices, and household variables accounted for rent error and project-caused errors?
2. What was the effect size (or relative strength) of project characteristics, project practice features, project-caused errors, and household characteristics in accounting for gross rent error?[43]

We developed two conceptual models to address the above research questions: one model examining rent errors (gross error, underpayment and overpayment errors) and one model examining project-caused errors. Focusing on project factors and project-caused errors in connection to rent errors, we attempted to generate useful information for HUD program improvement. Household or tenant characteristics associated with rent error were examined as well to provide information on details that complicate certification. Data obtained from our Project Staff Questionnaire were used to conduct this analysis.

Modeling Rent Errors. The dollar amount of rent error was measured in terms of subsidy overpayment, subsidy underpayment, and gross rent error. Subsidy underpayment is the dollar error caused by the household paying more than it should have (tenant overpayment); thus, HUD's contribution was less than it should have been. Subsidy overpayment, conversely, is the dollar error caused by the household's contribution being less than it should have been (tenant underpayment), and HUD's contribution being more. Gross error is the dollar amount of either overpayment or underpayment (in absolute value) for a given household (see Appendix A for calculations of the

[42] The term "net effect" refers to the relationship between a given independent variable and the outcome variable, statistically controlling for other independent variables in the model. A net effect is the estimated regression coefficient *b* or slope for a given predictor in multiple regression modeling. The term does not necessarily imply a causal effect, as this cross-sectional, survey-based design does not warrant causal conclusions.

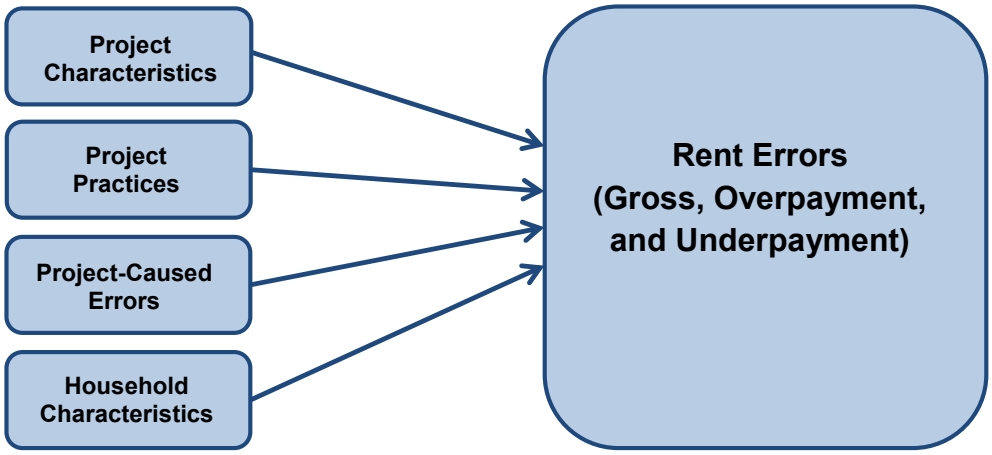
[43] Estimation of the "effect size" for predictor variables requires valid measurement of each variable, sensible model specifications, and a good model fit. In survey data analysis, however, it is always challenging to obtain accurate measures of every variable and specify models that generate robust estimates of effect sizes.

three measures). These three measures of rent error may relate to project and household factors in different patterns; therefore, it is necessary to model each rent error measure.

We modeled each rent measure using a two-part model. The first part of the model estimates the probability of a rent error (1 = rent error, 0 = no rent error). The second part of the model measures the error amount given that a rent error has occurred. This methodology is different from previous years, in which the rent error value was modeled inclusive of cases where there was no rent error. This two-part model allows us to separately examine the effects related to the probability that a rent error occurs as well as the amount of that rent error. Further, the two-part model is an effective way to deal with data that has a large number of 0 values.

Hypothetically, dollar amounts of rent errors are affected by four sets of factors: (1) project characteristics, (2) project practices, (3) project-caused errors, and (4) household characteristics (see Figure F-1). Project characteristics include organizational and staffing features (e.g., program type, caseload for all staff, certification staff, staff experience). Project practices cover different ways to assign cases (e.g., by transaction type, certification activities, or complexity levels); training hours and methods/topics for new and experienced staff; information technology (IT) applications; contracting certification to outside entities; and a set of performance management or quality control (QC) measures. QC measures range from setting performance goals, dedicating a department or personnel to QC, or reviewing certification and recertification to a certain extent, to measuring staff-perceived frequency of making various errors in the process.

Figure F-1
Conceptual Framework for Modeling Rent Errors



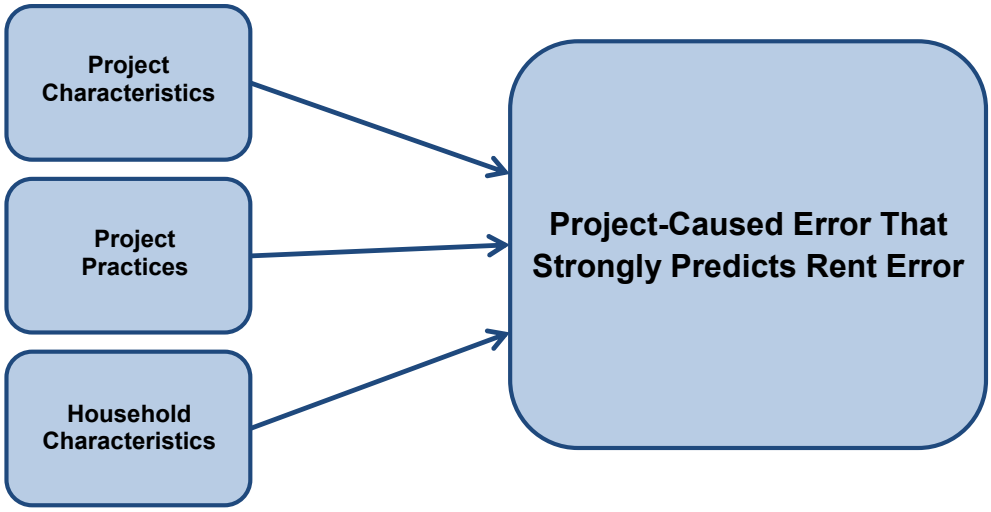
The project-caused errors will be used as predictors of rent error and as the outcomes to be modeled through project variables and household characteristics. The available data, however, may not be adequate to realistically represent all potential project errors (see the Methodology section below for definitions of the error types). Not all indicators of project-caused errors were found to be important in accounting for rent errors. Some project errors were unrelated or even negatively related to the dollar amount of rent errors, due to possible overlapping or confounding effects among multiple errors and other project or household factors. We tested the available project-caused errors measurement through bivariate and regression analyses to assess their relevance in accounting for gross rent error. Only those that are identified as related to rent errors are included in the final models.

Household characteristics refer to household financial conditions and demographics. The concept and related indicators of household characteristics have been well-established in prior studies as important predictors of rent error. Household financial conditions and demographics are factors that project staff should monitor when managing cases. These variables are external factors that would not be affected by project management or practices, but were included in the model as they have been strong predictors of rent error in previous analyses.

Modeling Project-Caused Errors. In the second conceptual model, we consider project-caused errors as the consequences of project characteristics, project practices, and household characteristics (see Figure F-2). Project-caused errors were identified through investigation of household records conducted by the field work. By default, project-caused errors are related to rent errors to a varying extent. Project-caused errors occur due to limitations in organizational resources, insufficient staff skills, a lack of rigorous quality control, and complicated household financial situations, among other problems.

Some project-caused errors were found in prior analyses to be strongly predictive of rent error, though not all at sufficient statistical significance levels—hence, only those that are found significantly related to rent errors were modeled in this study. Examining the pattern in which project and household factors account for project-caused errors may help housing management reduce such errors. However, the implication of relationships *among* project-caused errors is not clear. When project errors were defined and data coded, some of the indicators were similar, closely related, or even overlapping. Thus, in modeling a given project-cause error, we did not use other project-caused errors as predictors.

Figure F-2
Conceptual Framework for Modeling Project-Caused Errors



Data and Variables

We combined household and project data to conduct data processing, including examining data quality, missing data imputation, data editing and rescaling, and derived or composite variable construction. Before testing final multiple regression models, we conducted extensive initial data analysis in iteration with data processing to examine data quality of key measures, the bivariate relationship between predictor variables and outcome variables, and issues in preliminary multiple regression models.

The household records were matched with the affiliated projects using the project identification code. The resulting data set contains 2,400 household cases affiliated with 538 projects.[44] Subsequent diagnostic analysis identified four cases as outliers, which we removed from the final modeling. The final analysis used 2,369 household records linked to 538 project records. Replicate weights were attached to each record to calculate delete-a-group Jackknife variance estimates that account for the stratified, multi-stage cluster selection of the tenant sample.

The Household Data. The household survey gathered detailed information about household characteristics as well as final measure of rent errors. An algorithm was developed to recode/rescale raw data items and construct composite variables. Using the algorithm, we produced measures of the following:

- Project-caused errors
- Household financial conditions (e.g., income and expenses)
- Demographics (e.g., household size, number of bedrooms, elderly household with disabilities)
- Rent error measures (gross error, subsidy underpayment and overpayment errors)[45]

The Project Data. The Project Staff Questionnaire (PSQ) file contained over 200 raw data items, with many having a large number of categories that describe project characteristics and practices.

Methodology

Regression Diagnostic Analysis. Regression diagnostic analysis was conducted prior to multiple regression modeling to identify and remedy issues related to excessive collinearity, outliers, and other problems that distort statistical estimation.

Collinearity or multicollinearity occurs when a linear combination of explanatory variables in the model are highly correlated. Coefficient estimates tend to be unstable with large standard errors. The

[44]Of the 538 sampled projects (or project-like entities, hereafter referred to as projects) for the Project Staff Questionnaire (PSQ), 25 projects failed to respond; consequently, 115 households under these projects did not have PSQ data matched. A sensitivity analysis suggested that excluding these households may introduce bias to the analysis because they differed from the rest of the sample in three key household variables. We imputed project data for the 115 household records and retained these records in the merged household and project data set.

[45] For gross rent error and underpayment and overpayment errors, the logarithm of each dollar value was taken to tighten the variables' skewed distributions where very few cases had large dollar amount errors.

diagnostic results were largely comparable with earlier studies. A number of project and household predictors were found to have high multicollinearity; those that were deemed conceptually less important were excluded from analysis.

Outlier cases are data points that have an excessively large impact on regression estimates. To identify outliers, we examined residual distribution of the predicted probability of a gross rent error and the value of a gross rent error. Thirty-one cases were found to be outliers (28 in the logistic regression, 3 in the linear regression); thus, they were excluded from the modeling.

Intra-class correlation: With a two-level data structure where households are nested by projects, households' rent errors may be correlated strongly *within* projects. If so, the resulting model estimates with ordinary linear regression may be biased or lack precision. It would be more efficient to model rent errors with hierarchical linear technique, given that a large intraclass correlation occurs (i.e., a large proportion of the rent error variance occurs at the project level). To assess this possibility, we ran an unconditional hierarchical linear model (HLM) and found project-level variance of the log gross error was 10.8 percent of the total variance. Consistent with earlier years' analyses, we did not use HLM modeling techniques for this study.

Model Specification and Estimation. Multivariate analyses were conducted to account for rent errors (gross rent error, subsidy overpayment, and subsidy underpayment). We used logistic regression to model the probability of a rent error and linear regression to model the amount of the error. We considered variables from all four factors: (1) project characteristics, (2) project practices, (3) project-caused errors, and (4) household characteristics.

The full set of variables eligible for the model are presented in Table F-1. We selected the final variables for the model in two steps. First, we calculated individual models for each variable and identified those that had a significant relationship with rent error at $p < 0.10$. We included a class variable for program type and tested interactions between program type and the project characteristics and practices. These analyses were conducted separately for the rent error probability model and the rent amount model. Second, we used a stepwise selection algorithm to identify the final variables for each model.[46] Only the variables from step 1 were included in the stepwise algorithm. Any variable that was significant at $p < 0.05$ was included in the model. The stepwise algorithm was conducted separately for the rent error probability model and the rent amount model. We then combined the significant variables from the probability model and the rent amount model into the final set of variables for modeling.

To examine factors underlying project-caused errors, multivariate analyses were conducted using project characteristics, project practices, and household characteristics to account for each measure of project-caused errors. There were four project errors that were related to rent error: administrative error, overdue recertification, percentage of items with transcription errors, and percentage of items without written third-party verification. Administrative error and overdue certification are both binary variables. We coded the percentage of items with transcription errors into a binary variable where 1 indicates at least one transcription error and 0 indicates no transcription errors. Similarly,

[46] The stepwise algorithm introduces a single variable into the model and tests for significance. The variables are introduced into the model in order of the strength of their relationship with the outcome. After each variable is introduced into the model, the algorithm evaluates the significance of other effects in the model. Those that are no longer significant effects are removed from the model one at a time, in order of the weakest relationship.

we coded third-party verification into a binary variable where 1 indicates at least one item without written third-party verification. We modeled the binary-coded project-caused errors using logistic regression.

Unless otherwise noted, we conducted statistical analyses with the SURVEY procedures of SAS 9.2 using Jackknife delete-a-group replicate weights to adjust for design effects (see Appendix B: Weighting). PROC SURVEYLOGISTIC was used to estimate the probability of a gross error as well as the probability of overpayment and underpayment. PROC SURVEYREG was used to estimate the value of the gross rent error, overpayment, and underpayment, as well as the interval measures of project-caused errors. The value of gross rent error is conditional on an error occurring. Therefore, this model is based on the 846 observations where a rent error did occur. Similarly, the models for the value of the overpayment and underpayment are based on observations where an overpayment and underpayment occurred, respectively. For modeling binary-coded project-caused errors, we used PROC SURVEYLOGISTIC. PROC MIXED was used for variance analysis of rent error at project and household levels.

For descriptive statistics, we used PROC SURVEYMEANS and PROC SURVEYFREQ. All statistics presented here were generated with sample weights and replicate weights, using the Jackknife procedure.

Findings

To address the first research question of identifying predictor variables that accounted for rent error and project-caused errors, we present bivariate tabulation, regression coefficients, and related significance test statistics to establish whether or not an effect exists beyond chance (i.e., whether the effect is statistically significant).

Gross Rent Error

Descriptive statistics for the eligible predictor variables were tabulated separately by two groups of households: those with and those without gross rent error. This offers a preliminary view of the predictor variables differentiated by gross rent error. Exhibit F-1 presents statistics of the variables[47] by the indicator of gross rent error status (with or without an error of $5 or more). Statistically significant differences at the $P < 0.05$ level are noted by an asterisk. The proportion of Public Housing projects is higher for households with rent errors, while the percentage of Owner-administered projects is lower. There are no project practices that are significant between households with rent error and those without error. There are a number of significant differences for tenant characteristics and project-caused errors.

[47] For dummy variables (coded 1 for a "yes" and 0 for a "no" response), the means are equivalent to the percentage of households that had a value of 1.

Exhibit F-1
Variables Evaluated For Rent Error Modeling: Households With and Without Gross Rent Error (Original Scales, Weighted)

	Households Without Error n = 1,812					Households With Error n = 588			
Variable Label	**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**		**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**
Project Characteristics									
Public Housing	0.238	0.004	0.229	0.248	*	0.278	0.015	0.247	0.309
PHA-administered Section 8	0.450	0.004	0.441	0.460		0.477	0.016	0.444	0.510
Owner-administered	0.311	0.006	0.300	0.323	*	0.245	0.017	0.209	0.280
Response Across Project	0.145	0.022	0.099	0.190		0.169	0.026	0.115	0.222
Cases per Staff (in 100s)	1.309	0.175	0.944	1.675		1.463	0.240	0.963	1.963
Cases per Certification Staff (in 100s)	2.569	0.697	1.115	4.023		2.613	0.753	1.043	4.183
Cases per Experienced Certification Staff (in 100s)	11.008	5.672	-0.823	22.839		20.974	16.868	-14.213	56.160
Move-in Cases (in 100s) per Staff Member	0.134	0.010	0.113	0.155		0.144	0.018	0.107	0.181
Move-in Cases (in 100s) per Certification Staff Member	0.190	0.011	0.167	0.214		0.197	0.019	0.158	0.235
Move-in Cases (in 100s) per Experienced Certification Staff Member	0.538	0.245	0.026	1.050		1.140	0.774	-0.476	2.755
Percent of Experienced Certification Staff	87.791	1.043	85.616	89.966		85.835	1.207	83.317	88.354
Certification Staff Turnover Rate	12.079	1.303	9.361	14.797		13.367	1.643	9.940	16.793
Project Practices									
Assigned Case by Transaction Type	0.175	0.022	0.129	0.221		0.193	0.029	0.134	0.253
Assigned Case by Activity	0.091	0.018	0.054	0.129		0.083	0.017	0.047	0.120
Assigned Case Nonsystematically	0.726	0.026	0.672	0.781		0.718	0.032	0.650	0.786
Number of Activities Using a Computer	7.865	0.107	7.641	8.089		7.629	0.161	7.293	7.964
Number of Activities Using Software	5.226	0.070	5.081	5.371		5.130	0.072	4.980	5.280

Exhibit F-1 (cont'd)

	Households Without Error n = 1,812					Households With Error n = 588			
Variable Label	**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**		**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**
Project Characteristics									
Contracted out to Perform Certifications	0.110	0.018	0.071	0.148		0.086	0.023	0.037	0.134
Dedicated Training Department or Staff Trainer within Organization	0.714	0.032	0.646	0.782		0.720	0.033	0.651	0.789
Number Reported Training Hours for New Staff	61.269	7.699	45.210	77.328		64.028	7.329	48.740	79.316
Total Number of Training Hours for New Staff on Specific Topics	119.69	8.691	101.56	137.81		126.90	13.396	98.960	154.84
Count of Methods for Training Used for New Staff	3.469	0.180	3.094	3.845		3.617	0.191	3.219	4.015
1+ Web-based Training for New Staff	0.492	0.031	0.426	0.557		0.519	0.041	0.434	0.604
Shadowing/ Mentoring Training for New Staff	0.708	0.029	0.648	0.769		0.727	0.033	0.657	0.797
EIV Training for New Staff	0.683	0.029	0.623	0.743		0.696	0.031	0.631	0.761
1+ Calculation Training for New Staff	0.627	0.030	0.565	0.690		0.633	0.040	0.550	0.716
Interviewing Tenants Training for New Staff	0.640	0.027	0.584	0.697		0.673	0.030	0.610	0.736
Total Number of Training Hours for Experienced Staff on Specific Topics	59.390	5.313	48.309	70.472		62.206	5.344	51.059	73.354
Count of Methods for Training Used for Experienced Staff	3.703	0.167	3.355	4.051		3.662	0.201	3.243	4.082
1+ Web-based Training for Experienced Staff	0.553	0.029	0.493	0.613		0.520	0.048	0.420	0.620
Shadowing/ Mentoring Training for Experienced Staff	0.587	0.035	0.515	0.659		0.605	0.042	0.517	0.692
EIV Training for Experienced Staff	0.852	0.023	0.804	0.900		0.837	0.034	0.765	0.908

Exhibit F-1 (cont'd)

	Households Without Error n = 1,812					Households With Error n = 588			
Variable Label	**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**		**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**
Project Characteristics									
1+ Calculation Training for Experienced Staff	0.687	0.028	0.628	0.747		0.667	0.044	0.576	0.758
Interviewing Tenants Training for Experienced Staff	0.626	0.033	0.557	0.695		0.623	0.044	0.531	0.716
Form HUD-50058/50059 Training for experienced staff	0.695	0.031	0.631	0.759		0.692	0.039	0.611	0.773
Staff with Goal-Setting Process for Performing Certifications	0.742	0.023	0.694	0.790		0.770	0.027	0.714	0.826
Dedicated QC Staff	0.806	0.019	0.766	0.845		0.755	0.027	0.699	0.811
Number of Errors Tracked	0.174	0.296	-0.442	0.791		-0.323	0.271	-0.888	0.242
Certification Review Rate	0.615	1.841	-3.226	4.456		-1.184	2.050	-5.460	3.091
Frequency making errors	16.784	0.423	15.902	17.666		17.236	0.751	15.668	18.803
100% Certifications Reviewed	0.133	0.019	0.093	0.174		0.092	0.017	0.057	0.127
Random Select for Review	0.670	0.027	0.613	0.726		0.682	0.030	0.619	0.745
New/error-prone/household factor select for review	0.242	0.020	0.200	0.285		0.227	0.026	0.173	0.282
Review 5 key info	0.627	0.027	0.571	0.682		0.619	0.046	0.523	0.716
Review in 30 days Form HUD-50058/50059 submit	0.477	0.028	0.419	0.534		0.469	0.041	0.383	0.556
Review 3-12 months Form HUD-50058/50059 submit	0.422	0.029	0.362	0.483		0.439	0.049	0.336	0.542
Feedback specifics and in person	0.354	0.028	0.296	0.413		0.303	0.036	0.228	0.379
Feedback monthly or shorter	0.548	0.033	0.479	0.618		0.558	0.040	0.474	0.642
Feedback quarterly or longer	0.370	0.033	0.300	0.439		0.376	0.037	0.298	0.454
Review by supervisor/leader	0.771	0.018	0.734	0.808		0.791	0.027	0.735	0.848
Review by contract administrator	0.124	0.022	0.079	0.170		0.102	0.018	0.065	0.139
Review by OIG auditor	0.076	0.016	0.043	0.110		0.061	0.016	0.027	0.094

Exhibit F-1 (cont'd)

	Households Without Error n = 1,812					Households With Error n = 588			
Variable Label	**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**		**Mean**	**Standard Error**	**Lower 95%**	**Upper 95%**
Project Characteristics									
Review prior Form HUD-50058/50059	0.802	0.023	0.755	0.849		0.760	0.032	0.693	0.827
Household Characteristics									
Number Household Members	2.069	0.053	1.959	2.180	*	2.549	0.069	2.404	2.694
Total Annual Income in thousands	12.165	0.335	11.466	12.864	*	15.717	0.493	14.689	16.745
Number of Bedrooms	1.820	0.037	1.743	1.897	*	2.097	0.045	2.004	2.190
Earned Income	0.303	0.019	0.264	0.342	*	0.647	0.049	0.545	0.750
Other Income	0.210	0.015	0.178	0.242	*	0.349	0.029	0.290	0.409
Public Assistance Income	0.093	0.009	0.075	0.111		0.109	0.020	0.067	0.151
Pension Income	1.057	0.043	0.967	1.147		1.029	0.060	0.904	1.155
Medical Expense	0.524	0.042	0.438	0.611	*	0.921	0.084	0.746	1.096
Total Number of Sources of Income/Expenses	2.367	0.068	2.225	2.508	*	3.491	0.140	3.199	3.783
Total Number of Allowances	1.127	0.017	1.090	1.163	*	1.350	0.034	1.278	1.422
Age of Head of Household	0.286	0.785	-1.352	1.925	*	-2.250	0.713	-3.737	-0.763
Household With Elderly/Disabled	0.576	0.017	0.542	0.611	*	0.510	0.025	0.458	0.563
Moving to Work	0.104	0.027	0.048	0.161		0.145	0.043	0.055	0.235
Project-Caused Errors									
Percent of Items with Transcription Errors	0.164	0.009	0.146	0.183	*	0.446	0.018	0.410	0.483
Percent of Items Without Written third-party Verification	0.081	0.007	0.066	0.095	*	0.166	0.015	0.134	0.197
Overdue Recertification Error	0.009	0.002	0.004	0.014	*	0.039	0.012	0.013	0.064
Procedure Error	0.216	0.013	0.189	0.244	*	0.316	0.026	0.261	0.371
Administrative Error	0.293	0.013	0.265	0.320	*	0.848	0.026	0.793	0.902
Income Calculation Error	0.014	0.004	0.007	0.022	*	0.040	0.011	0.017	0.062
Any Calculation Error	0.039	0.006	0.026	0.052	*	0.117	0.015	0.085	0.150

* The two groups differ significantly in the predictor variable ($P < 0.05$).
Source: HUDQC FY 2014 household-level data collection and Project Staff Questionnaire.

Multiple Logistic Regression Models. In the multiple logistic regression, the regression coefficient estimates are typically evaluated in terms of odds ratios.[48] The odds ratio represents the odds that an event (e.g., gross rent error) will occur given a particular characteristic (e.g., administrative error), relative to the odds of the event occurring in the absence of that characteristic. The odds ratio is simply the probability of the event occurring divided by the probability of the event not occurring: OR = p/(1-p). For example, if the probability of a gross rent error without an administrative error is 25%, the odds of the event are 25%/75%, or 1 to 3. If an administrative error increases the probability of a gross rent error to 50%, the odds are 1 to 1. The odds ratio is the odds with the administrative error relative to the odds without an administrative error, or:

$$OR = (50\%/50\%)/(25\%/75\%) = 3$$

The odds ratio is estimated as the given predictor's relationship with the rent error, net of other predictor effects (hereafter, statements to interpret regression coefficient estimates are all qualified such that the estimated effect exists while holding other effects equal).

Multiple Linear Regression Models. In the multiple linear regression analysis of the rent error value, the regression coefficient estimate indicates the given predictor's relationship with the rent error, net of other predictor effects (hereafter, statements to interpret regression coefficient estimates are all qualified such that the estimated effect exists while holding other effects equal).

The estimated intercept represented a reference point for interpreting estimates of predictor effects on gross rent error from each model. For example, the intercept estimated in log scale was 2.26, equivalent to $9.61.[49] This was the expected average gross error of a "reference" group of households that had a zero value on each predictor variable in the model. For binary-coded predictors such as program type (e.g., Public Housing), the zero value represented the projects in programs other than the given one—in this case, PHA-administered Section 8 or Owner-administered programs. For project-caused errors, the zero value indicates there was not an instance of a particular error for that observation. For household-level interval predictors that were rescaled by centering, the "reference" households were characterized by the mean value of a given predictor. For example, for total annual income, the centered zero value was the average annual income of the overall study population.

A coefficient estimate for a predictor, if statistically significant, represents the difference from the "reference" value in gross rent error associated with this predictor. We focused on interpreting the regression coefficients that were statistically significant ($p \leq 0.05$), as they represented effects that were unlikely to be due to chance.

Gross Error Models. Overall, the final model showed that, as in previous years, project characteristics and project practices, as well as various sociodemographic household characteristics,

[48] The estimated coefficients in the logistic model are the log odds ratios, log (OR). The odds ratios are obtained as e^b, where e is a constant of approximately 2.718 and b is the estimated logistic regression coefficient.

[49] Dollar amount of the intercept is e^l, where e is a constant of approximately 2.718 and l is the estimated regression intercept in log scale. To convert coefficients in log scale to dollar amount, we added the log-scale estimate of a given predictor to the intercept log scale and converted the sum of log-scale values into dollar amount. The difference between the resulting dollar amount and the intercept-equivalent dollar amount is the estimated predictor effect in dollar amount of gross rent error. For example, the difference associated with predictor "administrative error" has a log estimate of 0.395 ($p < 0.05$). Other things being equal, this effect increases the gross error ($4.86) from the reference group's estimates, $e^{(2.26 + 0.395)} - e^{2.26} = 14.28 - 9.61 = 4.86$.

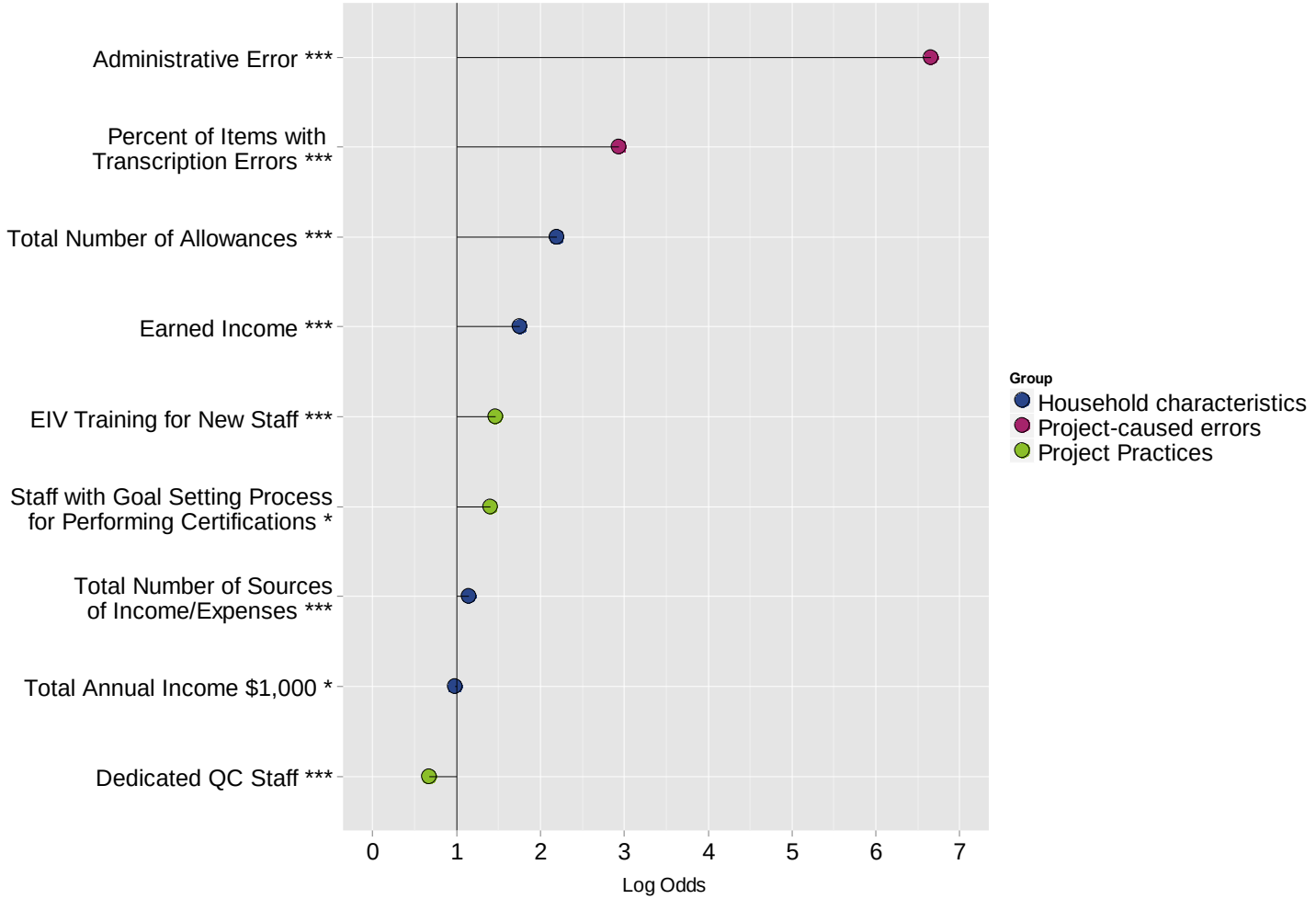
were significantly associated with gross rent error. We group the effects based on whether they were significant in predicting the probability of a gross rent error and whether they were significant in predicting the value of the gross rent error. Some variables are significant in both models.

- Significant characteristics in measuring the probability of a rent error (n = 2,369):
    - **Project characteristics:** There are no significant effects based on project characteristics. This is consistent with models from previous years.
    - **Project practices:** Projects with a dedicated QC staff were less likely to have a rent error, a 47% decrease in the odds.
    - **Tenant characteristics:** A one-unit increase in the total number of allowances (0, 1, 2, or 3) reported by the tenant increases the odds of a rent error by 2.19 times. The odds of a rent error are 76% higher for tenants with earned income than those without. There is a 14% increase in the odds of a rent error for each increase in the number of tenant income sources (range from 0 to 19).
    - **Project errors:** Two project errors were significant predictors, administrative error and percentage of transcription errors. These two effects were the two largest in modeling the probability of a gross rent error. The odds of a rent error is 6.66 times higher when there is an administrative error than the odds of a rent error without administrative error. The percentage of transcription errors increases the odds of a rent error by nearly 3 times.
- Characteristics were found to significantly predict the value of the gross rent error, given a rent error has occurred. The dollar values of these effects is larger than in past reports since this model is developed with observations known to have a gross rent error (n = 816).
    - **Project characteristics:** Higher percentages of certification staff turnover are associated with higher rent error, (0.05 per unit increase). For Owner-administered units, a one-unit increase in the ratio of move-in cases per staff member decreases the rent error by $0.36, while in Public Housing, a one-unit increase in the ratio of move-in cases per experienced staff reduces the rent error by $0.02.
    - **Project practices**: A single project practice was associated with the amount of rent error, when certification staff are required to review the household's previous Forms HUD-50058/50059 prior to starting the certification process for the household's current Forms HUD-50058/50059 transaction. This practice reduces the amount of rent error by $2.64.
    - **Tenant characteristics**: The amount of the rent error increases for households with earned income ($2.20), other income ($2.60), and public assistance income ($4.86). For every increase in $1,000 total income, the rent error increases by $0.09. As mentioned above, higher income is associated with lower probability of error, but the value of the error is higher for higher incomes. Rent errors are also higher for larger households, with an increase in $1.78 per household member. The total number of allowances decreases the amount of the error by $1.73.

- **Project errors:** Two project errors were significant predictors, administrative error and percentage of transcription errors (both are also significant in the probability model). Administrative errors have the largest impact on the value of the rent error with a $14.28 increase. Transcription errors also have a large impact on the amount of the error with an increase in $8.06.

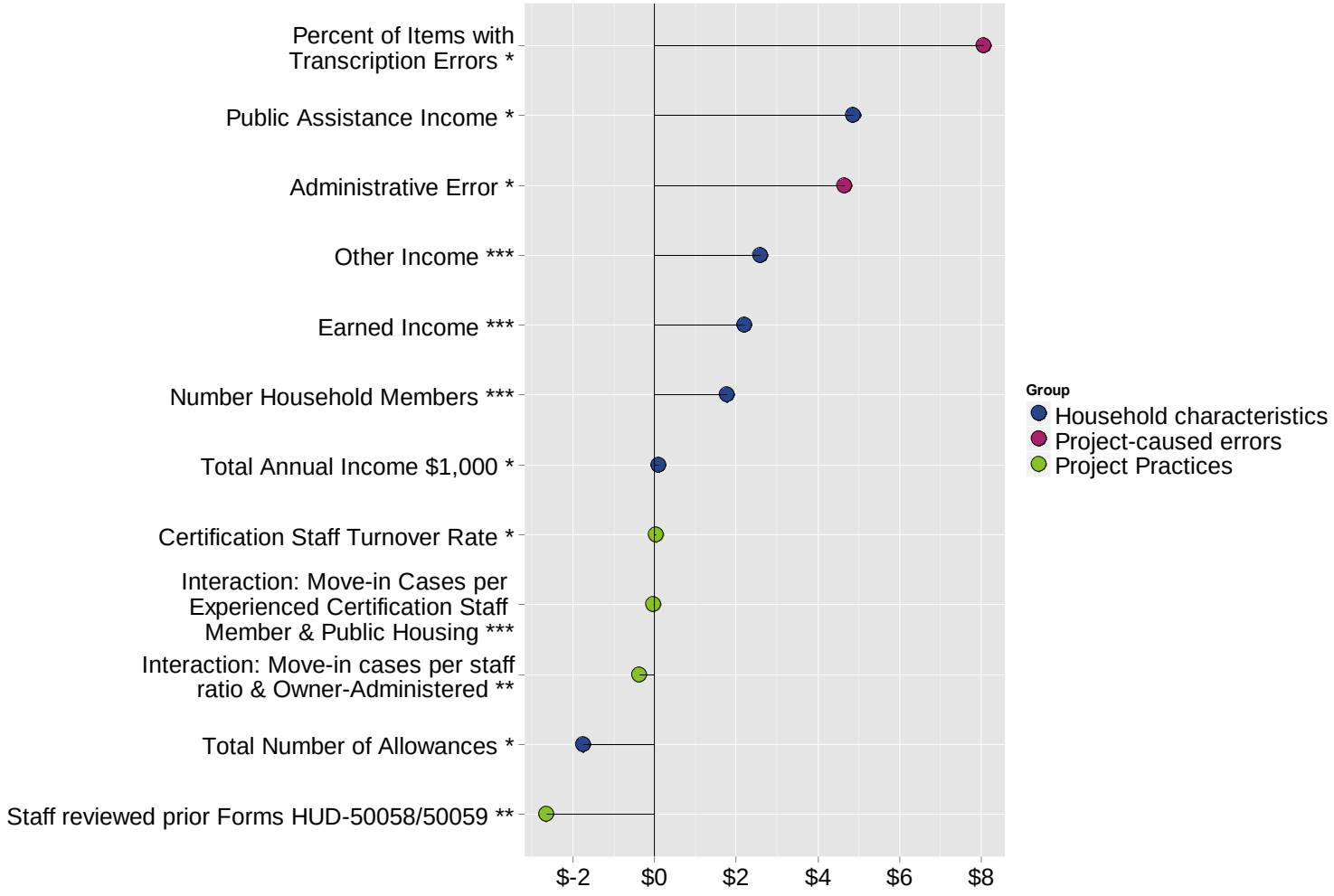
The two models both include a number of tenant characteristics that suggest more complex financial situations, such as multiple income sources, household size, and number of allowances. This is consistent with the analyses from prior years. Some of the characteristics from the FY 2013 model are similar to those from the FY 2014 model, including earned income, other income, public assistance income, total allowances, and total annual income. The differences between the current model and the model in FY 2013 include number of bedrooms, pension income, and medical expenses. The household characteristics in 2014 that are not in 2013 include household size and total number of income sources.

Figure F-3a
Statistically Significant Predictors of Gross Rent Error (1 = Error, 0 = No error): Logistic Regression Odds Ratios From the Final Model



*p < 0.05, **p < 0.01, *** p < 0.001 (test with the null hypothesis that a coefficient = 0; a significant result indicates that the corresponding predictor is associated with the gross rent error)
Estimate represents the unique effect of a given predictor, net of other effects in the model.
Significant effects based on design adjusted variance using delete-a-group Jackknife.
Source: HUDQC FY 2014 household-level data collection and Project Staff Questionnaire.

Figure F-3b
Statistically Significant Predictors of Log Gross Rent Error: Multiple Regression Derived Dollar Value Net Effects From the Final Model

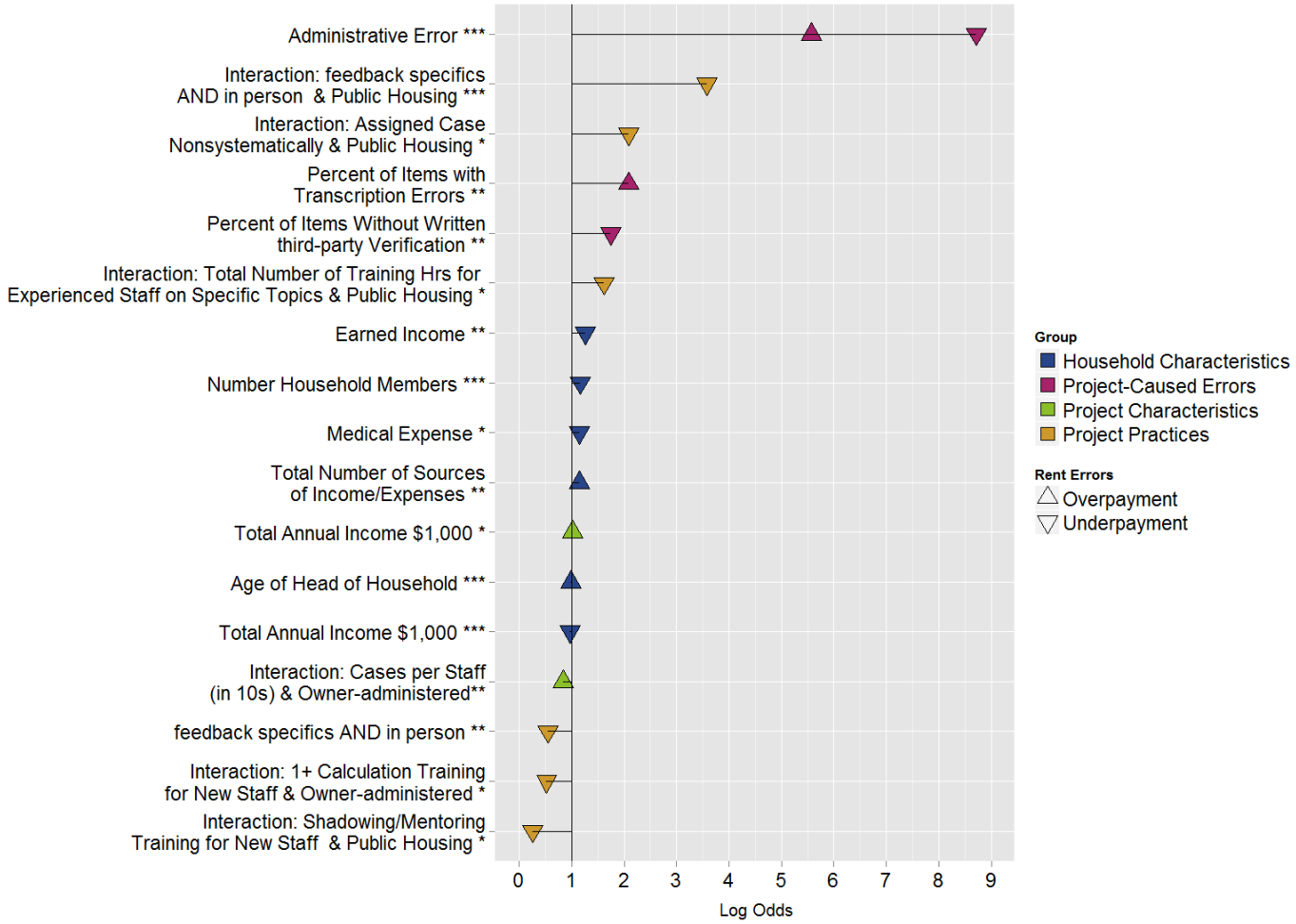


*p < 0.05, **p < 0.01, *** p < 0.001 (test with the null hypothesis that a coefficient = 0; a significant result indicates that the corresponding predictor is associated with the gross rent error)
Estimate represents the unique effect of a given predictor, net of other effects in the model.
Significant effects based on design adjusted variance using delete-a-group Jackknife.
Source: HUDQC FY 2014 household-level data collection and Project Staff Questionnaire.

Overpayment and Underpayment

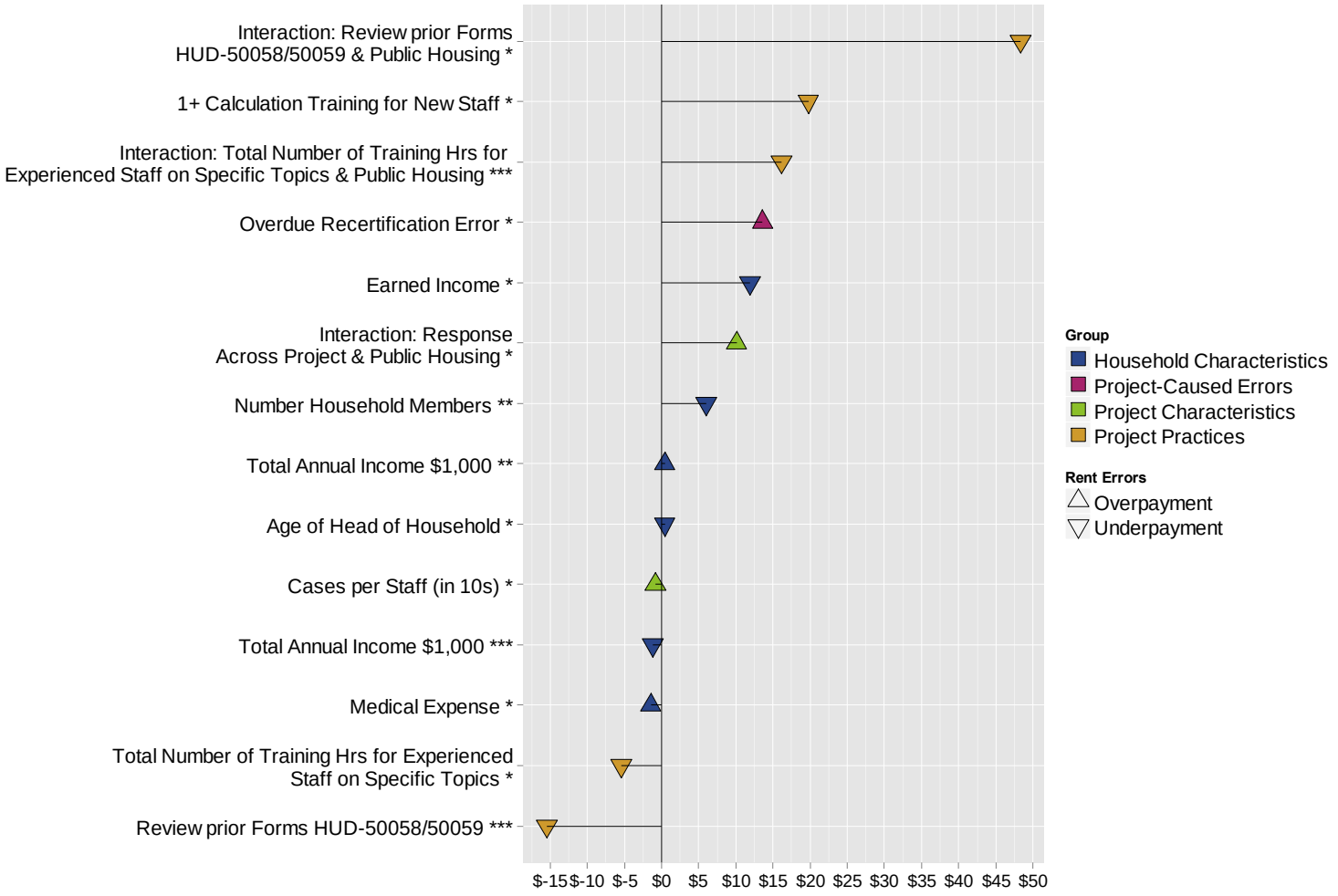
An analysis of overpayment and underpayment rent errors produced additional information that may improve program ability to deal with more specific rent errors. We estimated two equations with the same four sets of predictors as those used in modeling gross rent error to explain overpayment and underpayment that were rescaled into a logarithm. Figures F-4a and F-4b present the statistically significant results. The direction of the arrows indicates an overpayment or underpayment. Many of the effects are similar to the gross error model, including administrative error, percentage of items with a transcription error, earned income, household size, total sources of income, and total annual income.

Figure F-4a
Statistically Significant Predictors of Underpayment and Overpayment Rent Error Indicators (1 = Error, 0 = No error): Logistic Regression Odds Ratios From the Final Model



*p < 0.05, **p < 0.01, *** p < 0.001 (test with the null hypothesis that a coefficient = 0; a significant result indicates that the corresponding predictor is associated with the gross rent error)
Estimate represents the unique effect of a given predictor, net of other effects in the model.
Significant effects based on design adjusted variance using delete-a-group Jackknife.
Source: HUDQC FY 2014 household-level data collection and Project Staff Questionnaire

Figure F-4b
Statistically Significant Predictors of Log Underpayment and Overpayment Rent Errors: Multiple Regression Derived Dollar Value Net Effects



*p < 0.05, **p < 0.01, *** p < 0.001 (test with the null hypothesis that a coefficient = 0; a significant result indicates that the corresponding predictor is associated with the gross rent error)
Estimate represents the unique effect of a given predictor, net of other effects in the model.
Significant effects based on design adjusted variance using delete-a-group Jackknife.
Source: HUDQC FY 2014 household-level data collection and Project Staff Questionnaire

Underpayment. A number of predictors of project characteristics, project practices, project-caused errors, and household background were associated with underpayment in patterns similar to those for gross error. We present the significant effects for modeling the probability of an underpayment and then the significant effects for modeling the value of the effect.

- Significant characteristics in measuring the probability of an underpayment (n = 2,369):
    - Project characteristics: There are no significant effects based on project characteristics. This is consistent with the FY 2013 analyses.
    - Project practices: Project practices that decrease the odds of an underpayment are shadowing/mentoring of new staff in Public Housing as well as providing training to new staff in calculations (fixed income, earned income, assets, or deductions). In general, providing feedback based on one-on-one discussions and making sure the specific deficiencies for each file are recorded and made available to certification staff are associated with decreased odds of an underpayment (OR = 0.55). However, for Public Housing, this practice actually increases the likelihood of an underpayment (OR = 3.58). Combining the main effect and the interaction for Public Housing indicate that this feedback practice doubles the odds of an underpayment for Public Housing projects. Also increasing the odds of an error in Public Housing is a higher number of hours for experienced staff on specific topics (OR = 1.62). This association could be an inverse relationship—perhaps the hours of training for experienced staff is high because of higher numbers of underpayments; or due to confounding effects in the model (as will be discussed below, this variable reduces the probability of an administrative error). A final practice associated with increased probability of underpayment in Public Housing is assigning cases nonsystematically (e.g., alphabetically, random; OR = 2.09).
    - Tenant characteristics: The odds of an underpayment are 26% higher for tenants with earned income than those without; and 15% higher for tenants with medical expenses. There is a 14% increase in the odds of a rent error for each increase in the number of tenant income sources (range from 0 to 19). For every $1,000 increase in the tenant's total income, the odds of an underpayment are reduced by 3%. A one-unit increase in the number of household members increases the odds of an underpayment by 16%.
    - Project errors: Two project errors were significant predictors, administrative error and the percentage of items without written third-party verification. Administrative error was the largest effect in the model with an odds ratio of 8.72. The percentage of items without written third-party verification increases the odds of a rent error by 1.75 times.
- Characteristics were found to significantly predict the value of the underpayment, given an underpayment has occurred. The dollar value of these effects is larger than in past studies since this model is developed with observations known to have an underpayment (n = 269).
    - **Project characteristics:** There are no significant effects based on project characteristics. This is consistent with the FY 2013 analyses.

- **Project practices**: Providing training to new staff in calculations (fixed income, earned income, assets, or deductions) is associated with an increase in the underpayment ($19.75). Total training hours for experienced staff on specific topics is generally associated with a decrease in the value of the underpayment ($5.40), except in Public Housing, where it is associated with an $8.09 increase (includes the interaction). Requiring certification staff to review the household's previous Forms HUD-50058/50059 prior to starting the certification process for the household's current Forms HUD-50058/50059 transaction is associated with a decrease in the underpayment, except for Public Housing, where it increases the dollar amount of the underpayment to $9.95 (with the interaction).

- **Tenant characteristics**: The amount of the underpayment increases for households with earned income ($11.92). For every increase in $1,000 total income, the rent error increases by $1.18. Underpayment is also higher for larger households, with an increase in $5.98 per household member. The total number of allowances decreases the amount of the error ($1.73). A one-unit increase in the age of the household is associated with a $0.42 increase in the underpayment.

- **Project errors:** Two project errors were significant predictors, administrative error and percentage of transcription errors (both are also significant in the probability model). Administrative errors have the largest impact on the value of the rent error with a $14.28 increase. Transcription errors also have a large impact on the amount of the error with an increase in $8.06.

Overpayment. In modeling overpayment error, there were fewer significant predictors than the underpayment and gross error model. We present the significant effects for modeling the probability of an underpayment and then the significant effects for modeling the value of the effect.

- Significant characteristics in measuring the probability of an overpayment (n = 2,369):

  - **Project characteristics:** For Owner-administered projects, the ratio of cases per staff member was the only significant project characteristic. A higher number of cases per staff is associated with a decrease in the odds of an overpayment. An increase in 10 units per staff member lowers the odds of an overpayment by 18%.

  - **Project practices:** No project practices are significant predictors of the probability of an overpayment.

  - **Tenant characteristics:** There is a 14% increase in the odds of a rent error for each increase in the number of tenant income sources (range from 0 to 19). For every $1,000 increase in the tenant's total income, the odds of an underpayment are reduced by 3%. A one-unit increase in the number of household members decreases the odds of an underpayment by 2%. Both of these effects are predictors of underpayment.

  - **Project errors:** Two project errors were significant predictors, administrative error and the percentage of items with transcription errors. Administrative error was the largest

effect in the model with an odds ratio of 5.57. The percentage of items with transcription errors increases the odds of a rent error by 1.75 times.

- Significant characteristics in measuring the value of the overpayment, given an overpayment has occurred (the dollar values of these effects is larger than in past reports since this model is developed with observations known to have an underpayment [n = 325]):

  - **Project characteristics:** For Public Housing, projects reporting that staff members work on multiple projects have higher overpayments ($10.08). The ratio of cases to staff is associated with a decrease in the overpayment by $0.86.

  - **Project practices:** No project practices are significant predictors of the probability of an overpayment.

  - **Tenant characteristics:** For every $1,000 increase in the tenant's total income, the dollar value of the overpayment increases by $0.42. The presence of medical expenses is associated with reduced overpayments of $1.47.

  - **Project errors:** A single project error is associated with a large increase in the overpayment: overdue recertification, $13.61.

The probability of an underpayment shared a few of the same tenant and project error predictors as the probability of an overpayment: administrative error, number of income sources, and household income. The probability of an underpayment, however, shared no project characteristics or practices. The amount of underpayment and overpayment errors seemed to be associated with somewhat different project and household factors, with only two shared predictors: size of the household and income. The overpayment seems to be primarily driven by overdue recertification, while underpayment is driven by administrative error and transcription errors.

Project Error Models

In modeling gross rent errors, underpayments, and overpayments, four project-caused errors were significant predictors of rent errors: administrative error, percentage of items with transcription errors, percentage of items without written third-party verification, and overdue certification. To examine these predictors further, we ran logistic regression models predicting the occurrence of these project-caused errors.

Administrative error: Forty-two percent of cases were found to have an administrative error. There are a number of significant predictors of administrative error, including type of program (the odds of an administrative error for Public Housing and Owner-administered is 50% higher than Section 8). There are a number of household characteristics that increase the likelihood of an administrative error: earned income, number of bedrooms, number of allowances, and number of sources of income/expenses. However, the odds decrease when the household has public assistance income and pension income. The number of errors tracked, goal-setting process (in Owner-administered), and total training hours for new staff (in Public Housing) are associated with a decrease in the odds of an administrative error. Goal setting in Public Housing and Section 8 is associated with an increase in the odds of an administrative error.

Exhibit F-2: Significant Effects Using Logistic Regression for Project Error Models: Administrative Error in Households With Rent Error (n = 588)

Label	Mean	Lower 95%	Upper 95%
Public Housing***	1.51	1.25	1.82
Owner-administered*	1.57	1.09	2.26
Interaction: Move-in cases per staff ratio & Owner-administered*	0.97	0.949	0.997
Staff with Goal-Setting Process for Performing Certifications*	1.29	1.01	1.65
Number of Errors Tracked**	0.97	0.94	0.99
Interaction: Staff with Goal-Setting Process for Performing Certifications & Owner-administered***	0.44	0.28	0.69
Interaction: Total Number of Training Hours for New Staff on Specific Topics & Public Housing**	0.82	0.72	0.94
Earned Income***	1.51	1.24	1.84
Public Assistance Income*	0.72	0.55	0.95
Pension Income**	0.85	0.78	0.94
Number of Bedrooms***	1.16	1.07	1.26
Total Number of Allowances*	1.23	1.02	1.48
Total Number of Sources of Income/Expenses***	1.49	1.38	1.61

*p < 0.05, **p < 0.01, ***p < 0.001 (test with the null hypothesis that a coefficient = 0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).
Estimate represents the unique effect of a given predictor, net of other effects in the model.
Significant effects based on design adjusted variance using delete-a-group Jackknife.
Source: HUDQC FY 2014 household-level data collection and Project Staff Questionnaire

Percentage of items with transcription error: This outcome was dichotomized to be 1 if there was at least one item with a transcription error and 0 if there were none. Forty-five percent had at least one transcription error. Public Housing projects have a 47% increase in the odds of a transcription error. Earned income and number sources of income/expenses increase the odds of a transcription error. However, the odds are decreased when the household has pension income. The model for the transcription error shares many of the characteristics as the administrative error models since the dichotomized transcription measure is highly correlated with administrative error.

Exhibit F-3: Significant Effects Using Logistic Regression for Project Error Models: Transcription Error in Households With Rent Error (n = 588)

Label	Mean	Lower 95%	Upper 95%
Public Housing ***	1.47	1.25	1.72
Interaction: Staff with Goal-Setting Process for Performing Certifications & Owner-administered **	0.54	0.37	0.79
Number of Errors Tracked *	0.96	0.94	0.99
Earned Income ***	1.54	1.28	1.86
Pension Income *	0.87	0.79	0.98
Total Number of Sources of Income/Expenses ***	1.56	1.44	1.69

*p < 0.05, **p < 0.01, ***p < 0.001 (test with the null hypothesis that a coefficient = 0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).
Estimate represents the unique effect of a given predictor, net of other effects in the model.
Significant effects based on design adjusted variance using delete-a-group Jackknife.
Source: HUDQC FY 2014 household-level data collection and Project Staff Questionnaire

Percentage of items without written third-party verification: This outcome was dichotomized to be 1 if there was at least one item without written third-party verification and 0 if there were none. Fifteen percent of cases had at least one item without written third-party verification. Owner-administered projects have a lower probability of items without verification. Three household characteristics increase the probability: earned income, other income, total number of sources of income/expenses; while two reduce the probability: higher income and number of household members.

Exhibit F-4: Significant Effects Using Logistic Regression for Project Error Models: Lack of Third-Party Verification in Households With Rent Error (n = 588)

Label	Mean	Lower 95%	Upper 95%
Owner-administered *	0.59	0.36	0.97
Earned Income ***	2.10	1.78	2.49
Other Income ***	2.16	1.70	2.75
Total Annual Income in thousands ***	0.96	0.95	0.98
Number Household Members *	0.87	0.78	0.99
Total Number of Sources of Income/Expenses ***	1.35	1.27	1.43

Overdue recertification: Less than 2% of the cases are overdue recertification (37 cases). Due to the limited number of positive outcomes, we did not model overdue recertification.

Summary of Findings

The FY 2014 HUDQC multivariate modeling followed the conceptual approach used in previous years by analyzing variables representing project characteristics, project practices, tenant characteristics, and project-caused errors as they relate to gross rent error, subsidy underpayments, and subsidy overpayments. However, we took a different approach in constructing the models. In 2014, we used a two-part model that first models the probability of a rent error and then models the amount of the errors given that an error occurred. The analysis identified key patterns in which rent errors related to project and household variables. Because project-caused errors are strong predictors of rent errors, the analysis also examined project and household factors that account for project-caused errors. Key findings are highlighted below.

Rent errors

Project characteristics were not generally found to be predictive of the probability of a rent error. In fact, only a single project characteristic was found significant across all three probability models; the number of cases per staff member in Owner-administered units is associated with a reduction in the probability of an overpayment. In modeling the value of the rent error, higher percentages of certified staff turnover are associated with higher gross rent errors, while an increase in the ratio of move-in cases relative to staff is related to a decrease in the amount of gross rent error. The ratio of cases to staff was associated with a decrease in the amount of overpayment.

Of numerous *project practice* indicators, a few emerged as somewhat predictive of rent error, after controlling for all the modeled factors. Projects with a dedicated QC staff have a lower probability of a gross rent error. Projects that conduct EIV training for new staff and have a goal-setting process for performing certifications are associated with an increase in the probability of rent error. A review

of the household's previous Forms HUD-50058/50059 prior to certification is related to a reduction in the gross error amount.

Project-caused errors represented the largest effects in measuring rent error. Four indicators were most salient: (1) administrative errors, (2) overdue recertification errors (very few cases), (3) the rate of items without third-party written verification, and (4) the rate of items with transcription errors. Each predicted substantially higher rent error. Administrative error was the largest effect in measuring the probability for all three rent error measures. The rent error models suggest that reducing project-caused errors will reduce rent errors. The models focusing on project-caused errors will inform the correlates with making a project-caused error.

Project-caused error models

Project characteristics appeared to have some influence on project errors. Net of other effects, Public Housing and Owner-administered projects were more likely to make administrative errors than Section 8 housing. Consistent with FY 2013, Public Housing projects are more likely to have at least on transcription error, while Owner-administered projects are less likely to have certification of items without written verification.

Project practices had a few effects on project errors. In Public Housing and Section 8, projects with a goal-setting process for staff who conduct certifications were more likely to make an administrative error. Goal setting is also a significant factor in transcription errors. The number of errors tracked and total training hours for new staff are associated (in Public Housing) with a decrease in the odds of an administrative error.

Household characteristics play a significant role in explaining project errors because household financial conditions and demographics present varying levels of challenge to certification and recertification. Over the years, the basic patterns have been quite consistent and fit common sense (i.e., a household's complex financial situations raise the risk of errors in determining rent). Some key background predictors are:

- Households having earned income, a higher number of allowances, more incomes or expenses, and a larger number of bedrooms had higher error rates of administrative error.
- Pension income and public assistance income are associated with lower probability of administrative error.
- Larger households and households with higher total annual income on average had a lower error rate of lacking written verification.
- Earned income, other income, and the total number of income and expense sources are related to an increase in the probability of lacking written verification.

Implications for Program Improvement

To meet the specified Objectives (5, 12, and 13), we underscored a number of implications for HUD subsidy improper payment management.

First, the three housing programs were not substantially different in rent error after project and household variables were considered. This finding suggests that targeting a particular program type

for strengthening financial integrity may not be as effective as targeting specific problems underlying rent errors across all program types, for example reducing project-caused mistakes in (re)certification processing.

Project-caused errors in certification processing represent the largest effects with rent error, particularly administrative errors. Such errors can lead to overpayment, underpayment, or both. Reducing project-caused errors should be a priority for reducing the rate of improper payment. The significant project-caused variables are highly related to household characteristics (sources of income/expenses, household size). Households with more complex financial situations are more susceptible to project errors and thus more susceptible to rent errors.

Underpayment and overpayment relate to different issues and may require different strategies to remedy. The only common effect among the two is administrative error. This is the strongest predictor of rent error probability for both underpayment and overpayment. This common variable is consistent with FY 2013. However, the two error types differ in other significant project-caused errors. For underpayment, the percent of items without verification is a driver of underpayment, while the percent of items with transcription errors is a driver of overpayment. Earned income, the number of household members, and medical expenses are significant factors contributing to underpayment, while the total sources of income/expenses and age of household contribute to overpayment. Total income slightly increases overpayments and slightly decreases underpayments.

Future Research

This research presents a new way of evaluating the effects of rent errors by examining the probability of a rent error combined with the dollar value of those rent errors. While a number of results are consistent with prior studies, a number of new predictors have emerged. Increasing our understanding of these effects on rent errors as well as their relationship with other predictors (e.g., project-caused errors) will allow focused efforts to reduce errors. Numerous housing characteristics are predictors of rent error as well as underlying predictors of project-caused errors. Using these characteristics (e.g., large sources of income, large households) to identify specific cases that could be at risk for improper payment in advance of the (re)certification process could allow for increased quality control for these cases or the development of specific training around these at risk units.

The project practices that emerged from the modeling seem to be inconsistent in their relationship with rent errors (e.g., increased training associated with increased rent error). Further investigating these counterintuitive effects could help identify whether the effect is truly associated with rent error or whether there are underlying factors that are confounded with rent error. This will improve clarity on specific challenges facing certification staff that lead to processing errors and payment errors.

As stated in the FY 2013 report, historical analysis of the HUDQC data seems both feasible and desirable. Thus far, the analytic task has focused solely on a single year. With more than a decade of data accumulated by the annual surveys, a great deal of comparable measures of improper payment errors, project background/activities, and household characteristics are available. The large amount of data would allow in-depth analyses to describe the changing patterns of these important measures and their relationships. In a broad chronological framework, historical data analysis may shed light on how much progress HUD has made in dealing with housing subsidy improper payment, and how such progress can be attributed to changes in housing program practices in relation to changes in the

sociodemographic characteristics of program participants. Information yielded from historical analysis could be useful for HUD's long-term planning and program development to improve financial integrity.

References

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Harrell, F. E. (2001). *Regression modeling strategies*. New York: Springer.

Hosmer, D. W. & Lemeshow, S. (2001). *Applied logistic regression, textbook and solutions manual*. New York: Wiley & Sons.

Raudenbush, S. W. & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oak, CA: Sage Publishing.

U.S. Department of Housing and Urban Development
Office of Policy Development and Research
Washington, DC 20410-6000

September 2015