



NCHS-HUD Linked Data

Analytic Considerations and Guidelines

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Part 1: Introduction

The National Center for Health Statistics (NCHS) has developed a record linkage program designed to maximize the scientific value of the Center's population-based surveys. In a collaboration between NCHS and the U.S. Department of Housing and Urban Development (HUD), data for participants from two population-based health surveys (the National Health and Nutrition Examination Survey and National Health Interview Survey) were linked to data from HUD administrative records. These data, collectively referred to as the NCHS-HUD Linked Data, enable researchers to examine the health and well-being of individuals who live in HUD-assisted housing.

Data used in this linkage were from the following population-based NCHS health surveys and years:

- National Health Interview Survey (NHIS), years: 1999-2012;
- National Health and Nutrition Examination Survey (NHANES), cycles: 1999-2000, 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010, 2011-2012.

These data were linked to administrative records for HUD's largest housing assistance^a program categories, Housing Choice Vouchers (HCV), Multifamily (MF), and Public Housing (PH). The HUD administrative files contain housing, income, and program participation data for recipients of HCV, MF, and PH programs in all 50 states and the District of Columbia. HUD administrative records for MF program transactions that occurred between June 30th, 1996 and December 31, 2014 were included in the data linkage, and PH and HCV transactions occurring between December 1, 1999 and December 31, 2014 were included in the data linkage.

This document provides background information on the two NCHS surveys, HUD housing assistance programs, HUD administrative data, and the linkage process. General data considerations and analytic guidelines for researchers using the restricted-use NCHS-HUD linked data are also included.

A second document, "*NCHS-HUD Linked Data, Data Dictionary*," provides details about the variables in the linked data files (henceforth referred to as the *Data Dictionary*).

For more information or questions about the NCHS-HUD linked data, please visit the data linkage website http://www.cdc.gov/nchs/data_access/data_linkage_activities.htm or contact the NCHS Special Projects Branch at datalinkage@cdc.gov.

For more information about HUD programs, please refer to the HUD website at: <http://www.huduser.gov>. For questions that cannot be answered from the website, contact HUD researchers at NCHS_HUD_DataLinkage@hud.gov.

Throughout this document, several acronyms and abbreviations are used. For a comprehensive list of acronyms used in this document, consult [Appendix A: Acronym and Abbreviation List](#).

^a Of the 179,270 HCV transactions in the linked data with non-missing voucher types, there were 516 homeownership voucher transactions (0.29%, unweighted).

Part 2: Access to NCHS-HUD Linked Data Files

Due to confidentiality requirements, most NCHS survey linked data files are restricted for research use. The National Center for Health Statistics (NCHS) developed the Research Data Centers (RDCs) to allow researchers access to restricted data. RDCs are housed on-site at Centers for Disease Control and Prevention (CDC) facilities in Hyattsville, MD and Atlanta, GA. In addition, NCHS data can be accessed from RDCs housed in U.S. Census Bureau offices in several locations across the country. Researchers generally will need to be on-site at one of the RDCs to access restricted-use linked data, including the NCHS-HUD linked files.

The RDC is responsible for protecting the confidentiality of survey respondents, study subjects, or institutions from which data were collected. All researchers must submit a research proposal to determine if their project is feasible and to gain access to these restricted data files. The proposal provides a framework which allows RDC staff to identify potential disclosure risk. More information regarding the RDC and instructions for submitting an RDC proposal to access the data can be found at: <http://www.cdc.gov/rdc/>.

Part 3: NCHS Surveys

National Health Interview Survey (NHIS)

The National Health Interview Survey (NHIS) is an annual cross-sectional household interview survey of approximately 35,000 households (90,000 participants) designed to monitor the health of the United States population through the collection and analysis of data on a broad range of health topics. It has been conducted continuously since 1957 and the content of the survey is periodically updated. The sampling plan follows a multistage area probability design that permits the representative sampling of households and noninstitutional group quarters (e.g., college dormitories). The sampling plan is redesigned after every decennial census.

In 1997, NHIS underwent a questionnaire revision. Demographic and basic health information were collected on everyone in the household, and information on special health topics were collected on one adult and one child randomly selected from the household. Since 1997, the Core questions have remained largely unchanged from year to year. This allows for trend analyses and for data from more than one year to be pooled to increase sample size for analytic purposes. The Core contains four major components: Household, Family, Sample Adult, and Sample Child. The Household component collects limited demographic information for all individuals living in a housing unit. The Family component verifies and collects additional demographic information on each member of each family in the housing unit and collects data on topics including health status and limitations, injuries, healthcare access and utilization, health insurance, and income and assets.

From each family, one sample adult and one sample child (if any children under 18 years of age are present) are randomly selected. Information is collected about each selected person using the Sample Adult Core and the Sample Child Core questionnaires. Supplements are used to respond to new public health data needs as they arise. Some supplements are fielded only once; others are repeated as needed. A complete list of supplements can be found at: http://www.cdc.gov/nchs/nhis/supplements_cosponsors.htm.

Data are collected through a personal household interview conducted by interviewers employed and trained by the U.S. Bureau of the Census according to procedures specified by NCHS. A

computer assisted personal interview (CAPI) mode using a laptop computer has been used since 1997. For more information on the NHIS, go to <http://www.cdc.gov/nchs/nhis.htm>.

National Health and Nutrition Examination Survey (NHANES)

The National Health and Nutrition Examination Survey (NHANES) combines interviews, laboratory tests, and physical examinations to assess the health and nutritional status of adults and children in the United States. The survey currently examines a nationally representative sample of the civilian noninstitutionalized population, about 5,000 persons in 15 counties across the country each year.

Health interviews are conducted in participants' homes. Health measurements are performed in specially-designed and equipped mobile examination centers (MEC), which travel to locations throughout the country. The study team consists of a physician, medical and health technicians, as well as dietary and health interviewers. All participants visit the physician, and have dietary interviews and body measurements taken. All but the very young have a blood sample taken and a dental screening.

The in-home NHANES interview includes demographic, socioeconomic, dietary, and health-related questions. The examination component, conducted in mobile examination centers, consists of medical, dental, and physiological measurements, as well as laboratory tests. More information on the NHANES is available at <http://www.cdc.gov/nchs/nhanes.htm>.

Part 4: Understanding HUD Administrative Data

About HUD

The U.S. Department of Housing and Urban Development is the primary federal agency responsible for overseeing and managing domestic housing programs and policies. HUD manages and oversees a variety of housing and community development programs, including project-based rental subsidy programs, the Housing Choice Voucher program, community and economic development programs, Federal Housing Administration (FHA) mortgage insurance programs, and specialized programs for high needs populations (e.g., the elderly, homeless, and disabled). Most rural housing programs are managed by the United States Department of Agriculture (USDA).¹

People living in HUD-assisted households are represented in HUD administrative data because they receive a rental subsidy or pay a below market rent. HUD uses personal data about household characteristics, income, and expenses to determine the amount of rent subsidies under federal law. Generally, a rental subsidy reduces gross housing costs for the tenant to about 30 percent of household income, although program rules may allow for substantial variations in that ratio.

The NCHS-HUD data linkage covers HUD's largest housing assistance program categories: Housing Choice Vouchers (HCV), Multifamily programs (MF), and Public Housing (PH). Multifamily programs provide affordable housing through contracts with private owners of apartment buildings. HCV and PH programs are managed by local public housing agencies, which oversee data collection and manage housing assistance program implementation. Public housing is owned by PHAs. The HCV program gives tenants a voucher that covers part of their rent in a private-market unit. Administrative data for HUD-assisted households is submitted by

housing providers, who are private owners and managers of apartment buildings for MF programs, and public housing agencies for HCV and PH programs.

Public Housing Agencies

A public housing agency (PHA) is any entity authorized by the state or more broadly, a public territory, to help low-income families live in decent, safe, and sanitary housing. A PHA may be the owner of the housing (e.g., PH) or it may subsidize a third party to provide housing (e.g., HCV). Approximately 3,900 PHAs oversee rental housing assistance programs for more than 3.3 million households in the United States. PHAs must ensure income eligibility, income-based rental contribution of the families they assist, and the compliance of assisted units meeting minimum quality standards. Ongoing functions of a PHA include assuring tenant compliance with leases, performing annual reexaminations of income, and transferring families from one unit to another to correct over or under crowding. PHAs must also ensure assisted households have housing that is decent, safe, and sanitary. The PHA structure varies from state to state; some states have both a state-level PHA and local-level PHAs while others have only local-level PHAs. Other services provided by PHAs vary; PHAs may provide services such as homeownership programs, employment or training opportunities, and support programs for vulnerable populations.

HUD has a contractual relationship with PHAs, and provides grants for operating subsidies and for capital improvements in public housing. PHA-operated housing programs are separate and distinct from privately owned, assisted MF housing programs, in which HUD has a direct contractual relationship with private housing providers. Although HUD programs operate in different ways, all the households found in the HUD administrative data provided to NCHS received a rental subsidy and are considered assisted, low-income households by HUD.

HUD Housing Assistance Program Eligibility

Local housing agencies and private assisted housing owners typically determine eligibility for housing assistance program based on three factors: U.S. citizenship or eligible immigration status^b, family size, and gross annual income. The most complex of the three eligibility criteria is gross family annual income. HUD sets income limits that determine the eligibility of applicants for admission into HUD's housing assistance programs².

Many HUD housing assistance programs determine program eligibility using HUD-developed income limits based on area median income (AMI). HUD determines income limits using estimates of AMI for metropolitan and non-metropolitan^c Fair Market Rent (FMR)/income limit areas.³ Additionally, due to the increasing demand for more localized rents for various purposes, HUD provides Small Area FMRs for all metropolitan areas. HUD recently released an Advanced

^b Depending on PHA policy and locality, mixed status families may be eligible for housing assistance. A mixed status family includes documented and undocumented individuals. Some PHAs allow undocumented family members to share a dwelling with documented family members. However, typically the head of household must be documented.

^c For programmatic purposes, HUD subdivides Office of Management and Budget (OMB) defined metropolitan areas. On February 28, 2013, OMB announced through Bulletin No. 13-01 the revised delineations of Metropolitan Statistical Areas, Metropolitan Divisions, Micropolitan Statistical Areas, and Combined Statistical Areas. OMB also released guidance on uses of the delineations of these areas. Guidance is available at: <https://www.whitehouse.gov/sites/default/files/omb/bulletins/2013/b-13-01.pdf>.

Notice of Proposed Rulemaking regarding the use of Small Area FMRs in the Housing Choice Voucher Program.^d

HUD defines three income limit categories based on percentages of local AMI with adjustments for family size and other factors that serve as income ceilings for admission to various programs:⁴

- Low-income (more than 50% AMI but not greater than 80% AMI)
- Very low-income (more than 30% AMI but not greater than 50% AMI)
- Extremely low-income (not greater than 30% AMI) or the federal poverty level, whichever is greater^e

For illustration, in FY 2014, the median family income averaged \$63,900 for the United States overall, \$66,000 for metropolitan areas, and \$52,500 for nonmetropolitan portions of states.⁵ Table 1 illustrates what income limits would be using the national average median family income for FY 2014. In practice, programs are adjusted to the local area median income (an advantage over other federal programs that rely on the federal poverty guidelines alone).

<i>Income Limit Category</i>	<i>Maximum Threshold</i>	<i>Maximum Income Amount</i>
Low Income	80%	\$51,120
Very Low Income	50%	\$31,950
Extremely Low Income	30%	\$19,170

Some housing assistance programs have targeting requirements based on income limits. For example, PHAs are required to issue 75 percent of Housing Choice Vouchers that become newly available each year to “extremely low-income” families and individuals, while the remaining 25 percent are reserved for very low-income households (with some minor exceptions).^f The public housing program and Project-based Section 8^g program require that at least 40 percent of newly available units in a given year must serve extremely low-income families and individuals while the remainder of units may be made available to families up to the low-income level.⁶ In practice, HUD’s major housing assistance program categories usually exceed the minimum “income targeting” requirements. For more information about HUD income

^dMore information about HUD Small Area FMRs can be found at: <https://www.huduser.gov/portal/datasets/fmr/smallarea/index.html>

^e The FY 2014 Appropriations Act redefined the definition of Extremely Low Income for the Section 8 program. Currently, the definition of Extremely Low Income is a very low income family whose income does not exceed the maximum of 30 percent of area median income or the Federal Poverty Guidelines as published by HHS. HUD income limits conforming to this definition were released on July 1, 2014.

^f 42 USC 1437(n)(b)(1) states the following: “Of the families initially provided tenant-based assistance under section 1437f of this title by a public housing agency in any fiscal year, not less than 75 percent shall be extremely low-income families.”

^g The term “Section 8” technically refers to Section 8 of the Housing Act of 1937 which authorizes a wide variety of programs including HUD’s largest program, the HCV program, and project-based multifamily housing. To avoid confusion in this document, the term is only used to describe the section (Section 8) of the Housing Act of 1937 that authorizes a specified program. It is not used as a pseudonym for the HCV program.

limits and how they apply to specific HUD programs, consult [Appendix B: HUD Income Limits by Program](#).

Market Context: Housing Assistance Program Availability

Because the demand for housing assistance exceeds the resources available to HUD and local housing agencies, long waiting lists are common. A PHA may close its waiting list when there are more families on the list than can be assisted in the near future. Some PHAs utilize randomized lottery systems to allocate housing. The waiting list for the HCV program tends to be lengthy; however, applicants for the HCV program may also be placed on the waiting list for the PH program if their local PHA offers both programs. In many instances, families will be placed on the waiting list for all available programs offered by a local PHA. The NCHS-HUD Linked Data includes the date a HUD tenant entered the waiting list, when applicable. For more information, see [Part 8: Analytic Considerations and Guidelines](#).

PHAs may establish local preferences for selecting applicants from the waiting list. For example, PHAs may give a preference to a family^h that is homeless, living in substandard housing, paying more than 50% of its income for rent, or involuntarily displaced. Families who qualify for local preferences move ahead of other families on the list who do not qualify for any preference. Each PHA has the discretion to establish local preferences to reflect the housing needs and priorities of its particular community. These preferences must be included in the PHA's written policy manual.⁷

HUD Housing Assistance Programs

HUD's largest housing assistance program categories are HCV, MF, and PH. A common feature is that participating households in each of these programs typically contribute at least 30 percent of their income for rent or pay a minimum rent (often set at \$50 per month). A HUD subsidy pays the remaining amount up to a specified limit that varies by program.

Two terms are commonly used to describe housing assistance programs: project-based and tenant-based. In general, public housing and the project-based Section 8 program use the project-based approach while the Section 8 Housing Choice Voucher program uses the tenant-based approach. Project-based voucher assistance is tied to a specific building or unit, and does not offer portability. Tenant-based assistance can be used by a household to locate private housing of their choice. This type of assistance is portable because families with a tenant-based voucher must search for, choose, and lease safe, decent, and affordable privately-owned housing.

These distinctions (project-based vs. tenant-based), however, are further complicated by a PHA option to use a portion of its Section 8 Housing Choice Vouchers (up to 20 percent) as "project-based vouchers." These "project-based vouchers" are separate and distinct from project-based Section 8, which is an entirely separate program that happens to share the same section number in the federal law (The United States Housing Act of 1937, as amended). Additionally, MF units may be owned by any entity with which HUD has entered into a direct assistance contract. Although this is technically also considered to be project-based assisted housing (and the assistance is therefore, in general, not portable), the statutes associated with PH and MF

^h In this report, family refers to a family unit comprising one or more individuals and their dependents, if any. HUD does not distinguish between households and families.

project-based assistance are substantially different. In some contexts, analysts may need to be aware of the legal difference between project-based *assistance*, which usually refers to the MF program category, and project based *vouchers* (PBVs). PBVs arise when a PHA commits some of its HCV funding to units in a particular building.

HUD housing assistance programs, especially MF programs, can be complex. Some HUD programs have very subtle differences and others have undergone significant funding changes. Programs can sometimes overlap, with some programs subsidizing the construction of the building and another program providing ongoing subsidies for the annual operations and maintenance of the housing. Additionally, many HUD programs have devolved in response to policy changes and external factors. [Appendix C: Summary of HUD Rental Assistance Programs](#) describes HUD housing assistance programs. Researchers interested in further understanding specific programs (i.e., MF programs) should consult this documentation and associated citations to learn specifics about HUD housing assistance programs. Despite differences among programs, all HUD-assisted households receive a rental subsidy or pay a reduced market rent.

For analytic purposes, it is important to note that the major program categories in the linked data are HCV, MF, and PH. Though other HUD housing assistance programs exist, these programs are much smaller and unlikely to yield substantial sample size in the linked data.

Housing Choice Vouchers (HCV) Programⁱ

The Housing Choice Voucher (HCV) program is the federal government's largest housing assistance program. HCVs allow low-income families, the elderly, and the disabled to choose, lease, or sometimes buy safe, decent, and affordable housing. In the HCV program, housing assistance is tenant-based, meaning participants find their own housing in the private market. Participants are free to choose any housing that meets program requirements and are not limited to units located in subsidized housing projects. For example, participants can choose single-family homes, townhouses, or apartments. A family that is issued an HCV is responsible for finding suitable housing and the rental unit owner must agree to participate in the program. Selected units must pass an initial quality standards inspection conducted by the PHA. An HCV participant is advised of the unit size eligibility based on family size and composition. If applicable, the unit may include a family's current residence.⁸

HCVs are administered locally and program eligibility is determined by PHAs. In general, a participating family's income may not exceed 50% of the area median income, adjusted for family size. If a family is income eligible in one area, they do not become ineligible if they port to a lower-income area. Federal law mandates that PHAs must provide 75% of newly available HCVs to applicants whose incomes do not exceed 30% of the area median income.⁹ Local PHAs determine a payment standard which is the amount needed to rent a moderately-priced unit in the local housing market. This payment standard is used to calculate the amount of housing assistance a family will receive. A family which receives an HCV can select a unit with a rent that is below or above the payment standard. Subsidies are paid to landlords directly by PHAs on behalf of participants.^j Families pay the difference between actual rent charged by the landlord and amount subsidized by the program. This amount includes a utility allowance

ⁱ Federal regulations covering the HCV program are found in 24 CFR Part 982.

^j Some exceptions exist. For example, at least one MTW agency pays subsidies directly to households. For more information about MTW PHAs, see the section entitled "Moving to Work (MTW) Demonstration Program for PHAs."

payment. PHAs also calculate the maximum amount of housing assistance allowable. The calculated payment standard does not limit the amount of rent a landlord may charge or the family may pay. However, by law, whenever a family moves to a new unit where the rent exceeds the payment standard, the family may not pay more than 40% of its adjusted monthly income for rent. In practice, PHAs typically limit this rule to a family's first year in the HCV program.¹⁰

Changes in family size, job locations, and other reasons can impact a family's mobility and program eligibility. The HCV program is designed to allow families to move as their housing needs change without the loss of housing assistance. Moves are permissible as long as the family notifies the PHA ahead of time, terminates its existing lease within the lease provisions, and finds acceptable alternate housing. Thus, under the HCV program, portability is possible. The NCHS-HUD Linked Data includes a portability indicator, when applicable. For more information, see [Part 8: Analytic Considerations and Guidelines](#).

Homeownership Vouchers^k

If authorized by a PHA, a family may use its voucher to purchase a modest home under certain circumstances. Not all PHAs participate in the Homeownership Voucher program and the program is relatively small. As of FY 2015, approximately 10,000 occupied housing units belonged to this program. Potential homes must pass an initial housing quality standards inspection conducted by the PHA. Additionally, the house must pass an independent home inspection before the PHA may approve the purchase. Similar to other vouchers, a homeownership voucher is portable. Eligible families may purchase a home outside the initial jurisdiction if the PHA in the new jurisdiction administers the homeownership voucher program and receives new families into the program. Researchers interested in this program should review the section entitled "Analyses of Rental Assistance Programs" in [Part 8: Analytic Considerations and Guidelines](#).

Project-Based Voucher Program^l

The Project-based Vouchers Program is a component of a PHA's HCV program. There are no appropriations for this program and HUD does not allocate funding for project-based voucher assistance. Instead, funding for project-based vouchers comes from the HCV funds that HUD obligates to a PHA under its annual contributions contract (ACC)^m. Under the program, a PHA can attach up to 20% of its voucher assistance to specific housing units if the owner agrees to rehabilitate units, construct units, or set-aside a portion of units in an existing development. Substandard rental housing is eligible if rehabilitation costs are at least \$1,000 per unit. With the exception of units designated for families that are elderly, disabled, and/or receiving supportive services, no more than 25% of units in a project may have project-based voucher assistance.¹¹

Any eligible family on a PHA's voucher waiting list that is interested in moving into the specific project is eligible for the program. Owners select families for occupancy of a

^k Regulations for the Homeownership Voucher program are found in 24 CFR Part 982, sections 625-642.

^l Section 8(o)(13) of the U.S. Housing Act of 1937 (42 U.S.C. 1473f(o)(13)) mandates this program. Regulations for this program are found at 24 CFR 983.

^m An ACC is a contract between a PHA and HUD. The ACC is awarded to a PHA by HUD pursuant to a proposal submitted in response to HUD's published Request for Proposals for PHAs to provide contract administration services for units receiving project-based Section 8 housing assistance.

particular unit after screening each family. PHAs refer families, who have already applied and are on the PHA's waiting list, to properties that have project-based voucher assistance when units become vacant. After one year of assistance under this program, a family may move from a project-based voucher unit. The family may switch to the PHA's tenant-based voucher program when the next voucher is available. Under the tenant-based HCV program, the PHA issues a voucher and the family selects a unit on the private market. Conversely, under the project-based voucher program, a PHA enters into an assistance contract with the owner for specified units and for a specified term.¹²

The Project-Based Voucher program replaced the Project-Based Certificate program in the early 2000s. The Project-Based Certificate program was rarely used because it was burdensome, did not allow long-term financial commitments by PHAs, and did not provide incentives for owners to commit units to the program. Although HUD issued a notice in January 2001 and made most of the statutory changes effective immediately, HUD did not issue final rules to fully implement the statute until 2005. Congress made several amendments to the statute in 2008 as part of the Housing and Economic Recovery Act (HERA).¹³

Section 8 Moderate Rehabilitation Programⁿ

As of FY2015, the Section 8 Moderate Rehabilitation Program was being phased out with units converting to Section 8, under the Rental Assistance Demonstration program. HUD's Office of Public and Indian Housing oversees the Section 8 Moderate Rehabilitation (or "Mod Rehab") program that provides project-based rental assistance for low income families. The Mod Rehab program is not part of the HCV program and receives a separate annual appropriation. In the NCHS-HUD linked data, the program was aggregated under the broad HCV program category.

The Mod Rehab program was designed to permit moderate levels of rehabilitation to upgrade and preserve the U.S. housing stock. In exchange for providing a moderate level of rehabilitation to a property, participating owners are provided with a rent subsidy for a number of years by a PHA. As with MF programs, the mod rehab subsidy is tied to the building and cannot be used by the tenant to relocate to another building.¹⁴ Although the program stimulated maintenance via investment for repairs, it was estimated that a minimum of 2.7 million rental units needed moderate levels of upgrades.¹⁵ The Mod Rehab program was repealed in 1991 and no new projects have been authorized for development as of FY 2015. However, a number of apartments are still subsidized under the program. Only some Mod Rehab projects are eligible for renewal. Assistance is currently limited to properties previously rehabilitated pursuant to a housing assistance payments (HAP) contract between an owner and a PHA. Eligible families are placed on a PHA's HCV waiting list or a separate Mod Rehab waiting list.¹⁶

Section 8 Rental Certificate Program^o

In 1998, the Section 8 Rental Certification program was merged with the Section 8 Housing Choice Voucher program. There may be a small number of units left, under

ⁿ Regulations for the Mod Rehab program are found at 24 CFR Part 882, Subparts D and E

^o The Section 8 Certificate program is authorized by the U.S. Housing Act of 1937: Section 8(b) (1) for existing rental housing and Section 89(d)(2) for project-based certificates. Regulations are found in 24

previous longer term contracts that have not yet expired and that show up with this designation. There were some minor program differences between the two programs (i.e., “vouchers” and “certificates” terminology) but in general, the programs are very similar and both use the “tenant-based” model. Current funding for this program is only for renewals and continued assistance for families in assisted housing. There is no funding for new applicants and new certificates have been for special purposes only.

Multifamily Housing (MF) Programs

The MF program category encompasses a number of separate, distinct HUD programs. In all MF programs, subsidies are paid directly to private property owners who are required to provide a certain percentage of their housing units at affordable rates for low-income persons.¹⁷ Ownership may be for-profit or nonprofit. HUD subsidies (i.e., rental subsidies, below-market interest financing, mortgage insurance and other forms of assistance) provide ongoing rental assistance for annual operating costs. With the exception of Project-based Section 8 Assistance for Multifamily Housing, MF programs provide shallow subsidies^p. Comparatively, HCV and PH programs are deep subsidy^q programs.

MF program assistance is tied to the property, and it is not a tenant-based rental assistance program (e.g., HCV) where the subsidy follows the tenant when a tenant moves to another property. In MF programs, tenants cannot take their rental housing assistance subsidy elsewhere. Assistance always stays with the owner of the development.¹⁸

Multifamily properties with five or more units may have FHA multifamily mortgage insurance. The FHA-insured properties and other properties in the MF program may have all or part of their units covered by assistance contracts.¹⁹ Properties sometimes finance unsubsidized MF housing since these properties can have mixed financing sources such as other federal, state, or local programs. MF housing programs each have their own rules and affordability restrictions:²⁰

Section 221(d)(3) Below Market Interest Rate (BMIR) Multifamily Housing^r

The Section 221(d)(3) Below Market Interest Rate (BMIR) MF housing program insured and subsidized mortgage loans to facilitate new construction, substantial property rehabilitation, and cooperative housing for low-income families.²¹ This program no longer provides subsidies for new mortgage loans, but existing Section 221(d)(3) BMIR properties continue to operate under the program. Rents for this program are not based on a percentage of a tenant's income, but are a flat amount that HUD approves. This program is not generally considered to be an assistance program until there are assistance payments involved (e.g., RAP which is further described below). Families living in Section 221(d)(3) BMIR projects are considered subsidized because the

CFR Part 982 for the Voucher and Certificate Program, and Part 983 for the Project-Based Certificate Program.

^p Shallow subsidies occur when subsidies or incentives are provided to owners of a development. Due to development assistance, owners can then reduce rents below market.

^q A deep rental subsidy reduces gross housing costs for the tenant to about 30 percent of household income, although program rules may allow for substantial variations in that ratio.

^r The statute which authorizes the BMIR MF program is 12 U.S.C. 1715(l); Section 221(d)(5) of the National Housing Act. Associated regulations for this program can be found in 24 Code of Federal Regulations (CFR), part 221.

reduced rents for these properties are made possible by subsidized mortgage interest rates.²²

Section 236 MF Housing^s

In the Section 236 program, HUD subsidizes the interest on an owner's mortgage. HUD provides interest subsidies to lower a project's mortgage interest rate to as low as 1%. Section 236 combines federal mortgage insurance with interest reduction payments to a project owner for the production of low-cost rental housing.²³ A Section 236 development may receive other forms of rent subsidy through other assistance programs. The Section 236 program no longer provides insurance or subsidies for new mortgage loans, but existing Section 236 properties continue to operate under the program.²⁴

Rental Assistance Program (RAP)^t

The Rental Assistance Payment (RAP) program was established to provide additional rental assistance subsidy to property owners on behalf of very low-income tenants. This program represents an early form of rental subsidy that was used for up to 20% of the units in Section 236 developments prior to the Section 8 program. Some developments still have Section 236 RAP assistance. With this subsidy, rent is set at 30% of the tenant's income. RAP was available only to Section 236 properties and was the predecessor of the project-based Section 8 program.²⁵ This program is currently being phased out with units converting to Section 8, under the Rental Assistance Demonstration program.

Project-based Section 8 Assistance for Multifamily Housing^u

Starting in 1974, Congress authorized funds making project-based Section 8 assistance available for multifamily housing. Assistance became available for new construction, substantial rehabilitation of existing buildings, additional assistance for Section 221(d)(3) and Section 236 developments.²⁶ All such assistance is "project-based," meaning the subsidy is committed by HUD for the assisted units.²⁷ Households in the project-based Section 8 multifamily program typically receive a deep rental subsidy.

Section 202 Housing for the Elderly Program^v

The Section 202 program helps expand the supply of affordable housing with supportive services for the elderly. It provides very low-income elderly, including the frail elderly, with options that allow them to live independently but in an environment that provides support activities such as cleaning and transportation. Occupancy in Section 202

^s The statute which authorizes the Section 236 program is 12 U.S.C. 1715z-1; Section 236 of the National Housing Act. Program regulations can be found in 24 CFR, part 236.

^t The statute which authorizes the RAP program is 12 U.S.C. 1715z-1; Section 236 of the National Housing Act. Regulations can be found in 24 CFR part 236, subpart D.

^u The statute which authorizes the project-based Section 8 multifamily program is 42 U.S.C. 1437(f)(b); Section 8(b) of the United States Housing Act of 1937. Associated regulations for the Section 8 MF Housing program can be found in 24 CFR, parts 880, 881, 993, 884, and 886.

^v The statute which describes the Section 202 Direct Loan program is 12 U.S.C. 1701(q); Section 202 of the Housing Act of 1959. Associated regulations can be found in 24 CFR part 891, subpart E. The statute which authorizes the Section 202 Capital Advancement program is 12 U.S.C. 1701(q); Section 202 of the Housing Act of 1959 as amended by Section 801 of the Cranston-Gonzales National Affordable Housing Act. Associated regulations can also be found in 24 CFR part 891, subpart B.

housing is open to any very low-income household comprised of at least one person who is at least 62 years old at the time of application.²⁸ There are two primary program vehicles called Section 202: “New 202” that was enacted in 1990 and “Old 202” which operated from 1959-1990.

Section 202 Supportive Housing for the Elderly (“New Section 202”)

Enacted in 1990, the revamped Section 202 program includes subsidies for both development and ongoing rental assistance. Development subsidies were provided in the form of capital grants and ongoing rental assistance is provided in the form of renewable 5-year Project Rental Assistance Contracts. This transparent subsidy structure reduced much of the overlap between multiple programs and made cost estimates much easier to estimate. It also resulted in higher per-unit costs when compared to indirect subsidy vehicles and appropriations are usually only provided for a modest number of units (i.e., usually less than 5,000 units per year).

Section 202 Direct Loan Program for the Elderly (“Old Section 202”)

Enacted in 1959, this program operated until it was replaced by the new Section 202 program in 1990. The federal government provided direct loans without the need for a private bank to be involved in financing. Generous mortgage terms were provided to incentivize construction. When the Project-based Section 8 was created in 1974, many existing buildings that were financed with the old Section 202 program received project-based Section 8 rental assistance. “Old Section 202” is similar to other obsolete financing programs such as Section 221(d)(3) and Section 236.

Alongside the “Old” Section 202 program, there is often some form of Section 8 project-based assistance tied to the development. Section 202 Projects with Section 8 Assistance are referred to as Section 202/8.²⁹

Section 202 with Section 162 Assistance –Project Assistance Contract (PAC)^w

There are a handful of properties and units in the Section 162 program, which was originally created in 1988 as a program for persons with disabilities. The program was a brief precursor to the “New” Section 202 and Section 811 programs. The program sought to convert “Old” Section 202 properties to assist persons with disabilities. The “Section 162” program resembles “New” Section 202 or Section 811. Section 162 provided subsidies in the form of Project Assistance Contracts (PACs) to nonprofit sponsors to help make rents affordable in Section 202 projects developed for persons with disabilities. The PAC covered the difference between the HUD approved operating costs of the property and the tenant’s contributions toward rent plus the debt service on the loan. HUD awarded PACs to Section 202 projects for persons with disabilities funded in fiscal years 1989 and 1990.³⁰This program is not considered to be policy relevant and the sample in the linked NCHS-HUD dataset is likely too small for analysis.

^w The statute which authorizes the PAC/PRAC program is 42 U.S.C. 8013(d)(2); Section 811 of the Cranston-Gonzales National Affordable Housing Act. Associated regulations can be found in 24 CFR, part 891.

Section 811 Supportive Housing for People with Disabilities^x

Enacted in 1990, the Section 811 Supportive Housing for Persons with Disabilities program provides funding to develop and subsidize rental housing with the availability of supportive services for low-income adults with disabilities. Section 811 allows persons with disabilities to live as independently as possible in the community by subsidizing rental housing options that provide access to appropriate supportive services.

Section 811 subsidies are structured in the same manner as the “New” Section 202 program (capital grants for development and ongoing rental assistance).³¹ This program is being phased out with units converting to Section 8, under the Rental Assistance Demonstration program.

Rent Supplement Program^y

The Rent Supplement Program was the first project-based assistance program for mortgages insured by HUD’s Office of Housing. Rent Supplement contracts were available to Section 221(d)(3) BMIR, Section 236, and Section 202 properties for the life of the mortgage. The program was suspended in January 1973. Owners of properties with Rent Supplement contracts were allowed to convert to project-based Section 8 assistance. This program was an early form of rental subsidy that was used prior to the Section 8 program. Some developments still have rent supplement assistance.³²

Public Housing (PH) Program^z

The Public Housing program was established to provide decent and safe rental housing for eligible low-income families, the elderly, and persons with disabilities. PH dwellings range from scattered-site single-family detached houses to high rise apartment buildings. HUD administers federal aid to local PHAs that manage public housing for eligible low-income residents. HUD also provides technical assistance to help PHAs plan, develop, and manage PH developments.³³

Once admitted, a family may stay in PH as long as they comply with the lease and meets income requirements. For PH residents, income must be verified at an annual reexamination period spanning from 12-18 months. At reexamination, if the individual’s or family’s income exceeds 80 percent of area median income, then the PHA may reassess their eligibility for public housing.³⁴

In public housing, specific calculations are used to determine tenant monthly rent amount. Rent determination is the process of calculating a tenant’s contribution toward rent, referred to as the

^x The 811 program is authorized by Section 811 of the National Affordable Housing Act of 1990 (P.L. 101-625) as amended by the Housing and Community Development Act of 1992 (P.L. 102-550), the Rescission Act (P.L. 104-19) the American Homeownership and Opportunity Act of 2000 (P.L. 106-569), and the Frank Melville Supportive Housing Act of 2010 (P.L. 111–374). Program regulations are in 24 CFR Part 891. To learn more about the Section 811 program, see Section 811 Supportive Housing for Persons with Disabilities (HUD Handbook 4571.2) and Supportive Housing for Persons with Disabilities, Conditional Commitment to Final Closing (HUD Handbook 4571.4).

^y The statute which authorizes the Rent Supplement program is 12 U.S.C. 1701(s); Section 101 of the Housing and Urban Development Act of 1965. Associated regulations can be found in 24 CFR, part 215 (currently expired, but still in effect for existing contracts per 24 CFR 200.1302).

^z Chapter IX of 24 CFR applies to public housing.

Total Tenant Payment (TTP). The TTP is based on anticipated gross annual income minus deductions, if any, for an individual or family. Annual income is the anticipated total income from all sources received from the family's head of household, spouse, and each additional member of the family 18 years of age or older.³⁵ HUD regulations allow certain deductions from income in the amount of \$480 for each dependent, \$400 for any elderly family member or person with a disability, as well as medical deductions for families headed by an elderly person or a person with disabilities^{aa}.

Moving to Work (MTW) Demonstration Program for PHAs

Data from the HUD program categories, HCV, MF, and PH, described above, were included in the data linkage. The Moving to Work (MTW) demonstration program was introduced in 1996 to provide flexibility to PHAs for the PH and HCV programs. Tenants participating in the PH and HCV programs may be served by either MTW or non-MTW PHAs. The MTW program does not apply to multifamily programs because these programs are not administered by PHAs.

MTW is a demonstration program authorized in April 1996 by the Omnibus Consolidated Rescissions and Appropriations Act of 1996.³⁶ MTW provides PHAs (managing PH, HCV programs, or both) with the opportunity to design and test innovative, locally-designed strategies. The demonstration program gives PHAs exemptions from many existing rules, more flexibility with how they use Federal funds, and more flexible data reporting. PHAs in the MTW Demonstration can combine Federal funds from multiple housing assistance programs into one single, flexible source of funds, known erroneously as a "block grant" intended to better meet the needs of their community.

Under the MTW Demonstration, PHAs receive funding that is equivalent to what they would have received had they not participated in MTW.³⁷ When the program began in 1996, 30 PHAs were selected to participate.³⁸ In 2014, 39 PHAs (of 3,300 PHAs nationwide) participated in MTW, including sites in Orlando, Baltimore, Los Angeles, Atlanta, the District of Columbia, Chicago, and Philadelphia. In 2016, Congress directed that the MTW program be expanded to bring in 100 new PHAs over a 7-year period.³⁹

MTW agencies are permitted to seek exemption from many existing PH and HCV program rules found in the United States Housing Act of 1937 in pursuit of the three MTW statutory objectives:

- **Cost Savings:** Reduce cost and achieve greater costs effectiveness in Federal expenditures
- **Self-Sufficiency:** Give incentives to families with children where the head of household is working, seeking work, or preparing for work by participating in job training, education, or programs that assist people to obtain employment and become economically self-sufficient
- **Housing Choices:** Increase housing choices for low-income families⁴⁰

Common exemptions sought by MTW agencies include time limits for program participation, work requirements, and less frequent income verification. If approved by HUD, MTW agencies may project-base more than 20 percent of voucher funding and exceed spending limits on services. While MTW agencies have considerable flexibility, they must still abide by all other

^{aa} The statutory provision for deductions is described in 42 U.S. Code § 1437a.

federal rules and regulations, including the Fair Housing Act, the Civil Rights Act, labor standards, environmental rules, and procurement guidelines.⁴¹

Users of the linked data should keep in mind that MTW is a demonstration program limited until recently to only 39 PHAs (39 out of 3,300 nationwide in 2014). Due to reporting flexibility, MTW agencies provide less detailed tenant data than the traditional Form 50058 requires. Thus, the data collected and the frequency of data collection for MTW-HCV and MTW-PH and recipients are limited.

Please note that in the remainder of this report (excluding appendices), the reference to PH will include both MTW PH and non-MTW PH. Similarly, the reference to HCV will include both MTW HCV and non-MTW HCV.

Part 5: HUD Administrative Data

Housing providers collect administrative data on families participating in HUD programs and transmit required data to HUD using federal forms. Information collected includes:

- Dates of transactions including enrollment, income recertification, and end of participation
- First and last names of each person living in the housing unit, and personal attributes including sex, race, citizenship status, social security number, date of birth, and relationship to the head of household
- Family characteristics that might qualify the family for tenant selection preferences
- Detailed income and assets information for all household members
- An estimate of the family's anticipated income for the next twelve months and sources of that income
- Geographic information for the newly approved unit^{bb}

The forms used to collect this data are forms HUD-50058, MTW HUD-50058, and HUD-50059. The data are stored on in two databases.

Form HUD-50058

Administrative Form HUD-50058, the “Family Report,” is used to collect data on the people who participate in the HCV and PH programs. PHAs collect and electronically submit information contained on the Form HUD-50058 through the PIH Information System (PIC).

- Form HUD-50058: <http://portal.hud.gov/hudportal/documents/huddoc?id=HUD50058.pdf>
- Form HUD-50058 Instruction Booklet: <http://portal.hud.gov/hudportal/documents/huddoc?id=Form50058instructbooklet.pdf>

Form HUD-50058 Moving-to-Work MTW

As mentioned previously in the [MTW program discussion](#), PHAs participating in MTW have fewer data requirements. Form HUD-50058 MTW (“MTW Family Report”) is used only by PHAs participating in the MTW demonstration. HUD defines MTW families as those that participate in any MTW program component.

- MTW Form HUD-50058: http://portal.hud.gov/hudportal/documents/huddoc?id=DOC_10236.pdf

^{bb} This information is only available after it has undergone geocoding processes overseen by geographers at HUD headquarters in Washington, DC.

PIH Information Center (PIC)

Data for HUD's HCV and PH programs are collected on Form HUD-50058 and data from MTW-PH and MTW-HCV programs are collected on Form HUD-50058 MTW and stored via the Public & Indian Housing (PIH) Information Center (PIC). Currently, the PIC system is evolving into the PIH Inventory Management System (IMS). During the transition, the system is being referred to as IMS/PIC. The IMS/PIC system is responsible for maintaining and gathering data about all of PIH's inventories of PHAs, developments, buildings, housing units, PHA officials, and HUD offices. The system facilitates more timely and accurate exchanges of data between PHAs and HUD.

The PIC data extract created for the NCHS-HUD data linkage was based on the PIC transactions-level file, originally implemented in May 2001. The earliest effective date for transactions on this file is 18 months prior to this date, although transactions for a small portion of program participants may exist prior to this date in the transactions-level file. Due to data incompleteness, HUD restricted data from HCV and PH PIC to transactions during the dates: December 1, 1999 – December 31, 2014.

Form HUD-50059

Administrative Form HUD-50059, entitled "Owners Certification of Compliance with HUD's Tenant Eligibility and Rent Procedures," is used to collect data on the people who participate in MF programs.

- Form HUD-50059: <http://portal.hud.gov/hudportal/documents/huddoc?id=50059.pdf>
- Form HUD-50059 Instructions: <http://portal.hud.gov/hudportal/documents/huddoc?id=50059a-ins.pdf>

Tenant Rental Assistance Certification System (TRACS)

The Tenant Rental Assistance Certification System (TRACS) is a system developed to collect and maintain certified tenant data for processing from owners and management agents of MF housing projects. System access is also granted for local housing agencies acting as subsidy contract administrators for HUD. All tenant data collected and stored in TRACS undergo rigorous edits to ensure accuracy and compliance with eligibility rules.

Tenant and contract data stored in the TRACS database is available to authorized users for on-line viewing and updating. Report and data retrieval capabilities are available. Housing assistance programs within the scope of TRACS include Section 236, Section 8, Section 221(d) (3) BMIR, Rent Supplement Payments, certain Section 202 programs, and Section 202/811 Project Rental Assistance Payments. One of the main sources for electronic submissions to TRACS is the form HUD-50059.

The TRACS data extract created for the NCHS-HUD data linkage was based on TRACS point in time quarterly extracts from the TRACS production system. Since December 1997, these data capture only the most recent transaction within the past 18 months at the time of the data extract. For example, the 2012 quarterly extract contains the most recent transaction occurring between June 30, 2011 and December 30, 2012. For the NCHS-HUD data linkage, the December TRACS quarterly extracts for the years 1997-2014 were concatenated. Transactions with the same SSN, effective date, and transaction code were considered duplicates and removed. Similar to the PIC file, the earliest effective date for transactions on this file is 18

months prior to the date of the extract. While transactions for a small portion of program participants may exist prior to this date in the transactions-level file, HUD restricted data from MF TRACS transactions during the dates: June 30, 1996 – December 31, 2014.

Picture of Subsidized Households

HUD annually releases aggregated PIC and TRACS data for public use. The dataset summarizes characteristics of HUD-assisted households. The searchable dataset, entitled “Picture of Subsidized Households”, is available at:

<https://www.huduser.gov/portal/datasets/picture/yearlydata.html>. Researchers can use this file to estimate the amount of HUD-assisted households at different summary levels including national, state, county, and Census tract.

HUD Data Quality Improvement over Time

The quality of HUD administrative data has improved over time. The primary reason for poor data quality during the early 2000s was due to the migration of data from one system to another. Prior to the PIC database, tenant data was stored in the Multifamily Tenant Characteristics System (MTCS). In the early 2000s, data from MTCS was migrated to PIC until the conversion was completed in 2003. This was problematic, however, because prior to the migration, MTCS data was neither cleaned nor validated. Therefore, data migration led to data quality issues.

During the early 2000s, the U.S. General Accounting Office (GAO) and HUD’s Office of the Inspector General (OIG) conducted audits of controls over certain segments of MTCS. One HUD OIG audit report focused specifically on northeastern states and reported data quality problems through the year 2002 within MTCS. The report tested a sample of data for accuracy and identified “fatal errors” for selected fields. On average, seven percent of the data fields contained fatal errors. Some of the more frequent errors were blank addresses, missing names and missing social security numbers. This analysis provided an indication of the accuracy of HUD administrative data through the end of 2002, largely as a result of the fact that HUD did not clean up old MTCS data before migrating it to the new PIC system.⁴²

Another 2004 HUD OIG audit provided a more comprehensive view of HUD administrative data in the PIC database. The report yielded many key findings pertaining to data quality. First, the report found that PIC did not have adequate controls over the completeness and accuracy of the social security numbers within the system. Second, the PIC system did not contain controls to identify invalid social security numbers submitted tenants. At that time, the controls over the social security number field in PIC did not enforce a requirement that the field contain only numbers. Invalid social security numbers such as 111-11-1111, and 123-45-6789 were also allowed. The number of inaccurate records overall was significant. Auditors found approximately 703,000 records converted from the prior MTCS system that had not had an annual re-examination in the last 15 months.⁴³

A GAO report released in October 2000 highlighted the status of HUD actions taken to resolve internal control weaknesses, including actions pertaining to data quality issues in MTCS and TRACS. Among such actions included the following: (1) HUD began a large-scale computer matching effort using federal income tax data; (2) PHA’s rate of reporting tenant information to HUD’s MTCS database improved, rising from 64 percent to 90 percent; (3) HUD increased monitoring of PHA reporting and corrected software problems; (4) and, HUD established administrative sanctions for PHAs who failed to report tenant data through MTCS and TRACS.⁴⁴

It took several years for HUD to fully address these challenges, implement corrective actions, and improve administrative data records for millions of HUD tenants serviced by over 3,000 PHAs.

Since 2000, HUD has also implemented a number of processes to eliminate missing data and improve data quality. For example, the ongoing improvement of the use of fatal errors^{cc} in Form HUD-50058 submission processes has reduced administrative errors and subsidy payment errors. Notices and training guides have also been provided to PHAs to inform data collection processes. For example, Notice PIH 2010-3 explains the procedures PHAs are required to use for verifying Social Security numbers of participants and household members at the time of application for housing assistance programs and during mandatory reexamination of household income.⁴⁵ Starting in January 2010, PHAs were required to use the Enterprise Income Verification (EIV) system as a third party source to verify tenant income information during all mandatory annual and interim reexaminations of family income and composition^{dd}. Additionally, to improve the reporting levels, HUD developed a “delinquency reporting module” where PHAs were assessed on their report versus occupied units. In the past, PHAs were sanctioned if they were below the reporting requirements.

As a result of the implementation of the EIV system and other processes, the quality of HUD administrative data has improved from previous years. For example, one recent study conducted in 2014 by the Census Bureau analyzed survey, federal and commercial address data quality. The study found that HUD administrative records have relatively little missing information when examining address fields only.⁴⁶

HUD recommends that researchers consider potential data quality issues when conceptualizing research questions and conducting analysis using the linked NCHS-HUD data.

Part 6: Linkage Eligibility of NCHS Participants

Only a subset of 1999-2012 NHIS and 1999-2012 NHANES participants were eligible for linkage with the HUD administrative data. Criteria for determining linkage eligibility varied with the survey, the survey year, and by participant characteristics.

NCHS collected 9-digit SSN from 1999-2006 NHIS participants and began collecting only the last 4-digits of the survey respondent’s SSN in 2007. Although NCHS collected 9-digit SSN in all 1999-2006 NHIS, the participants for whom the 9-digit SSN was collected varied by survey year. For the 1999-2001 NHIS, all participants were asked to provide their 9-digit SSN. For 2002-2003 NHIS, only the family respondent^{ee} in the household was asked to provide their SSN, which resulted in less than 1% of linkage eligible 2002-2003 NHIS child respondents.

^{cc} A “fatal” error is the kind of error that is so serious that it stops the processing of the submission for that household. More information about fatal errors available at:

http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/systems/pic/faq/58sub#11

^{dd} In accordance with 24 CFR 5.236 and HUD administrative guidance

^{ee} The Family Core questionnaire is administered separately to each family in the household. For each family, a resident family member who is at least the age of legal majority is identified as the “family respondent.” The family respondent serves as the primary respondent for the family, providing information for all children and adult family members. However, all members of the family aged 18 years or older who are at home at the time of the interview may respond for themselves.

Accordingly, no 2002 and 2003 NHIS child participants were classified as linkage eligible. Since not all adults were eligible for linkage as in previous years, there are fewer 2002 and 2003 NHIS linkage eligible adults and linked adults compared to 1999-2001 NHIS . For the 2004-2006 NHIS, the family respondent, sample adult and sample child in the household were asked to provide their SSN. Beginning in 2007 NHIS, only the last four digits of the SSN were collected. For the 2007-2012 NHIS, only the sample adult and sample child respondents in a household provided the last four digits of the SSN.

As a result, the following summarizes linkage-eligibility:

Any 1999-2001 NHIS participant was linkage-eligible if he/she:

- provided a nine-digit SSN, month of birth, year of birth, and sex, and
- did not refuse data linkage, and
- did not refuse to answer a question about receiving public housing assistance.

A 2002-2003 NHIS adult family participant was linkage-eligible if he/she:

- provided a nine-digit SSN, month of birth, year of birth, and sex, and
- did not refuse data linkage, and
- did not refuse to answer a question about receiving public housing assistance.

A 2004-2006 NHIS family participant, sample adult and sample child was linkage-eligible if he/she:

- provided a nine-digit SSN, month of birth, year of birth, and sex, and
- did not refuse data linkage, and
- did not refuse to answer a question about receiving public housing assistance.

A 2007-2012 NHIS sample adult and sample child were linkage-eligible if they:

- provided a four-digit SSN, month of birth, year of birth, sex, first name, last name
- did not refuse data linkage
- did not refuse to answer a question about receiving public housing assistance.

All 1999-2012 NHANES participants were linkage-eligible if they:

- provided a nine-digit SSN, month of birth, year of birth, sex, and
- did not refuse data linkage.

Linkage eligibility rates and match rates are available on the NCHS-HUD linked data website.

Linkage eligibility of children (under 18 years of age)

NCHS survey participants under 18 years of age at the time of the survey are linkage-eligible if consent was provided by their parent or guardian. However, this consent is only valid until the child's 18th birthday, at which point he/she becomes an adult. In accordance with NCHS Ethics Review Board (ERB) guidelines, child survey participants are eligible for linkage to administrative data if the administrative data were generated from program participation prior to their 18th birthday. Data generated from program participation on or after the child participant's 18th birthday cannot be included on a linked data file.

For example, a 2005 NHIS participant who was 15 years old at the time of interview can only be linked to HUD data for 2007 and earlier years (during which time the child was less than 18 years of age). This participant could not be linked to administrative records with dates after their 18th birthday, in this case dates in 2008 and later years. This practice applies to all analytic projects using linked data, whether they are conducted within the NCHS RDC or in collaboration with NCHS staff in-house.

Part 7: Description of NCHS-HUD linked files

The NCHS-HUD linked data comprises the following files. These files will be referenced in the remainder of the document.

- **Feasibility Files**
Universe: All 1999-2012 NHIS and 1999-2012 NHANES participants.

The NHIS and NHANES feasibility files were created to enable researchers to perform sample size and power calculations for potential analyses.

These files contain information about linkage eligibility, and indicators for program participation for each 1999-2012 NHIS and 1999-2012 NHANES participant. The variables contained in the feasibility file are described in the Data Dictionary. Information about using the feasibility file to determine sample size is found in [Part 8: Analytic Guidelines and Considerations Analytic Sample Size Estimation: Feasibility Files](#).

- **Transaction File**
Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked to HUD administrative data.

The transaction file contains a record for each transaction of the linked 1999-2012 NHIS-HUD and 1999-2012 NHANES-HUD participants. As noted in [Part 6: Linkage Eligibility](#), transactions for NHIS and NHANES child participants were removed during post-processing if the transaction occurred after their 18th birthday. The variables contained in the file are described in the Data Dictionary. The transaction file contains detailed member and household attributes that are contained in HUD administrative systems.

- **Episode Files**
There are seven episode files that contain start and end dates for participation episodes in various HUD programs based on the transaction data and assumptions about reasonable intervals between transactions. Most HUD recipients are required to recertify each year, and consequently, a transaction is expected each year. However, some HUD programs (for instance, MTW) have longer intervals between recertifications. The episode files are useful primarily for longitudinal analysis related to the duration and timing of housing assistance episodes, and conditions or outcomes that may have preexisted or followed such episodes.

Episode File – Overall

Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with any transaction record in the HUD administrative data.

Episode File – PH

Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with at least one Public Housing transaction in the HUD administrative data.

Episode File – HCV

Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with at least one Housing Choice Vouchers transaction in the HUD administrative data.

Episode File – MTW PH

Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with at least one MTW Public Housing transaction in the HUD administrative data.

Episode File – MTW HCV

Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with at least one MTW Housing Choice Vouchers transaction in the HUD administrative data.

Episode File – PBS8

Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with at least one Multifamily Project Based Section 8 transaction in the HUD administrative data.

Episode File – Other MF

Universe: 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with at least one Other Multifamily transaction in the HUD administrative data.

The variables contained in the episode files are described in the Data Dictionary. Details about construction of the episode files are provided in [Part 8: Construction of the episode files and analytic considerations](#). [Appendix D: SAS Program to Create Participation Episodes](#) provides the SAS program code used to create participation episodes.

- Concurrency File

Universe: All 1999-2012 NHIS and 1999-2012 NHANES participants who were linked with any transaction record in the HUD administrative data.

The concurrency file contains variables related to timing of HUD participation relative to the timing of the NHIS or NHANES interview and/or NHANES MEC examination, such as: 1) indicator variables for living in HUD-assisted housing on the date of the NCHS interview (or MEC examination, where appropriate), 2) the type of HUD-assisted housing received, and 3) the number of days between the interview and/or examination dates (NHANES MEC participants only) and the previous and/or next transactions.

Details about how the concurrency variables can be used to identify NHIS and NHANES participants who lived in HUD-assisted housing at time of interview and/or MEC examination is provided in [Part 8: Construction of the episode files and analytic considerations](#).

- Weights File

Universe: All 1999-2012 NHIS and 1999-2012 NHANES participants.

As mentioned in [Part 6: Linkage Eligibility](#), not all of the 1999-2012 NHIS and 1999-2012 NHANES participants are eligible for linkage. Therefore, NHIS and NHANES sample weights have been adjusted for linkage eligibility. The Weights file contains a record for each participant 1999-2012 NHIS and 1999-2012 NHANES participant who was linkage-eligible, and contains various sample weights adjusted for linkage eligibility. All linkage ineligible participants are given a missing weight.

Details about derivation of the weights are provided in [Part 8: Eligibility-adjusted Participant Survey Weights](#).

Part 8: Analytic Considerations and Guidelines

This section describes general considerations and guidelines for analysis using the linked data files identified by NCHS programmers and analysts. Potential new analytic issues discovered in the course of analysis can be reported to the NCHS Special Projects Branch at datalinkage@cdc.gov.

While selected demographic data are available on the HUD administrative files, NCHS recommends using demographic data from survey variables when possible.

Merging restricted-use NCHS-HUD linked data with public-use NCHS survey files

The linked data files are only available through the NCHS RDC. Researchers with approved RDC proposals may provide analytic files created from public use survey files to the RDC, which the RDC analyst will merge to the NCHS-HUD Linked Data. The restricted-use NCHS-linked files are merged with the public-use NCHS survey data files using unique person identifiers. Therefore, it is important for researchers to include the correct survey person identification number: PUBLICID (for NHIS), or SEQN (for NHANES).

For using NHIS data, it also is important to note in the descriptions below that the variable names and locations needed to construct PUBLICID vary by NHIS survey year.

NHIS 1999-2003

The data items 'Survey year' (SRVY_YR), 'Household number' (HHX), 'Family number' (FMX), and 'Person number' (PX) identify a participant within each NHIS*. These data items must be concatenated to obtain the unique personal identifier (PUBLICID) used in the NHIS-HUD linked file.

Variable	Public-use Location	Length	Description
SRVY_YR	3-6	4	Year of interview
HHX	7-12	6	Household serial number
FMX	13-14	2	Family number
PX	15-16	2	Person number within Household

SAS example:
length publicid \$14;

```
PUBLICID = trim(left(SRVY_YR||HHX||FMX||PX));
```

Note: The SAS input statements available from the NHIS public-use data website do NOT input all of the variables as character and they must be in character format for the concatenation.

Stata example: (note this will convert the variables to a string variable)
egen PUBLICID = concat(SRVY_YR HHX FMX PX)

*The data item 'Person number' was called PX in the 1999-2003 NHIS and FPX in the 2004-2012 NHIS. Users may find it necessary to create an FPX variable in the 2003 and earlier datasets (or PX in later datasets).

NHIS 2004

The data items 'Survey year' (SRVY_YR), 'Household number' (HHX), 'Family number' (FMX), and 'Person number' (FPX) identify a participant within NHIS 2004. These data items must be concatenated to obtain the unique personal identifier (PUBLICID) used in the NHIS-HUD linked file.

<u>Variable</u>	<u>Location</u>	<u>Length</u>	<u>Description</u>
SRVY_YR	3-6	4	Year of interview
HHX	7-12	6	Household serial number
FMX	13-14	2	Family number
FPX	15-16	2	Person number

SAS example:

```
length publicid $14;  
PUBLICID = trim(left(SRVY_YR||HHX||FMX||FPX));
```

Stata example: (note this will convert the variables to a string variable)
egen PUBLICID = concat(SRVY_YR HHX FMX FPX)

NHIS 2005 – 2012

The data items 'Survey year' (SRVY_YR), 'Household number' (HHX), 'Family number' (FMX), and 'Person number' (FPX) identify a participant within each NHIS. These data items must be concatenated to obtain the unique personal identifier (PUBLICID) used in the NHIS-HUD linked file.

<u>Variable</u>	<u>Location</u>	<u>Length</u>	<u>Description</u>
SRVY_YR	3-6	4	Year of interview
HHX	7-12	6	Household serial number
FMX	16-17	2	Family number
FPX	18-19	2	Person number

SAS example:

```
length publicid $14;  
PUBLICID = trim(left(SRVY_YR||HHX||FMX||FPX));
```

Stata example: (note this will convert the variables to a string variable)
egen PUBLICID = concat(SRVY_YR HHX FMX FPX)

Analytic Sample Size Estimation: Feasibility Files

The feasibility files provide a limited set of variables that can be used to determine the maximum available sample size and may be useful to researchers considering whether to initiate a RDC proposal to analyze the restricted-use linked NCHS-HUD files.

Two feasibility files are available: a single feasibility file for 1999-2012 NHIS-HUD participants and a single feasibility file for 1999-2012 NHANES-HUD participants. The following variables are included on the NHIS and NHANES feasibility files: NCHS survey participants' unique identifiers (PUBLICID or SEQN), survey participant eligibility status for HUD data linkage (HUD_MATCH_STATUS), and variables specifying from which program the participant ever lived in HUD-assisted housing (EVER_HUD, EVER_HCV, EVER_MF, EVER_PH).

The feasibility files do not contain information about when the person lived in HUD-assisted housing relative to the survey interview or income information.

Eligibility-adjusted Participant Survey Weights

The survey weights provided in the NHIS and NHANES data files adjust for oversampling of specific subgroups and differential non-response, and are post-stratified to annual population totals for specific population domains to provide nationally representative estimates. Little is known, however, about the properties of these weights for linked data files with incomplete linkage due to linkage ineligibility and matching failures. In addition, methods for using the survey weights for some longitudinal analyses are yet to be researched. Because this is an important and complex methodological topic, ongoing work at NCHS and elsewhere is examining the use of survey weights for linked data in multiple ways.

Preliminary guidance is to analyze linked data files using eligibility-adjusted survey weights. Sample weights adjusted for linkage eligibility have been created for the NHIS-HUD and NHANES-HUD linked data files and are available in the Weights data file (refer to [Part 7: Description of the linked data files](#)).

The eligibility-adjusted sample weights were derived using a model-based calibration approach implemented with the SUDAAN PROC WTADJUST.

The approach allows auxiliary information to be used to adjust the weights for non-response. This approach and the SUDAAN procedure are provisionally recommended for adjusting survey weights for the linked files. As inferences may depend on the model used to derive weights, within SUDAAN's WTADJUST or a different calibration approach, researchers should seek assistance from a mathematical statistician for guidance for their particular project. Information on using Procedure WTADJUST to adjust sample weights for linkage eligibility, including sample SUDAAN code, can be found at: http://www.cdc.gov/nchs/data/datalinkage/adjusting_sample_weights_for_linkage_eligibility_using_sudaan.pdf

In addition, 'survwgt' can be used to poststratify the weights in Stata. More information can be found at: <http://faculty.virginia.edu/nwinter/progs/survwgt.hlp.shtml>.

Several adjusted weights are available in the weights file. Specific auxiliary information used to create the weights is shown in the following table:

Variable	Variable Label	Auxiliary information used
ADJ_INTWT	ADJUSTED NHANES INTERVIEW WEIGHT	Sex ¹ , Race ² , and Age ³
ADJ_MECWT	ADJUSTED NHANES MOBILE EXAMINATION CENTER WEIGHT	Sex ¹ , Race ² , and Age ³
ADJ_PERWT	ADJUSTED NHIS PERSON WEIGHT	Sex ¹ , Race ² , and Age ³
ADJ_SCWT	ADJUSTED NHIS SAMPLE CHILD WEIGHT	Sex ¹ , Race ² , and Age ⁴
ADJ_SAWT	ADJUSTED NHIS SAMPLE ADULT WEIGHT	Sex ¹ , Race ² , and Age ³

¹ male, female

² white non-Hispanic, black non-Hispanic, Hispanic, other non-Hispanic

³ age in years: 0-17, 18-44, 45-64, 65 and older

⁴ age in years: 0-5, 6-12, 13-17

The choice of which adjusted sample weight to use depends on the analysis and more, specifically, on the variables used in the analyses and the survey years included. Below are important considerations for the two surveys:

NHIS: NCHS did not uniformly ask SSN of all NHIS respondents during the 1999-2012 survey period, and this variation affects which survey weights should be used. Since all adult respondents of 1999-2006 NHIS were asked their SSN, analyses of 1999-2006 NHIS adults should incorporate the person weights, or the sample adult weights if analytic variables are based on sample adult file. As only adults included in the sample adult module were asked their SSN in NHIS 2007-2012, analyses of 2007-2012 NHIS adult respondents should only incorporate sample adult weights. SSNs were obtained from all children in the 1999-2001 NHIS, so analyses of children in the 1999-2001 NHIS should incorporate either the person weights or the sample child weights if analytic variables are from the sample child file. In the 2004-2012 NHIS only the sample child was asked their SSN, so analyses of children in the 2004-2012 NHIS should incorporate sample child weights. As mentioned previously, children in 2002-2003 NHIS were not linked to the HUD data.

NHANES: Analyses should incorporate either the adjusted interview weights or, if analytic variables are based on data obtained during the MEC examination, the adjusted MEC examination weights.

Analyses of Children in the 1999-2012 NCHS-HUD Linked Data Files

As mentioned in [Part 6: Linkage Eligibility](#), administrative data for child survey participants generated after their 18th birthday are not available for release. This limitation impacts two of three groups of 1999-2012 NHIS or 1999-2012 NHANES child participants who lived in HUD-assisted housing during the 1996-2014 timeframe:

1. Child participants who only lived in HUD-assisted housing as children. There is no impact on this subgroup of children; all transactions are available.
2. Child participants who lived in HUD-assisted housing as children and adults. All transactions that occurred prior to the child's 18th birthday are available, but all transactions occurring on or after the child's 18th birthday are not available for release.
3. Child participants who lived in HUD-assisted housing only as adults. These children are not linkage-eligible.

Administrative data on HUD program participation obtained from adult participants prior to the survey, including during the time that the adult participant was not yet 18 years of age and,

therefore a child, is available. A researcher interested in performing analyses of children should keep this fact in mind.

Analyses of Rental Assistance Programs

Since a small number of HCV housing assistance programs provide homeownership vouchers, these programs are not technically “rental” assistance programs. Researchers using the linked files to specially examine “rental” assistance programs should exclude transactions from the HCV homeownership program. If researchers wish to broadly examine HUD assistance programs for low-income households, all transactions can be included. *Note: Researchers interested in examining only rental assistance programs should indicate this in their RDC proposal. NCHS will remove HCV homeownership vouchers from the requested file.*

Construction of the Episode Files and Analytic Considerations

While a transaction is any occurrence for which a HUD form is completed (e.g., new admission to a HUD program, annual recertification, end of participation, etc.), an episode is a single continuous period of enrollment in a HUD program based on dates of HUD transactions. The Episode files are constructed from the Transaction file. The begin date of a participant’s first episode is the effective date on their first transaction record. Subsequent episodes for the participant are identified based on the interval between the effective dates on their transaction records. The SAS program (described in [Appendix D: SAS Program to Create Participation Episodes](#)) then cycles through each transaction’s effective date and executes one of two actions:

- 1) treat the current transaction as part of the current episode and proceed to the next transaction, or
- 2) treat the current transaction as the start of a new episode, which then forces the previous transaction to be the end date of the previous episode.

The action is determined by the number of days between each transaction as well as the HUD program type. The expected interval between any two transactions for a non-MTW recipient is one year but PHAs are given 60 days leeway to submit reports so 425 days (one year plus 60 days) is used as the standard for determining if there has been a break in assistance. For most MTW PHAs, the expected interval between any two transactions for an MTW recipient is two years. However, MTW PHAs are given the flexibility to conduct recertification as infrequently as every three years. In the NCHS-HUD Linked Data, the estimated interval between any two transactions for the majority of MTW recipients is two years, again with a 60 day leeway; therefore, 790 days (two years and 60 days) used as the standard.

If the interval between this date and the subsequent transaction’s effective date is less than 425 days for non-MTW programs, or 790 days for MTW programs, it is assumed that the two dates are part of the same “episode” of participation. This continues until the interval between two effective dates is greater than 425 days for non-MTW programs, or 790 days for MTW programs. If the interval is greater than these durations, it is assumed that the two dates are from two distinct episodes of enrollment. In this situation, the effective date of the transaction immediately preceding the current transaction becomes the last date of the episode and the effective date of the current transaction becomes first date of the subsequent transaction.

There are two important considerations when using the episode files. First, transaction type was not taken into account when the episodes were created. The reason for using the number of

days between the transactions rather than the type of transaction was that end of participation forms are not always submitted, and requiring that an end of participation transaction define the end of an episode would bias concurrency predictions. As a result, it is possible for an “end of transaction” to also appear as the start date of an episode. For example:

Subject A (non-MTW)

Transaction 1 effective date: 1/1/2008 (transaction type: new admission)
 Transaction 2 effective date: 1/1/2010 (transaction type: end of transaction)
 Transaction 3 effective date: 1/1/2011 (transaction type: new admission, last transaction)

Episode file for Subject A:

Episode 1 begin date: 1/1/2008 End date 1: 1/1/2008
 Episode 2 begin date: 1/1/2010 End date 2: 1/1/2011

If the participant was interviewed on 2/2/2009, the episode dates would result in the participant possibly being misclassified as not living in HUD-assisted housing at the time of the interview. To avoid such misclassification, the SAS program used to generate the episodes (found in Appendix D) can be modified to generate new program-specific episode files using the transaction file.

The second consideration to keep in mind is that the overall episode file does not always align with the program-specific episode files. This is because the episodes in the overall episode file are created using the same algorithm as each program-specific episode file, which is based on the dates of transactions. The start and end dates are created irrespective of program type, which means that any two effective dates for two different programs may be the start and end date of a single episode. Data linkage staff recommend that the program-specific episode files be used in preference to the overall episode file.

Identification of Ever and Concurrent HUD-Assisted Participants

Ever lived in HUD-assisted housing: To identify NCHS participants who live in HUD-assisted housing at any time during the administrative period (i.e., MF program transactions occurring during the dates June 30, 1996 – December 31, 2014, and HCV and PH transactions occurring during the dates December 1, 1999 – December 31, 2014), use the variable EVER_HUD on the feasibility file. To identify participants who ever lived in HUD-assisted housing through HCV, MF, and PH programs, use the variables EVER_MF, EVER_PH, and EVER_HCV, respectively.

Concurrent receipt of HUD assistance: There are several variables that can be used to identify concurrent HUD participation i.e., participants who live in HUD-assisted housing at the time of their NCHS interview (or examination, if applicable). The variables, listed below, are grouped together by their similarity:

Variable	Variable identifies participants who:
CON_STATUS_INT	Lived in any type of HUD-assisted housing at time of interview
CON_STATIN_MF	Lived in HCV, MF, or PH HUD-assisted housing at time of interview. Only populated for NHIS and NHANES respondents receiving assistance from specific programs (non-detailed program categories).
CON_STATIN_PH	
CON_STATIN_HCV	
INT_HCV	Lived in HCV, Other MF, PBS8, MTW-PH, or PH HUD-assisted housing at time of interview (applicable to NHIS and NHANES). Only populated for NHIS and NHANES
INT_MTW_HCV	
INT_MTW_PH	

INT_OTHER_MF	respondents receiving assistance from detailed program categories.
INT_PBS8	
INT_PH	
CON_STATUS_EXM	Lived in any HUD-assisted housing at time of NHANES exam. Only populated for NHANES MEC participants who live in HUD-assisted housing.
CON_STATEX_MF	Lived in HCV, MF, or PH HUD-assisted housing at time of NHANES exam. Only populated for NHANES MEC participants receiving assistance from specific programs (non-detailed program categories).
CON_STATEX_PH	
CON_STATEX_HCV	
EXM_HCV	Lived in HCV, MF, or PH HUD-assisted housing at time of interview. Only populated for NHANES MEC participants receiving assistance from specific program.

Also included on the concurrency file are variables to identify participants who lived in HUD-assisted housing within a specific number of days from the survey interview. *Please note: The following variables cannot be directly accessed by the researcher, but upon request RDC staff can use them to derive categorical variables for researchers to use in the RDC.*

Variable	Use these variables to determine...
TIME_A	Participants who had a HUD transaction after their NCHS interview
TIME_B	Participants who had a HUD transaction before their NCHS interview
TIME_A_HCV	Participants who had a HUD HCV transaction after their NCHS interview
TIME_A_MF	Participants who had a HUD MF transaction after their NCHS interview
TIME_A_PH	Participants who had a HUD PH transaction after their NCHS interview
TIME_B_HCV	Participants who had a HUD HCV transaction before their NCHS interview
TIME_B_MF	Participants who had a HUD MF transaction before their NCHS interview
TIME_B_PH	Participants who had a HUD PH transaction before their NCHS interview

For example, to identify participants who were in HUD within 364 days (one year) of their NCHS interview, researchers may request in their RDC proposal that an indicator variable be created that identifies participants who lived in HUD-assisted housing within 364 days of their survey interview.

As mentioned in [Part 8: Construction of the episode files and analytic considerations](#), there may be misclassification due to how the episodes were constructed and this may impact the concurrency indicators. As suggested earlier, the SAS program used to generate the episodes (found in Appendix D) can be modified to generate new program-specific episode files using the transaction file.

Unit of Analysis

When using the NCHS-HUD linked files, the unit of analysis should be the participant, not the household. Survey participants, not households, were linked to HUD administrative data. While one household member's living in HUD-assisted housing directly affects all members in a household, household-level analyses should not be done for several reasons. First, some members of a HUD household who were NCHS survey participants may not have been eligible for linkage; and will not be on the linked file. Second, transactions that occurred on or after the 18th birthday of child survey participants are not included in the linked files. Third, the membership of the HUD household may differ from that of the corresponding NCHS survey household.

MF Housing Program Data: Limitations and Considerations

Although HUD analysts generally do not treat the various MF subprograms as one composite category, a composite MF category was created for the NCHS-HUD linked files in addition to maintaining the MF subprograms. HUD does not recommend that researchers analyze MF subprograms without specialized expertise in these subprograms. HUD provides the following recommendations for analyzing MF programs in the linked data:

- If the research purpose is only to identify low-income individuals receiving HUD rental assistance, then use the pooled variable for MF.
- If the research purpose is to make program-specific policy recommendations related to MF housing, then acquire a comprehensive understanding of the various MF subprogram types and functions. Account for differences among the subprograms in the analysis, especially when inferences are drawn. Depending on the research question, it may be advisable to include only Project-Based Section 8 participants in the analysis.
- In the linked data, the Project Based Section 8 program is the largest MF subprogram and the one most similar to the HCV and PH programs. Depending on the research question, it may be inadvisable to combine this program with the Section 236 or Section 221(d)(3) subprograms; doing so could lead to irrelevant and/or inaccurate results.
- Section 202 and Section 811 MF subprograms serve special populations- elderly households and disabled households. The differences between these populations and those of other HUD programs must be accounted for in the analysis, especially when inferences are drawn.

Variable Considerations & Data Anomalies

HUD Program Variables

The variable, PROGRAM, categorizes HUD programs into six broad program types: four for non-MTW programs and two for MTW programs. Non-MTW MF programs are categorized as either Section 8 MF housing or other MF housing:

PROGRAM codes	<i>PROGRAM categories</i>
HCV	Housing Choice Vouchers (including the Mod Rehab, Certificate, Home Ownership Voucher programs)
PH	Public Housing
MTW HCV	MTW Housing Choice Vouchers
MTW PH	MTW Public Housing
PBS8	Multifamily Project Based Section 8
Other MF	Other Multifamily

If a researcher wishes to analyze specific programs within the MF program, the variable PROGRAM_TYPE can be utilized. Category labels with the prefix “H” represent MF programs:

Program	PROGRAM_TYPE Codes	PROGRAM_TYPE categories
MF	H1	Project Based Section 8
MF	H2	Rent Supplement
MF	H3	RAP (Rental Assistance Payment)
MF	H4	Section 236
MF	H5	BMIR (Below Market Interest Rate)
MF	H7	Section 202 PRAC (Project Rental Assistance Contract)
MF	H8	Section 811 PRAC (Project Rental Assistance Contract)
MF	H9	Section 202/162 PAC (Project Assistance Contract)
PH	P	Public Housing
HCV	VO	Housing Choice Vouchers (Includes Certificate program, Mod-Rehab program, and Homeownership Voucher program)

The variable, VOUCHER_TYPE, can be used to examine specific rental assistance programs within the HCV category. Due to the small number of HCV homeownership vouchers, there is not sufficient data to evaluate the HCV homeownership voucher program, alone.

Additionally, NCHS recommends that researchers using the linked files to solely examine "rental" assistance programs should exclude transactions from HCV homeownership program. *Note: Researchers interested in examining only rental assistance programs should indicate this in their RDC proposal. NCHS will remove HCV homeownership vouchers from their file.*

More information about tenant-based vouchers, project-based vouchers, and homeownership vouchers can be found in [Part 4: Understanding HUD Administrative Data](#) of this report.

Program	VOUCHER_TYPE codes	VOUCHER_TYPE categories
HCV	PBV	Project-Based Vouchers
HCV	TBV	Tenant-Based Vouchers
Note: Participants in the Certificate program and the Mod Rehab program are marked as missing for VOUCHER_TYPE.		

NOTE: Individuals may be recipients of more than one HUD program at the same point in time. Cases of dual program participation are rare but nonetheless occur in the linked data and indicate errors in the administrative data. Analysts must consider this potential discrepancy when conducting analyses using the linked data.

Transaction Variables

The variable TRANSACTION_TYPE identifies the specific action for a given transaction. The table below presents the variable codes for each action type and the applicable HUD program. Transactions with rare transaction codes were excluded from the NCHS-HUD linked data transaction file.

TRANSACTION_TYPE code	Action description	Applicable HUD program
1	New admission ^{ff}	HCV, MF, and PH* HUD programs
2	Annual recertification ^{gg}	
3	Interim recertification ^{hh}	
4	Portability move in	HCV* HUD program only
5	Portability move out	
6	End of participation ⁱⁱ	HCV, MF, and PH* HUD programs
7	Other change of unit ^{jj}	
12	Flat rent update	PH* HUD program only
14	Historical adjustment	HCV* and PH* HUD programs only
16	Gross rent change	MF HUD programs only
17	Correction	

*Transaction codes apply to HCV and PH tenants (both MTW and non-MTW).

As described previously, the episodes of participation defined in the Episode files do not take into account the transaction type. Researchers interested in creating their own episodes using the type of transaction should understand the recertification process for each HUD program. Recertification rules vary based on program and PHA participation in the MTW demonstration. MTW sites have flexible rules regarding the timing of recertification, allowing recertifications to occur less frequently. Recertification guidelines for HCV, MF, and PH HUD programs, and MTW demonstration sites are described in [Appendix E: Program Recertification](#).

^{ff} In PIC, new admissions were coded based on a response of “1” on line 2a of Form 50058. In TRACS, new admissions were based on Form 50059. If the respondent reported Certification Type as “Initial Certification (IC)” or “Move-in (MI)” on line 16 then the transaction was recoded to “1”.

^{gg} In PIC, annual recertification transactions were coded based on a response of “2” on line 2a of Form 50058. In TRACS, annual recertification transactions were coded based on responses to line 16 on Form 50059. If the respondent reported Certification Type as “Annual Recertification (AR)” then the transaction was recoded to “2”.

^{hh} In PIC, interim recertification transactions were coded based on a response of “3” on line 2a of Form 50058. In TRACS, interim recertification transactions were coded based on responses to line 16 on Form 50059. If the respondent reported Certification Type as “Interim Recertification (IR)” then the transaction was recoded to “3”.

ⁱⁱ In PIC, end of participation transactions were coded based on a response of “6” on line 2a of Form 50058. In TRACS, transactions were coded based on responses to line 16 on Form 50059. If the respondent reported Certification Type as “Termination (TM)” or “Move Out (MO)” then the transaction was recoded to “6”.

^{jj} In PIC, “other change of unit” transactions were coded based on a response of “7” on line 2a of Form 50058. In TRACS, transactions were coded based on responses to line 16 on Form 50059. If the respondent reported Certification Type as “Unit Transfer (UT)” then the transaction was recoded to “7”.

Admission Date and Effective Date

The following variables relate to admission date and effective date. These variables are located on the Transaction file.

ADMISSION_DATE - for HCV and PH HUD program transactions, the variable ADMISSION_DATE is the date of admission to the program. For MF program transactions, the variable ADMISSION_DATE is the date that a tenant or family moved into a MF housing unit.

EFFECTIVE_DATE - identifies the date of each transaction.

Household Member Relationships

The variable, RELATIONSHIP, on the transaction file captures the relationship of each household member to the head of the household. This variable was derived from the relationship variables on HUD Forms 50058 and 50059. Relationship code definitions differ in Form 50058 and Form 50059. In the transaction file, relationship codes were recoded to make them consistent (see [Appendix F: Relation\(ship\) code definitions for Form HUD-50058 and Form-50059](#)).

Number of Children in Household

HUD provided aggregate count variables on the transaction file to enumerate the children and youth (0-17) who reside within a HUD household. The variable OWN_CHILDREN_CNT counts a household's "own" children (biological or adopted) and other youth relatives. The variable FOSTER_CHILDREN_CNT counts all foster children in the household. The variable FULL_TIME_STUDENT_CNT counts the number of fulltime students over 17 in the household. Identified students do not necessarily have to live at home full-time, as HUD recognizes that full-time students often come home for summer break, winter break, and other holidays. If a researcher wishes to calculate a count of the number of dependents within a household, they must use their own discretion to construct a variable. It could include any combination of the OWN_CHILDREN_CNT, FOSTER_CHILDREN_CNT, and/or the FULL_TIME_STUDENT_CNT.

Waiting List Variable

The variable DATE_ENTERED_WAITING_LIST on the transaction file refers to the date a household entered a PHA's waiting list. This field is populated only for new admission and end of participation transaction records (TRANSACTION_TYPE codes 1 and 6). Note that PHA waiting list processes differ and some PHAs might close, reopen, or restart waiting lists for certain programs. It is unknown how this variable is affected by such processes.

Disability Indicator and Count

The transaction file includes five disability indicator variables (DISABLED_COHEAD, DISABLED_HEAD, DISABLED_HOUSEHOLD, DISABLED_MBR, DISABLED_SPOUSE) and two disability count variables (OTHER_ADULT_DISABLED_CNT, CHILD_DISABLED_CNT). Information on disability for HUD recipients is collected on Forms 50058 and 50059. These two HUD forms capture different definitions of disability which are defined according to program. It is important to note that the disability indicators are not related to the impairment variables, which are also on the transaction file.

For Form 50058, if one or more of the following applies, a person is classified as disabled:

- The person has a disability as defined in Section 223 of the Social Security Act.

- The person has a physical, mental, or emotional impairment, which is expected to be of long-continued and indefinite duration, substantially impedes his or her ability to live independently, and is of such a nature that such ability could be improved by more suitable housing conditions.
- The person has a developmental disability as defined in Section 102 of the Developmental Disabilities Assistance and Bill of Rights Act.
- The person has acquired immune deficiency syndrome (AIDS) or any condition that arises from the etiologic agent for AIDS.

For Form 50059, definitions utilized to establish eligibility and/or obtain program benefits as a disabled family or person with disabilities vary by MF program. [Appendix G: Applicable Definition of Disability – Determining HUD Eligibility](#) outlines disability definitions by HUD program.

Some of the disability variables are derived from other disability variables. For example, several conditions must be met in order to identify a household as disabled. A household is considered to be a HUD disabled household if the head of household, spouse, and co-head are all less than 62 years of age and at least one of them is disabled. This is indicated by a disability indicator in the linked data. Two other disability count variables also are derived from this variable as follows: OTHER_ADULT_DISABLED_CNT is the count of disabled adults in the household other than the head of household, spouse, and co-head. The variable CHILD_DISABLED_CNT is the count of all disabled household members who are under 18 years of age (including foster children).

Elderly Indicator Variables

There are several elderly indicator variables on the transaction file (ELDER_COHEAD, ELDER_HEAD, ELDER_HOUSEHOLD, ELDER_SPOUSE). For most HUD programs, elderly is defined as age 62 or older and an elder household is defined as one where the head, spouse or co-head is elderly, but because HUD bases the definition of elderly on program eligibility, some programs use other definitions (see relevant HUD elderly definitions in [Appendix H: Applicable Definition of Elderly– Determining HUD Program/Project Eligibility](#)).

Income Variables

The Transaction file has summary income variables that provide information about the income amounts and sources for individual household members and the household as a whole. Some income codes are used to establish exclusions or deductions. When potential tenants apply for housing assistance, they must report all sources of income, except income for individuals explicitly excluded (i.e., live-in aids, foster children, and foster adults). Exclusions vary by HUD program.

For Form 50058, there are 16 types of income and exclusions. For more information regarding income codes, descriptions, and associated exclusions for the HCV and PH programs, see the “Income and Exclusion Chart” in the Form HUD-50058 Instruction Booklet.

For Form 50059, there are 13 income source codes for MF programs. For more information, see “Section D: Income Information” on HUD Form 50059.

INCOME_TOTAL_MBR – sum of income amounts from all sources for each household member.

INCOME_WAGE_MBR – sum of multiple sources of wage income for a household member. The income codes from Form HUD-50058 and Form HUD-50059 used for summation are specified in the Data Dictionary.

INCOME_WAGE_HH – sum of the wages of all household members and represents the total household income from wages.

INCOME_WELFARE_MBR – sum of the multiple income codes collected from Form HUD-50058 and Form HUD-50059. Income codes used for summation are specified in the Data Dictionary.

INCOME_WELFARE_HH – sum of all member-level welfare calculations and represents a sum calculation for the entire household.

INCOME_PENSION_MBR – sum of multiple income codes collected from Form HUD-50058 and Form HUD-50059. Income codes used for summation are specified in the Data Dictionary.
INCOME_PENSION_HH – sum of all member-level pension calculations and represents a sum calculation for the entire household.

INCOME_OTHER_MBR – sum of multiple income codes collected from Form HUD-50058 and Form HUD-50059. Codes used for summation are specified in the Data Dictionary.

INCOME_OTHER_HH – sum all member-level other income calculations and represents a sum calculation for the entire household.

The two variables, TOT_A_INCOME and INCOME_TOTAL_HH, provide total household income. TOT_A_INCOME is calculated by PHAs and INCOME_TOTAL_HH is calculated by the HUD data analysts who provided data to NCHS. The household income values from these two variables generally match. If they do not match, one or both of them may be inaccurate, possibly due to administrative errors. Therefore, HUD recommends that researchers be consistent when choosing a household income variable for use. If a researcher is interested in household income details such as source of income, he/she should use INCOME_TOTAL_HH as opposed to TOT_A_INCOME because INCOME_TOTAL_HH is based on income detail variables for all members in the household provided to NCHS and will therefore be consistent with detailed member level income data.

ADJUSTED_A_INCOME_HH – annual household income adjusted for allowances and deductions and is used to determine eligibility for housing assistance.

Note that monetary values in the NCHS-HUD linked data files are not adjusted for inflation. General guidance from HUD's Economic and Market Analysis Division is to use the Consumer Price Index (CPI) when adjusting incomes and rents for comparability across time and geography. Due to fluctuations in the relationship between rent and utilities to gross rent, it is recommended to use 80% of the change in Rent of Primary Residence and 20% of the change in Fuels and Utilities when adjusting gross rent for inflation. Information about the CPI is available from: <http://www.bls.gov/cpi/>.

HUD Deductions

When potential tenants apply for housing assistance, they may be eligible for a number of allowances for disabled or elderly household members and deductions for child care expenses, medical and disability expenses.

DEDUC_CHILD_CARE – amount of the deduction from total household income allowed for child care expenses.

DEDUC_DISABILITY_MED – amount of the deduction from total household income allowed for medical and disability expenses.

DEDUC_ELDERLY_DISABLE – \$400 income allowance for any family with an elderly or disabled head, spouse or co-head.

DEDUC_TOT_DEPENDENT – the amount of reduction in total income allowed for dependents. A full-time student, 18 years of age or older, who is not the head, co-head, spouse, foster child or foster adult is considered a dependent for income purposes. Generally, the following individuals are also considered to be dependents if they are currently living in the assisted unit and are not the head of household, co-head, or spouse:

- Individuals aged 17 years or under
- Individuals aged 18 and over and disabled or full-time students
- Children temporarily absent due to placement in a foster home
- Children subject to joint custody agreement
- Full-time students (regardless of age) away at school but living with family during school breaks
- Children being adopted (or whose custody is being sought) and living in unit.

DEDUC_TOT_ALLOW – sum of all applicable allowances.

DEDUC_TOT_PERMISSIVE – total amount of permissive deductions specialized deductions and applies to PH only.

Household Payment and Subsidy Variables

A number of variables pertain to household payment.

CONTRACT_RENT - the monthly contract rent of a housing unit as established by a landlord/owner and a PHA/tenant. This value does not include tenant-paid utilities, but does include the value of any utilities paid by the landlord. The variable UTIL_ALLOW Utility allowance is HUD's estimate of monthly tenant-paid utilities.

GROSS_RENT - HUD's estimate of the gross amount paid monthly by tenants and is the sum of CONTRACT_RENT and UTIL_ALLOW.

ASSISTANCE_PAYMENT - the amount of money HUD pays for the rent and utilities of the housing unit. This value generally should not be less than 0, but can be for MTW records, because the amount varies in the MTW data due to the flexibility associated with MTW data reporting. It is recommended to either recode negative values to zero or delete negative values.

Assistance amounts are missing for PH programs because the subsidy is delivered via the operating fund and the capital fund, not to individual households.

Total Household Expenses and Assistance Payments

The TOTAL_HOUSEHOLD_EXPENSES variable gives the total amount paid monthly by a household for expenses (i.e., rent and utilities). The variable ASSISTANCE_PAYMENT represents the amount of money HUD pays for the rent and utilities of the unit. These variables may be inaccurate for participants in MTW programs, but the extent of the inaccuracy is unknown and these calculations are provided by HUD only as an estimate for the researcher. Additionally, these variables were derived from multiple variables that are not available on the linked data files. Calculations for assistance payments and total household expenses can be found in [Appendix I: Total Household Expenses and Assistance Payments – Subsidy and Expense Calculations](#).

Geocoded Data

Though the original file received from HUD contained a very detailed level of geographic information (i.e., address), the Transaction file available for release through the RDC does not contain this level of geographic information. Access to these data must undergo a formal review by the NCHS ERB.

Geocoded data for the linked participant’s residence *at the time of their survey interview* are available through the RDC. However, it is important to note that although this level of geography is available, NHIS and NHANES samples are only representative at the regional and national level. For this reason, PHAs and private housing providers are not identified in the linked data.

Some NCHS surveys include a measure of urban/rural geographic location, whereas others do not. Please refer to the survey documentation for information about available data. If the survey does not include the urban-rural classification of interest, it can be merged onto the file using state and county identifiers. An urban-rural classification recommended for use with NCHS surveys is the NCHS Urban-Rural Classification Scheme for Counties. Information about this classification is available from: http://www.cdc.gov/nchs/data_access/urban_rural.htm. When requesting that an urban-rural classification scheme be merged onto the NCHS-HUD linked file, include state and county in the list of restricted variables and request the NCHS Urban-Rural scheme as an additional NCHS data source. State and county identifiers will be removed after the urban-rural codes are merged onto the linked file.

Variables with Potential Data Quality Concern

Administrative data are not designed for research purposes. As a result, it is recommended that researchers use the HUD administrative variables on the linked files with caution because the validity and reliability of some of these variables are not completely known (e.g., not reliably reported, inconsistent with transactions types, not consistent with data on individual household members, etc.). HUD acknowledges that several of these variables may not be accurately nor consistently reported. Variables to approach with particular caution are outlined below. Please refer to the Data Dictionary for more details about these variables.

Variable name	Description	HUD Program		
		PH	HCV	MF
HOMELESS_IND	A binary variable to indicate if the household was	X	X	N/A

	homeless upon entry into the program			
PORTABILITY_IND ³⁷	A binary variable to indicate if the household moved from a different PHA	N/A	X	N/A
TOT_HOUSEHOLD_MEMBERS	Total number of household members	X	X	X

³⁷ For more information about portability and the HCV program, please review “Chapter 13: Portability” in the HUD [Housing Choice Voucher Program Guidebook](#).

Appendices

Appendix A: Acronym and Abbreviation List

Acronym or Abbreviation	Name
AIDS	Acquired Immune Deficiency Syndrome
AMI	Area Median Income
BMIR	Below Market Interest Rate
CAPI	Computer Assisted Personal Interview
CDC	Centers for Disease Control and Prevention
CPI	Consumer Price Index
ERB	Ethics Review Board
EIV	Enterprise Income Verification
FHA	Federal Housing Administration
FMR	Fair Market Rent
GAO	General Accounting Office
HAP	Housing Assistance Payments
HCV	Housing Choice Voucher program category
HERA	Housing and Economic Recovery Act
HUD	United States Department of Housing and Urban Development
OIG	Office of the Inspector General
LMSA	Loan Management Set-Aside
MEC	Mobile Examination Center
Mod Rehab	Section 8 Moderate Rehabilitation program
MF	MultiFamily housing program category
MTCS	Multifamily Tenant Characteristics System
MTW	Moving to Work demonstration program
NCHS	National Center for Health Statistics
NHANES	National Health and Nutrition Examination Survey
NHIS	National Health Interview Survey
OMB	Office of Management and Budget
PAC	Project Assistance Contract
PBS8	Project-Based Section 8
PBV	Project Based Voucher
PH	Public Housing program category
PHA	Public Housing Agency
PIC	PIH Information Center
PIH	Public & Indian Housing
PRAC	Project Rental Assistance Contract
RAP	Rental Assistance Payment program
RDC	Research Data Center
TRACS	Tenant Rental Assistance Certification System
TTP	Total Tenant Payment
USDA	United States Department of Agriculture

Appendix B: Income limits by HUD program

The table below provides a summary of the specific HUD income limit categories used to determine eligibility for some HUD programs.

Table A: Income limits by HUD program		
Type of HUD housing Subsidy	Type of income limit**	Program Type in Linked Data
HCV Program	Low*, very low, and extremely low-income limit	HCV
Section 8	Low*, very low, and extremely low-income limit	MF and HCV
Public Housing	Low, very low, and extremely low-income limit	PH
Section 236	Low-income limit	MF
Rent Supplement	Low-income limit	MF
Rental Assistance Payment (RAP)	Low-income limit	MF
Section 202 without assistance	Low-income limit. See paragraph 3-6.D.3 of HUD Handbook 4350.3: Occupancy Requirements of Subsidized Multifamily Housing Programs. for exceptions ⁴⁷	MF
Section 202 with Section 8 Assistance Pre-1981	Pre-1981: Low, very low, and extremely low-income limit Post-1981: Very low and extremely low-income limit	MF
Section 202 with Rent Supplement	Low-income limit	MF
Section 202 PACs	Low-income limit	MF
Section 202/811 PRACs, except those funded in FY1995	Very low-income limit	MF
Section 202/811 PRACs funded in FY 1995	Low-income limit	MF
Section 221(d)(3) BMIR	BMIR income limit	MF
*The <i>low income-limit</i> , set at 80 percent of the area median income, is used for families whose incomes fall above the very low-income limits but who are considered to be eligible for assistance because they are: (1) Continuously assisted under the public housing or Section 8 programs; (2) Non-purchasing households in the following homeownership programs: HOPE 1, HOPE 2, or other HUD-assisted multifamily home ownership programs covered under 24 CFR 284.173; or, (3) Displaced as a result of the prepayment of a mortgage or voluntary termination of a mortgage insurance contract.		

**HUD's three income limit categories are based on percentages of local AMI with adjustments for family size and other factors: Low-income (more than 50% AMI but not greater than 80% AMI); Very low-income (more than 30% AMI but not greater than 50% AMI); and, extremely low-income (not greater than 30% AMI) or the federal poverty level, whichever is greater.³⁸

³⁸ The FY 2014 Appropriations Act redefined the definition of Extremely Low Income for the Section 8 program. Currently, the definition of Extremely Low Income is a very low income family whose income does not exceed the maximum of 30 percent of area median income or the Federal Poverty Guidelines as published by HHS. HUD income limits conforming to this definition were released on July 1, 2014.

Appendix C: Summary of HUD Housing Assistance Programs

There are important programmatic considerations when analyzing HUD assistance programs. Programs often overlap with more than one subsidy type being used in the same buildings and/or developments. Additionally, programs have changed over time. The major HUD housing assistance programs types are categorized in the linked data as (1) public housing (PH), (2) Housing Choice Voucher (HCV), and (3) multifamily housing (MF). Even though HUD analysts do not treat the MF category as one program directly comparable to HCV and PH, for the purposes of the data linkage file the various MF subprograms were combined into one category. HUD does not recommend that researchers analyze MF subprograms without specialized expertise in these subprograms. Please refer to [Part 8: MF Housing Data Limitations and Considerations](#) for more information. Although many of these MF programs were included in the linked data, analysis of these programs individually would likely yield a very small number of observations. The table below does not include all HUD housing assistance programs, but summarizes the key programs in the NCHS-HUD linked data files.

To complement the summary table below, researchers should note the following key concepts and principles related to the HUD programs:

- **Tenant-based and project-based:** Project-based vouchers and tenant-based vouchers are two terms commonly used to describe housing assistance programs.
 - Tenant-based vouchers imply that assistance lies with the tenant rather than a building and therefore is portable. Families with a tenant-based voucher must search for, choose and lease safe, decent, and affordable privately-owned housing.
 - Project-based vouchers are tied to a specific building or project, and do not offer portability.
- **Financing and development:** HUD and the Federal Housing Administration (FHA) have operated numerous programs over the years to incentivize new development, construction and rehabilitation of housing. Financing subsidies can spur development and are generally effective at providing affordability for more moderate income families. These programs are sometimes combined with housing assistance to provide greater affordability.
- **Rental assistance:** Rental assistance provides ongoing annual subsidies for the operation, maintenance and upkeep of affordable rental housing. Rental assistance is generally needed to provide affordability to assist families at the lowest income levels.

TABLE B: SUMMARY OF HUD HOUSING ASSISTANCE PROGRAMS IN THE NCHS-HUD LINKED DATA FILES					
HUD Rental Assistance Program	Subprogram Type	Description of program	Tenant-based or project-based	Funding new applicants?	Number of housing units** and/or sample size concerns
PH	PH	Public housing was established to provide decent and safe rental housing for eligible low-income families, the elderly, and persons with disabilities. PH dwellings range from scattered-site single-family detached houses to high rise apartment buildings.	Project-based	Yes	As of FY15, approximately 1.1 million occupied housing units.
HCV	Section 8 Moderate Rehabilitation (Mod Rehab) Program	The Mod Rehab program was an additional component of the PB S8 program intended to fill a smaller part of the market. The purpose of Mod Rehab was to require less subsidy to develop. The program grew from 1978-1989 when development of new units was terminated.	Project-based	No	As of FY15, approximately 25,000 housing units are in this program. They are in the process of converting to either the PB S8 or PBV program. This program is generally not considered to be policy relevant and the sample is likely too small for analysis.
HCV	Section 8 Housing Choice Vouchers (HCV)	The Section 8 HCV program is HUD's largest rental housing assistance program in terms of the number of families assisted and annual appropriations. In general, subsidies are not tied to a particular building or unit (however, see "Section 8 PBV" below). Instead, vouchers are tenant-based and assisted families are allowed to locate privately owned rental housing and use the voucher subsidy to pay a portion of the rent.	Tenant-based	Yes	As of FY15, approximately 2.2 million occupied housing units. No sample size concerns.

TABLE B: SUMMARY OF HUD HOUSING ASSISTANCE PROGRAMS IN THE NCHS-HUD LINKED DATA FILES (CONTINUED)					
HCV	Section 8 Project-Based Voucher (PBV) Program	Under the Section 8 HCV program, PHAs are authorized to use up to 20% of their vouchers for project-based assistance in which the subsidy is attached to a building or unit. PBVs are therefore not a separate program but a component of the HCV program. PBVs can be used to meet a variety of specialized uses, including in combination with: services for the homeless, persons with disabilities; services for the elderly; or, in combination with new development subsidies to incentivize construction in more desirable (e.g., lower poverty) locations. Despite similar names, the PBV “program” should not be confused with the PB S8 program.	Project-based	There is no separate funding for this component of the S8 HCV program. PHAs can designate new PBVs from their existing allocations.	As of FY15, approximately 35,000 designated PBVs. The linked sample size is likely too small for analysis but this program is highly policy relevant and growing in popularity.
HCV	Homeownership Vouchers	As with PBVs, PHAs have discretion to designate a portion of their vouchers for low-income homeownership. Funding can be used for ongoing mortgage costs or for upfront down payment assistance. Use of the program for this purpose is very limited as it reduces the amount remaining for the main purpose of the HCV program.	Tenant-based and Project-based	There is no separate funding for this program. PHAs can designate new PBVs from existing allocations.	As of FY 15, approximately 10,000 occupied housing units. The sample is likely too small for analysis.
HCV	Section 8 Rental Certificate Program	Now defunct, this was a component of the HCV program which for many years operated as two related programs: vouchers and certificates. The programs were merged in 1998. However, due to long-term funding allocations in some cases, the separate designation remains in place for a small (and decreasing) number of units.	Tenant-based	No	This program is generally not considered to be policy relevant and the sample is likely too small for analysis.
TABLE B: SUMMARY OF HUD HOUSING ASSISTANCE PROGRAMS IN THE NCHS-HUD LINKED DATA FILES (CONTINUED)					

MF	Project-based Section 8	<p>Started in 1974, the project-based Section 8 (PB S8) program provides ongoing annual rental assistance for privately owned multifamily housing. This program is one of HUD's primary rental assistance programs. It was initially divided into two components:</p> <ul style="list-style-type: none"> • "Older assisted" which was attached to existing buildings that often were built in the 1950s and 1960s using HUD/FHA financing programs (e.g., old Section 202, 221(d)(3) and Section 236. "Older assisted" PB S8 is also known as "Loan Management Set-Aside" (LMSA) • "Newer assisted" which was attached to new or substantially rehabbed properties from 1974 through the 1980s. These were sometimes combined with FHA market rate mortgage insurance, state housing finance bonds or the Rural Housing Service Section 515 program to incentivize development. Also called "Section 8 NC/SR" for "New Construction / Substantial Rehabilitation." 	Project-based	Yes. The Project-based Section 8 program is HUD's second largest program in terms of discretionary budget authority (approximately \$9 billion per year).	As of FY15, approximately 1.2 million occupied housing units. Please review Part 8: Analytic Considerations and Guidelines, MF Housing Data Limitations and Considerations of this documentation.
MF	Section 202 Housing for the Elderly	The Section 202 program expands the supply of affordable housing with supportive services for the elderly. There are two primary program vehicles called Section 202: "New 202" that was enacted in 1990 and "Old 202" which operated from 1959-1990.	Project-based	See below.	See below for unit distribution by 202 program type (e.g., "New 202" or "Old 202").
TABLE B: SUMMARY OF HUD HOUSING ASSISTANCE PROGRAMS IN THE NCHS-HUD LINKED DATA FILES (CONTINUED)					

MF	Section 202 Supportive Housing for the Elderly ("new Section 202")	Enacted in 1990, the new Section 202 program includes subsidies for both development and ongoing rental assistance. Development subsidies are provided in the form of capital grants and ongoing rental assistance is provided in the form of renewable 5-year Project Rental Assistance Contracts. This transparent subsidy structure reduced much of the overlap between multiple programs and made cost estimates much easier to estimate. It also resulted in higher per-unit costs when compared to indirect subsidy vehicles and appropriations are usually only provided for a modest number of units (i.e., usually less than 5,000 units per year).	Project-based	Yes	As of FY 15, approximately 130,000 occupied housing units. The sample is potentially too small for analysis.
MF	Section 202 Direct Loan Program for the Elderly ("old Section 202")	Enacted in 1959, this program operated until it was replaced by the new 202 program in 1990. The federal government provided direct loans without the need for a private bank to be involved in financing. Generous mortgage terms were provided to incentivize construction. When the Project-based Section 8 was created in 1974, many existing buildings that were financed with the old Section 202 program received PB S8 rental assistance. "Old Section 202" is similar to other now obsolete financing programs discussed farther below.	Project-based	No	There are still approximately 200,000 units in "Old 202" buildings that also receive Project-based Section 8 rental assistance.
MF	Section 202 with 162 Assistance –Project Assistance Contract (PAC)	This was a brief precursor program to new Section 202 that converted old Section 202 properties to assist persons with disabilities. The "Section 162" program more closely resembles New Section 202 or Section 811.	Project-based	No	This program is generally not considered to be policy relevant and the sample is likely too small for analysis.
TABLE B: SUMMARY OF HUD HOUSING ASSISTANCE PROGRAMS IN THE NCHS-HUD LINKED DATA FILES (CONTINUED)					

MF	Section 811 Supportive Housing for People with Disabilities	Enacted in 1990, the Section 811 Supportive Housing for Persons with Disabilities program provides funding to develop and subsidize rental housing with the availability of supportive services for low-income adults with disabilities. The subsidies are structured in the same manner as the new Section 202 program (capital grants for development and ongoing rental assistance).	Project-based	Yes	As of FY 15, approximately 30,000 occupied housing units. The sample is likely too small for analysis.
MF	Section 221(d)(3) Below Market Interest Rate (BMIR) Multifamily Housing	The Section 221(d)(3) Below Market Interest Rate (BMIR) MF program insured and subsidized mortgage loans to facilitate new construction, substantial property rehabilitation, and cooperative housing for low-income families.	Project-based	No	As of FY 15, approximately 1,000 occupied housing units. Unless expertise in MF programs is available, analysts should pool this program with other MF programs. Analyzing this program independently would lead to sample size issues. Please review Part 8: Analytic Considerations and Guidelines, MF Housing Data Limitations and Considerations of this documentation.
TABLE B: SUMMARY OF HUD HOUSING ASSISTANCE PROGRAMS IN THE NCHS-HUD LINKED DATA FILES (CONTINUED)					

MF	Section 236 Multifamily Housing	Operating during 1968-1973, the Section 236 program, subsidized the interest on a private owner's mortgage. The program was successful in developing over 500,000 units of housing. However, it was found that affordability could only be provided to the very lowest income residents with additional ongoing annual rental assistance.	Project-based	No	As of FY 15, approximately 20,000 occupied housing units. Unless expertise in MF programs is available, analysts should pool this program with other MF programs. Analyzing this program independently would lead to sample size issues. This program also has not produced new housing units since the 1970s and has limited policy relevance. Please review Part 8: Analytic Considerations and Guidelines, MF Housing Data Limitations and Considerations of this documentation.
MF	Rental Assistance Program (RAP)	An early precursor to MF programs, the Rental Assistance Payment (RAP) program was established to provide additional rental assistance subsidy to property owners on behalf of very low-income tenants. This program represents an early form of rental subsidy that was used for up to 20% of the units in Section 236 developments prior to the Section 8 program. Some developments still have Section 236 RAP assistance.	Project-based	No	As of FY 15, approximately 9,000 occupied housing units. These units are in the process of converting to other programs. Unless expertise in MF programs is available, analysts should pool this program with other MF programs. Analyzing this program independently would lead to sample size issues. Please review Part 8: Analytic Considerations and Guidelines, MF Housing Data Limitations and Considerations of this documentation.
TABLE B: SUMMARY OF HUD HOUSING ASSISTANCE PROGRAMS IN THE NCHS-HUD LINKED DATA FILES (CONTINUED)					

MF	Rent Supplement Program	Another precursor to the Project-based Section 8 program, the Rent Supplement Program provided ongoing federal rental assistance. The program was suspended in January 1973. Owners of properties with Rent Supplement contracts were allowed to convert to project-based Section 8 assistance, however a small number of units remain in the program as of 2015.	Project-based	No	As of FY 15, approximately 4,000 occupied housing units. These units are in the process of converting to other programs. Unless expertise in MF programs is available, analysts should pool this program with other MF programs. Analyzing this program independently would lead to sample size issues. Please review Part 8: Analytic Considerations and Guidelines, MF Housing Data Limitations and Considerations of this documentation.
**Housing unit estimates provided in this table represent the universe of HUD administrative data as of FY15. These estimates do not apply to the linked data files.					

Appendix D: SAS Program to Create Participation Episodes

The following SAS Program was used to generate program participation episodes:

```
*****
*****
***PROGRAM:13B-get_Periods_W_GRID_WRAPPER.SAS
***
***PURPOSE:CREATE EPISODE PERIODS FROM HUD TRANSACTION DATA ***
***DATE: 11/18/2015
***
***AUTHOR:LYNN RODGERS ***
*****
*****;
*@ACTION: INPUT RESTATE TRANSACTION FILE FROM HUD;
DATA NCHS_DATA;
SET INPUT.RESTATE_HUD_TRANSACTIONS_INT;
*@ACTION:RENAME PROGRAMS;
IF PROGRAM EQ 'MTW HCV' THEN PROGRAM='MTW_HCV';
IF PROGRAM EQ 'MTW PH' THEN PROGRAM='MTW_PH';
IF PROGRAM EQ 'Other MF' THEN PROGRAM='OTHER_MF';
RUN;

%MACRO PERIODS (PGRM, PERIOD);
*@ACTION: SORT DATA BY IDS AND EFFECTIVE DATE;
PROC SORT DATA=NCHS_DATA OUT=ALL_DATA;
BY PUBLICID EFFECTIVE_DATE;
*@ACTION: BREAK OUT BY NON MISSING PROGRAM TYPE;
%IF &PGRM GT %THEN %DO;
WHERE PROGRAM EQ "&PGRM";
%END;
RUN;
*@ACTION: CREATE INTERNAL EPISODE FILES BY PROGRAM TYPE;
DATA OUTPUT.EPISODE_DATES_&PGRM._INT (KEEP=PUBLICID SEQN &PGRM._BEG_DATE1 -
&PGRM._END_DATE10
&PGRM._END_DATE1 - &PGRM._END_DATE10 SURVEY_NAME);
SET ALL_DATA;
BY PUBLICID;
*@ACTION:CREATE VARIABLES TO HOLD ALL OF THE PERIODS,PLUS BEGINNING AND
ENDING DATES;
RETAIN HOLD_EFFDT PERIOD_1 - PERIOD_66 EPISODE_CNT TRANSACTION_CNT
&PGRM._BEG_DATE1 - &PGRM._BEG_DATE10 &PGRM._END_DATE1 -
&PGRM._END_DATE10;
EFFDT=EFFECTIVE_DATE;
ARRAY PERIODS (66) PERIOD_1 - PERIOD_66;
ARRAY BEGIN_DATE (10) &PGRM._BEG_DATE1 - &PGRM._BEG_DATE10;
ARRAY END_DATE (10) &PGRM._END_DATE1 - &PGRM._END_DATE10;
*@ACTION: LABEL VARIABLES;
LABEL
PUBLICID = "NHIS PUBLIC ID"
SEQN = "NHANES SEQUENCE NUMBER"
SURVEY_NAME = "SURVEY NAME"
&PGRM._BEG_DATE1 = "&PGRM. BEGIN DATE-EPISODE 1"
```

```

&PGRM._BEG_DATE2 = "&PGRM. BEGIN DATE-EPIISODE 2"
&PGRM._BEG_DATE3 = "&PGRM. BEGIN DATE-EPIISODE 3"
&PGRM._BEG_DATE4 = "&PGRM. BEGIN DATE-EPIISODE 4"
&PGRM._BEG_DATE5 = "&PGRM. BEGIN DATE-EPIISODE 5"
&PGRM._BEG_DATE6 = "&PGRM. BEGIN DATE-EPIISODE 6"
&PGRM._BEG_DATE7 = "&PGRM. BEGIN DATE-EPIISODE 7"
&PGRM._BEG_DATE8 = "&PGRM. BEGIN DATE-EPIISODE 8"
&PGRM._BEG_DATE9 = "&PGRM. BEGIN DATE-EPIISODE 9"
&PGRM._BEG_DATE10 = "&PGRM. BEGIN DATE-EPIISODE 10"
&PGRM._END_DATE1 = "&PGRM. END DATE-EPIISODE 1"
&PGRM._END_DATE2 = "&PGRM. END DATE-EPIISODE 2"
&PGRM._END_DATE3 = "&PGRM. END DATE-EPIISODE 3"
&PGRM._END_DATE4 = "&PGRM. END DATE-EPIISODE 4"
&PGRM._END_DATE5 = "&PGRM. END DATE-EPIISODE 5"
&PGRM._END_DATE6 = "&PGRM. END DATE-EPIISODE 6"
&PGRM._END_DATE7 = "&PGRM. END DATE-EPIISODE 7"
&PGRM._END_DATE8 = "&PGRM. END DATE-EPIISODE 8"
&PGRM._END_DATE9 = "&PGRM. END DATE-EPIISODE 9"
&PGRM._END_DATE10 = "&PGRM. END DATE-EPIISODE 10"
;
*@ACTION: FORMAT THE DATE FIELDS;
FORMAT &PGRM._BEG_DATE1 - &PGRM._BEG_DATE10 &PGRM._END_DATE1 -
&PGRM._END_DATE10 DATE.;
IF FIRST.PUBLICID THEN DO;

    HOLD_EFFDT=EFFDT;
*@ACTION: INITIALIZE FIELDS TO MISSING OR ZERO;
DO J=1 TO 10;
    BEGIN_DATE (J)=.;
    END_DATE (J)=.;
END;

TRANSACTION_CNT=0;
EPISODE_CNT=1;
BEGIN_DATE(EPISODE_CNT)=EFFDT;

DO I = 1 TO 66;
    PERIODS (I)=.;
END;

END;
*@ACTION: INCREMENT TRANSACTION COUNTER BY ONE;
TRANSACTION_CNT+1;
*@ACTION: CALCULATE PERIODS BETWEEN TRANSACTIONS;
PERIODS(TRANSACTION_CNT)=EFFDT-HOLD_EFFDT;
IF PERIODS(TRANSACTION_CNT) GT &PERIOD THEN DO;
    END_DATE(EPISODE_CNT)=HOLD_EFFDT;
    EPISODE_CNT+1;
    BEGIN_DATE(EPISODE_CNT)=EFFDT;
END;

HOLD_EFFDT=EFFDT;
*@ACTION: OUTPUT ONE RECORD PER ID;
IF LAST.PUBLICID THEN DO;
    END_DATE(EPISODE_CNT)=EFFDT;

```

```

OUTPUT;
END;
RUN;
*@ACTION: CREATE PUBLIC FROM INTERNAL VERSION;
DATA OUTPUT.EPISODE_DATES_&PGRM._PUB (DROP=NEW_HUD_ID);
SET OUTPUT.EPISODE_DATES_&PGRM._INT ;

RUN;
*@ACTION: SHOW CONTESENTS OF INTERNAL AND PUBLIC FILES;
PROC CONTENTS DATA=OUTPUT.EPISODE_DATES_&PGRM._PUB;
PROC CONTENTS DATA=OUTPUT.EPISODE_DATES_&PGRM._INT;
RUN;
%MEND PERIODS;
*@ACTION: RUN MACRO FOR ALL PROGRAM TYPE;
%PERIODS (HCV, 425); *NOTE:ONE YEAR PLUS TWO MONTHS;
%PERIODS (PH, 425);
%PERIODS (PBS8, 425);
%PERIODS (OTHER_MF, 425);
%PERIODS (MTW_HCV, 790); *NOTE:TWO YEARS PLUS TWO MONTHS;
%PERIODS (MTW_PH, 790);
%PERIODS (, 425);
*@ACTION: TIME STAMP;
    DATA _NULL_ ;
    LAPTIME=TIME();
    LAPDATE = TODAY();
    PUT "TIME CHECK: " LAPTIME TIMEAMPM14.2 " " LAPDATE YYMMDD10. " **
PROGRAM ENDED" ;
    RUN;

```

Appendix E: Program Recertification

In general, HUD regulations mandate annual recertification to ensure that only eligible individuals and families receive housing assistance and that assisted tenants pay rents proportionate with their income and ability to pay. Recertification rules vary based on program, and PHAs that are participating in the MTW demonstration have special rules regarding the timing of recertification. Recertification guidelines for HCV, MF, and PH programs and MTW demonstration program regulations are described below.

HCV Program

PHAs are required to reexamine the income and composition of HCV families at least once every 12 months. Annual reexamination determines the continued eligibility of the family and establishes the housing assistance payment (HAP) to be made on behalf of the family. PHAs may also require families to report interim changes in family income. A family's failure to comply with PHA reexamination requirements is grounds for terminating assistance.⁴⁸

Individual PHAs must establish reexamination procedures that allow for proper and timely verification of information and advance notification to the family of any rent change. The PHA must establish a policy regarding annual reexamination effective dates that ensures that reexamination for every family occurs within a 12-month period. To ensure compliance, PHAs should initiate reexamination procedures 90 to 120 days before the date reexamination results are to take effect. This allows the PHA ample time to obtain all required verifications and provide reasonable advance notice to both the family and the property owner of any change in the family share and HAP. PHAs may require reexaminations more frequently when the family has seasonal or irregular income, or for justifiable reasons such as balancing a PHA's workload.⁴⁹

It is recommended that PHAs choose one of the following reexamination dates:

- **The anniversary date of the HAP contract.** Most PHAs choose this as the reexamination date for administrative ease. This choice allows the effective date of changes in HAP resulting from the reexamination process to coincide with the anticipated effective date of any changes in the rent to owner.
- **Twelve months from the date of initial verification.** The PHA may choose to establish reexamination cycles based upon the date of initial information verification. In this case, the reexamination effective date is the first of the month following the month in which family information was initially verified. This choice allows the PHA to issue new HCV to families who move at the anniversary date without necessarily having to conduct a reexamination at that time.⁵⁰

Most PHAs require tenants to complete the reexamination in person. Families are notified in writing of the date of the reexamination appointment, the location of the appointment, and what they are required to bring to the interview. Generally, a family can request another appointment if there is a scheduling conflict. Some PHAs complete reexaminations by mail, scheduling appointments only if there is no response to the mailed reexamination request or the documentation returned to the PHA is incomplete. Another option is to do both in-person and mail reexaminations depending upon circumstances. For example, a PHA's procedures might call for mail reexaminations only for elderly participants and participants with disabilities. The PHA may also conduct "in home" reexamination interviews for the elderly and for families in which the head of household is a person with disabilities.⁵¹

MF programs

For MF programs, the following regulations pertain to recertification:⁵²

- 24 CFR 5.657 Section 8 Project-based Assistance Programs: Re-examination of Family Income and Composition
- 24 CFR 880.603, 884.218, 886.124, 886.324, 891.410, 891.610, and 891.750 Re-examination of Family Income and Composition
- 24 CFR 5.659 Family Information and Verification

Annual recertifications must be completed by the tenant's recertification anniversary date. The recertification anniversary date is the first day of the month in which the tenant moved into the property. For example, if a tenant moves in on September 1, their anniversary date is September 1. If a tenant moves in on September 30, their anniversary date is still September 1. The recertification anniversary date does not change if a tenant transfers from one unit to another unit at the same property. It is the property owner's responsibility to process all recertifications in a timely manner. HUD has instructed Contract Administrators to terminate assistance payments to an owner if a new annual recertification has not been completed and submitted through TRACS within 15 months of the previous year's anniversary date. Owner must repay the difference of missed payments.⁵³

PH Program

When a family resides in public housing, they must comply with HUD's rules on continued occupancy and reexamination. For the majority of public housing tenants, residents are required to verify their information, including income and family composition, at least annually. Some exceptions exist. For example, PHAs may require that families paying a flat rent only need to provide income information every three years.⁵⁴

MTW Demonstration Project

Reducing or restructuring the frequency of recertification/reexamination as it pertains to program eligibility is a common policy for MTW agencies. Therefore, tenants participating in programs at MTW PHAs may need to verify their income and family composition less frequently than tenants in non-MTW HUD programs. In fact, recertification can occur as infrequently as every three years. This greatly reduces administrative burden for MTW PHAs. It is recommended that when using the Transaction file, researchers allow transactions to be spaced farther apart for MTW program participants. Alternatively, researchers can use the linked episodes files which account for MTW and non-MTW program participation time frames.

Appendix F: Relation(ship) code definitions for Form HUD-50058 and Form-50059

<i>Relation code definitions as described in Form HUD-50058 Instruction Booklet</i>		
Relationship Code	Description	Definition
A	Other Adult	A member of the household (excludes foster adults), other than the head or spouse or co-head, who is 18 years of age or older on the effective date of action, regardless of disability status.
E	Full-time student 18+	A member of the household, other than the Head, spouse or co-head, or foster child or adult, 18 years of age or older on the effective date of action who carries a subject load considered full-time for students under the standards and practices of the educational institution attended. An educational institution includes a vocational school with a diploma or certificate program, as well as a degree-granting institution.
F	Foster Child/Adult	<ul style="list-style-type: none"> • <i>Foster child</i> – A member of the household who is under 18 years of age or a member who is a full-time student, 18 years or older, and who is under the parental control and responsibility of someone other than his or her mother or father. • <i>Foster adult</i> – A member of the household (usually a person with a disability, unrelated to the tenant family, who is unable to live alone) who is 18 years of age or older and for whom the family provides necessary shelter, care and protection.
H	Head of household	The one adult member of the household, designated by the family or by PHA policy as the head of household, who is wholly or partly responsible for rent payment.
K	Co-Head	An individual in the household who is equally responsible for the lease with the head of household. Participants may indicate either a spouse or a co-head, but not both. A co-head never qualifies as a dependent. However, a co-head may be under 18 years old if declared an “emancipated minor,” as many states will allow an emancipated minor to sign a lease.
L	Live-in Aide	<p>A person who lives with an elderly or disabled person(s) and who:</p> <ul style="list-style-type: none"> • is determined by the PHA to be essential to the care and well-being of the person(s); • is not obligated to support the person(s); • would not be living in the unit except to provide necessary supportive services. <p>A child of a live-in aide should be categorized as live-in aide.</p>
S	Spouse	The marriage partner of the head of household.
Y	Other Youth under 18	A member of the household (regardless of disability status), who is under 18 years of age on the effective date of action, and is not a foster child.
Source: http://portal.hud.gov/hudportal/documents/huddoc?id=Form50058instructbooklet.pdf		

Relationship Code Definitions as Described in Instructions for TRACS 202D form HUD-50059 & Applicable Recodes (Item 37 – Relationship Code)		
Code & Applicable Recode	Description	Definition
O *Recoded to (A) to match PIC data.	Other Adult	Other adult member of the family who is not the head, spouse or co-head.
F	Foster Child/Adult	Foster child under the age of 18 or the child of a Foster child or Foster adult.
H	Head	There can be only one head. If there is a spouse or co-head, list the same person as head on each (re)certification, as long as that person resides in the household.
K	Co-Head	There can either be a spouse or a co-head but not both. There can be only one co-head. For the Section 202/8, Section 202 PAC, and Section 202 PRAC and Section 811 PRAC projects, to qualify for admission/assistance, persons must be age 62 or, if disabled, at least 18 years old. Therefore, a head, spouse or co-head under the age of 18 would not occur in these programs.
L	Live-in Attendant	Persons in this category do not have rights under the lease. Persons in this category are not considered members of the family.
S	Spouse	There can either be a spouse or a co-head, but not both. There can be only one spouse.
D *Recoded to (Y) or (E) to match PIC data.	Dependent	Count any member of the family currently living in the unit who is not the Head, Spouse or Co-Head and: <ul style="list-style-type: none"> • Age 17 or younger • 18 or older and disabled or a full-time student • Child temporarily absent due to placement in a foster home • Child who is subject to joint custody agreement • Full-time student (regardless of age) away at school but lives with family during school breaks • Child being adopted (or custody being sought) and living in unit
N	None of the above	Others Living in the Unit Who are not Members of the Tenant Family. Persons in this category do not have rights under the lease and persons in this category are not considered members of the family.

Appendix G: Applicable Definition of Disability – Determining HUD Eligibility

Definitions to establish eligibility or obtain HUD program benefits as a person with disabilities vary by program. Additionally, eligibility can vary by project and some projects receive assistance from more than one program.

TABLE F: APPLICABLE DEFINITIONS OF DISABILITY - DETERMINING HUD PROGRAM/DEVELOPMENT ELIGIBILITY		
HUD Program Category	Subprogram Type	Disability Definition & Corresponding Regulations
HCV and PH	Section 8 and Public Housing Assistance	<p>Person with disabilities:</p> <p>(1) Means a person who:</p> <ul style="list-style-type: none"> (i) Has a disability, as defined in [42 U.S.C. 423]; (ii) Is determined, pursuant to HUD regulations, to have a physical, mental, or emotional impairment that: <ul style="list-style-type: none"> (A) Is expected to be of long-continued and indefinite duration; (B) Substantially impedes his or her ability to live independently, and (C) Is of such a nature that the ability to live independently could be improved by more suitable housing conditions; or (iii) Has a developmental disability as defined in [42 U.S.C. 6001]. <p>(2) Does not exclude persons who have the disease of acquired immunodeficiency syndrome (AIDS) or any conditions arising from the etiologic agent for AIDS;</p> <p>(3) For purposes of qualifying for low-income housing, does not include a person whose disability is based solely on any drug or alcohol dependence; and</p> <p>(4) Means “individual with handicaps”, as defined in § 8.3 of this title, for purposes of reasonable accommodation and program accessibility for persons with disabilities.</p>
MF	Section 8 Multifamily Programs	<ul style="list-style-type: none"> • Definition D – Disabled Family [24 CFR 5.403] • Definition E – Person with Disabilities [24 CFR 5.403]
MF	Section 236 and Section 221(d)(3)	<ul style="list-style-type: none"> • To view specific restrictions, definitions, and documentation requirements, consult HUD Handbook 4350.3: Occupancy Requirements of Subsidized Multifamily Housing Programs.⁵⁵
MF	Section 811 PRAC*	<ul style="list-style-type: none"> • Definition F – Disabled Household. [24 CFR 891.305] • Definition H – Person with a Disability (Handicapped Person) [24 CFR 891.505 and 891.305]
MF	Section 202 with 162 Assistance –Project Assistance Contract (PAC)*	<ul style="list-style-type: none"> • Definition G – Disabled (Handicapped) Family. [24 CFR 891.505] • Definition H – Person with a Disability (Handicapped Person) [24 CFR 891.505 and 891.305]
MF	Section 202 PRAC	NA
MF	Section 202/8*	<ul style="list-style-type: none"> • Definition G – Disabled (Handicapped) Family [24 CFR 891.505] • Definition H – Person with a Disability (Handicapped Person) [24 CFR 891.505 and 891.305] • Definition I – Nonelderly Disabled (Handicapped) Family [24 CFR 891.505]
<p>*NOTE: Under the Section 202/8, Section 202 PAC and Section 811 Programs, project eligibility may be limited to persons qualifying under a specific disability category: persons with physical disabilities, chronically mentally ill individuals, and developmentally disabled individuals.</p>		

Appendix H: Applicable Definition of Elderly– Determining HUD Eligibility

Definitions to establish eligibility or obtain HUD program benefits as an elderly family vary by program. Additionally, eligibility can vary from one development to another (i.e., a building overseen by a multifamily owner receiving HUD assistance). Some developments receive assistance from more than one program.

TABLE G: APPLICABLE DEFINITIONS OF ELDERLY - DETERMINING HUD PROGRAM/DEVELOPMENT ELIGIBILITY		
HUD Housing Assistance Program	Subprogram Type	Elderly Definition and/or Definition Type & [Corresponding Regulations]
HCV and PH	Section 8 and Public Housing Assistance	<i>Elderly family</i> means a family whose head, spouse, or sole member is a person who is at least 62 years of age. It may include two or more persons who are at least 62 years of age living together, or one or more persons who are at least 62 years of age living with one or more live-in aides.
MF	Section 8 Multifamily Programs	Definition A – Elderly Family [24 CFR 5.403]
MF	Section 811 PRAC*	NA
MF	Section 202 with 162 Assistance –Project Assistance Contract (PAC)*	NA
MF	Section 202 PRAC	Definition C –Elderly Person [24 CFR 891.205]
MF	Section 202 without Rental Assistance	Single people aged 62 or older; households the head of which (or the spouse) is aged 62 or more (12 U.S.C. 1701q(d)(4) as added by P.L. 86-372(9/23/59)
MF	Section 202/8*	Definition B – Elderly Family [24 CFR 891.505]
MF	Section 236 and Section 221(d)(3)	<p>Owner-Adopted Elderly Restrictions in Certain Federally Assisted Housing Projects that were Designed to Serve the Elderly</p> <ul style="list-style-type: none"> • Section 658 of Title VI of Subtitle D of the Housing and Community Development Act of 1992 (HCDA) permits owners of certain federally assisted projects to restrict occupancy in such projects (or portions of projects) to elderly families in accordance with the rules, standards, and agreements governing occupancy in effect at the time of the development of the project. • Applicability. Only owners of properties that were originally designed for the elderly and assisted through the following programs are eligible to apply this restriction: <ul style="list-style-type: none"> ○ Section 236 (insured and non-insured); ○ Section 221(d)(3) BMIR; and ○ Section 202 of the Housing Act of 1959, as Section 202 existed before the enactment of the Cranston-Gonzalez National Affordable Housing Act (i.e., Section 202 projects developed prior to 1991). See paragraph 3-20 B for 202/8 eligibility requirements. <p>To view specific restrictions, definitions, and documentation requirements, consult HUD Handbook 4350.3: Occupancy Requirements of Subsidized Multifamily Housing Programs.⁵⁶</p>

Appendix I: Total Household Expenses and Assistance Payments – Subsidy and Expense Calculations

In the NCHS-HUD linked files, the TOTAL_HOUSEHOLD_EXPENSES variable gives the total amount paid by a household towards their housing unit (i.e., rent and utilities). The variable ASSISTANCE_PAYMENT represents the amount of subsidy that HUD provides for the rent and utilities of the unit. In the linked data, the TOTAL_HOUSEHOLD_EXPENSES and ASSISTANCE_PAYMENT variables are found in the Transaction file. Although programs are categorized into three main types in the linked data, HUD collects the household subsidy and expenses data via separate modules organized by program and/or subprogram on the HUD-50058 and HUD-50059 administrative forms. To understand how total household expenses and assistance payments were calculated as summation variables for NCHS, researchers should be familiar with the design and layout of HUD’s administrative forms. Total household expenses and assistant payment calculations are described in detail below. Calculations outline specific equations, exceptions, and adjustments use by HUD analysts. Generally, descriptions use original variable names from HUD’s administrative databases (PIC and TRACS). The information is organized by HUD-50058 and HUD-50059 layout. For participants in MTW programs, certain variables and calculations may be inaccurate. However, the extent of the inaccuracy is unknown. Possible reasons for such inaccuracies are further described below.

Some exceptions are applicable to all programs on HUD Form-50058 and HUD Form-50058 MTW. First, HAP payments should not be negative. Therefore, if the variable TOT_HAP or NORMAL_TOTAL_HAP was less than zero and or missing then it was set to zero. Additionally, utility allowances are not allowed to be negative; therefore, any negative values are incorrect. If the variable UTILITY_ALLOW was less than zero or missing then it was set to zero.

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HUD-50058, Section 10: Public Housing and Turnkey III

This section covers subsidies and expenses associated with public housing. Calculations are organized below by total household expenses and assistance payment. In the linked data, this program is indicated by the value “PH” under the PROGRAM variable.

<i>Total Household Expenses</i>	<i>Assistance Payment</i>
The variable LOWER_RENT ^{mm} was used to populate total household expenses with two exceptions. First, if TYPE_OF_RENT_CODE ⁿⁿ equals 'F' (for “Flat”) then FLAT_RENT_AMT ^{oo} was used to populate the total household expenses variables. Second, if MIX_FAMILY_TTP ^{pp} was greater than zero then MIX_FAMILY_TTP was used to populate total household expenses.	Due to the nature of public housing assistance, payments for individual households cannot be calculated. This is because public housing subsidies are distributed to public housing agencies in two large lump payments: the Public Housing Operating Fund and the Public Housing Capital Fund.

^{mm}LOWER_RENT corresponds to line 10d on HUD-50058 and represents the amount of lower rent based on the lesser of TTP (line 10a) and ceiling rent (line 10c). If ceiling rent is zero, then lower rent is set equal to TTP (line 10a).

ⁿⁿTYPE_OF_RENT_CODE corresponds to line 10u on FORM-50058 and represents the code for the type of rent selected [Income Based (I) or Flat Rent (F)].

^{oo}FLAT_RENT_AMT corresponds to line 10b on FORM-50058 and represents the flat rent amount that a public housing household may be required to pay.

^{pp}MIX_FAMILY_TTP corresponds to line 10p on FORM-50058 and represents the total tenant payment for the unit based on the proration calculation.

HUD-50058, Section 11: Section 8: Project-Based Certificates and Vouchers

This section covers subsidies and expenses associated with project-based certificates and vouchers. Calculations are organized below by total household expenses and assistance payment. In the linked data, this program is indicated by the flag “HCV” in the PROGRAM variable. This subprogram is also coded as “PBV” for VOUCHER_TYPE.

Total Household Expenses	Assistance Payment
The following equation was used to calculate total household expenses: [GROSS_RENT ^{qq} - TOT_HAP ^{rr}]. If PRO_PERCENTAGE ^{ss} is greater than zero then MIX_FAMILY_TTP ^{tt} was used to calculate total household expenses.	The variable TOT_HAP was used to populate ASSISTANCE_PAYMENT with one exception. If PRO_PERCENTAGE was greater than zero then PRO_TOT_HAP ^{uu} was used to populate ASSISTANCE_PAYMENT.

Section 12: “Housing Choice Vouchers: Tenant Based Vouchers”

This section covers subsidies and expenses associated with the Certificates program and Housing Choice Vouchers. TOTAL_HOUSEHOLD_EXPENSES is calculated similarly for these programs but distinct differences exist. Calculations for Certificates and Housing Choice Vouchers are presented separately below.

Certificates: This section covers subsidies and expenses associated with the Certificate program. In the linked data, this program is indicated by the value “HCV” under the PROGRAM variable. This subprogram is coded as missing for VOUCHER_TYPE.

Total Household Expenses	Assistance Payment
The following equation was used to calculate total household expenses: [GROSS_RENT ^{vv} - TOT_HAP]. If PRO_PERCENTAGE ^{ww} was greater than zero then MIX_FAMILY_TTP ^{xx} was used to populate total household expenses.	TOT_HAP was used to populate ASSISTANCE_PAYMENT. However, if PRO_PERCENTAGE was greater than zero then PRO_TOT_HAP was used to populate ASSISTANCE_PAYMENT.

^{qq}GROSS_RENT corresponds to line 11n on FORM-50058 and represents the unit's total monthly rent amount including any utility allowance provided to the tenant.

^{rr}TOT_HAP corresponds to line 11r or 11aa on FORM-50058 and represents the total housing assistance payment (HAP) amount, computed as gross rent of unit (line 11n) minus TTP (line 11q) It is populated as zero if TTP (line 11q) is greater than gross rent of unit (11n).

^{ss}PRO_PERCENTAGE corresponds to line 11ag on FORM-50058 and represents the percent of family eligible for rental subsidy based on the total number eligible and total number in family.

^{tt}MIX_FAMILY_TTP corresponds to line 11ai on FORM-50058 and represents the total tenant payment for the unit based on the proration calculation.

^{uu}PRO_TOT_HAP corresponds to line 11ah on FORM-50058 and represents the total prorated housing assistance payment amount.

^{vv}GROSS_RENT corresponds to line 12n on FORM-50058 and represents the unit's total monthly rent amount. It includes any utility allowance provided to the tenant for the unit. Alternatively, this value could be from line 11n on FORM-50058.

^{ww}PRO_PERCENTAGE corresponds to line 12ae on FORM-50058 and represents the percent of the family eligible for rental subsidy based on the total number eligible and the total number in family.

^{xx}MIX_FAMILY_TTP corresponds to line 12ai on FORM-50058 and represents total rent amount the family pays to the owner, or the total credit amount the family receives to pay utilities.

Housing Choice Voucher: This section covers subsidies and expenses associated with the HCV program. In the linked data, this program is indicated by the value “HCV” under the PROGRAM variable. This subprogram is also coded as “TBV” for VOUCHER_TYPE.

Total Household Expenses	Assistance Payment
The following equation was used to calculate total household expenses: $[GROSS_RENT - NORMAL_TOT_HAP^{yy}]$. If PRO_PERCENTAGE is greater than zero then MIX_FAMILY_CONTRIBUTION ^{zz} was used to calculate TOTAL_HOUSEHOLD_EXPENSES.	NORMAL_TOT_HAP was used to calculate ASSISTANCE_PAYMENT. However, if PRO_PERCENTAGE is greater than zero then PRO_HAP was used to populate ASSISTANCE_PAYMENT.

Section 13: Section 8: “Moderate Rehabilitation (Mod Rehab)”

This section covers subsidies and expenses associated the Mod Rehab program and are organized below by total household expenses and assistance payment. In the linked data, this program is included in the value “VO” for the PROGRAM variable and is coded as missing for VOUCHER_TYPE.

Total Household Expenses	Assistance Payment^{aaa}
The following equation was used to calculate total household expenses: $[TENANT_RENT^{bbb} + UTIL_ALLOW^{ccc}]$. The following exception should also be noted. If PRO_PERCENTAGE ^{ddd} was greater than zero then the following equation was used to calculate TOTAL_HOUSEHOLD_EXPENSES: $[PRO_TENANT_RENT^{eee} + UTIL_ALLOW]$.	The following equation was used to calculate ASSISTANCE_PAYMENT: $[GROSS_RENT^{fff} - TOTAL_HOUSEHOLD_EXPENSES]$. GROSS_RENT was calculated using the following: $[RENT_TO_OWNER^{ggg} + [UTIL_ALLOW]]$. If PRO_PERCENTAGE was greater than zero then PRO_HAP was used to populate ASSISTANCE_PAYMENT.

Section 15: “Homeownership Vouchers”

This section covers subsidies and expenses associated the Homeownership Voucher program. In the linked data, this subprogram is included in the value “VO” for the PROGRAM variable. It is also marked as “HV” in the VOUCHER_TYPE variable.

^{yy}NORMAL_TOT_HAP corresponds to line 12r or 12ab on FORM-50058 and represents the amount of normal total housing assistance payment. This value is often the same as line 12m.

^{zz}MIX_FAMILY_CONTRIBUTION corresponds to line 12ag on FORM-50058 and represents the total family contribution toward the unit based on the proration calculation.

^{aaa} After the data release, a mistake was found in the code HUD analysts used to calculate assistance payment for Mod Rehab mixed status families. This mistake only affected three families.

^{bbb}TENANT_RENT corresponds to line 13k on FORM-50058 and represents the total rent amount the family pays to the owner or the total credit amount the family receives to pay utilities.

^{ccc}UTIL_ALLOW corresponds to line 13i on FORM-50058 and represents the monthly allowance amount for tenant supplied utilities if the rental payment does not include all utilities.

^{ddd}PRO_PERCENTAGE corresponds to line 13t on FORM-50058 and represents the percent of the family eligible for rental subsidy based on the total number eligible and the total number in family.

^{eee}PRO_PERCENTAGE corresponds to line 13x on FORM-50058 and represents the total rent amount the family pays to the owner or the total credit amount the family receives to pay utilities.

^{fff}GROSS_RENT corresponds to line 13p on FORM-50058 and represents the unit’s total monthly rent amount including the utility allowance provided to the tenant for the unit.

^{ggg}RENT_TO_OWNER corresponds to line 13h on FORM-50058 and represents the total monthly rent amount paid to the Mod Rehab unit owner under the lease.

Total Household Expenses	Assistance Payment
The following equation was used to calculate total household expenses: [GROSS_HOME_EXP ^{hhh} - NORMAL_TOT_HAP ⁱⁱⁱ]. If PRO_PERCENTAGE ⁱⁱⁱ was greater than zero then MIX_FAMILY_CONTRIBUTION ^{kkk} was used to populate TOTAL_HOUSEHOLD_EXPENSES.	NORMAL_TOT_HAP was used to calculate ASSISTANCE_PAYMENT. IF PRO_PERCENTAGE is greater than zero then ASSISTANCE_PAYMENT is equal to PRO_HAP

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Section 20: “MTW Public Housing”

This section covers subsidies and expenses associated with MTW public housing and are organized below by total household expenses and assistance payment. In the linked data, this program is indicated by the value “MTW PH” for the PROGRAM variable.

Total Household Expenses	Assistance Payment
The following equation was used to calculate total household expenses: [TENANT_RENT ⁱⁱⁱ + UTILITY_ALLOW ^{mmm}]. If MIX_FAMILY_TENANT_RENT ⁿⁿⁿ did not equal zero then the following was equation was used: [MIX_FAMILY_TENANT_RENT + UTILITY_ALLOW]	Due to the nature of public housing, no assistance payments can be calculated for MTW public housing. This is because all public housing subsidies are determined by the Public Housing Operating Fund and the Public Housing Capital Fund.

Section 21: “MTW Tenant Based or Project Based Assistance”

This section covers subsidies and expenses associated with MTW tenant-based and project-based programs. Subsidies and expenses are organized below by total household expenses and assistance payment. In the linked data, this program is indicated by the value “MTW HCV” for the PROGRAM variable.

Total Household Expenses	Assistance Payment
The following equation was used to calculate total household expenses: [TENANT_RENT ^{ooo} + UTILITY_ALLOW ^{ppp}]. If	Because MTW data is limited, total household expenses are estimated by estimating assistance payment and ensuring that gross rent is properly calculated. Total household expenses may not be reliable because the MTW tenant rent

^{hhh}GROSS_HOME_EXP corresponds to line 15k on FORM-50058 and represents gross homeownership expense. It is the sum of lines 15f, 15g, 15h, 15i and 15j.

ⁱⁱⁱNORMAL_TOT_HAP corresponds to line 15q on FORM-50058 and represents the amount of normal total housing assistance payment.

ⁱⁱⁱ PRO_PERCENTAGE corresponds to line 15ad on FORM-50058 and represents the percent of the family eligible for rental subsidy based on the total number eligible and the total number in family.

^{kkk}MIX_FAMILY_CONTRIBUTION corresponds to line 15af on FORM-50058 and represents the mixed family total family share.

ⁱⁱⁱTENANT_RENT corresponds to line 20b on FORM-50058 MTW and represents tenant rent to owner.

^{mmm}UTILITY_ALLOW corresponds to line 20d on FORM-50058 MTW and represents a tenant’s monthly utility allowance.

ⁿⁿⁿMIX_FAMILY_TENANT_RENT corresponds to line 20c on FORM-50058 MTW and represents the tenant rent to owner among a mixed-eligibility family.

^{ooo}TENANT_RENT corresponds to line 21n on FORM-50058 MTW and represents tenant rent to owner.

^{ppp}UTILITY_ALLOW corresponds to line 21j on FORM-50058 MTW and represents a tenant’s monthly utility allowance.

<p>MIX_FAMILY_TENANT_RENT^{qqq} did not equal zero then the following was used to calculate total household expenses: [MIX_FAMILY_TENANT_RENT + UTIL_ALLOW]. Additionally, GROSS_RENT^{rrr} was calculated. If GROSS_RENT equals zero and RENT_TO_OWNER^{sss} is greater than zero then GROSS_RENT = [RENT_TO_OWNER + UTIL_ALLOW]. If TOTAL_HOUSEHOLD_EXPENSES is greater than GROSS_RENT then TOTAL_HOUSEHOLD_EXPENSES was recoded to equal GROSS_RENT.</p>	<p>value is not consistent with documentation. MTW tenant rent is defined as the amount the tenant pays towards the unit's rent. However, the value of TENANT_RENT is often negative, which indicates that it may sometimes include a utility reimbursement. Sometimes, it is also greater than the gross rent which is not logical. Because it is not possible to tell what tenant rent actually represents in the MTW program, the computation of total household expenses should be considered unreliable. Therefore, the estimated assistance payment amount is also unreliable. Calculations were still completed, however, and the following equation and exceptions were used to calculate assistance payment: [GROSS_RENT - TOTAL_HOUSEHOLD_EXPENSES]. If FLAT_INC_BASED_SUBSIDY^{ttt} equaled 'F' (for Flat) and FLAT_SUBSIDY^{uuu} was greater than zero then ASSISTANCE_PAYMENT was set equal to the higher of two values: zero or the value used to populate FLAT_SUBSIDY.</p>
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Section 22: “MTW Homeownership”

This section covers subsidies and expenses associated with MTW HCV Homeownership vouchers. Subsidies and expenses are organized below by total household expenses and assistance payment. In the linked data, transactions from this program have the value “MTW HCV” for the PROGRAM variable and the value “HV” for the VOUCHER_TYPE variable.

Total Household Expenses	Assistance Payment
<p>The variable TOT_FAMILY_CONTRIBUTION^{vvv} was used to populate TOTAL_HOUSEHOLD_EXPENSES. If FLAT_SUBSIDY^{www} was greater than zero and FLAT_INC_BASED_SUBSIDY^{xxx} equals 'Flat (F)' then TOTAL_HOUSEHOLD_EXPENSES was set equal to [GROSS_HOME_EXP^{yyy} - FLAT_SUBSIDY]. Additionally, if TOTAL_HOUSEHOLD_EXPENSES was greater than GROSS_HOME_EXP then GROSS_HOME_EXP was used to value TOTAL_HOUSEHOLD_EXPENSES. Lastly, if</p>	<p>To calculate assistance payment, exceptions were considered. If FLAT_SUBSIDY was greater than zero and FLAT_INC_BASED_SUBSIDY equaled 'Flat (F)' then FLAT_SUBSIDY was used to populate ASSISTANCE_PAYMENT. After all adjustments were made for</p>

^{qqq}MIX_FAMILY_TENANT_RENT corresponds to line 21p on FORM-50058 MTW and represents the tenant rent to owner among a mixed-eligibility family.

^{rrr}GROSS_RENT corresponds to line 21k on FORM-50058 MTW and represents gross rent (line 21i + line 21j).

^{sss}RENT_TO_OWNER corresponds to line 21i on FORM-50058 MTW and represents amount rent paid to owner.

^{ttt}FLAT_INC_BASED_SUBSIDY corresponds to line 21a on FORM-50058 MTW and represents if rent is income-based or flat.

^{uuu}FLAT_SUBSIDY corresponds to line 21m on FORM-50058 MTW and represents the flat subsidy amount, if applicable.

^{vvv}TOT_FAMILY_CONTRIBUTION corresponds to line 22m on FORM-50058 MTW and represents total family share.

^{www} FLAT_SUBSIDY corresponds to line 22k on FORM-50058 MTW and represents the flat subsidy amount, if applicable.

^{xxxxx} FLAT_INC_BASED_SUBSIDY corresponds to line 22a on FORM-50058 MTW and represents if rent is income-based or flat.

^{yyy}GROSS_HOME_EXP corresponds to line 22j on FORM-50058 MTW and represents the gross homeownership expense.

GROSS_HOME_EXP was equal to zero then GROSS_HOME_EXP was set equal to $[M_HOMEOWNERSHIP_EXP^{zzz} + UTILITY_ALLOW^{aaaa} + M_OTHER_ALLOW^{bbbb}]$.	total household expenses, the following equation was used: $[GROSS_HOME_EXP - TOTAL_HOUSEHOLD_EXPENSES]$
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Regardless of program type, assistance payment amount and total household expenses are populated in Section B on Form-50059. In order to calculate total household expenses, assistance payments must be calculated first. Both calculations are described below.

Total Household Expenses	Assistance Payment
The following equation was used to calculation total household expenses: $[GROSS_RENT^{cccc} - ASSISTANCE_PAYMENT]$. If the program type was Section 236 ^{dddd} or BMIR (Below Market Interest Rate) ^{eeee} , then TOTAL_HOUSEHOLD_EXPENSES was set equal to $[TENANT_RENT_AMT^{ffff} + UTILITY_ALLW_AMT^{9999}]$.	ASSTANCE_PMT_AMT was used to populate ASSISTANCE_PAYMENT. Adjustments were made to ensure the assistance payment was not more than the gross rent and that the ASSISTANCE_PAYMENT was not negative.

^{zzz}M_HOMEOWNERSHIP_EXP corresponds to line 22g on FORM-50058 MTW and represents the monthly homeownership payment, if applicable.

^{aaaa}UTILITY_ALLOW corresponds to line 21j on FORM-50058 MTW and represents a tenant's monthly utility allowance.

^{bbbb}M_OTHER_ALLOW corresponds to line 22i on FORM-50058 MTW and represents other monthly allowances, if any.

^{cccc}GROSS_RENT is derived from values inputted on FORM-50059. It is the sum of contract rent (Section B, line 29) and (Section B, line 30) utility allowance.

^{dddd}This is marked as program type "H4" in the linked data under the PROGRAM_TYPE variable.

^{eeee}This is marked as program type "H5" in the linked data under the PROGRAM_TYPE variable.

^{ffff}TENANT_RENT_AMT is the amount paid by the tenant for rent without considering a utility allowance. The values are dependent upon the subsidy type and are derived from many fields on Form 50059.

⁹⁹⁹⁹UTILITY_ALLOW_AMT is the amount HUD or the Contract Administrator has approved for this unit type if all utilities are not included in the rent. The amount is taken from the project's Rental Schedule or the subsidy contract.

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