UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001

January 14, 2013

2010 CENSUS PLANNING MEMORANDA SERIES

No. 251

MEMORANDUM FOR The Distribution List

From: Burton Reist *[signed]*
Acting Chief, Decennial Management Division

Subject: Behavior Coding Report of 2010 Census Coverage Measurement Person Interviews

Attached is the Behavior Coding Report of 2010 Census Coverage Measurement Person Interviews. The Quality Process for the 2010 Census Evaluations, Experiments, and Assessments was applied to the methodology development, specifications, software development, analysis, and documentation of the analysis and results, as necessary.

If you have questions about this report, please contact Jennifer Leeman at (301) 763-5801.

Attachment

Behavior Coding Report of 2010 Census Coverage Measurement Person Interviews

U.S. Census Bureau standards and quality process procedures were applied throughout the creation of this report.

Jennifer Leeman and Heather Marsh
Center for Survey Measurement

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Executive Summary

The purpose of this behavior coding study is to determine how interviewers ask questions as well as how well respondents answer them during the 2010 Census Coverage Measurement Person Interview. These results can provide insights on how to improve survey questions, administrative procedures, and training of interviewers for future operations in preparation for the 2020 Census.

The 2010 Census Coverage Measurement Person Interview is part of an independent survey operation that measures the accuracy of the within household coverage of the census. For the 2010 Census, temporary interviewers conducted face-to-face interviews via Computer Assisted Personal Interviewing instrument. The 2010 Census Coverage Measurement Person Interview protocol also included an Information Sheet that interviewers handed to respondents for use during the interview (see Appendix 1). Respondents could keep this sheet.

Behavior coding is a survey research method for systematically analyzing interactions between interviewers and respondents. This method involves the application of a set of uniform codes to interviewer and respondent verbal behavior. Examples of codes applied to interviewer behaviors include reading the question as worded, making a major change to the question, and skipping the question entirely. Respondent behaviors include providing an answer that matches one of the response options, asking for clarification, and giving an answer that is not easily mapped on to the response options, among others. High rates of non-ideal behaviors (such as interviewers changing question wording or respondents providing answers that do not match response options) can indicate problems with specific questions. For example, if a particular question is associated with high rates of major changes, especially if interviewers administer other survey questions as written, it suggests that there may be issues with that question. Behavior coding can also identify problems with interviewer performance. For example, if the majority of questions are not read as worded, it can suggest a need for additional training or supervision if a standardized interview is to be achieved.

The research question for this study was: **How well do the Census Coverage Measurement Person Interview survey questions perform?** Specifically, the goal of the study was to document how interviewers asked questions and how respondents answered them. This research question was answered by examining 271 audiotaped 2010 Census Coverage Measurement Person Interviews. Six experienced Census Bureau interviewers trained in behavior coding assigned the codes. Each interviewer coded approximately 45 interviews. These six interviewers did not work on any other part of the 2010 Census Coverage Measurement Person Interview operation. The use of audiotapes limited our analysis to verbal behaviors; as non-verbal behaviors were not recorded. For each question in the 2010 Census Coverage Measurement Person Interview survey instrument, interviewers coded the interviewer's administration of the question, the respondent's first reply and the respondent's final answer. Additionally, all coders coded five of the same cases to test for reliability of the coding. Using Fliess' kappa statistic, we found substantial agreement among behavior coders for their coding of interviewer behavior and moderate agreement for respondent behavior.

Results

Across all 176 questions in the instrument, only half of all question administrations constituted ideal interviewer behavior: 49 percent were an exact reading or slight modification, and one percent were appropriate verifications. Forty-three percent of the total sample involved major changes to question wording by the interviewers. The low rate of ideal interviewer behavior is similar to what was observed in the 2006 Census Coverage Measurement Person Interview (Pascale, 2007), after which some modifications were made to the questions. It is only slightly better than the results of the behavior coding study of the 2010 Census Nonresponse Followup, which was also a personal interview operation (Childs and Jurgenson, 2011). In contrast, the rate of ideal interviewer behavior is far below the rates documented by the behavior coding study of the 2010 Census Coverage Followup operation, which employed experienced telephone interviewers (Childs, Leeman, and Smirnova, 2012).

Interviewer behavior deviated further from the ideal than respondent behavior. Overall, first level respondent behavior consisted of a response that was either codable or codable with interpretation 78 percent of the time. Only eight percent of responses were uncodable and two percent were clarification requests. A fairly high percentage, over eight percent, consisted of inaudible or other responses. Moreover, analysis of final outcomes, defined as the last answers provided by respondents to a given question, showed that even when respondents' first response to a question was uncodable, interviewers and respondents were often able to resolve these problems. Final outcomes were codable or codable with interpretation in 86 percent of cases, and final outcomes were uncodable only three percent of the time.

The question-by-question analysis revealed that interviewers deviated from the question wording and/or administration procedures on the majority of questions; of the 61 questions that met the minimum sample size of 20 administrations for inclusion in the analysis, all but three exceeded the 15 percent threshold of non-ideal interviewer behavior.[1] In the context of standardized interviewing, when interviewers generally read the questions as worded, those questions above the 15 percent threshold are considered problematic. However, when a standardized interview is not achieved and almost all of the questions exceed the threshold for non-ideal interviewer behavior, it is more difficult to know whether specific questions are problematic or whether interviewers are failing to conduct interviews as expected. Analysis of coder notes regarding the types of changes made can identify particular areas of concern that might be addressed in interviewer training or by modifying the questions.

Several patterns of non-ideal interviewer behavior were observed either alone or in combination across various questions. These patterns include: (1) omitting “middle initial” in questions soliciting a name (e.g., Household Roster); (2) neglecting to include text required on the first administration of a question (e.g., Race); (3) failing to reference a list on the Information Sheet (e.g., In-mover Household Type); (4) omitting an explicit mention of the timeframe (e.g., Age on Census Day); (5) asking a single question for the entire household (e.g., General Hispanic Origin); (6) assuming that all household members will have the same response (e.g., Race); (7)

[1] The 15 percent threshold level is a U.S. Census Bureau standard for behavior coding non-ideal interviewer and respondent behavior (Fowler, 1992; Landreth, Krejsa, and Karl, 2006; Oksenberg, Cannell, and Kalton, 1991).

omitting some of the categories in questions with numerous response options (e.g., Tenure), and (8) combining two questions into one (e.g., In-mover Cross Streets and In-mover Landmarks). The present study did not directly examine the impact of non-ideal interviewer behavior on data quality. However, analysis of changes revealed that some changes had an impact on question meaning, such as when verb tenses were changed from past to present. In other cases, the omission of explicit timeframes (e.g., "On April 1") may have failed to orient respondents to Census Day, and thus resulted in inaccurate answers.

As for respondent behavior, high rates of uncodable responses (i.e., above the 15 percent threshold) were observed in cases where respondents did not know the information being requested (such as an address), when the response options were numerous or contained similar categories (e.g., Tenure, Relationship) and for the Race question.

In some cases, modifications to the questions may facilitate improved interviewer performance, and increase data quality and consistency. For example, it is worth exploring whether using distinct questions and fields for first, middle, and last name promotes collection of this information.

In other cases, increased training and supervision may prove useful in achieving standardized interviews. It is worth noting that of the three behavior coding studies carried out on 2010 Census operations (Nonresponse Followup, Coverage Followup, and Census Coverage Measurement Person Interview) it was the Coverage Followup operation that showed the highest rates of ideal interviewer behavior (Childs, Leeman, and Smirnova, 2012). The data suggest that this difference relates to the difference in mode and type of interviewer between the operations: Coverage Followup was a centralized Computer Assisted Telephone Interviewing operation conducted by experienced interviewers whereas Nonresponse Followup and Census Coverage Measurement Person Interview were decentralized field operations conducted by newly hired interviewers. This explanation is consistent with the behavior coding study of the 2004 Census Test Coverage Followup (Landreth, Krejsa, and Karl, 2006), which found a higher rate of appropriate interviewer behavior for the experienced telephone interviews than the inexperienced in-person interviews with the same instrument. In addition to any inherent differences between telephone and in-person interviewing, the two modes were associated with important differences in supervision. The Computer Assisted Telephone Interviewing operations were conducted in controlled environments with close supervision and coaching, and achieved far greater standardization in the interviewing process than did inexperienced field staff operating with less direct supervision. New and emerging technologies may facilitate the provision of increased monitoring and feedback to interviewers conducting face-to-face interviews.

If standardized interviewing is a goal, it may be worthwhile to explore offering incentives, in addition to supervision and feedback of person interviews. Rather than rewarding interviewers based primarily on the number of interviews completed, increased monitoring may make it possible to provide incentives based on how well interviews are completed. Research is needed both on the impact of standardization on data quality as well as on the effectiveness of incentives for increasing standardization.

For these reasons, **we recommend using experienced interviewers for as much as possible in the 2020 Census interviewer-administered operations, experimenting with ways to monitor interviewers through different types of technology in order to give them timely feedback on their performance, and providing incentives and rewards for interviewers who follow standardized interviewing procedures.**

Other recommendations emerging from this study are related to the behavior coding methodology. Because standardized interviews are the goal, behavior coding studies examine whether questions were administered as written. In this study, we analyzed the kinds of changes made to questions in order to assess whether there were changes in question meaning. However, as noted above, the effect of deviation from the script was not examined directly. **We recommend that future studies examine the effect of deviations from the script on data quality.** In addition to providing additional information about the potential impact of non-ideal interviewer behavior, analyzing the links between interviewer behavior and data quality can also offer insights on the severity of different types of major changes.

When the questions are examined in isolation, without considering the complete interaction surrounding a question or the larger context, it is difficult to determine which deviations are truly problematic. Since the data set for an operation such as Census Coverage Measurement Person Interview contains so many questions, it is not feasible to train coders to subjectively evaluate various kinds of non-standard behaviors. **We recommend that in future studies researchers carry out preliminary analysis of fewer interviews and identify specific topics or questions for further analysis, rather than coding and analyzing entire interviews.** This would allow researchers to design better coding schemes a priori, which could be individualized for each question under analysis. This could also reduce the need for coder notes, thus reducing the time required for analysis after coding is completed. In addition, if a smaller number of issues were the focus, it would be possible to look at larger conversational contexts, rather than focusing on isolated utterances. The recording of personal interviews via the Computer Audio-Recorded Interviewing system may facilitate such an approach by allowing random access and sorting of questions and recordings (versus listening to recordings of entire interviews).

1. Introduction

1.1. Purpose of Study

In order to learn how census interviewers ask and how respondents answer survey questions, a series of behavior coding studies was carried out on three of the interviewer-administered survey questionnaires during the 2010 Census, including the Census Nonresponse Followup (NRFU), Coverage Followup (CFU), and Census Coverage Measurement Person Interview (CCM PI). The purpose of these studies was to document how interviewers ask, and respondents answer, questions. This can provide insight on how survey questions, administration procedures, and the training of interviewers may be improved and will help with preparations for the 2020 Census. This evaluation focuses on the CCM PI follows the Behavior Coding of the 2010 Census Coverage Measurement Person Interview Study Plan (see Childs, 2010).

There are numerous precedents for using behavior coding studies for the development of the Census Bureau's coverage surveys. In the 1990s, the coverage measurement survey was evaluated using behavior coding in years leading up to the Census 2000 Accuracy and Coverage Evaluation (A.C.E.), the predecessor of the CCM (Bates and Good, 1996). In addition, staff from the Statistical Research Division (SRD) analyzed interviewer and respondent behavior in the CCM PI operation conducted as part of the 2006 Census Test (Pascale, 2007). A number of changes were made to the question wording and skip patterns in the 2010 Census CCM PI instrument based on the findings from that behavior coding study as well as from other 2006 Census Test evaluations.

Following the difficulties that arose with the Census 2000 A.C.E. data (i.e., computer matching identified many duplicates not identified by the survey; see Mule, 2002), researchers expressed the desire to have behavior coding data from census production interviews, so that anomalies identified post hoc could possibly be explained by analyzing the interviewer and respondent interaction data. An additional goal of the present study was to be prepared to investigate any similar issues that might arise in the 2020 Census and to help the Census Bureau interpret any disparities between different operations.

1.2. Intended Audience

The intended audience for this paper is Census Bureau staff, as well as anyone interested in the particulars of questionnaire wording, design, and evaluation.

2. Background

2.1. Coverage Followup

The CCM PI is part of an independent survey operation that measures the accuracy of the census. The development and pretesting of the CCM questions included cognitive testing conducted prior to the 2006 Census Test (Kerwin, Franklin, Koenig, Nelson, and Strickland 2004). In addition, behavior coding of the CCM PI operation conducted in association with the 2006 Census Test (Pascale, 2007) led to additional modifications.

For the 2010 Census, the CCM PI was carried out by temporary interviewers who conducted in-person interviews via a Computer Assisted Personal Interviewing (CAPI) instrument. The CCM PI protocol included an Information Sheet that interviewers were to give respondents at the beginning of the interview. The Information Sheet had a 2010 calendar and the response options for four of the questions (see Appendix 1). Those questions make explicit reference to the Information Sheet.

2.2. 2010 CCM PI Module Descriptions

The 2010 Census CCM PI consisted of multiple modules. Some modules were administered to all respondents (e.g., Module E: Demographics), while others were only asked if a previous question led to that module. Similarly, there were multiple paths through the modules, depending on respondents' answers. Some questions followed a person-based format (i.e., all the questions are asked about a given household member before going on to the next person); while others followed a topic-based approach (i.e., each question is asked of all household members before going on to the next question). The purpose, content, and format of each module are described below (Linse, 2010). For the complete text of all questions, see Appendix 2 (except for Module A, which was not coded for CCM PI study).

Module A: Interview Attempt – The purpose of Module A is to identify the respondent and confirm that the interviewer is at the correct address, as well as gather information on attempts at the interview. This module was NOT coded for this study.

Module B: Roster – This module consists of several roster questions to collect the names of all people currently staying at the sample address (including people who stay overnight at the sample address more than they stay anywhere else) as well as probes for people that may have been missed during the census. Module B was the first module coded in this study.

Module C: Identifying In-movers – This module identifies any people who lived or stayed at the sample address on the day of the interview, and determine if they lived or stayed there on Census Day. This module consists of multiple questions asked of all household members on the roster, in person-based format. If someone is identified as an "in-mover," (a person at sample address now but not there on Census Day) the instrument then collects information regarding the in-mover's Census Day address to investigate where each person should have been on Census Day.

Module D: Identifying Out-movers – This module is used to identify any people who no longer live or stay at the sample address, but DID live or stay there on Census Day. For each "out-mover" (a person who lived at the sample address on Census Day – and who no longer lives there), the survey collects name, the date they moved out, the address to which they moved and lastly, the type of place into which they moved. After the data has been collected, the list of out-mover names is reviewed with the respondent for accuracy and completeness.

Module E: Demographics – Demographics (tenure, relationship to reference person, sex, date of birth, age, race, and ethnicity) are collected for all persons listed on the roster. This module

collects information in a topic-based format, which means that each question is asked of all household members before moving onto the next question.

Module F: Alternate Address Questions – This module collects information about each member on the roster regarding any other addresses where the people on the roster should have been counted in the census, or might have been duplicated in the census (such addresses are referred to as "alternate addresses"). Questions are asked about attending college, living with relatives, serving in the military or living elsewhere for work, as well as having a seasonal or second home and other relative's homes. Information is collected in a topic-based format, in the same manner as Module E, with each question asked of all household members before moving onto the next question.

Module G: Group Quarters – The purpose of Module G is to determine if anyone on the roster lived or stayed at a group quarters on Census Day. In Module G, respondents are shown an Information Sheet with a list of group quarters (e.g., dormitories, barracks, nursing homes, and correctional facilities) and asked, person-by-person, whether anyone stayed at any of these kinds of places. If yes, the address, type of facility, and information about when the person was there is collected.

Modules H and I: Verifying Alternate Addresses – Modules H and I attempt to verify that the interviewer has collected the correct address for each person listed on the household roster. Module H asks respondents to verify that all household members for whom no additional addresses were reported did in fact have just one address during the previous year (the module includes questions to capture any additional addresses reported at this time). Module I verifies the addresses for any individuals who reported more than one address (this is only for people who moved to the address from an alternate address listed in Module F, which collects moving dates for in-movers).

Module J: Census Day Address Determination – This module collects information regarding Census Day residence status for people listed on the household roster for whom there is not yet enough information to determine their Census Day residence. The goal, here, is to identify where they lived on Census Day according to census residence rules. For those household members with more than one address, Module J attempts to determine which address they were residing at on Census Day. These questions are person-based, meaning all questions are asked of one person before the next person is asked the same set of questions.

Module K: Interview Day Residence Determination – Similar to Module J, this module is also only asked of those household members whose current place of residence is not clear. The goal is to confirm that the interview day residence information is correct. Module K asks questions to determine where respondents lived on the day the CCM PI was conducted.

Module L: In-mover Address – Module L is only asked when an "in-mover" address is collected during the interview (this module is skipped if there was no in-mover address collected). The goal of this module is to collect sufficient information about the other address so that Census Bureau analysts can find the address in census records. The section is repeated if

there is more than one in-mover address (e.g., two roommates moved into the sample address unit from different places).

Modules M and W: Sample Address on Census Day – This module, if the current residents of the sample address did NOT live there on Census Day, is asked to determine the housing unit status (e.g., vacant or occupied, for rent or for sale, etc.) of the address. Also, if known, interviewers collect information on the household that moved out (generally the same questions as Modules E through G).

Module N: Respondent Questions – This module, the last one in the survey instrument, collects the respondent's name, telephone number, and preferred contact times should additional information be required.

2.3. Behavior Coding

The behavior coding method is used in survey research to analyze the interactions between interviewers and respondents during the administration of survey questions (Cannell, Fowler, and Marquis, 1968). This method, involves the systematic application of codes to verbal behaviors that interviewers and respondents display during the question/answer process (Oksenberg, Cannell, and Kalton, 1991; Sykes and Morton-Williams, 1987).

Behavior coding is a useful method for gathering information about the performance of survey questionnaires. If questions and response options are worded and structured in ways that respondents can easily understand and answer, then confidence grows regarding the ability of the survey questionnaire to meet its intended measurement objectives. In the context of standardized interviewing, an ideal interaction between an interviewer and a respondent consists of the interviewer asking the question exactly as worded and the respondent immediately providing an answer that is easily classified into one of the existing response categories. When the interaction deviates from this ideal, there may be problems with the question and/or response options that can lead to measurement error.

This method was first used to evaluate interviewer performance (Cannel, Lawson, and Hausser 1975) and is now frequently used to identify problematic questions during survey pre-testing (Oksenberg, Cannell, and Kalton, 1991; Sykes and Morton-Williams, 1987). Behavior coding has also been utilized to analyze question administration for surveys in production (e.g., Pascale and McGee, 2008; Lepkowski, et al. 1998).

The application and analysis of behavior codes for interviewer-respondent interactions allow researchers to pinpoint problems in the survey questionnaire (Fowler and Cannell, 1996). High rates of non-ideal interviewer or respondent behavior can indicate problems with specific questions, particularly if interviewers administer other survey questions as written. For instance, if interviewers frequently change the wording of a specific question, it may indicate that the questions is awkwardly worded or overly complex (Fowler and Cannell, 1996). In addition, when interviewers skip required a question, it may be indicate that they judge the question to be redundant or overly sensitive. When a question is overly long or complex, or contains difficult terms, it may be associated with a high rate of clarification requests on the part of the respondent

(Fowler and Cannell, 1996). High rates of uncodable answers for particular questions may indicate comprehension problems or a mismatch between the respondent's situation and the response categories.

In addition to identifying issues with particular questions, behavior coding can also identify problems with interviewer performance. For example, if the majority of questions are not read as worded, particularly if these questions have been previously tested, it can suggest a need for additional training or supervision if a standardized interview is to be achieved.

Behavior coding can be as complex or as simple as the researcher deems necessary. Coding can be implemented at the first level of interaction only (i.e., when an interviewer first asks the question and the respondent provides feedback before the interviewer speaks again) or several levels of interaction may be analyzed. Typically, when research intends to identify problem questions, coding the first level of interaction is sufficient because major problems are often evident when the question is first read, or during the initial response (Burgess and Paton, 1993; Esposito, Rothgeb, and Campanelli, 1994; Oksenberg et al., 1991; Smiley and Keeley, 1997). However, coding the final outcome of the interaction provides additional information on whether the interviewer and the respondent were ultimately successful in resolving difficulties with the question-and-answer process before moving on to the next question. This presents another evaluation measure for each question.

3. Methodology

3.1. Research Question

The research question for this study was: **How well do CCM PI survey questions perform in interviews?** Specifically, the goal of the study was to document how interviewers asked questions and how respondents answered them. This research question was answered by generating and analyzing behavior coding data for a small sample of interviews to assess how often the interviewer successfully read the questions as worded and how often the respondent generated a response that could easily be classified into one of the response options (i.e., a codable answer) following standard practice (Fowler and Cannell, 1996; Oksenberg, Cannell, and Kalton, 1991; Sykes and Morton-Williams, 1987).

When non-ideal interviewer or respondent behavior exceeds a particular threshold (e.g., 15 percent of administrations) for a particular question, this is often considered an indication of a problem with that question (Fowler, 1992; Landreth, Krejsa, and Karl, 2006; Oksenberg, Cannell, and Kalton, 1991). Questions that exceed this threshold of undesirable behavior are analyzed in detail to understand what particular problems the interviewers and/or respondents are experiencing. However, the identification of patterns of behavior for individual questions requires a minimum number of question administrations. For this study, like many other behavior coding studies conducted at the Census Bureau, only questions that were administered 20 or more time were included in the question-by-question analysis.

3.2. Behavior Coding Methodology

Behavior coding was carried out on a sample of 2010 Census CCM PI interviews that had been recorded as part of two separate studies: (1) Respondent Debriefings of the 2010 Census Coverage Measurement Person Interview and Person Followup (Nichols, 2010)[2] and (2) Comparative Ethnographic Studies of Enumeration Methods and Coverage (Schwede, 2009). These two studies were designed to provide additional information about how these instruments performed in the field. Rather than a random sample of the CCM universe, they targeted geographic areas expected to contain high percentages of individuals with specific demographic characteristics. The Respondent Debriefing study included areas with high concentrations of military personnel, college students, and seasonal residents (as well as general sites) in order to evaluate the performance of the CCM PI instrument in identifying individuals who might have been accidentally omitted or counted twice on the census. The Comparative Ethnographic Studies sites were chosen in order to include high percentages of all officially recognized racial groups as well as Hispanics and Middle Eastern individuals. For both studies, observers accompanied CCM PI interviewers on household visits. After obtaining consent, observers audiotaped the interviews using cassette recorders. Following the interviews, observers conducted and recorded debriefings with the respondents. For the present study, only the recorded interviews (not the debriefings) were analyzed. All tapes that had been received and processed at the U.S. Census Bureau headquarters in time to be included for this study were included, with the exception of two interviews that were conducted in Spanish. Ninety-nine tapes from the Respondent Debriefings study and 172 from the Comparative Ethnographic Studies were included in the present study.

Once the recordings were obtained, the Center for Survey Measurement (CSM) conducted this study by having specially trained interviewers at the Tucson Telephone Center carry out the behavior coding. CSM staff prepared the study plan, behavior coding procedures, and all coding instruments. CSM staff also prepared training materials and conducted a three-day training session for the six members of the telephone staff who carried out the coding. These coders were telephone interviewers who had prior experience in behavior coding, including having conducted coding for two other 2010 Census behavior coding projects. The coders had more than six years of experience as telephone interviewers. Coders were selected based on their supervisors' judgment of their reliability as interviewers. Once the coding was completed, the coded data was sent to CSM for analysis.

Because the in-person interviews were recorded on audiotapes (rather than video tapes or a Computer Audio Recorded Interviewing – CARI – system), behavior coders did not have access to any non-verbal communication such as gestures or head-nodding, nor were they able to assess the entries made into the Computer Assisted Personal Interviewing (CAPI) instrument. Moreover, because the interviews were conducted in the field, at respondents' homes, there was sometimes background noise. In some cases, this meant that an entire interview was inaudible and excluded from analysis; in other cases, individual items, or parts of interactions, were inaudible. As is explained below, coders were instructed to code individual utterances as "inaudible or other" if they could not be heard or understood.

[2] This study was cancelled after data collection had been completed.

Coders were assigned a caseload comprised of randomly selected recordings, with the exception that each caseload included five interviews that were coded by each of the six interviewers for the purposes of reliability assessment. Coders did not know which cases were the production cases and which cases were for reliability. Each coder was assigned approximately 45 cases. Using a prescribed framework of behavior codes, coders listened to each recording and entered codes into a database designed for this project by CSM staff. The framework of behavior codes used for this project was adapted from Oksenberg, Cannell, and Kalton (1991). For each question, coders coded first level interviewer and respondent behavior, Break-ins (interruptions of the first level question administration) and final outcomes.

As in previous behavior coding studies, interviewer behavior was coded using five major categories (See Table 1). The first category, "exact reading or slight modification" (ES), was used when the interviewer read the question exactly as worded or changed it only slightly. The second code, "major change" (MC), recorded when the interviewer made a major change to the wording of a question. The third category, "appropriate verification" (V+) recorded that the interviewer verified a response appropriately by reading the question prior to verifying information given earlier in the interview. The fourth category, "inappropriate verification" (V-), was used when the interviewer verified a response without first reading the question and response options as required. The final interviewer behavior code used was "inaudible or other" (I/O).

Table 1. Interviewer Behavior Codes

Code	Explanation of Behavior
ES	Exact Reading or Slight Modification
MC	Major Change
V+	Appropriate Verification: question read as worded before verifying information provided earlier in interview
V-	Inappropriate Verification: response verified without reading question beforehand
I/O	Inaudible or Other
S+	Skip with information provided previously
S-	Skip without information provided

Source: 2010 CCM PI Behavior Coding Training Materials

A difference between the interviewer behavior codes used in this study and the previous two 2010 Census behavior coding studies was the use of two codes for skipped questions in Module E, the Demographics module.[3] Both the S+ and the S- codes were used for questions that should have been asked but were skipped completely. While any skip is a violation of procedures and is always considered non-ideal interviewer behavior, coders were asked to distinguish between cases where the respondent had already explicitly provided the information (S+) and cases where the information had not been provided (S-). The motivation for this distinction was to gain a

[3] The original intent was to have coders use these 'skip' codes for all modules, but in practice the multiplicity of paths through the instrument, the complexity of the skip patterns, and the fact that coders were relying solely on audiotapes made it nearly impossible to determine which questions were required and incorrectly skipped. For this reason, the coding protocol was modified and interviewers were asked to record skips (S+ and S-) only for Module E, the Demographic Module, which is asked of all household members and has a branching structure that is easier to follow, especially for the experienced interviewers who carried out the coding.

better sense of whether skipped questions might be negatively affecting data quality. If the information about a question had been provided previously, the skipping constituted a violation of training procedures, but was less likely to lead to compromised data. In contrast, when questions were skipped without the information having been explicitly provided, there was a greater likelihood of incorrect responses being recorded or of important information being overlooked.

There were seven codes used for respondent behavior (See Table 2). The first code, "clarification request" (CL) was used when the respondent asked for clarification or repetition. The second code, "codable response" (CA) was used if the respondent provided an answer that matched the response options. The third code, "codable with interpretation" (CWI), indicates that an answer could be matched onto a response option with some interpretation by the interviewer. The fourth code captures a "qualified answer" (QA) such as "Well, I think he's about 18." An "uncodable response" (UC) is one that does not match a response option. "Doesn't know" (DK) was used if the respondent reported not knowing the answer, whereas "refusal" (REF) means that the respondent refused to respond. "Inaudible or other" (I/O) answers made up the last category. In addition to coding the first level respondent behavior, coders also coded the "final outcome," or the last answer that the respondent provided, regardless of how many conversational turns it took to arrive at this answer. The same codes were used for final outcomes as for first level respondent behaviors.

Table 2. Respondent Behavior Codes

Code	Explanation of Behavior
CL	Clarification request
CA	Codable response
CWI	Codable with Interpretation
QA	Qualified Answer
UC	Uncodable response
DK	Doesn't Know
REF	Refusal to answer
I/O	Inaudible or other

Source: 2010 CCM PI Behavior Coding Training Materials

"Break-ins" (BR) were coded separately from both interviewer and respondent behavior, in order to be able to capture whether and how the question was asked (regardless of the interruption), as well as how the respondent answered. Sometimes when a respondent interrupts, the interviewer is still able to ask the entire question, though other times they are not. If a respondent interrupted and the interviewer did not finish reading the question, this was coded as a break-in and the interviewer behavior was coded as a major change. If the respondent interrupted to provide an answer, this was coded as a break-in and the answer was coded according to the codes for respondent behavior.

Following are two hypothetical examples illustrating the level of exchanges and their corresponding codes.

Example 1:

I:	What was Johnnie's age on April 1, 2010?	First level	ES: Exact reading or slight modification
R:	What?	First level	CL: Clarification request
I:	How old was Johnnie on April 1, 2010?	Second level	(not coded)
R:	13.	Final Outcome	CA: Codable

Example 2:

I:	Does someone in this household own this house, apartment or mobile home, with a mortgage or loan (including home equity loans), own it free and clear, rent it, or occupy it without having to pay rent?	First level	ES: Exact reading or slight modification
R:	I own it.	First level	UA: Uncodable
I:	Do you own with a mortgage or loan, or do you own it free and clear?	Second level	(not coded)
R:	What did you say?	Second level	(not coded)
I:	Do you have a mortgage, or do you own it free and clear?	Third level	(not coded)
R:	With a mortgage	Final Outcome	CA: Codable

Coders were trained to take detailed notes any time that there was a major change, non-ideal verification, uncodable answer, or clarification request, as well as any time something noteworthy occurred. These notes were used for the additional analysis described below.

After the coding was completed, CSM carried out further analysis on each question that was administered at least 20 times and exceeded 15 percent non-ideal interviewer behavior (i.e., major change, inappropriate verification, inappropriate skips or uncodable responses). For questions asked at least 20 times and above the 15 percent threshold, the coders' notes were analyzed in order to gain further insight on potential problems with the question. Specifically, CSM researchers analyzed the coders' notes and classified them into post hoc categories for each question. These categories were neither exhaustive nor mutually exclusive. Instead, categories were created for behaviors that were particularly problematic and/or frequent, such as omitting reference to the Information Sheet or particular kinds of rephrasings. Because several non-ideal behaviors sometimes co-occurred, a single major change could belong to several post hoc categories.

3.3. Inter-coder Reliability

To assess the reliability of the behavior coding results, we sought to determine whether coders would apply the same codes to the same observable behaviors. The coders independently coded the same five interviews and agreement statistics were generated with the resulting data. For this project, inter-coder reliability was assessed using Fleiss' kappa statistic. The Fleiss' kappa provides a conservative measure of agreement among two or more coders in their application of the behavior codes, because it accounts for the possibility of agreement by chance (Fleiss, 1981). There is no universally accepted method of evaluating a kappa statistic. However, according to

Landis and Koch (1977), kappa scores greater than or equal to 0.81 indicate an almost perfect level of agreement across coders, 0.61 to 0.80 indicate substantial level of agreement, scores ranging from 0.41 to 0.60 indicate a moderate level of agreement, scores from 0.21-0.40 indicate fair agreement, and scores below 0.20 represent slight to poor agreement.

As shown in Table 3, overall, the kappa scores reflected substantial reliability with regard to interviewer behavior and moderate agreement with regard to respondent behavior and final outcome.

Table 3. Behavior Coding Reliability

Behavior category	Kappa score
Interviewer Behavior	.624
Respondent Behavior	.537
Final Outcome	.582

Source: CCM PI 2010 Kappa Analysis.xlsx

4. Limitations

One limitation of this study is that the interviews do not represent a random sample of the CCM PI operation. Instead, they were recorded as part of studies that targeted specific kinds of places. Thus, findings from the present study cannot be generalized.

The sample size for this study was such that all "gate" questions had sufficient sample size to be analyzed but many questions that follow skip patterns were not administered enough times to have a sufficient sample size for analysis. This limits the findings of this study to those questions that had a large enough sample size, which is 20 or more, for analysis.

Another limitation relates to the way that the recording was carried out. As noted in the methodology section, observers accompanied the interviewers and recorded the interviews. The presence of these observers and the fact that the tape recorders were present and visible (in contrast with the less intrusive telephone recording of CATI behavior coding studies) may have affected the behavior of interviewers and respondents. In addition, interviewers and respondents interacted in-person and the interviews were only recorded on audiotape. As a result, any non-verbal communication was not recorded and could not be coded or analyzed.

In addition to these limitations related to the dataset, there are also limitations inherent to the behavior coding methodology itself. Behavior coding does not directly examine the relationship of non-ideal interviewer behaviors to data quality. Nonetheless, analysis of coder notes can determine when changes to question wording have an impact on question meaning, which can affect answers provided, thus compromising data quality. Behavior coding can also identity difficulties with question administration.

An additional limitation of behavior coding relates to limiting the analysis to individual conversational turns in isolation, without considering the rest of the exchange surrounding a particular question. When behavior coding looks only at the first level, as is typical, information

offered in subsequent levels is overlooked. Similarly, the question-by-question analysis of the behavior coding method misses the flow of conversation and is unable to measure the influence of previous questions and the larger conversational interaction.

5. Results

5.1. General Findings

After presenting overall findings across all questions, the questions are discussed by module.[4] As noted above, behavior coding studies at the Census Bureau generally use 15 percent as the threshold of non-ideal interviewer or respondent behavior, above which a question merits further analysis. For this reason, the results section of this paper focuses on questions with high rates of non-ideal interviewer behavior or uncodable responses. For tables including all questions administered in the survey and corresponding interviewer and respondent behaviors, see Appendices 2-14.

Interviewer Behavior

Across all questions in the instrument, only half of the question administrations constituted ideal interviewer behavior: 49 percent were an "exact reading or slight modification" (ES), and one percent were "appropriate verifications" (V+). In this study, 43 percent of the total sample of all questions involved a "major change" (MC) to question wording. Seven percent of all question administrations were "inappropriate verifications" (V-). Lastly, one percent of interviewer behavior was "inaudible or other" (I/O) (see Table 4).

The low rate of ideal interviewer behavior is similar to what was observed in the 2006 Census Test of the 2006 CCM PI, where a similar behavior coding study revealed that ideal interviewer behaviors across questions was only 49 percent (Pascale, 2007). Behavior coding research on the 2010 Census NRFU operation found only a 39 percent rate of ideal interviewer behavior (Childs and Jurgenson, 2011).

Table 4. Interviewer Behavior

ES	MC	V+	V-	I/O
48.8%	42.6%	1.0%	6.5%	1.1%
(n=6,437)	(5,625)	(129)	(862)	(138)

N = 13,191 Missing: n = 44

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Question-by-question analysis of the 61 questions that met the minimum sample size for inclusion revealed that the high rates of non-ideal interviewer behavior were widespread. All but three of the 61 questions analyzed exceeded the 15 percent threshold.

[4] Questions in Module A were not coded for this project. The purpose of Module A is to collect information for the subsequent interview questions, as well as gather information on attempts at the interview.

Respondent Behavior

Overall, first level respondent behavior consisted of a response that was either "codable" (CA) or "codable with interpretation" (CWI) 79 percent of the time. Only eight percent of responses were "uncodable" (UC) and two percent were "clarification requests" (CL). Over nine percent consisted of "inaudible or other" (I/O) responses.

Table 5. Respondent Behavior

CA	CWI	UCA	CL	DK	REF	I/O	UC
75.3%	4.1%	0.7%	2.1%	1.2%	0.1%	9.6%	8.2%
(n=9,861)	(538)	(96)	(277)	(162)	(18)	(1,252)	(1,068)

N = 13,092 Missing: n = 2,055

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Reviewing respondent behaviors by question revealed differences across questions. Of the 58 questions administered more than 20 times, 12 of them were associated with uncodable responses 15 percent of the time or more. In particular, respondents exhibited difficulty with the Race, Specific Hispanic Origin and Tenure questions, as well as various questions that required them to report an address. The specific issues related to each question are discussed in greater detail in the question-level presentation of results.

Final Outcome

Final outcome, defined as the last answer provided by the respondent to a given question, was slightly improved over first level respondent behavior. Even when respondents' first response to a question was uncodable, interviewers and respondents were often able to resolve these problems. Final outcomes were codable or codable with interpretation in 85 percent of cases.

Table 6. Final Outcome

CA	CWI	UCA	DK	REF	I/O	UC
82.5%	3.1%	0.4%	1.3%	0.1%	9.5%	3.2%
(n=10,763)	(403)	(51)	(164)	(13)	(1,238)	(417)

N = 13,092 Missing: n = 2,098

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Break-ins

Break-ins, that is, when the respondent interrupts the interviewer during the question reading, were observed on four percent of all question administrations. As noted above, break-ins were coded separately from both interviewer and respondent behavior, meaning that a question with a break-in was also associated with both an interviewer behavior and a respondent behavior. However, in this study, we consider break-ins in the discussion of interviewer behavior because they are related to how the interviewer was able to administer the question. This is not meant to suggest that break-ins are a reflection of poor interviewer behavior. Instead, they may be indicative of problems with the question. In the discussion of individual questions, it is indicated when a high rate of break-ins (ten percent or higher) was observed. For data on break-ins for all questions, see Appendix 15.

5.2. Findings by Module

In this section, analysis of the questions associated with non-ideal behavior in each module is provided. Only those questions in which the sample size is adequate (n>20) and either non-ideal interviewer behavior or uncodable responses exceeded 15 percent are included in the detailed analysis. Non-ideal interviewer behavior consisted of major changes, inappropriate verifications and, in Module E, inappropriate skips.

Module B: Rosters
Coding for this project began with Module B. This module collects the names of all the current residents at the sample address, and checks for people who may have been missed during the census.

The goal of the module is to collect names of all current residents, including any people who stay overnight at the housing unit more often than they stay anywhere else, and any other people the respondent might not initially consider listing. This latter group includes people between residences, highly mobile people, nonrelatives, extended relatives, and children. There are two different paths for creating a list of people living at the unit. The first path is for people who are staying at a seasonal unit or in transitory living quarters who have no other place they usually live. The second path is for the more typical permanent housing unit. Most CCM rosters are created using the questions from the second path.

Out of the nine questions in Module B that met the minimum sample size of 20 administrations, seven met the threshold for non-ideal interviewer behavior, as shown in Table 7:

Table 7. Module B Questions above 15 percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Household Roster (ROSTER_1B)	We'll start by making a list of everyone who lives or stays (here/at address) now. Let's start with you. What is your first name? Middle initial? Last name? Anyone else?	65 (24.3%)	0 (0.0%)
Name of Someone who Stays Often (NAME_OFTEN2)	What is that person's first name? Middle initial? Last name? Anyone else?	12 (40.0%)	1 (3.3%)
Missed Babies and Children (NAME_BABY)	Are there any babies, foster children, or other children who stay (here/at address) that you didn't mention?	60 (22.5%)	1 (0.4%)
Unrelated People and Relatives (NAME_REL)	Have I missed any relatives or unrelated people who live or stay (here/at address)?	45 (17.2%)	2 (0.8%)
Alternate Address (ROSTER_ADDR1)	What is the address of the other place (you/name) stayed?	7 (18.4%)	0 (0.0%)
Alternate Address Cross Streets (ROSTER_CROSS)	What are the cross streets closest to that address?	13 (61.9%)	0 (0.0%)
Review of Roster (ROSTER_REV)	I am going to show you the list of people I have recorded. Is everything spelled correctly? Is the list complete?	122 (46.4%)	0 (0.0%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

In Module B, the interviewer begins by informing the respondent that they will make a list of everyone who lives or stays at the address currently, and then asks for the person's first name, middle initial, and last name. After completing the roster, in subsequent questions the interviewer then asks about various categories of people who may have been omitted. For example, the interviewer asks specifically about babies, foster children, relatives, and unrelated people who might live or stay at the address. If the respondent answers affirmatively, the interviewer then asks for the first name, middle initial, and last name of the individuals to be added (Name of Someone who Stays Often is a follow-up probe like this).

The Household Roster question had a major change rate of 24 percent, with 62 percent of these changes " (15 percent of all administrations) consisting of the interviewer omitting or modifying the notion of "living or staying. In some cases, this was because interviewers skipped the entire introductory sentence "Let's start by making a list of everyone who lives or stays here" and instead simply asked for the respondent's name. In other cases, interviewers did include an introductory sentence but omitted "or stays," for example saying, "We need to make a list of everyone living here." A similar problem was also documented in the 2010 Census NRFU behavior coding study (Childs and Jurgenson, 2011).

Another pattern of non-standard interviewer behavior in Module B was related to the asking for an individual's first name, middle initial, and last name in the Household Roster question. This behavior was also observed on all the questions that required the interviewer to collect the name

of a household member not previously reported, such as a baby, someone who stays there often, or a relative. However, most of these questions are quite rare, and thus they did not meet the minimum number of 20 administrations to be further analyzed. They all exhibited relatively high rates of major changes (five out of 13 administrations, combined across questions). The one name question other than Household Roster that had a sufficient sample size was Name of Someone who Stays Often (30 administrations), which had a major change rate of 40 percent. In all of the questions involving the collection of names, interviewers often omitted part of the question or did not specifically request first name, middle initial, and last name. For Household Roster, 34 percent of major changes consisted of interviewers saying, "Let's make a list of everyone who lives or stays here" without specifically requesting names. In other cases, interviewers just asked respondents how to spell an individual's name. This accounted for six percent of major changes to Household Roster (less than two percent of all administrations) and 17 percent of major changes to Name of Someone who Stays Often (or approximately seven percent of all administrations). Another change resulted when interviewers asked for names, but neglected to ask for first name, middle initial, and last name. This was the case in nine percent of the major changes for Household Roster, and 10 percent of the major changes for Name of Someone who Stays Often.

Leaving out a specific request for names, and especially for the middle initial, is problematic because, while respondents generally do provide first and last names, they may leave out the middle initial if it is not specifically requested. In this study, because only first level interactions and final outcomes were examined, it is not possible to know whether interviewers followed up by asking about middle initials. One possible modification to the question worth considering is to divide the name questions into three distinct questions, perhaps highlighting the importance of all three. Even though there are three distinct fields, the wording and presentation of the question presents it all together which might have contributed to respondents forgetting to mention all three or else thinking that only part (perhaps first name and last) was needed. In addition, it might also be worth exploring whether collecting middle names, rather than middle initials, highlights the importance of this part of the name. It might also have the additional benefits of aiding in record matching, and would be more consistent with the conventions used for Spanish and many other languages where multiple names, but not initials, are commonly used.

Respondents gave codable responses to Household Roster and Name of Someone who Stays Often, 97 and 91 percent of the time, respectively. However, because middle initial was not a required response, it is not known whether respondents would have provided middle initials more frequently had interviewers been more consistently asked for them.

Another type of problem that occurred across questions in this module was for interviewers to drop part of the question, omitting a specific category of person that might have been overlooked in compiling the roster. The Missed Babies and Children question ("Any babies, foster children or other children") and Unrelated People and Relatives ("Any relatives or unrelated people") had major changes 22 and 17 percent of the time, respectively. For Missed Babies and Children, interviewers did not ask about foster children on 15 percent of the major changes (three percent of all administrations), dropped the category of other babies for five percent (one percent of all administrations) and omitted other children 38 percent (nine percent of all administrations). In

Unrelated People and Relatives, many of the major changes, 25 percent, consisted of interviewers asking only about relatives and not about any unrelated people.

Another component of the Missed Babies and Children question that was frequently omitted was the phrase "that you didn't mention." When this happened in households where no children had been mentioned, it did not impact the flow of interaction or impact the data. However, in cases where respondents had included children on the original roster, it sometimes caused confusion or apparent irritation. Moreover, break-ins were observed on ten percent of all question administrations for this question, suggesting that some omissions were due to interviewers being interrupted by respondents.

For Unrelated People and Relatives and Missed Babies and Children, responses were codable or codable with interpretation greater than 85 percent of the time, but it is not possible to know whether respondents would have mentioned other individuals had all categories in the question been read as worded.

When respondents reported at a roster question that individuals had another address, two questions were used to gather information about that address. The first of these, Alternate Address had a major change rate of 18 percent, while the second, Alternate Address Cross Streets, had a rate of 62 percent. These two questions were somewhat infrequent, and as result, even though they met the 15 percent threshold, there were only seven and 13 instances of major changes, respectively. It is difficult to draw strong conclusions based on the distribution of major change types in such a small sample. However, these questions are quite similar or even identical to other questions that solicit addresses and cross streets in other modules of this instrument that occurred more frequently (e.g., Alternate Address and Alternate Address Cross Streets, in Module C), and they show similar patterns of major changes. Specifically, on eight occasions, interviewers converted the questions into yes/no format (e.g., "Do you know that address?" or "Do you know any cross streets?"). In addition, on three occasions, interviewers combined the cross street question with the landmarks question which followed it, such as by asking "You wouldn't happen to know anything about that address like cross streets, landmarks or anything?" (For more discussion of the frequency of major changes to address and cross street questions, see the next section). Respondents provided codable responses more than 85 percent of the time.

The Review of Roster question, which is asked of all respondents, was administered appropriately 52 percent of the time and had major changes 46 percent of the time. The most common major changes, accounting for 90 percent of all major changes to this question, were:

- Asking only if the list is complete and not asking about the spelling (e.g., "So here's a roster of everybody here; does that look correct?").
- Not asking if the list is complete but rather, if the names of everyone on the list are spelled correctly (e.g., "I am going to show you a list of people I have; did I spell everything correct?").
- Making a statement about the list rather than explicitly asking whether the list is complete and correctly spelled (e.g., "Here is a list of everyone that I put in.").

Review of Roster had an acceptable level of codable responses.

Module C: Identifying In-movers

The goal of this module is to identify people at the sample address on the day of the CCM PI interview who did not live or stay there on Census Day. If someone is identified as an "in-mover," the interviewer attempts to collect the address where the person lived on Census Day, so that records from that address can be checked to determine where the individual should be counted on Census Day. These questions are asked of all household members on the roster.

Module C contains 11 questions. All seven questions in Module C that met the minimum sample size of 20 administrations also met the threshold for non-ideal interviewer behavior (See Table 8). Only In-mover Current Status was associated with uncodable responses more than 15 percent of the time.

Table 8. Module C Questions above 15 Percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Census Day Whereabouts (HERE_CD)	NOW USING YOUR CALENDAR THINK BACK TO WHERE (YOU WERE/NAME WAS) LIVING ON April 1.* (Were you/was name) living (here/at address) on April 1 or somewhere else?	453 (58.3%)	60 (7.7%)
In-mover Address (INMVR_ADDR1)	What was (your/name's) address on April 1?	33 (48.5%)	5 (7.4%)
In-mover Cross Streets (INMVR_CROSS)	What are the cross streets closest to that address?	23 (63.9%)	1 (2.8%)
In-mover Landmarks (INMVR_LNDMRKS)	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	27 (75.0%)	1 (2.8%)
In-mover Household Type (INMVR_TYPE1)	Is the place (you were/name was) staying on April 1 a house or apartment or another type of place like those shown on List A, ON THE INFORMATION SHEET I GAVE YOU?	50 (83.3%)	1 (1.67%)
In-mover Current Status (INMVR_BACK)	Is (address) (your/name's) only residence now, or (do you/does name) still spend some time during the year at (address)?	49 (59.0%)	3 (3.6%)
In-mover Moving Date (INMVR_DATE1)	What date did (you/name) move (here/to address)?	23 (37.7%)	7 (11.5%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

*Capital letters are used to indicate that the particular text is read only on the first administration of a given question.

The first item exceeding the 15 percent threshold of non-ideal interviewer behavior is Census Day Whereabouts, which asks whether each individual was living at the sample address on Census Day. The major change rate for this question was 58 percent. Analysis of the notes taken by coders revealed several patterns. The most common major change, which occurred on 68 percent of major changes, was that after asking about the respondent, interviewers simply asked something like "And how about (name)?" "And (name) was also living here?" for the remaining

household members. This type of change omits the explicit timeframe reference, which is intended to ensure that the respondent orients to the April 1, 2010, date. In addition, there were also several cases of interviewers asking the question a single time for all household members, such as “And was everyone else living here too?” Combining the question in this way runs the risk of impacting data quality by failing to have the respondent consider every individual separately, particularly when the roster may contain some tenuously attached people.

Concerns about whether the question administration sufficiently orients respondents to the Census Day timeframe also arise regarding the omission of specific parts of the question, which has three main components:

(1) Information Sheet reference - first administration only (“Using your calendar”) - omitted in seven percent of major changes (four percent of all administrations).
(2) Time orientation - first administration only (“Think back to where you were living on April 1”) – about 12 percent of major changes (seven percent of all question administrations) omitted this phrase.
(3) Main question (“Were you/was name living here April 1 or somewhere else?”) – As noted above, 68 percent of major changes consisted of interviewers eliding the question and simply asking about subsequent household members by name. In addition, there were three instances where interviewers asked the question but dropped the required reference to April 1 (e.g., “Was name> living here or somewhere else?”).

These changes may have a negative impact on data quality as the respondent may not orient to Census Day, and instead focus on the day of the CCM PI interview.

Another common change was for interviewers to omit the expression “or somewhere else.” This omission does not result in a change of meaning, since if an individual was not living at the address on April 1, it follows that they were living someplace else. However, when included, it serves to highlight that the question is asking about the location where the individual was on Census Day, by contrasting the current address with “somewhere else.” Given that the question is already quite complex, eliminating this phrase might result in a more consistent reading of the rest of the question, including the reference to the calendar and the time orientation. One possibility is “Was (name) living here on April 1?” While shortening the question might have its advantages, one disadvantage to making it a yes/no question is that it possibly makes it easier to answer “yes” automatically.

In addition to a high rate of major changes, Census Day Whereabouts also had a high rate of inappropriate verifications – approximately eight percent of all question administrations, which was higher than any other question in the instrument. These included interviewers asking things like “And you were living here on April 1?” or “I'll ask the same question for everybody: so everybody was here on April 1?” Such responses lead to underreporting of individuals who had a different situation.

Item In-mover Address, which was administered with a major change 49 percent of the time, is intended to collect the Census Day address of the mover. Interviewers frequently omitted the reference to April 1; this was the case for 82 percent of all major changes (40 percent of all

question administrations). This question immediately follows Census Day Whereabouts and is only used if an individual is reported as having lived somewhere else on Census Day. It is not possible to assess the impact on data quality directly using behavior coding methodology. However, it is possible that transient individuals who moved more than once between Census Day and the CCM PI might mistakenly report an interim address, rather than the address on April 1.

Another common major change consisted of interviewers rephrasing the question as a yes/no question such as "Do you know the address?" This occurred 39 percent of major changes (19 percent of all administrations), and can be attributed to conversational norms that disfavor asking questions that respondents cannot answer, and that allow respondents to interpret this yes/no question as a request for the address. Although the behavior coding did not examine subsequent levels, it is possible that interviewers requested the address if it was not provided in response to this question. About 21 percent of the time (10 percent of all administrations), interviewers dropped "address" from the question and asked, in a very general way, "Where was (name) living?"

The questions that ask about the closest cross streets (In-mover Cross Streets) and nearby landmarks (In-mover Landmarks) were also unsatisfactorily administered with major changes occurring 64 and 75 percent of the time, respectively. As was the case with In-mover Address, interviewers often did not read the question as worded and instead asked a yes/no question such as "Do you know the cross streets?" or "Do you happen to know the cross streets around there?" This occurred in 56 percent of the major changes.

The most serious type of major change consisted of interviewers combining the cross street and landmark questions into one conversational turn but asking things such as "Do you know any cross streets or landmarks around there?" This occurred on 74 percent of major changes to the In-mover Cross Streets question (47 percent of all administrations). However, it should be noted that it is possible that respondents communicated non-verbally that they did not know the cross street (e.g., shaking head "no" as interviewer started to read the question, leading the interviewer to modify the question on the fly); such non-verbal behavior cannot be detected on audio recordings. Combining these two questions may lead respondents to provide only one or the other, thus reducing the information available to match addresses, which is important for the CCM PI operation.

On the landmarks question (In-mover Landmarks), all of the interviewers who made a major change to this question dropped the last part of the question: "that would help someone find that address." For example, interviewers might ask: "Are there any landmarks nearby such as schools?" "And are there any landmarks around there, like I don't know, like a post office, restaurant, school, just anything?" Further, slightly more than half of the major changes also involved interviewers only reading the first part of the question, thereby not providing any examples of landmarks. For example, interviewers sometimes asked: "Any landmarks close by?" or "And landmarks or anything else?" These changes impact the quality and usefulness of the data provided by respondents.

The next item meeting the threshold of non-ideal interviewer behavior is In-mover Household Type, which intends to measure whether the address is a housing unit or a group quarters. The question asks whether the address was a house or an apartment, and makes reference to a list of mostly group quarters types on the Information Sheet (see Appendix 1). This question had a major change 50 of the 60 times it was administered (83 percent). Analysis of coder notes revealed that interviewers often failed to reference List A on the Information Sheet. This occurred 37 times, representing 74 percent of major changes and 62 percent of all administrations of this question. The break-in rate for this question was 15 percent of all administrations, so it is possible that at least some of the failure to reference the list was due to respondents' tendency to interrupt this question. It is worth considering whether moving the list reference to the beginning of the question might avoid this problem. For example, the question could read: "LOOK AT LIST A ON THE INFORMATION SHEET I GAVE YOU. Is the place (you were/name was) staying on April 1 a house or apartment or another type of place?"

Interviewers also sometimes presupposed that it was a housing unit, asking questions such as "Is that a house?" or "That's a house, right?" (13 times or 26 percent of major changes). In addition, on half of the major changes (42 percent of question administrations), interviewers dropped any reference to April 1. These changes undermine the goal of the question, which is to determine whether it is a housing unit or group quarters.

Another question with a high rate of non-ideal interviewer behavior is In-mover Current Status ("Is (address) your/name's only residence now or do you/does name still spend some time during the year at (address)?"), with major changes occurring 49 out of the 83 times the question was administered (59 percent). Thirty-two times interviewers asked respondents if the address is the individual's only residence now and dropped the rest of the question about whether the respondent or another household member spends "some time during the year at (address)?" In twelve other instances, interviewers did not name the other address, instead referring to it by city name, with a phrase like "your daughter's place" or simply "the other address." Thus, 90 percent of administrations coded as major changes (53 percent of administrations) involved the omission of the specific other address. In some instances, these may actually have been appropriate interviewer behavior; when respondents had not provided complete alternate addresses, the CAPI instrument used this kind of generic phrasing. Because this research relied exclusively on audiotapes, there was no way for coders to assess whether this was the case.

In-mover Current Status was the only question in Module C where the rate of uncodable responses exceeded the fifteen percent threshold. Specifically, respondents gave uncodable responses 19 percent of the time. For this item, about 63 percent of the uncodable responses are a result of respondents simply answering yes/no without providing the address on that conversational turn. Some of these could have been in response to an inadequately posed question (e.g., "Is this your only residence now?"). Eighteen percent of the uncodable responses are due to respondents not providing a definitive answer, but rather, attempting to explain a complex situation, for example, "She's come here on vacation."

Like In-mover Current Status, for In-mover Moving Date ("What date did you/name move here/to that address?"), which had a major change rate of 38 percent, interviewers did not always mention the other address explicitly. In addition, for 52 percent of major changes, they shortened

the question by not asking "what date," but rather, asked more generally about other household members: "Did (name) move same time as you?" And (name) moved here the same day?"

Module D: Identifying Out-movers

This module is used to identify individuals who were living at the address on April 1 but who no longer live there. If an "out-mover" is identified, questions about the name and current address of that individual, as well as the move-out date, are then administered.

All of the four questions in Module D with 20 or more administration met the threshold for non-ideal interviewer behavior. All four had acceptable rates of uncodable responses, ranging from four to nine percent.

Table 9. Module D Questions above 15 Percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Out-mover Identification (OUT_MOV)	Now let's talk about (address). Was there anyone else living or staying (here/at address) during March or April who is no longer living (here/there)?	80 (32.7%)	1 (0.4%)
Out-mover Name (OUTMOV_NAME)	What is that person's first name? Middle initial? Last name? Anyone else?	5 (25.0%)	3 (15.0%)
Out-mover Moving Date (OUTMOV_DATE1)	What date did (name) leave (address) to live somewhere else?	17 (73.9%)	0 (0.0%)
Out-mover Whereabouts Knowledge (OUTMOV_KNOWLEDGE)	Do you know (name) well enough to answer questions about other places where he/she might have stayed during March or April?	7 (31.8%)	0 (0.0%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

The CCM PI uses Out-mover Identification, which is administered once per household, to determine whether there is anyone else who lived at the house during March and April who no longer lives there. About 33 percent of the question administrations contained a major change. In 75 percent of these cases, interviewers did not introduce the question with "Now let's talk about (address)" and instead asked questions such as: "Was there anyone else living or staying here during March or April who is no longer living here?" When the interview is taking place at the address in question and no other addresses have been discussed at this point in the interview, this phrase is not necessary and there should be no negative impact on data quality. Since the majority of major changes are of this type, the high rate of "non-ideal" interviewer behavior does not raise as many concerns as for other questions.

About ten percent of major changes (3 percent of all question administrations) involved interviewers failing to mention March or April. While this was relatively rare, it does raise concerns about data quality. The omission of the timeframe completely changes the meaning of the question, and thus could fail to identify an out-mover or could identify people unnecessarily.

Out-mover Name – "What is the first name, middle initial and last name? Anyone else?" – had a major change five out of the 20 times it was administered (25 percent). In most of these, interviewers did not specifically ask for the first name, middle initial and last name, but rather just asked for the name generally, with common questions being: "And what are their names?" "What was your mother's name?" Failing to specifically request the first name, middle initial, and last name in Out-mover Name, does not change the meaning of the question but it may result in fewer middle initials being collected (see discussion of Household Roster and Name of Someone who Stays Often in the previous section). Respondents gave codable responses on 95 percent of all administrations.

The question that requests the move date, Out-mover Moving Date, had a major change 74 percent of the time. The most common change was that interviewers dropped "to live somewhere else" from the end of question, and instead simply asked when the individual had left. This seems unlikely to have negatively impacted data quality.

Out-mover Whereabouts Knowledge – "Do you know (name) well enough to answer questions about other places where he/she might have stayed during March or April?" was administered 22 times, with major changes observed seven of those times, for a major change rate of 32 percent. The small sample size means that clear patterns are difficult to discern. However, review of coding notes revealed that on four of the seven administrations, interviewers dropped the timeframe from the questions. Further, on three of the seven administrations interviewers dropped "other places" from the question, saying, for example: "And do you know her well enough to answer the same questions?" or "Do you know her well enough to know where she was staying in March or April?" Five percent responses were Uncodable.

Module E: Demographics

In Module E the interviewer collects information about household tenure and any alternate names used by household members, relationship to the reference person, date of birth, and sex, as well as race and ethnicity for everyone on the roster. These data facilitate matching the people collected in the CCM interview to people listed in the census for the sample housing unit. These questions are administered in a topic-based format, meaning that each question is asked for every person on the roster before going onto the next question. All of the questions except for the nickname question (which is not a question in the census) were identical to the demographic questions used in the Census Nonresponse Followup.

Module E contains 16 questions administered at least 20 times, and all of them met the fifteen percent threshold for non-ideal interviewer behavior. The data for the questions about name, tenure, relationship, sex and age are presented in Table 10 and the data for the race and ethnicity questions are shown in Table 11. Four questions form Module E also had uncodable response rates above fifteen percent: Tenure, Reference Person, Race and Specific Hispanic Origin.

Table 10. Module E Questions above 15 Percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-	S-
Other Name (OTHER_NAME)	(DO YOU/DOES NAME) EVER GO BY A NICKNAME OR MIDDLE OR MAIDEN NAME?* How about (name)?	422 (48.0%)	11 (1.3%)	47 (5.3%)
Nickname (OTHER_NAME2)	What is the other name (you go/name) goes) by?	21 (12.5%)	20 (11.9%)	11 (6.6%)
Tenure (TENURE)	Do you or does someone in (this/that) household own this (hutype) with a mortgage or loan - including home equity loan, own it free and clear, rent it, or occupy it without having to pay rent?	149 (56.4%)	12 (4.6%)	0 (0%)
Reference Person (REF_PERS)	Of the people who live (here/there), who (owns/rents) (this/that) (hutype)?	83 (35.5%)	18 (7.7%)	8 (3.4%)
Relationship (RELATION1)	PLEASE LOOK AT LIST B ON THE INFORMATION SHEET I GAVE YOU AT THE BEGINNING OF THE INTERVIEW.* How (are you/is name) related to (you/name)?	283 (45.5%)	82 (13.2%)	5 (.8%)
Sex (SEX)	(Are you/Is NAME) male or female? How about (name)?	275 (31.1%)	347 (39.3%)	56 (6.3%)
Date of Birth (DOB)	What is (your/name's) date of birth?	348 (39.3%)	1 (0.1%)	12 (1.4%)
Age on Census Day (ASK_AGE)	What was (your/name's) age on April1, 2010?	23 (69.7%)	2 (6.1%)	2 (6.1%)
Age on Census Day Confirmation (CONFIRM_AGE)	FOR THE CENSUS, WE NEED TO RECORD AGE AS OF APRIL 1, 2010.* So just to confirm (you were/name was) (age/less than one year old/not yet born) on April 1, 2010?	524 (61.9%)	9 (1.1%)	35 (4.1%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

*Capital letters are used to indicate that the particular text is read only on the first administration of a given question.

Other Name had a major change 48 percent of the time. The most common change (45 percent of major changes, 22 percent of all administrations) was that interviewers asked only about a nickname or middle name, omitting the reference to "maiden name." Because coders could not see the interaction or the CAPI screen, it was not always clear to them whether this omission was based on respondent gender (gender and age had not yet been collected but could have been inferred by the interviewer at this point). For 22 percent of the major changes, interviewers did not ask about the middle name. Another non-ideal reading was for interviewers to ask the question once for the entire household, such as "Do you or someone in your household go by a

nickname or a maiden name?" This pattern accounted for most of the inappropriate skips, as well as for six percent of major changes.

The question used to request the alternate name, Nickname, exceeded the 15 percent non-ideal interviewer behavior as a result of high rates of inappropriate verifications as well as major changes. Review of coder notes revealed that in all but two of these cases the respondent had just provided the alternate name and the interviewer simply repeated it or asked for the spelling without first reading the question. In the other two cases, the slight changes in wording reflected the respondent's previous answer and did not cause a change in meaning such as "What is your middle name?"

The Tenure question had a major change 56 percent of the time. This consisted primarily of interviewers dropping one or more of the response categories. For example, in 20 percent of the major changes, interviewers dropped all references to owning, for example by asking: "Do you or does somebody in the household rent this house?" Twenty-nine percent of the major changes consisted of interviewers dropping the reference to renting, asking for example: "Do you or does someone in this household own this with a mortgage or loan or own it free and clear?" In 68 percent of the major changes (38 percent of total administrations), interviewers dropped the last part of the question: "occupying without paying rent." Such changes may affect data quality, particularly if someone reports incorrectly because they do not hear their appropriate response option.

Respondents provided uncodable responses to the Tenure question 59 of 265 times (22 percent). The majority of these uncodable responses consisted of answering "yes" or "no," or answering "own" without specifying with or without a mortgage. Some of these could have been in response to a major change question. The patterns of interviewer and respondent behavior were similar to those observed in the behavior coding study of the 2010 NRFU operation, which was also a face-to-face personal interview (Childs and Jurgenson, 2010).

It is worth noting that the break-in rate for Tenure was 18 percent of all administrations, one of the highest rates in this study. Given the high rate of major changes as well as the uncodable responses, it is worth considering whether to modify the question. In particular, it might make sense to reduce the number of response options, possibly by utilizing a branching structure.

After determining household tenure, the next question asks which household member owns or rents the house. The major change rate for Reference Person was 36 percent. The most common change was for interviewers to assume that the respondent (rather than another household member) was the owner or renter, asking for example "So you own the house then?" or "Who owns the house? Is that you?" In some cases, this may have been a logical assumption, especially if other household members were children. The uncodable response rate for this question was 27 percent, with most of these responses consisting of multiple-person answers such as "both," "the two of us" or "both my parents." This accounted for 42 of the 58 uncodable responses (72 percent; 20 percent of total responses), suggesting that this is the primary difficulty in responding to this question.

The next question solicits information about household members' relationship to the reference person and refers to the Information Sheet which the interviewer was to have provided to the respondent at the beginning of the interview. As is discussed, one problem that was observed across questions is the failure to reference the lists on the Information Sheet. From the behavior coding data, it cannot be determined if the respondent was provided with the Information Sheet, only that it was not referenced explicitly.

Relationship had major changes 46 percent of the time. For over half of these changes (54 percent; 25 percent of total administrations), interviewers did not read the question as worded but instead asked the respondent to confirm the relationship, asking for example, "And NAME is your wife, right?" or "And NAME is your son too?" Inappropriate verifications constituted an additional 13 percent of administrations of the Relationship question, making this a common pattern of behavior. It is not possible to determine from the analysis of questions in isolation whether such information had been previously provided or whether these verifications were based on interviewer assumptions. In addition, 27 percent of major changes involved interviewers dropping the reference to the list on the Information Sheet, which is required on the first administration.

Responses to Relationship were uncodable 33 percent of the time. The majority of these responses (115 out of 195) consisted of respondents saying "son" or "daughter" without specifying biological or adopted. In other cases, respondents simply answered "yes," perhaps misinterpreting the question as asking whether the person was related, or perhaps in response to a rephrased yes/no question asked by the interviewer (the consideration of conversational turns in isolation makes it difficult to link question-asking behaviors with response behaviors). Sixteen of the uncodable responses (eight percent) consisted of a term such as "friend," "boyfriend," "girlfriend," or "baby's mama." Analysis of coder notes also revealed that sixteen responses that coders classified as uncodable (eight percent) actually consisted of respondents answering with a family-related category not on the list such as "niece," "aunt" or "cousin." It should not have been difficult for interviewers to map these onto existing response options (i.e., "other relative").

The next item that exceeded the fifteen percent threshold of non-ideal interviewer behavior is Sex – "Are you male or female? How about NAME?" For this question, coders classified interviewer behavior as a major change 31 percent of the time. Thirty-six percent of these instances consisted of interviewers introducing the question in a way to let the respondent know that the question needs to be asked for verification purposes: "I have to verify sex for all persons, so you are female and your son is male?" "Now, just for verification purposes, you are female correct?" "And NAME, I'm going to take a real stab at this, she's female?" Eighty percent of the major changes consisted of interviewers dropping "male" or "female," sometimes also phrasing it as a verification or confirmation. Typical phrasings include "Is NAME female?" and "NAME is a male, correct?" It is important to note that coders classified these administrations as major changes, in fact, interviewers had been trained that such verifications were acceptable. Therefore, the high rate of major change for this question is not as problematic as it first appears.

The Date of Birth question had a major change 39 percent of the time. Here, 54 percent of the major changes were cases of households with more than two members where interviewers did not explicitly ask for date of birth for each person; instead, they simply named other household

members. For example, interviewers asked “And, NAME?” or “And your sisters?” For 26 percent of the major changes, interviewers did not ask about “date of birth,” asking instead for the respondent’s or a household member’s birthday: “What is NAME’S birthday?” This should not have any negative data quality implications.

After the respondent provides date of birth, the CCM PI instrument calculates age on Census Day and confirms it with the respondent in Age on Census Day Confirmation. If the date of birth is unknown, the age on Census Day is asked with Age on Census Day. The major change rate for these questions was 62 percent and 70 percent, respectively. The majority of major changes (74 percent) consisted of interviewers omitting reference to the April 1 timeframe. An example of such administrations include: “Do you know how old NAME is?” This omission is very problematic, especially for Age on Census Day as we know that individuals with birthdays between Census Day and follow-up operations sometimes misreport their age.

Nineteen percent of the major changes consisted of the interviewer failing to ask the Age on Census Day Confirmation as a question and instead saying something like “Okay, so she was 28” or “Which would make him 35.” It is not possible to tell from coder notes whether rising intonation was used to signal that this was in fact a question or whether respondents confirmed these calculations.[5]

Following these questions on date of birth and age are the race and ethnicity questions. These questions collect the self-reported racial and ethnic background of respondents as required by the Office of Management and Budget’s (OMB) 1997 guidelines. According to the OMB guidelines, people of Hispanic, Latino, or Spanish origin may be of any race. For this reason, the Hispanic origin question is separate from Race, and both questions must be administered for all individuals. These two questions refer to the Information Sheet (see Appendix 1). All seven of the race and ethnicity questions that were administered 20 or more times exceeded the threshold for further analysis (see Table 11).

[5] In both of these cases, the reference date is also missing so these administrations were also coded as missing the timeframe.

Table 11. Race and Ethnicity Questions above 15 Percent Non-Ideal Interviewer Behavior

General Hispanic Origin (SPAN_ORIG)	PLEASE LOOK AT LIST C. ARE YOU OF HISPANIC, LATINO, OR SPANISH ORIGIN?* How about (name)?	312 (35.1%)	50 (5.7%)	94 (10.6%)
Specific Hispanic Origin (SPAN_ORIG2)	(Are you/ Is name) Mexican, Mexican American, or Chicano; Puerto Rican; Cuban; or of another Hispanic, Latino, or Spanish origin; for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on?	40 (37.0%)	15 (13.9%)	18 (16.7%)
Race (RACE)	PLEASE LOOK AT LIST D AND CHOOSE ONE OR MORE RACES. <FOR THE CENSUS, HISPANIC ORIGINS ARE NOT RACES.> (ARE YOU/IS NAME) WHITE; BLACK, AFRICAN AMERICAN, OR NEGRO; AMERICAN INDIAN OR ALASKA NATIVE; ASIAN; NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER; OR SOME OTHER RACE?* What is (name's) race?	449 (51.2%)	80 (9.1%)	137 (15.6%)
American Indian or Alaskan Native Tribe (AIAN)	YOU MAY LIST ONE OR MORE TRIBES.* What is (your/name's) enrolled or principal tribe?	23 (14.4%)	8 (5.0%)	43 (26.9%)
Specific Asian (ASIAN)	YOU MAY CHOOSE ONE OR MORE ASIAN GROUPS.* (Are you/ Is name) Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, or another Asian group, FOR EXAMPLE, HMONG, LAOTIAN, THAI, PAKISTANI, CAMBODIAN AND SO ON.	15 (14.3%)	21 (20.0%)	23 (21.9%)
Specific Native Hawaiian or Pacific Islander (NHPI)	YOU MAY CHOOSE ONE OR MORE PACIFIC ISLANDER GROUPS.* (Are you/ Is name) Native Hawaiian; Guamanian or Chamorro; Samoan; or another Pacific Islander group, FOR EXAMPLE FIJIAN, TONGAN, AND SO ON?	3 (12.0%)	3 (12.0%)	9 (36.0%)
Other Race Group (SOR)	What is (your/name's) other race group?	7 (17.1%)	6 (14.6%)	12 (29.3%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx
*Capital letters are used to indicate that the particular text is read only on the first administration of a given question.

The General Hispanic Origin question is a yes/no question asking whether an individual is of Hispanic, Latino or Spanish origin, and it serves as a filter question for a subsequent question requesting the specific Hispanic origin. Even though General Hispanic Origin only requires a yes or no response, the list on the Information Sheet shows the question in a way similar to the paper census form, with various yes responses: "Yes, Mexican/Mexican-American/Chicano," "Yes, Puerto Rican," etc. In this way, the CCM PI format can be considered almost a hybrid between the census paper form and the CFU CATI instrument, which consisted of a yes/no question without explicit response options of specific Hispanic origins.

The specific Hispanic Origin question, Specific Hispanic Origin follows the general question in order to provide more detailed Hispanic origin detail. The questions read as follows: "Are you Mexican, Mexican American, or Chicano; Puerto Rican; Cuban; or of another Hispanic, Latino, or Spanish origin; for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on?" It is only asked if the respondent replied in the affirmative to the General Hispanic Origin question.

Major change rates for interviewer behavior were 35 percent of the time for General Hispanic Origin and 37 percent of the time for Specific Hispanic Origin. For General Hispanic Origin, over 50 percent of changes consisted of the interviewer simply asking the name of various household members, without saying "How about?" This change could have been considered a slight modification rather than a major change, suggesting that the interviewer behavior was not as problematic as first appears. Nonetheless, 20 percent of the major changes involved interviewers dropping the reference to the list that is required on the first administration, asking for example, "Are you guys of Hispanic, Latino or Spanish origin?" In these cases, we cannot tell if the respondent was exposed to the visual aid for this question.

In 15 percent of major changes (5 percent of total administrations) to General Hispanic Origin, interviewers ask for confirmation from the respondents, assuming, in many ways, that other household members have the same ethnicity as the respondent, asking for example "And she's of Hispanic, Latino or Spanish origin I take it?" It is worth noting that an additional 16 percent of all administrations consisted of inappropriate verifications or skips, showing the frequency of these types of interviewer behavior. This type of problem was observed throughout the race and ethnicity questions, as is discussed below. Break-ins occurred on almost 14 percent of all administrations of General Hispanic Origin, and interviewers' non-ideal behavior was influenced by the tendency of respondents to interrupt this question. For General Hispanic Origin, uncodable responses were below the 15 percent threshold for further analysis.

The patterns of non-ideal interviewer behavior for Specific Hispanic Origin were similar to General Hispanic Origin. Forty-eight percent of major changes consisted of interviewers assuming that all household members shared a common Hispanic origin, asking for example, "So he is Mexican American like you?" This accounts for 48 percent of major changes to Specific Hispanic Origin (18 percent of total administrations). Inappropriate verifications and skips constitute another 30 percent of total administrations. The omission of some response options occurred on 33 percent of major changes to Specific Hispanic Origin.

In contrast with General Hispanic Origin, Specific Hispanic Origin showed a higher rate of uncodable responses: 15 percent. However, given the relatively low frequency of administrations, together with high rates of inaudible data, clear patterns are difficult to discern. About half of the uncodable responses consisted of respondents answering "yes," presumably to a question that was phrased as a confirmation (e.g., "You said she was Mexican?"), and about a quarter consisted of respondents claiming a pan-Hispanic or mixed Hispanic origin.

Several patterns of non-standard interviewer behavior observed on the Hispanic origin questions were also observed across the race questions. In addition to the failure to reference the list on the Information Sheet, non-ideal interviewer behavior observed across questions included omitting the text or instructions required on the first administration and presupposing that the respondent or another household member is of a specific race. In addition to these common problems, some question-specific issues are discussed below.

Immediately following the General Hispanic Origin and Specific Hispanic Origin questions is Race. On the first administration, the question includes: a) an instruction to look at the list; b) an explicit statement informing respondents that they may report more than one race; for persons in households where someone has answered affirmatively to the Hispanic origin question, an explicit statement that Hispanic origins are not considered races; and d) explicit reading of the response options (including "some other race"). On subsequent administrations, the question is reduced to "What is NAME's race?"

Fifty-one percent of the time that Race was asked, an interviewer committed a major change. Approximately 20 percent of these changes (10 percent of all administrations) consisted of interviewers either completely omitting the text required on the first administration or dropping the phrase "choose one or more races." Of the 877 times that Race was administered, 661 were first administrations, meaning that 13 percent of respondents were not explicitly told that they could choose multiple races. For 37 percent of major changes, interviewers omitted all or some of the race categories, with "some other race" accounting for half the omissions. The break-in rate for Race was 10 percent of all administrations, these omissions are due to respondents interrupting before the entire question could be read.

As noted above, for all of the race and ethnicity questions, interviewers sometimes asked yes/no confirmation questions, which presupposed a specific identity. For Race, 23 percent of major changes consisted of rephrasings such as "So you're White, right?" "Look at list D. Are you White?" or "And NAME is the same?" Similar behavior was also observed on the American Indian or Alaskan Native Tribe and Specific Asian follow-up questions where they constituted 48 and 53 percent of major changes, respectively. These kinds of assumptions also account for the unacceptable rate of non-ideal interviewer behavior on the Specific Native Hawaiian or Pacific Islander follow-up question. For that question, major changes were observed 12 percent of the time, but inappropriate verifications and skips constituted 12 and 32 percent of question administrations, respectively.

Like Specific Hispanic Origin and Race, on Specific Asian interviewers sometimes omitted some or all of the response categories. For example, interviewers sometimes asked: "Under Asian, is she Asian Indian, Chinese Filipino?" or "For Asian, which one?" This type of change occurred

on 27 percent of major changes to Specific Asian. For American Indian or Alaskan Native Tribe and Specific Asian, interviewers also sometimes omitted the text required on the first administration. This occurred on 26 and 20 percent of major changes respectively.

In addition to unacceptable levels of non-ideal interviewer behavior, Race was also associated with an uncodable response rate above the threshold: 16 percent. Analysis of coder notes revealed that the majority of these uncodable responses consisted of respondents specifying a specific Asian category (e.g., Vietnamese) to the initial question (prior to the follow-up), a Hispanic origin (e.g., Mexican), or another national category not officially considered a race (e.g., Lebanese). In some cases, respondents answered with a combination of racial and national categories. There were also a few cases that could have been coded as "doesn't know" or "refusal." Specific Asian, American Indian or Alaskan Native Tribe and Specific Native Hawaiian or Pacific Islander were all associated with uncodable response rates below 15 percent.

The patterns of interviewer and respondent behavior for the demographic module were similar to those observed in the behavior coding study of the 2010 NRFU operation, which was also a face-to-face personal interview.

Module F: Alternate Addresses

This module asks about places other than the sample address where household members may have lived or stayed around March or April of 2010. There are seven distinct questions asking whether individuals were staying at various kinds of alternate addresses that historically have caused census omissions and duplication, including college residences, second homes, work-related or military addresses and other relative's homes. There is also a eighth generic question asking about any other place the person might have stayed. For each type of alternate address, the main question is asked for the entire household once. The ages of the people on the roster are used to populate the question text appropriately. For example, when we ask about any college residences, the question text only refers to those people of college age. Then, for anyone identified as having that type of address, person-based questions are asked to collect the alternate address. The instrument design does not assume that all of the people in a household with a college address necessarily have the same college address.

In Module F, of the nine questions with more than 20 administrations, all but the Introduction exceeded the 15 percent threshold for non-ideal interviewer behavior (see Table 12).

If an individual reported as having been staying in an alternate address around the time of the census, details about that address are then collected. These questions were far less frequent, and only two of them were administered more than 20 times (College Address and Shared Custody). Both of these questions exceeded the 15 percent threshold of non-ideal interviewer behavior. In addition, College Address had an uncodable response rate above 15 percent. All other questions had uncodable response rates below 15 percent.

Table 12. Module F Questions above 15 Percent Non-Ideal Interviewer Behavior.

Question Name	Question Text	Major Changes	V-
College Attendance (COLLEGE_ATTND1)	During March or April, were you or was (name) attending college?	22 (15.6%)	1 (0.7%)
College Address (COLLEGE_ADDR1)	What is the address where (you were/name was) staying in March or April?	17 (44.7%)	3 (7.9%)
Shared Custody (SHARED_CUST1)	During March or April, did (you or name) live or stay part of the time somewhere else with a parent, grandparent, a son or daughter, or some other relative?	89 (34.9%)	0 (0.0%)
Shared Custody Address (SHARED_ADDR1)	What is the address of other place (you/name) stayed?	4 (16.0%)	3 (12.0%)
Military Service (MIL_AWAY1)	During March or April, (were you or was name) away because of military service?	43 (17.7%)	0 (0.0%)
Staying Elsewhere for Work (JOB_AWAY1)	During March or April did (you or name) have a job that involved living or staying someplace else <other than the military service you just mentioned>?	57 (22.8%)	0 (0.0%)
Seasonal or Second Home (SEAS_HOME1)	Do you or does (name) have a seasonal or second home?	41 (15.7%)	2 (0.8%)
Staying Any Other Place (OTHER_PLACE1)	In the past year, was there any other place you, or (name) stayed often?	49 (18.9%)	1 (0.4%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

As was the case in other modules, there are patterns of non-ideal behavior across questions. One such pattern observed on Seasonal or Second Home and Staying Any Other Place is the failure to list the names of each household member in the question. Instead, interviewers asked about the entire household, such as “Do any of you have a second or seasonal home?” or “Did anyone stay any other place?” While interviewers also did this kind of combining on other alternate address questions such as Staying Elsewhere for Work and Military Service (14 percent of major changes to each question), it was most prevalent on these two questions, where it accounted for more than half the major changes. This is an important change, because prior cognitive testing showed that when names were not listed in the question, respondents were less likely to consider more tenuously attached household members in their response.

Another pattern observed was the omission of the time reference, which occurred on all questions with an explicit mention of March or April, and constituted more than 50 percent of major changes to Staying Elsewhere for Work and Military Service. Because the CCM PI operation is carried out several months after Census Day, the omission of an explicit reference to census months impacts the data quality. The time reference was also frequently omitted on College Address; however, it was less likely to cause problems because that question is used to collect addresses once it is already established that an individual was away at the time of the Census.

Interviewer behavior on the two address questions that had sufficient sample size for analysis (College Address and Shared Custody Address) was similar to that observed for the address questions in other modules. Specifically, interviewers rephrased these questions as yes/no questions, asking for example "Do you know the address?" As noted earlier, these two questions were administered far less frequently than the other alternate address questions discussed in this section. The behaviors were similar to those observed in similar questions in Modules B and C, and discussed in more depth in the corresponding sections.

For College Address, the only question in the module with an unacceptable rate of uncodable responses, respondents provided uncodable responses 16 percent of the time. These uncodable responses included cases of "Yeah" and "No," due to the "Do you know?" style of inquiry in which interviewers often asked the question. In other cases, they were simply instances in which the respondent did not know the college address. This is similar to findings from the 2010 CFU Behavior Coding (Childs, Leeman, and Smirnova, 2012).

Another type of major change was for interviewers to omit or shorten parts of the question. For example, in Shared Custody Address, 25 percent of major changes involved interviewers dropping all examples of people with whom the individual might have stayed: parent, grandparent, a son or daughter, or some other relative. Fifty-seven percent of the time, interviewers read some of the examples, but not all of them, for example asking about a parent or grandparent, or a son or daughter but omitting "some other relative." Some of these omissions are the result of respondent interruptions: the break-in rate for this question was 15 percent.

For Staying Elsewhere for Work, about one-third of major changes involved interviewers rephrasing the question and omitting "living or staying." Examples of this behavior include rephrasing in the negative and shortening a household version of the question: "He doesn't have a job where he's somewhere else?" and "Anybody have a job that takes them away?"

Module G: Group Quarters

In this module, interviewers ask whether any of the household members might have stayed in various kinds of group quarters around Census Day. On the first administration, interviewers ask the respondent to consult the list on the Information Sheet, which contains a list of different group quarters, such as college dormitories or sorority/fraternity houses, military barracks or ships, nursing homes or independent living centers, and correctional facilities, and then asks if they spent even one night in any of those types of places. Interviewers then go through the roster, asking about each individual in turn. Any time there is an affirmative answer, details about the specific group quarters – including address, cross streets and landmarks – are then collected.

Out of the nine questions in Module G, only one (the first, gate question) met the minimum sample size of 20 administrations. This question also exceeded the 15 percent threshold of non-ideal interviewer behavior.

Table 13. Module G Questions above 15 Percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Group Quarters (GQ_PLACE)	PLEASE LOOK AT LIST A. EVEN IF (YOU/NAME) DID NOT LIVE THERE, DID (YOU/NAME) SPEND EVEN ONE NIGHT IN ANY OF THOSE TYPES OF PLACES AROUND April 1?* How about (name)? Did (name) spend even one night in any of those types of places around April 1?	401 (62.2%)	25 (3.9%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx
*Capital letters are used to indicate that the particular text is read only on the first administration of a given question.

The most common major change to Group Quarters was the omission of the substantive question text for administrations after the first person: interviewers often simply asked "How about (name)?" without also asking "Did (name) spend even one night in any of those types of places around April 1 ?" as required. This rephrasing was observed on 80 percent of major changes (50 percent of all question administrations). Ninety-two percent of major changes involved interviewers omitting the timeframe from their reading of the question. For 90 percent of major changes, interviewers did not specify "even one night," either omitting it completely or asking with word changes like "any night," "any time" or "sometime." The omission of these phrases failed to orient respondents to Census Day, or to convey that even a single night stay at a group quarters should be reported. Less than three percent of responses to Group Quarters were Uncodable.

Although the other eight questions in Module G were all administered fewer than 20 times and thus were not included in the detailed analysis, it should be noted that they all showed high levels of non-ideal interviewer behavior. These questions are similar to the address, cross street and landmark questions in other modules and the types of changes observed were quite similar to those observed for those other modules (see the discussion of Module C for more details).

Modules H and I: Verifying Alternate Addresses

The goal of Modules H and I is to verify that the interviewer has collected the appropriate addresses for each person on the roster. If a person had no other addresses collected within the instrument, then Module H is used to confirm that the person stayed only at a single address during the past year. If two or more addresses were collected, Module I is used to verify those addresses. Module I also contains questions about whether an individual with two or more addresses moved from one place to the other or goes back and forth between them. There are also questions about move dates, and about the proportion of time spent between multiple residences.

Out of 18 questions in the module, three met the minimum of 20 administrations, and all three were associated with non-ideal interviewer behavior rates above 15 percent. These questions are shown in Table 14. There were no questions with uncodable response rates of 15 percent or higher.

Table 14. Module H and I Questions above 15 Percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Single Address Verification (VERIFY_ADDRESS)	Just to confirm the following people lived or stayed at only one address in the past year: (you, name, and name). Is that correct?	49 (21.6%)	0 (0.0%)
Address Review (REVIEW_ADDRESS1)	I have collected these addresses for (you/name). (Addresses) Is that correct?	49 (33.1%)	4 (2.7%)
Moved or Back and Forth (MOVE)	Did (you/name) go back and forth between these places, or did (you/name) move?	19 (29.7%)	3 (4.7%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

The question used for individuals with a single address, Single Address Verification, was administered 227 times and 49 of those administrations were coded as containing a major change (about 22 percent of administrations). For 47 percent of these changes (10 percent of all administrations) interviewers omitted the timeframe reference "in the past year." Typical of such omissions was the phrasing: "Just to confirm, you just have that one address, is that correct?" On 20 percent of these major changes the interviewer omitted "is that correct?" at the end of the question. Interviewers read the previous sentence with rising intonation clearly indicating that it was a question, and it would have been reasonable to classify such administrations as "exact readings." In other cases, interviewers did not pause for confirmation, and instead continued on to the next question, discouraging the respondent from thinking about the question and responding. Behavior coders in this study were quite strict in their evaluation of what counted as an "exact reading," in part because the use of audio-only recordings did not allow them to see the questions as they were to be read, and instead required them to keep track of multiple paths, fills, and first-administration texts in their heads. The cognitive demands of this task did not leave much room for additional judgment calls on the part of the coders.

Another type of major change observed with Single Address Verification, was the combining of multiple respondents into a single word or phrase such as "everyone" or "all of you," rather than reading the names as indicated on the script. This could only happen on households with three or more members.

For multiple person households, rather than asking Address Review in its entirety for each household member, interviewers sometimes simply asked: "Same for NAME?" for household members after the first. Another example of this behavior is: "Is that also the ADDRESS and ADDRESS for NAME?" This type of change was observed on 45 percent of all major changes. Another common behavior on the part of the interviewers was to read only partial addresses, sometimes referring only to the city or the country. It is not possible to know when this shortening was for convenience and when it was because the respondent had not provided a complete address, a limitation of the behavior coding methodology employed.

The question about whether a respondent moved or goes back and forth between two reported addresses, Moved or Back and Forth, had a major change 30 percent of the time. The most common change was for interviewers to omit "move," and instead simply ask whether the

individual went “back and forth.” Common phrasings include: “Did NAME go back and forth between these places?” “Does NAME go back?” This type of change was observed on 89 percent of major changes. Sixty-three percent of major changes involved a rephrasing as a yes/no question such as “So did you move?” or “Do you go back and forth?”

Module J: Census Day Address Determination

For those household members with more than one address, Module J attempts to determine which address they were residing at on Census Day. The questions in this module are person-based, that is, all the questions in this module are asked for each qualifying person before asking the same set of questions for the next qualifying person in the household. If there are no people on the roster who fit the qualifications for the module (for example, no one has more than one address listed) the entire module is skipped.

Module J contains 12 questions, but only two met the minimum sample size for further analysis. Both of these were coded as having non-ideal interviewer behavior above the 15 percent threshold (see Table 15). They also met the fifteen percent threshold of uncodable responses.

Table 15: Module J Questions above 15 percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Census Day Primary Address (CD_ADDR1)	Around April 1, where (were you/was name) living and sleeping most of the time?	30 (33.7%)	3 (3.4%)
Time at Alternate Address (CYCLE1)	Which of the following categories most accurately describes the amount of time (you/name) stayed at the other place: A few days a week, A few weeks each month, Months at a time, Some other period of time?	11 (34.4%)	2 (6.3%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

The first item in Module J, Census Day Primary Address, had a major change 34 percent of the time. In order to count people once and only once and in the right location, the question asks the respondent to identify the location where each person in the household lives or sleeps “most of the time” around the time of the census. Interviewers made multiple changes to the question, many of which co-occurred in various combinations. On 30 percent of all major changes, interviewers did not ask about both “living and sleeping” and instead just mentioned one or the other (e.g. “On April 1, where was NAME sleeping?”). Interviewers also omitted “most of the time” from the question on 30 percent of major changes. On 27 percent of major changes interviewers omitted the time reference altogether; common scenarios include readings such as, “Where was NAME living or sleeping most of the time?” In other cases, interviewers asked “on April 1” instead of “around April 1.” This occurred on 23 percent of all major changes. Another change, which was observed on 17 percent of major changes, was the omission or rephrasing of “living or sleeping” such as in “Where was NAME most of the time?”

Respondents provided uncodable responses to Census Day Primary Address 15 percent of the time. Analysis of the notes revealed that in fact, 31 percent of responses coded in this way were

cases of the respondent not knowing the answer and 23 percent were cases of respondents reporting equal amounts of time at the two addresses (e.g., "like half and half" or "equal 50/50"). The former cases could have been coded as "doesn't know" and the latter as "codable."

Behavior coders coded Time at Alternate Address as having a major change 11 of the 32 times it was administered (about 34 percent). Analysis of the coding notes revealed that four of these were in fact exact readings, two of them were inaudible, and one was an appropriate verification. Taking this miscoding as well as the two inappropriate verifications into account, the question exceeds the 15 percent threshold for non-ideal interviewer behavior but actual "major changes" constituted only 13 percent of all administrations. The most common major change was for the interviewer not to read all of the categories.

For Time at Alternate Address, seven of the 32 administrations were coded as having an uncodable response (15 percent). However, as was the case in Census Day Primary Address, some of the putatively uncodable responses actually were cases in which the respondent reported not knowing the answer. Further, 71 percent of the "uncodable" responses could have fit within one of the response options. For example, the response category, "some other period of time," could be appropriate when respondents said things like, "Twice a year for a week to two weeks every six months." One possibility for improving the question would be not to read the response options, especially as these are hard to process aurally, and instead use an open-ended question where interviewers select the most appropriate option. Respondents who answer that they don't know could be read a list of options. Another possibility would be to provide the response options on the Information Sheet.

Module K: Interview Day Residence Determination

This module is also only asked of those household members whose place of residence on the day of the interview is not clear. Three questions in Module K met the 20 administration minimum. All three meet the threshold for non-ideal interviewer behavior. Two questions, Current Primary Address and Current Time at Address, were associated with uncodable responses more than 15 percent of the time.

Table 16: Module K Questions above 15 percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Current Primary Address (NOW_ADDR1)	Currently where (are you/is name) living and sleeping most of the time?	21 (25.3%)	6 (7.2%)
Current Time at Address (NOW_TIME)	How long (are you/is name) staying there?	9 (32.1%)	1 (3.6%)
Past Year Time at Each Address (NOW_NOTES)	Please tell me how much time (you/name) spent at each address in the past year.	6 (30.0%)	1 (5.0%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

The first item in Module K, Current Primary Address, had a major change rate of 25 percent. The types of misreadings that occurred in Current Primary Address are similar to the types of misreadings exhibited in other questions, such as Census Day Primary Address in Module J. Thirty-three percent of the major changes involved interviewers dropping both "living or sleeping" from the question, (e.g., "Where is NAME most of the time?") and 14 percent of the major changes involved interviewers mentioning one or the other (e.g., "And currently she's living at ADDRESS most of the time?"). In addition, 52 percent of major changes involved the interviewer assuming that one of the addresses was where the individual was living and sleeping most of the time (e.g., "currently NAME is living and sleeping most of the time at the other address?"). This was also the case for question administrations coded as inappropriate verifications.

The remaining two items meeting the minimum sample size and the threshold of non-ideal interviewer behavior were Current Time at Address and Past Year Time at Each Address, which had major change rates of 32 percent and 30 percent, respectively. These questions were administered infrequently (28 and 20 times, respectively) so while the data suggest that the interviewer behavior was non-ideal, the classification of the specific types of major changes is less robust. For both questions, interviewers attempt to preempt any frustration on the part of the respondent who may be, at this point in the interview, growing fatigued or expressing irritation, saying for instance, "Same question as for your grandfather. Is NAME staying there permanently… not returning to this address?" or "And we already covered this question, but how much time did NAME spend at each address? You said that is was January to July15th, correct?"

For Current Primary Address respondents gave uncodable answers 18 percent of time. Most the responses coded in this way consist of the respondent answering "yes" or answering Don't Know. For Current Time at Address, the uncodable response rate was also 18 percent. This question asks how much time an individual spent at an address. The response options are: 1) Less than one month; 2) One to two months; 3) Three to four months; 4) Five to six months; 5) More than five months; and 6) Not returning to ADDRESS. These options are not read aloud, but instead are meant to be selected by the interviewer. Sixty percent of the uncodable responses were cases in which a respondent provided an answer such as "the school year" rather a number of months. Behavior coders coded this very literally as "Uncodable," since it did not fit the exact response categories, artificially elevating the rate of non-ideal respondent behavior.

Module L: In-mover Address

Module L is only asked if an "in-mover" is identified during the interview. The purpose of this module is to collect enough information for Census Bureau analysts to find the in-mover's address in their records.

All four of the Module L questions that were administered 20 or more times met the threshold for non-ideal interviewer behavior (see Table 17). Only Alternate Address Tenure had an uncodable response rate above 15 percent.

Table 17: Module L Questions above 15 percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Additional People at Alternate Address (ALT_ADDR_NAME)	Earlier you told me that (you and name) lived at (address). I'm going to ask a few more questions about that address. Was there anyone else who lived there on April 1?	12 (27.9%)	0 (0.0%)
Names of People at Alternate Address (ALT_ADDR_NAME1)	What are their names and approximate ages?	8 (38.1%)	0 (0.0%)
Alternate Address Tenure (ALT_ADDR_OWN)	On April 1, 2010, was (address) owned with a mortgage or loan - including home equity loans, owned free and clear, rented, or occupied without having to pay rent?	30 (73.2%)	0 (0.0%)
Neighbors near Alternate Address (ALT_ADDR_NEIGHBORS2)	What are the names of the neighbors who live near that place?	20 (54.1%)	0 (0.0%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

For the first item in Module L that met the threshold, Additional People at Alternate Address, a major change occurred 12 times or about 28 percent of the time. In nine of these cases (75 percent), the interviewer omitted the first sentence establishing the address ("Earlier you told me…"). By omitting this sentence, respondents might not realize that the questions are about the Census Day address. In six of the nine cases, interviewers did explicitly reference the city or street, and oriented respondents in this way. In 25 percent of the major changes, interviewers apologized for the lengthiness of the interview and/or informed the respondent that the interview was almost complete. Only in one instance did the interviewer fail to reference Census Day. The uncodable response rate was just two percent.

The second item in the module that met the threshold for non-ideal interviewer behavior is Names of People at Alternate Address. For this item, a major change occurred eight of the 21 times it was administered (31 percent). These changes involved interviewers asking whether the respondent knew or remembered the names or ages, or asking for just names or ages (rather than both), for instance, asking "Do you know the age?" At first glance, these changes seem problematic and appear to have the potential to affect data quality. It is unlikely that interviewers would only ask for age if the name had not already been provided. The behavior coding methodology of question-by-question analysis does not capture a complete picture of what occurred. Similarly, in those cases where the interviewer asked only the name at the first level, whether they went on to ask the age later in the interaction is not analyzed. The fact that interviewers separated these questions suggests that perhaps they should be on separate screens. Non-ideal respondent behavior did not reach the 15 percent threshold of concern.

For Alternate Address Tenure – "On April 1, 2010 was ADDRESS owned with a mortgage or loan – including home equity loans, owned free and clear, rented or occupied without having to pay rent?" – a major change occurred 73 percent of time and respondents were able to give a codable answer 63 percent of the time. Fifty-eight percent of the major change types involved

interviewers not reading all of the categories, including: 1) Owned with a mortgage or loan including home equity loan; 2) Owned free and clear; 3) Rented; and 4) Occupied without having to pay rent. This involved interviewers shortening the question and omitting response categories, for example: "On April 1, was ADDRESS owned with a mortgage, owned free and clear or rented?" or "And on April 1 was ADDRESS… do you know if he rented it or is it a home that he has mortgage on?" For this item, only three percent of the major changes consisted of interviewers dropping the reference to April 1.

Seven of the 41 responses to Alternate Address Tenure were uncodable (17 percent). While the small number of responses makes it difficult to establish patterns, there are a couple of instances (two out of seven) in which respondents answered "No" that it was not owned and two instances in which respondents indicate that the house is "owned" without choosing one of the response options indicating how the house is owned. This pattern is similar to the uncodable responses to the Tenure question in Module E. For response behavior, this question did meet the threshold, but it is difficult to establish patterns given the low number of uncodable responses (seven). In some cases, respondents answered that the residence was owned but did not specify whether it was with a mortgage or free and clear. In other cases, respondents answered 'no' to a yes/no question but did not specify the tenure status, or reported that they did not know the tenure status.

The last item in the Module, Neighbors near Alternate Address, had a major change on 54 percent of administrations. Seventy percent of the major change types occurred when interviewers reformulated the question as a yes/no question, such as: "That's out in the country so there really aren't any neighbors that live near there, right?" or "Do you happen to know the names of any neighbors that live near there?" In 25 percent of the major changes, interviewers omitted "near that place" and instead, just asked about the names of their neighbors. Common scenarios include, "What are the names of the neighbors?" and "Do you know the names of any neighbors?" Respondents were able to give a codable answer only 35 percent of the time, but all three uncodable responses were cases in which respondents simply did not know the names of the neighbors.

Modules M and W: Sample Address on Census Day

In these modules, the interviewer collects information on housing unit status of the sample address on Census Day (i.e., vacant or occupied, for rent or for sale, etc.) and, if applicable, on the residents of the unit on Census Day.

Modules M and W contain four questions in total but only one was administered 20 or more times, Census Day Address Status. This question exceeded the 15 percent threshold of non-ideal interviewer behavior. In contrast, uncodable responses were below fifteen percent.

Table 18. Modules M and W Questions above 15 percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Census Day Address Status (CD_STATUS1)	On April 1, 2010, was (address) vacant or was it occupied?	6 (26.1%)	1 (4.4%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Major changes were observed on six of the 23 administrations of Census Day Address Status, a major change rate of 26 percent. On four of these, interviewers dropped the timeframe reference (67 percent of major changes; 17 percent of administrations). Though the reference date may be established at this point in the interview, dropping it risks gleaning an incorrect housing unit status for Census Day. In four cases, interviewers 'softened' the question pursuant to conversational norms, such as by asking: "By any chance do you know if this unit was vacant or occupied on April 1 of this year?" or "Would you happen to know if this address was vacant or occupied?" Respondents generally were able to give codable responses, although they frequently did not know the unit status.

Module N: Respondent Questions

This module is the last module and contains questions to wrap up the interview, collect telephone numbers, and establish the best contact times. The information is used for administrative and production purposes.

Both questions that were administered over 20 times also met the threshold for non-ideal interviewer behavior. Respondent's Telephone Number and Best Time to Contact Respondent had a major change occur 18 and 66 percent of the time, respectively.

Table 19. Module N Questions above 15 percent Non-Ideal Interviewer Behavior

Question Name	Question Text	Major Changes	V-
Respondent's Telephone Number (R_PHONE)	In case we need to contact you again, may I please have your telephone number?	47 (17.9%)	1 (0.4%)
Best Time to Contact Respondent (BEST_TIME)	What is the best time to reach you?	166 (66.1%)	0 (0.0%)

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

For Respondent's Telephone Number, about half (25 administrations) of the major changes involved the omission of the first part of the question, which explains why the respondent's number is needed. Instead, interviewers simply asked for the phone number: "And give me your phone number again, please" or "What's your phone number here?" In about one third of the major changes, interviewers changed the wording of the explanation, asking, for example, "In case they need to contact you, just to confirm that we were here, what will be the best number?" "If we have any other questions, can I have a telephone number?" or "In case I need to contact

you to maybe clarify one of these answers, can I please have your phone number?" About 30 percent of major changes involved interviewers dropping the word "please" from the question. Respondents provided codable answers for Respondent's Telephone Number 91 percent of the time.

For Best Time to Contact Respondent – "What is the best time to reach you?" – the vast majority of these cases (approximately 90 percent) involved interviewers asking whether days or evenings were better, for example: "Do you prefer day or evening?" "Days, evenings, which do you prefer?" This addition encourages responses that are a better match with the three response options: 1) Day, 2) Evening, and 3) Either. As for respondent behavior, uncodable responses constituted just under the 15 percent threshold, with the majority of such responses consisting of non-specific times such as "Anytime" or "I don't have a schedule."

6. Related Evaluations, Experiments, and/or Assessments

Behavior Coding of the 2010 Nonresponse Followup Interviews Report.
Behavior Coding Report of 2010 Census Coverage Followup English and Spanish Interviews.
2010 Census Content and Forms Design Assessment Report.

7. Key Lessons Learned, Conclusions, and Recommendations

Behavior coding of the CCM PI revealed that interviewers deviated from the question wording and/or administration procedures at high rates; the question-by-question analysis found that the vast majority of questions were associated with non-ideal interviewer behavior above the commonly used 15 percent threshold. In several cases, analysis of coder notes showed that coders were quite 'strict' in their applications of codes, perhaps as result of their experience as telephone interviewers. However, in other cases, interviewers deviated widely from the script, changing or omitting key parts of the question and altering the question meaning. Although some changes appeared less likely to affect data quality, they nonetheless represent a deviation from the standardized interviews generally prescribed by the Census Bureau.

Several patterns of non-ideal interviewer behavior interviewer behavior were observed either alone or in combination across various questions. These patterns include: (1) omitting "middle initial" in questions soliciting a name (e.g., Household Roster);[6] (2) neglecting to include text required on the first administration of a question (e.g., Race); (3) failing to reference a list on the Information Sheet (e.g., In-mover Household Type); (4) omitting an explicit mention of the timeframe (e.g., Age on Census Day); (5) asking a single question for the entire household (e.g., General Hispanic Origin); (6) assuming that all household members will have the same response (e.g., Race); (7) omitting some of the categories in questions with numerous response options (e.g., Tenure), and (8) combining two questions into one (e.g., In-mover Cross Streets and In-mover Landmarks). The present study did not directly examine the impact of non-ideal interviewer behavior on data quality. However, analysis of changes revealed that some changes

[6] In some cases, interviewers subsequently probed for middle initial but in others, they did not. Unfortunately, the methodology employed in this study, which coded only the first level of interaction, does not provide information on the frequency of subsequent probes. For more in-depth discussion and specific recommendations for changing the question format, see the section on Module E.

had an impact on question meaning, such as when verb tenses were changed from past to present In other cases, the omission of explicit timeframes (e.g., “On April 1”) may have failed to orient respondents to Census Day, and thus resulted in inaccurate answers.

As for respondent behavior, high rates of uncodable responses (i.e., above the 15 percent threshold) were observed most often in cases where respondents did not know the information being requested (such as an address), when the response options were numerous or contained similar categories (e.g., Tenure, Relationship) and for the Race question.

In some cases, modifications to the questions may facilitate improved interviewer performance and increase data quality and consistency. For example, it is worth exploring whether using distinct, separate questions that ask for the first, middle and last names independently would promote collection of this information.

In other cases, modifications to the production setting, such as increased training and supervision, may prove useful in achieving standardized interviewer behavior. It is worth noting that of the three behavior coding studies carried out on 2010 operations (NRFU, CFU and CCM PI), it was the CFU operation that showed the highest rates of ideal interviewer behavior (Childs, Leeman, and Smirnova, 2012). This difference relates to the difference in mode and type of interviewer between the two operations: CFU was a centralized CATI operation conducted by experienced interviewers whereas NRFU and CCM PI were decentralized field operations conducted by newly hired interviewers. This explanation is consistent with the behavior coding study of the 2004 CFU (Landreth, Krejsa, and Karl, 2006), which found a higher rate of standardized interviewer behavior for the experienced telephone interviews than the inexperienced in-person interviews with the same instrument. In addition to any inherent differences between telephone and in-person interviewing, the two modes were associated with important differences in supervision. The CATI operations were conducted in controlled environments with close supervision and coaching and achieved far greater standardization in the interviewing process than did inexperienced field staff operating with less direct supervision. New and emerging technologies may facilitate the provision of increased monitoring and feedback to interviewers conducting face-to-face interviews.

If standardized interviewing is a goal, it may be worthwhile to explore offering incentives, in addition to supervision and feedback of person interviews. Rather than rewarding interviewers based primarily on the number of interviews completed, increased monitoring may make it possible to provide incentives based on how well interviews are completed. Research is needed both on the impact of standardization on data quality as well as on the effectiveness of incentives for increasing standardization.

For these reasons, **we recommend using experienced interviewers for as much as possible in the 2020 Census interviewer-administered operations, experimenting with ways to monitor interviewers through different types of technology in order to give them timely feedback on their performance, and providing incentives and rewards for interviewers who follow standardized interviewing procedures.**

Other recommendations emerging from this study relate to the behavior coding methodology. Because standardized interviews are the goal, behavior coding studies examine whether questions were administered as written. The effect of deviation from the script was not examined directly. In this study, we analyzed the kinds of changes made to questions in order to assess whether there were changes in question meaning. However, as noted above, the effect of deviation from the script was not examined directly. **We recommend that future studies examine the effect of deviations from the script on data quality.** In addition to providing additional information about the potential impact of non-ideal interviewer behavior, analyzing the links between interviewer behavior and data quality can also offer insights on the severity of different types of major changes.

When the questions are examined in isolation, without considering the complete interaction surrounding a question or the larger context, and it is difficult to determine which deviations are truly problematic. Since the data set for an operation such as CCM PI contains so many questions, it is not feasible to train coders to subjectively evaluate various kinds of non-standard behaviors. **We recommend that in future studies researchers carry out preliminary analysis of fewer interviews and identify specific topics or questions for further analysis, rather than coding and analyzing entire interviews.** This would allow researchers to design better coding schemes a priori, which might even be individualized for each question under analysis. This could also reduce the need for coder notes, thus reducing the time required after coding is completed. In addition, if a smaller number of issues was the focus, it would be possible to look at larger conversational contexts, rather than focusing on isolated utterances. The recording of personal interviews via the CARI system may facilitate such an approach by allowing random access and sorting of questions and recordings (versus listening to recordings of entire interviews).

8. Acknowledgements

The authors are grateful to Jenny Hunter Childs for her input and assistance with all phases of this study. We also wish to acknowledge Beth Nichols and Laurie Schwede for providing the recordings used in this study, as well as Lorraine Randall and Katie Drom for their assistance in preparing the audiotapes and coding materials. Thanks also to the expert observers who recorded the interviews: Tammy Adams, Julie Bibb, Ephrosine Daniggelis, Rachel Donkersloot, Gianna Dusch, Ted Fortier, Angelina Foster, Eleanor Hubbard, Jenny Hunter Childs, Matt Jans, Celeste Kline Stone, Karyn Lacy, Kyra Linse, Mary Mulry, Beth Nichols, Travis Pape, Ruth Sando, and Vicki Smith. Additional thanks to Nathan Jurgenson and Aleia Clark for their assistance with the analysis. Thank you to John Magruder and Olga Koly of the Telephone Communications Office, as well as the staff of Tucson Telephone Center who carried out the behavior coding. We are also grateful to the critical reviewers for their comments.

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Appendix 1: CCM PI Information Sheet

D-1300.1, Information Sheet

D-1300.1
(1-12-2010)

INFORMATION SHEET
Census Coverage Measurement Person Interview
2010 Census

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

2010

JANUARY

S	M	T	W	TH	F	S
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FEBRUARY

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NOVEMBER

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DECEMBER

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USCENSUSBUREAU

List A

PLACES THAT HOUSE GROUPS OF PEOPLE

College housing:

- ▫ Dormitory or residence hall
- ▫ Sorority or fraternity house

Military housing:

- ▫ Military barracks
- ▫ Military ship

Other group facilities:

- ▫ Nursing home
- ▫ Independent or assisted living facility
- ▫ Correctional facility, such as a jail
- ▫ Group home providing room, board, and psychological, social, or behavioral services
- ▫ Emergency shelter
- ▫ Residential school for people with disabilities
- ▫ Psychiatric hospital or Psychiatric unit in a hospital
- ▫ Other, please specify

List B

RELATIONSHIP

- ☐ Husband or wife
- ☐ Biological son or daughter
- ☐ Adopted son or daughter
- ☐ Stepson or stepdaughter
- ☐ Brother or sister
- ☐ Father or mother
- ☐ Grandchild
- ☐ Parent-in-law
- ☐ Son-in-law or daughter-in-law
- ☐ Other relative

- ☐ Roomer or boarder
- ☐ Housemate or roommate
- ☐ Unmarried partner
- ☐ Other nonrelative

List C

HISPANIC, LATINO, OR SPANISH ORIGIN

- ☐ **No,** not of Hispanic, Latino, or Spanish origin
- ☐ Yes, Mexican, Mexican American, or Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, of another Hispanic, Latino, or Spanish origin – *For example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.*

List D

RACE
(Choose one or more races)

- ☐ White
- ☐ Black, African American, or Negro
- ☐ American Indian or Alaska Native
- ☐ Asian – Includes:
  - Asian Indian
  - Chinese
  - Filipino
  - Japanese
  - Korean
  - Vietnamese
  - Other Asian – *For example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.*
- ☐ Native Hawaiian or Other Pacific Islander – Includes:
  - Native Hawaiian
  - Guamanian or Chamorro
  - Samoan
  - Other Pacific Islander – *For example, Fijian, Tongan, and so on.*
- ☐ Some other race

Appendix 2: CCM PI Questions

Module B: Roster

Question Name	Question Text	Response Options
B1 ROSTER1A	What are the names of the people who are staying (here/at address) and have no other place where they usually live? First name? Middle initial? Last name? Anyone else?	[Open Text] Blank Don't know Refused
B4 ROSTER1B	We'll start by making a list of everyone who lives or stays (here/at address) now. Let's start with you. What is your first name? Middle initial? Last name? Anyone else?	[Open Text] Blank Don't know Refused
B6 NAME_OFTEN	Is there anyone else who has another place to live, but who stays (here/ at address) often?	1. Yes 2. No Don't know Refused
B7 NAME_OFTEN2	What is that person's first name? Middle initial? Last name? Anyone else?	[Open Text] Blank Don't know Refused
B9 NAME_FIND	Is there anyone else who is staying (here/at address) until they find a place to live?	1. Yes 2. No Don't know Refused
B10 NAME_FIND2	What is that person's first name? Middle initial? Last name? Anyone else?	[Open Text] Blank Don't know Refused
B12 NAME_BABY	Are there any babies, foster children, or other children who stay (here/at address) that you didn't mention yet?	1. Yes 2. No Don't know Refused
B13 NAME_BABY2	What is that child's first name? Middle initial? Last name? Any other children?	[Open Text] Blank Don't know Refused
B15 NAME_REL	Have I missed any relatives or unrelated people who live or stay (here/at address)?	1. Yes 2. No Don't know Refused

Question Name	Question Text	Response Options
B16 NAME_REL2	What is that person's first name? Middle initial? Last name? Anyone else?	[Open Text] Blank Don't know Refused
B18 ROSTER_ADDR1	What is the address of the other place (you/name) stayed?	[Open Text] Don't know Refused
B21 ROSTER_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
B22 ROSTER_CROSS	What are the cross streets closest to that address?	[Open Text]
B23 ROSTER_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	[Open Text] Don't know Refused
B24 ROSTER_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
B25 ROSTER_REV	I am going to show you the list of people I have recorded. Is everything spelled correctly? Is the list complete?	1. No Change 2. Edit Name 3. Delete Person 4. Add person 5. Table Now Correct

Module C: Identifying In-movers

Question Name	Question Text	Response Options
C1 HERE_CD	NOW USING YOUR CALENDAR THINK BACK TO WHERE (YOU WERE/NAME WAS) LIVING ON (CENDAY). (Were you/was name) living (here/at address) on (cenday) or somewhere else?	1. Here/at (SAMPLE_ADDDR) 2. Somewhere else 3. Born after (CENFULL) Don't know Refused
C2 INMVR_ADDR1	What was (your/name's) address on (cenday)?	[Open Text] Don't know Refused
C5 INMVR_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
C6 INMVR_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
C7 INMVR_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	[Open Text] Don't know Refused

Question Name	Question Text	Response Options
C8 INMVR_TYPE1	Is the place (you were/name was) staying on (cenday) a house or apartment or another type of place like those shown on List A, ON THE INFORMATION SHEET I GAVE YOU?	1. House/Apartment/Mobile home/Condo/Townhouse 2. Dormitory or residence hall 3. Sorority or fraternity house 4. Military barracks 5. Military ship 6. Nursing home 7. Independent or assisted living facility 8. Correctional facility, such as a jail 9. Group home providing room, board, and psychological, social, or behavioral services 10. Emergency shelter 11. Residential school for people with disabilities 12. Psychiatric hospital/Psychiatric units in other hospitals 13. Homeless 14. Other Don't know Refused
C10 INMVR_TYPE3	Is that place a house or apartment, college housing, military housing, senior housing, or another type of place?	1. House/Apartment/Mobile Home/Condo/Townhouse 2. College Housing 3. Military Housing 4. Senior Housing 5. Other Don't know Refused
C12 INMVR_BACK	Is (address) (your/name's) only residence now, or (do you/does name) still spend some time during the year at (address)?	1. (ADDRESS) only residence 2. Still spend some time at both 3. Complex Situation Don't know Refused
C13 INMVR_DATE1	What date did (you/name) move (here/to address)?	[Date] Don't know Refused

Question Name	Question Text	Response Options
C14 INMVR_DATECD	Did (you/name) move in before (cenday), after (cenday), or on (cenday)?	1. Before (CENDAY) 2. After (CENDAY) 3. On (CENDAY) Don't know Refused
C15 INMVR_EXPDATE	Please tell me how much time (you/name) spent at each address in the past year.	[Open Text] Don't know Refused

Module D: Identifying Out-movers

Question Name	Question Text	Response Options
D1 OUT_MOV	Now let's talk about (address). Was there anyone else living or staying (here/at address) during (cenmonths) who is no longer living (here/there)?	1. Yes 2. No Don't know Refused
D2 OUTMOV_NAME	What is that person's first name? Middle initial? Last name? Anyone else?	[Open Text] Blank Don't know Refused
D4 OUTMOV_DATE1	What date did (name) leave (address) to live somewhere else?	[Date] Blank Don't know Refused
D6 OUTMOV_DATECD	Did (name) (pass away/leave address) before (cenday), after (cenday), or on (cenday)?	1. Before (CENDAY) 2. After (CENDAY) 3. On (CENDAY) Don't know Refused
D7 OUTMOV_KNOWLEDGE	Do you know (name) well enough to answer questions about other places where he/she might have staying during (cenmonths)?	1. Yes 2. No Don't know Refused

Question Name	Question Text	Response Options
D8 OUTMOV_TYPE1	Did (name) move to a house, or apartment or another type of place like those shown on List A, ON THE INFORMATION SHEET I GAVE YOU?	1. House/Apartment/Mobile home/Condo/Townhouse 2. Dormitory or residence hall 3. Sorority or fraternity house 4. Military barracks 5. Military ship 6. Nursing home 7. Independent or assisted living facility 8. Correctional facility, such as a jail 9. Group home providing room, board, and psychological, social, or behavioral services 10. Emergency shelter 11. Residential school for people with disabilities 12. Psychiatric hospital/Psychiatric units in other hospitals 13. Homeless 14. Other Don't know Refused
D12 OUTMOV_ADDR1	What is the address of that place?	[Open Text] Don't know Refused
D15 OUTMOV_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
D16 OUTMOV_CROSS	What are the cross streets closest to that address?	[Open Text]
D17 OUTMOV_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	[Open Text] Don't know Refused
D18 OUTMOV_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
D19 REVIEW_LIST	I am going to show you the list of people who have (moved out/passed away/ moved out or passed away). Have I spelled all names correctly?	1. No change 2. Edit Name 3. Delete Person 4. Add Person 5. Table Now Correct

Module E: Demographics

Question Name	Question Text	Response Options
E1 OTHER_NAME	(DO YOU/DOES NAME) EVER GO BY A NICKNAME OR MIDDLE OR MAIDEN NAME? How about (name)?	1. Yes 2. No Don't know Refused
E2 OTHER_NAME2	What is the other name (you go/(WNAME@X) goes) by?	[Open Text]
E3 TENURE	Do you or does someone in (this/that) household own this (hutype) with a mortgage or loan - including home equity loan, own it free and clear, rent it, or occupy it without having to pay rent?	1. Own with a mortgage or loan (including home equity loan) 2. Own free and clear 3. Rent 4. Occupy without having to pay rent Don't know Refused
E4 REF_PERS	Of the people who live (here/there), who (owns/rents) (this/that) (hutype)?	[Select household member] Don't know Refused
E5 RELATION1	PLEASE LOOK AT LIST B ON THE INFORMATION SHEET I GAVE YOU AT THE BEGINNING OF THE INTERVIEW. How (are you/is name) related to (you/name)?	1. Husband or wife 2. Biological son or daughter 3. Adopted son or daughter 4. Stepson or stepdaughter 5. Brother or sister 6. Father or mother 7. Grandchild 8. Parent-in-law 9. Son-in-law or daughter-in-law 10. Other relative 11. Roomer or boarder 12. Housemate or roommate 13. Unmarried partner 14. Other nonrelative Don't know Refused
E8 SEX	(Are you/Is NAME) male or female? How about (name)?	1. Male 2. Female Don't know Refused
E9 DOB	What is (your/name's) date of birth?	[Open Text] Don't know Refused

Question Name	Question Text	Response Options
E10 ASK_AGE	What was (your/name's) age on (cenfull)?	[Open Text] Don't know Refused
E12 CONFRIM_AGE	FOR THE CENSUS, WE NEED TO RECORD AGE AS OF (CENFULL). So just to confirm (you were/name was) (age/less than one year old/not yet born) on (cenfull)?	1. Yes 2. No Don't know Refused
E13 CORRECTDOB	Since (your/name's) age as of (cenfull) was (age), can you help me correct (your/name's) date of birth? I have (date). What should it be?	[Open Text]
E14 RELATION_REVIEW	I have recorded that (you are/name is) (your/name's) (parent/parent-in-law). Is that correct?	1. Yes 2. No Don't know Refused
E15 SPAN_ORIG	PLEASE LOOK AT LIST C. ARE YOU OF HISPANIC, LATINO, OR SPANISH ORIGIN? How about (name)?	1. Yes 2. No Don't know Refused
E16 SPAN_ORIG2	(Are you/ Is name) Mexican, Mexican American, or Chicano; Puerto Rican; Cuban; or of another Hispanic, Latino, or Spanish origin; for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on?	4. Mexican, Mexican American, or Chicano 5. Puerto Rican 6. Cuban 7. Another Hispanic, Latino, or Spanish origin (for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on Don't know Refused
E18 RACE	PLEASE LOOK AT LIST D AND CHOOSE ONE OR MORE RACES. <FOR THE CENSUS, HISPANIC ORIGINS ARE NOT RACES.> (ARE YOU/IS NAME) WHITE; BLACK, AFRICAN AMERICAN, OR NEGRO; AMERICAN INDIAN OR ALASKA NATIVE; ASIAN; NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER; OR SOME OTHER RACE? What is (name's) race?	1. White 2. Black, African American or Negro 3. American Indian or Alaska Native 4. Asian 5. Native Hawaiian or Other Pacific Islander 6. Some other race Don't know Refused

Question Name	Question Text	Response Options
E19 AIAN	YOU MAY LIST ONE OR MORE TRIBES. What is (your/name's) enrolled or principal tribe?	[Open Text] Don't know Refused
E20 ASIAN	YOU MAY CHOOSE ONE OR MORE ASIAN GROUPS. (Are you/ Is name) Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, or another Asian group, FOR EXAMPLE, HMONG, LAOTIAN, THAI, PAKISTANI, CAMBODIAN AND SO ON.	1. Asian Indian 2. Chinese 3. Filipino 4. Japanese 5. Korean 6. Vietnamese 7. Other Asian (for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on Don't know Refused
E22 NHPI	YOU MAY CHOOSE ONE OR MORE PACIFIC ISLANDER GROUPS. (Are you/ Is name) Native Hawaiian; Guamanian or Chamorro; Samoan; or another Pacific Islander group, FOR EXAMPLE FIJIAN, TONGAN, AND SO ON?	1. Native Hawaiian 2. Guamanian or Chamorro 3. Samoan 4. Other Pacific Islander (for example, Fijian, Tongan, and so on) Don't know Refused
E24 SOR	What is (your/name's) other race group?	[Open Text]

Module F: Alternate Address Questions

Question Name	Question Text	Response Options
F1 RES_INTRO	Some people have more than one place to live or stay and could be counted in more than one place. The Census Bureau would like to make sure everyone you mentioned was only counted once.	1. Continue
F1A COLLEGE_ATTND1	During (cenmonths), were you or was (name) attending college?	1. Yes 2. No Don't know Refused
F1B COLLEGE_ATTND2	Who was attending college? Anyone else?	[Select household member]
F1C COLLEGE_ADDR1	What is the address where (you were/name was) staying in (cenmonths)?	[Open Text] Don't know Refused
F1F COLLEGE_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
F1G COLLEGE_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
F1H COLLEGE_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find the address?	[Open Text] Don't know Refused
F1I COLLEGE_AFFIL	Is the place (you/name) stayed a dormitory, residence hall, or sorority or fraternity house?	1. Yes 2. No Don't know Refused
F1J COLLEGE_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
F1K COLLEGE_NAME1	What college or university did (you/name) attend?	[Open Text or select college name from existing list] Don't know Refused
F2A SHARED_CUST1	During (cenmonths), did (you or name) live or stay part of the time somewhere else with a parent, grandparent, a son or daughter, or some other relative?	1. Yes 2. No Don't know Refused

Question Name	Question Text	Response Options
F2B SHARED_CUST2	Who stayed somewhere else? Anyone else?	[Select household member]
F2C SHARED_ADDR1	What is the address of other place (you/name) stayed?	[Open Text] Don't know Refused
F2F SHARED_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
F2G SHARED_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
F2H SHARED_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find the address?	[Open Text] Don't know Refused
F3A MIL_AWAY1	During (cenmonths), (were you or was name) away because of military service?	1. Yes 2. No Don't know Refused
F3B MIL_AWAY2	Who was away because of military service? Anyone else?	[Select household member]
F3C MIL_TIME	(Were you/Was name) gone for 2 weeks or less, or for more than 2 weeks during (cenmonths)?	1. 2 weeks or less 2. More than 2 weeks Don't know Refused
F3D MIL_STAY	(Were you/Was name) staying the US or outside the US?	1. In the United States 2. Outside the United States Don't know Refused
F3E MIL_TYPE	At what type of place (were you/was name) staying – military barracks, a ship, other on-base housing, off-base housing, or other non-military housing?	1. Military Barracks 2. Ship 3. Other on-base housing 4. Off-base housing 5. Other non-military housing Don't know Refused
F3F MIL_HOUSE	Please describe the other nonmilitary housing.	[Open Text] Don't know Refused
F3G MIL_DATE	(Were you/Was name) staying there on (cenday)?	1. Yes 2. No Don't know Refused

Question Name	Question Text	Response Options
F3H MIL_ADDR1	What is the address where (you/name) stayed?	[Open Text] Don't know Refused
F3K MIL_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
F3L MIL_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
F3M MIL_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find the address?	[Open Text] Don't know Refused
F3N MIL_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
F4A JOB_AWAY1	During (cenmonths) did (you or name) have a job that involved living or staying someplace else <other than the military service you just mentioned>?	1. Yes 2. No Don't know Refused
F4B JOB_AWAY2	Who stayed someplace else? Anyone else?	[Select household member|
F4C JOB_PLACE	In (cenmonths), did (you/name) stay at one place or more than one place while working?	1. One place other than (ADDRESS) 2. More than one place other than (ADDRESS) 3. Stayed only at (ADDRESS) Don't know Refused
F4D JOB_RES	Did (you/name) stay often at any of these places?	1. Yes 2. No Don't know Refused
F4E JOB_ADDR1	What is the address where (you/name) (stayed/stayed the most)?	[Open Text] Don't know Refused
F4H JOB_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
F4I JOB_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused

Question Name	Question Text	Response Options
F4J JOB_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find the address?	[Open Text] Don't know Refused
F4K JOB_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
F5A SEAS_HOME1	Do you or does (name) have a seasonal or second home?	1. Yes 2. No Don't know Refused
F5B SEAS_HOME2	Who does? Anyone else?	[Select household member]
F5C SEAS_ADDR1	What is the address of (your/name's) other home?	[Open Text] Don't know Refused
F5F SEAS_MILES	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
F5G SEAS_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
F5H SEAS_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find the address?	[Open Text] Don't know Refused
F5I SEAS_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
F6A OTHER_PLACE1	In the past year, was there any other place you, or (name) stayed often?	1. Yes 2. No Don't know Refused
F6B OTHER_PLACE2	Who stayed often at another place? Anyone else?	[Select household member]
F6C OTHER_ADDR1	What is the address where (you/name) stayed?	[Open Text] Don't know Refused
F6F OTHER_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
F6G OTHER_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused

Question Name	Question Text	Response Options
F6H OTHER_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find the address?	[Open Text] Don’t know Refused
F6I OTHER_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don’t know Refused

Module G: Group Quarters

Question Name	Question Text	Response Options
G1 GQ_PLACE	PLEASE LOOK AT LIST A. EVEN IF (YOU/NAME) DID NOT LIVE THERE, DID (YOU/NAME) SPEND EVEN ONE NIGHT IN ANY OF THOSE TYPES OF PLACES AROUND (CENDAY)? How about (name)? Did (name) spend even one night in any of those types of places around (cenday)?	1. Yes 2. No Don't know Refused
G2 GQ_TYPE	What type of place is it?	2. Dormitory or residence hall 3. Sorority or fraternity house 4. Military Barracks 5. Military Ship 6. Nursing home 7. Independent or assisted living facility 8. Correctional facility, such as jail 9. Group home providing room, board, and psychological, social, or behavioral services 10. Emergency shelter 11. Residential school for people with disabilities 12. Psychiatric hospital/Psychiatric units in other hospitals 14. Other Don't know Refused
G3a GQ_TYPE3	(Do you/Does name) have access to 24-hour skilled nursing care at this place?	1. Yes 2. No Don't know Refused
G4 GQ_ADDR1	What is the address of that place?	[Open Text] Don't know Refused
G6 GQ_ADDR1a	What is the name of that place?	[Open Text] Don't know Refused

Question Name	Question Text	Response Options
G8 GQ_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
G9 GQ_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
G10 GQ_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find the address?	[Open Text] Don't know Refused
G11 GQ_CD	(Were you/Was name) staying there on (cenday)?	1. Yes, on (CENDAY) 2. No, not on (CENDAY) Don't know Refused

Modules H and I: Verifying Alternate Addresses

Question Name	Question Text	Response Options
H1 VERIFY_ADDRESS	Just to confirm the following people lived or stayed at only one address in the past year: (you, name, and name). Is that correct?	1. Yes 2. No Don't know Refused
H2 VERIFY_ADDRESS2	Who had more than one address? Anyone else?	[Select household member]
H3 VERIFY_ADDRESS3	What is the other address where (you/name) stayed?	[Open Text] Blank Don't know Refused
H4 VERIFY_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
H5 VERIFY_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
H6 VERIFY_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	[Open Text] Don't know Refused
H7 VERIFY_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
I1 REVIEW_ADDRESS1	I have collected these addresses for (you/name). (Addresses) Is that correct?	1. Yes 2. No, Add address 3. No, delete address Don't know Refused
I2 REVIEW_ADDRESS2	What is the other address where (you/name) stayed?	[Open Text] Blank Don't know Refused
I2a REVIEW_ADDRESS3	Which address(es) (have you/has name) not stayed or lived at?	[Select Address]
I3 REVIEW_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
I4 REVIEW_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused

Question Name	Question Text	Response Options
I5 REVIEW_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	[Open Text] Don't know Refused
I6 REVIEW_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
I7 MOVE	Did (you/name) go back and forth between these places, or did (you/name) move?	1. Back and forth 2. Move 3. Complex situation Don't know Refused
I8 MOVE_DATE	What date did (you/name) move?	[Open Text] Don't know Refused
I9 MOVE_APRIL	Did (you/name) move before (cenday), after (cenday), or on (cenday)?	1. Before (CENDAY) 2. After (CENDAY) 3. On (CENDAY) Don't know Refused
I10 MOVE_NOTES	Please tell me how much time (you/name) spent at each address in the past year.	[Open Text] Don't know Refused

Module J: Census Day Address Determination

Question Name	Question Text	Response Options
J1 CD_ADDR1	Around (cenday), where (were you/was name) living and sleeping most of the time?	[Select Address] Don't know Refused
J2 CD_ADDRESS2	Where did (you/name) stay (cenday)?	[Select Address] Don't know Refused
J4 CD_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
J5 CD_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
J6 CD_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	[Open Text] Don't know Refused
J7 CD-NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
J8 CYCLE1	Which of the following categories most accurately describes the amount of time (you/name) stayed at the other place? Was it: A few days a week; A few weeks each month; A few days each month; Months at a time; Some other period of time?	1. A few days a week 2. A few weeks each month 3. A few days each month 4. Months at a time 5. Some other period of time Don't know Refused
J9 CYCLE_NOTES	Please tell me approximately how much time (you/name) spent at each address in the past year.	[Open Text] Don't know Refused
J10 CYLCE_WK	During a typical week in (cenmonths), did (you/name) spend more days at (address) or the other place?	1. (ADDRESS) 2. Other place 3. Both places equally Don't know Refused
J11 CYCLE_MTH	During (cenmonths), did (you/name) spend more (weeks/days) at (address) or at the other place?	1. (ADDRESS) 2. Other place 3. Both places equally Don't know Refused

Question Name	Question Text	Response Options
J12 CYCLE_YR	In the past year, did (you/name) spend more months at (address) or at the other place?	1. (ADDRESS) 2. Other place 3. Both places equally Don't know Refused
J13 WHERE_CD	(Were you/ Was name) staying at (address) or at the other place on (cenday)?	1. (ADDRESS) 2. Other place Don't know Refused

Module K: Interview Day Residence Determination

Question Name	Question Text	Response Options
K1 NOW_ADDR1	Currently where (are you/is name) living and sleeping most of the time?	[Select Address] 32. Equal time at addresses Don't know Refused
K3 NOW_MILE	Is that place more than a (mile/kilometer) away from (address)?	1. Yes 2. No Don't know Refused
K4 NOW_CROSS	What are the cross streets closest to that address?	[Open Text] Don't know Refused
K5 NOW_LNDMRKS	Are there any landmarks nearby, such as schools or hospitals that would help someone find that address?	[Open Text] Don't know Refused
K6 NOW_NEIGHBOR	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused
K7 NOW_TYPE	Is the place (you are/name is) currently staying a house or apartment or another type of place like those shown on List A, ON THE INFORMATION SHEET I GAVE YOU?	1. House/Apartment/Mobile Home/Condo/Townhouse 2. Dormitory or residence hall 3. Sorority or fraternity house 4. Military Barracks 5. Military Ship 6. Nursing home 7. Independent or assisted living facility 8. Correctional facility, such as a jail 9. Group home providing room, board, and psychological, social, or behavioral services 10. Emergency shelter 11. Residential school for people with disabilities 12. Psychiatric hospital/Psychiatric units in other hospitals 13. Homeless 14. Other Don't know Refused

Question Name	Question Text	Response Options
K8 NOW_TYPE_NOTE	What type of place was that?	[Open Text] Don't know Refused
K9 NOW_TYPE2	Is that place a house or apartment, college housing, military housing, senior housing, or another type of place?	1. House/Apartment/Mobile Home/Condo/Townhouse 2. College housing 3. Military housing 4. Senior housing 5. Other Don't know Refused
K10 NOW_TYPE3	Is that place a dorm, a sorority or fraternity house, or some other college housing?	2. Dormitory or residence hall 3. Sorority or fraternity house 16. Other college housing
K10 NOW_TYPE3b	Is that place a barracks, a ship, or some other military housing?	4. Military barracks 5. Military ship 17. Other military housing
K10 NOW_TYPE3c	Is that place a nursing home, or an independent or assisted living facility?	6. Nursing home 7. Independent or assisted living facility 18. Another type of place
K10 NOW_TYPE3d	Is that other type of place a jail, a group home, a shelter, a school for people with disabilities, a psychiatric facility, or some other type of place?	8. Correctional facility, such a jail 9. Group home providing room, board, and psychological, social, or behavioral services 10. Emergency shelter 11. Residential school for people with disabilities 12. Psychiatric hospital/Psychiatric units in other hospitals 14. Other
K10a NOW_TYPE4	(Do you/Does name) have access to 24-hour skilled nursing care at that place?	1. Yes 2. No Don't know Refused

Question Name	Question Text	Response Options
K11 NOW_TIME	How long (are you/is name) staying there?	1. Less than one month 2. 1-2 months 3. 3-4 months 4. 5-6 months 5. More than 6 months 6. Not returning to (ADDRESS) Don't know Refused
K12 NOW_NOTES	Please tell me how much time (you/name) spent at each address in the past year.	[Open Text] Don't know Refused

Module L: In-mover Address

Question Name	Question Text	Response Options
L1 ALT_ADDR_NAME	Earlier you told me that (you and name) lived at (address). I'm going to ask a few more questions about that address. Was there anyone else who lived there on (cenday)?	1. Yes 2. N Don't know Refused
L2 ALT_ADDR_NAME1	What are their names and approximate ages?	[Open Text] Blank Don't know Refused
L3 ALT_ADDR_RELATD	Are any of these people related - (name) and (you, name)?	1. Yes 2. No Don't know Refused
L4 ALT_ADDR_OWN	On (cenfull) was (address) owned with a mortgage or loan - including home equity loans, owned free and clear, rented, or occupied without having to pay rent?	1. Owned with a mortgage or loan (including home equity loans) 2. Owned free and clear 3. Rented 4. Occupied without having to pay rent Don't know Refused
L5 ALT_ADDR_NEIGHBORS2	What are the names of the neighbors who live near that place?	[Open Text] Don't know Refused

Modules M and W: Sample Address on Census Day

Question Name	Question Text	Response Options
M1 CD_STATUS1	On (cenfull), was (address) vacant or was it occupied?	1. Vacant 2. Occupied 3. This address was not a housing unit on (CENFULL) Don't know Refused
M2 CD_STATUS2	Which category best describes this unit as of (cenfull)?	1. For rent 2. For sale only 3. Rented but no one lived there yet 4. Sold but no one lived there yet 5. For vacation, seasonal, recreational, or occasional use 6. For migrant workers 7. Other vacant Don't know Refused
M3 CD_STATUS3	Which category best describes this unit as of (cenfull)?	1. Demolished 2. Burned out 3. Business 4. Other (open to the elements, condemned, under construction) 5. Trailer moved from non-park location 6. Empty mobile home/trailer site 7. Group quarters (ex. Group Home, Halfway House) Don't know Refused
M5 WHO_ROSTER	What are the names of the people who lived (here/at address) on (cenfull)? First name? Middle initial? Last name? Anyone else?	[Open Text] Blank Don't know Refused
M7 WHO_REVIEW_LIST	I am going to show you the list of people I have recorded living (here/at address) on (cenfull). Have I spelled all names correctly?	1. No change 2. Edit Name 3. Delete Person 4. Add Person 5. Table Now Correct

Module N: Respondent Questions

Question Name	Question Text	Response Options
N3 R_NAME	What is your name?	[Open Text]
N4 R_PHONE	In case we need to contact you again, may I please have your telephone number?	[Open Text} Don't know Refused
N5 PRX_LOC	What is your address?	[Open Text]
N6 BEST_TIME	What is the best time to reach you?	1. Day 2. Evening 3. Either

Appendix 3: Module B - Roster

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
NAME_BABY	Frequency	205	1	60	0	1	**267**
	Row Pct	76.78	0.37	22.47	0.00	0.37	
NAME_BABY2	Frequency	3	0	1	0	0	**4**
	Row Pct	75.00	0.00	25.00	0.00	0.00	
NAME_FIND	Frequency	243	0	18	0	1	**262**
	Row Pct	92.75	0.00	6.87	0.00	0.38	
NAME_FIND2	Frequency	1	0	3	0	0	**4**
	Row Pct	25.00	0.00	75.00	0.00	0.00	
NAME_OFTEN	Frequency	235	0	31	0	0	**266**
	Row Pct	88.35	0.00	11.65	0.00	0.00	
NAME_OFTEN2	Frequency	17	0	12	0	1	**30**
	Row Pct	56.67	0.00	40.00	0.00	3.33	
NAME_REL	Frequency	213	2	45	0	2	**262**
	Row Pct	81.30	0.76	17.18	0.00	0.76	
NAME_REL2	Frequency	1	1	2	0	1	**5**
	Row Pct	20.00	20.00	40.00	0.00	20.00	
ROSTER1A	Frequency	0	0	1	0	0	**1**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
ROSTER1B	Frequency	199	2	65	1	0	**267**
	Row Pct	74.53	0.75	24.34	0.37	0.00	
ROSTER_ADDR1	Frequency	31	0	7	0	0	**38**
	Row Pct	81.58	0.00	18.42	0.00	0.00	
ROSTER_CROSS	Frequency	8	0	13	0	0	**21**
	Row Pct	38.10	0.00	61.90	0.00	0.00	
ROSTER_LNDMRKS	Frequency	5	0	12	0	0	**17**
	Row Pct	29.41	0.00	70.59	0.00	0.00	
ROSTER_NEIGHBOR	Frequency	3	0	14	0	1	**18**
	Row Pct	16.67	0.00	77.78	0.00	5.56	
ROSTER_REV	Frequency	137	4	122	0	0	**263**
	Row Pct	52.09	1.52	46.39	0.00	0.00	
Total	**Frequency**	**1,301**	**10**	**406**	**1**	**7**	**1,725**
	Row Pct	**75.42**	**0.58**	**23.54**	**0.06**	**0.41**	
Frequency Missing = 3							

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior								Total
		CA	CL	CWI	DK	I/O	QA	REF	UCA	
NAME_BABY	Frequency	222	3	6	0	27	0	0	8	**266**
	Row Pct	83.46	1.13	2.26	0.00	10.15	0.00	0.00	3.01	
NAME_BABY2	Frequency	4	0	0	0	0	0	0	0	**4**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
NAME_FIND	Frequency	223	2	5	2	20	0	0	8	**260**
	Row Pct	85.77	0.77	1.92	0.77	7.69	0.00	0.00	3.08	
NAME_FIND2	Frequency	2	0	0	0	1	0	0	1	**4**
	Row Pct	50.00	0.00	0.00	0.00	25.00	0.00	0.00	25.00	
NAME_OFTEN	Frequency	205	13	22	0	10	1	0	15	**266**
	Row Pct	77.07	4.89	8.27	0.00	3.76	0.38	0.00	5.64	
NAME_OFTEN2	Frequency	29	0	1	0	1	0	0	1	**32**
	Row Pct	90.63	0.00	3.13	0.00	3.13	0.00	0.00	3.13	
NAME_REL	Frequency	224	6	6	0	27	0	0	1	**264**
	Row Pct	84.85	2.27	2.27	0.00	10.23	0.00	0.00	0.38	
NAME_REL2	Frequency	5	0	0	0	0	0	0	0	**5**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ROSTER1A	Frequency	0	1	0	0	0	0	0	0	**1**
	Row Pct	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
ROSTER1B	Frequency	254	3	2	0	2	1	0	1	**263**
	Row Pct	96.58	1.14	0.76	0.00	0.76	0.38	0.00	0.38	
ROSTER_ADDR1	Frequency	19	0	1	9	1	3	0	5	**38**
	Row Pct	50.00	0.00	2.63	23.68	2.63	7.89	0.00	13.16	
ROSTER_CROSS	Frequency	13	0	0	5	3	1	0	0	**22**
	Row Pct	59.09	0.00	0.00	22.73	13.64	4.55	0.00	0.00	
ROSTER_LNDMRKS	Frequency	11	2	0	2	0	1	0	0	**16**
	Row Pct	68.75	12.50	0.00	12.50	0.00	6.25	0.00	0.00	
ROSTER_NEIGHBOR	Frequency	5	1	0	4	3	0	0	5	**18**
	Row Pct	27.78	5.56	0.00	22.22	16.67	0.00	0.00	27.78	
ROSTER_REV	Frequency	230	2	4	1	22	0	1	1	**261**
	Row Pct	88.12	0.77	1.53	0.38	8.43	0.00	0.38	0.38	
Total	**Frequency**	**1,446**	**33**	**47**	**23**	**117**	**7**	**1**	**46**	**1,720**
	Row Pct	**84.07**	**1.92**	**2.73**	**1.34**	**6.80**	**0.41**	**0.06**	**2.67**	
Frequency Missing = 54										

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 4: Module C - Identifying In-movers

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
HERE_CD	Frequency	247	13	453	4	60	**777**
	Row Pct	31.79	1.67	58.30	0.51	7.72	
INMVR_ADDR1	Frequency	24	4	33	2	5	**68**
	Row Pct	35.29	5.88	48.53	2.94	7.35	
INMVR_BACK	Frequency	29	1	49	1	3	**83**
	Row Pct	34.94	1.20	59.04	1.20	3.61	
INMVR_CROSS	Frequency	12	0	23	0	1	**36**
	Row Pct	33.33	0.00	63.89	0.00	2.78	
INMVR_DATE1	Frequency	29	1	23	1	7	**61**
	Row Pct	47.54	1.64	37.70	1.64	11.48	
INMVR_DATECD	Frequency	3	0	1	0	0	**4**
	Row Pct	75.00	0.00	25.00	0.00	0.00	
INMVR_EXPDATE	Frequency	5	0	7	0	0	**12**
	Row Pct	41.67	0.00	58.33	0.00	0.00	
INMVR_LNDMRKS	Frequency	8	0	27	0	1	**36**
	Row Pct	22.22	0.00	75.00	0.00	2.78	
INMVR_MILE	Frequency	0	0	2	0	0	**2**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
INMVR_TYPE1	Frequency	9	0	50	0	1	**60**
	Row Pct	15.00	0.00	83.33	0.00	1.67	
INMVR_TYPE3	Frequency	1	0	1	0	0	**2**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
Total	**Frequency**	**367**	**19**	**669**	**8**	**78**	**1,141**
	Row Pct	**32.16**	**1.67**	**58.63**	**0.70**	**6.84**	
Frequency Missing = 2							

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior								Total
		CA	CL	CWI	DK	I/O	QA	REF	UCA	
HERE_CD	Frequency	533	27	85	2	73	2	0	67	**789**
	Row Pct	67.55	3.42	10.77	0.25	9.25	0.25	0.00	8.49	
INMVR_ADDR1	Frequency	41	2	3	4	8	0	1	8	**67**
	Row Pct	61.19	2.99	4.48	5.97	11.94	0.00	1.49	11.94	
INMVR_BACK	Frequency	53	3	2	0	10	0	0	16	**84**
	Row Pct	63.10	3.57	2.38	0.00	11.90	0.00	0.00	19.05	
INMVR_CROSS	Frequency	26	3	0	4	1	0	0	2	**36**
	Row Pct	72.22	8.33	0.00	11.11	2.78	0.00	0.00	5.56	
INMVR_DATE1	Frequency	37	3	4	0	8	1	0	8	**61**
	Row Pct	60.66	4.92	6.56	0.00	13.11	1.64	0.00	13.11	
INMVR_DATECD	Frequency	2	0	0	2	0	0	0	0	**4**
	Row Pct	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	
INMVR_EXPDATE	Frequency	6	0	1	0	2	0	0	3	**12**
	Row Pct	50.00	0.00	8.33	0.00	16.67	0.00	0.00	25.00	
INMVR_LNDMRKS	Frequency	22	2	0	2	7	2	0	0	**35**
	Row Pct	62.86	5.71	0.00	5.71	20.00	5.71	0.00	0.00	
INMVR_MILE	Frequency	1	0	0	0	1	0	0	0	**2**
	Row Pct	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	
INMVR_TYPE1	Frequency	41	0	3	3	6	1	0	5	**59**
	Row Pct	69.49	0.00	5.08	5.08	10.17	1.69	0.00	8.47	
INMVR_TYPE3	Frequency	1	0	0	0	0	0	0	1	**2**
	Row Pct	50.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	
Total	**Frequency**	**763**	**40**	**98**	**17**	**116**	**6**	**1**	**110**	**1,151**
	Row Pct	**66.29**	**3.48**	**8.51**	**1.48**	**10.08**	**0.52**	**0.09**	**9.56**	
Frequency Missing = 176										

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 5: Module D - Identifying Out-movers

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
OUTMOV_ADDR1	Frequency	2	0	8	0	1	**11**
	Row Pct	18.18	0.00	72.73	0.00	9.09	
OUTMOV_CROSS	Frequency	1	0	7	0	0	**8**
	Row Pct	12.50	0.00	87.50	0.00	0.00	
OUTMOV_DATE1	Frequency	6	0	17	0	0	**23**
	Row Pct	26.09	0.00	73.91	0.00	0.00	
OUTMOV_DATECD	Frequency	0	0	2	0	0	**2**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
OUTMOV_KNOWLEDGE	Frequency	15	0	7	0	0	**22**
	Row Pct	68.18	0.00	31.82	0.00	0.00	
OUTMOV_LNDMRKS	Frequency	1	0	7	0	0	**8**
	Row Pct	12.50	0.00	87.50	0.00	0.00	
OUTMOV_NAME	Frequency	12	0	5	0	3	**20**
	Row Pct	60.00	0.00	25.00	0.00	15.00	
OUTMOV_NEIGHBOR	Frequency	1	0	6	0	1	**8**
	Row Pct	12.50	0.00	75.00	0.00	12.50	
OUTMOV_TYPE1	Frequency	1	0	9	0	1	**11**
	Row Pct	9.09	0.00	81.82	0.00	9.09	
OUT_MOV	Frequency	162	1	80	1	1	**245**
	Row Pct	66.12	0.41	32.65	0.41	0.41	
REVIEW_LIST	Frequency	7	0	3	0	0	**10**
	Row Pct	70.00	0.00	30.00	0.00	0.00	
Total	**Frequency**	**208**	**1**	**151**	**1**	**7**	**368**
	Row Pct	**56.52**	**0.27**	**41.03**	**0.27**	**1.90**	
Frequency Missing = 1							

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior							Total
		CA	CL	CWI	DK	I/O	QA	UCA	
OUTMOV_ADDR1	Frequency	4	0	1	3	2	1	0	**11**
	Row Pct	36.36	0.00	9.09	27.27	18.18	9.09	0.00	
OUTMOV_CROSS	Frequency	3	1	1	1	2	0	0	**8**
	Row Pct	37.50	12.50	12.50	12.50	25.00	0.00	0.00	
OUTMOV_DATE1	Frequency	9	1	3	4	0	4	2	**23**
	Row Pct	39.13	4.35	13.04	17.39	0.00	17.39	8.70	
OUTMOV_DATECD	Frequency	1	1	0	0	0	0	0	**2**
	Row Pct	50.00	50.00	0.00	0.00	0.00	0.00	0.00	
OUTMOV_KNOWLEDGE	Frequency	14	0	1	3	3	0	1	**22**
	Row Pct	63.64	0.00	4.55	13.64	13.64	0.00	4.55	
OUTMOV_LNDMRKS	Frequency	5	0	1	0	1	0	1	**8**
	Row Pct	62.50	0.00	12.50	0.00	12.50	0.00	12.50	
OUTMOV_NAME	Frequency	19	0	0	0	0	0	1	**20**
	Row Pct	95.00	0.00	0.00	0.00	0.00	0.00	5.00	
OUTMOV_NEIGHBOR	Frequency	1	1	1	0	3	0	2	**8**
	Row Pct	12.50	12.50	12.50	0.00	37.50	0.00	25.00	
OUTMOV_TYPE1	Frequency	7	0	1	1	1	1	0	**11**
	Row Pct	63.64	0.00	9.09	9.09	9.09	9.09	0.00	
OUT_MOV	Frequency	194	8	7	0	26	0	9	**244**
	Row Pct	79.51	3.28	2.87	0.00	10.66	0.00	3.69	
REVIEW_LIST	Frequency	9	0	0	0	2	0	0	**11**
	Row Pct	81.82	0.00	0.00	0.00	18.18	0.00	0.00	
Total	**Frequency**	**266**	**12**	**16**	**12**	**40**	**6**	**16**	**368**
	Row Pct	**72.28**	**3.26**	**4.35**	**3.26**	**10.87**	**1.63**	**4.35**	
Frequency Missing = 34									

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 6: Module E - Demographics

Interviewer Behavior

Question Name		Interviewer Behavior							Total
		ES	I/O	MC	S+	S-	V+	V-	
AIAN	Frequency	21	1	23	64	43	0	8	**160**
	Row Pct	13.13	0.63	14.38	40.00	26.88	0.00	5.00	
ASIAN	Frequency	2	1	15	43	23	0	21	**105**
	Row Pct	1.90	0.95	14.29	40.95	21.90	0.00	20.00	
ASK_AGE	Frequency	4	1	23	1	2	0	2	**33**
	Row Pct	12.12	3.03	69.70	3.03	6.06	0.00	6.06	
CONFIRM_AGE	Frequency	258	15	524	5	35	1	9	**847**
	Row Pct	30.46	1.77	61.87	0.59	4.13	0.12	1.06	
DOB	Frequency	500	19	348	5	12	0	1	**885**
	Row Pct	56.50	2.15	39.32	0.56	1.36	0.00	0.11	
NHPI	Frequency	2	0	3	8	9	0	3	**25**
	Row Pct	8.00	0.00	12.00	32.00	36.00	0.00	12.00	
OTHER_NAME	Frequency	343	3	422	51	47	3	11	**880**
	Row Pct	38.98	0.34	47.95	5.80	5.34	0.34	1.25	
OTHER_NAME2	Frequency	8	2	21	102	11	4	20	**168**
	Row Pct	4.76	1.19	12.50	60.71	6.55	2.38	11.90	
OUTMOV_NAME	Frequency	0	0	1	0	0	0	0	**1**
	Row Pct	0.00	0.00	100.00	0.00	0.00	0.00	0.00	
RACE	Frequency	52	15	449	139	137	5	80	**877**
	Row Pct	5.93	1.71	51.20	15.85	15.62	0.57	9.12	
REF_PERS	Frequency	98	3	83	9	8	15	18	**234**
	Row Pct	41.88	1.28	35.47	3.85	3.42	6.41	7.69	
RELATION1	Frequency	202	7	283	22	5	21	82	**622**
	Row Pct	32.48	1.13	45.50	3.54	0.80	3.38	13.18	
RELATION_REVIEW	Frequency	1	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
SEX	Frequency	123	10	275	55	56	17	347	**883**
	Row Pct	13.93	1.13	31.14	6.23	6.34	1.93	39.30	
SOR	Frequency	3	0	7	12	12	1	6	**41**
	Row Pct	7.32	0.00	17.07	29.27	29.27	2.44	14.63	
SPAN_ORIG	Frequency	318	6	312	104	94	4	50	**888**
	Row Pct	35.81	0.68	35.14	11.71	10.59	0.45	5.63	
SPAN_ORIG2	Frequency	6	1	40	28	18	0	15	**108**
	Row Pct	5.56	0.93	37.04	25.93	16.67	0.00	13.89	
TENURE	Frequency	102	0	149	0	0	1	12	**264**
	Row Pct	38.64	0.00	56.44	0.00	0.00	0.38	4.55	
Total	**Frequency**	**2,043**	**84**	**2978**	**648**	**512**	**72**	**685**	**7,022**
	Row Pct	**29.09**	**1.20**	**42.41**	**9.23**	**7.29**	**1.03**	**9.76**	
Frequency Missing = 27									

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior								Total
		CA	CL	CWI	DK	I/O	QA	REF	UCA	
AIAN	Frequency	52	1	3	3	4	0	0	3	**66**
	Row Pct	78.79	1.52	4.55	4.55	6.06	0.00	0.00	4.55	
ASIAN	Frequency	41	0	3	0	2	0	0	1	**47**
	Row Pct	87.23	0.00	6.38	0.00	4.26	0.00	0.00	2.13	
ASK_AGE	Frequency	9	0	1	13	4	2	0	1	**30**
	Row Pct	30.00	0.00	3.33	43.33	13.33	6.67	0.00	3.33	
CONFIRM_AGE	Frequency	653	12	5	2	101	4	0	27	**804**
	Row Pct	81.22	1.49	0.62	0.25	12.56	0.50	0.00	3.36	
DOB	Frequency	748	9	2	30	26	16	2	41	**874**
	Row Pct	85.58	1.03	0.23	3.43	2.97	1.83	0.23	4.69	
NHPI	Frequency	8	0	0	0	3	0	0	0	**11**
	Row Pct	72.73	0.00	0.00	0.00	27.27	0.00	0.00	0.00	
OTHER_NAME	Frequency	602	16	57	1	62	3	3	48	**792**
	Row Pct	76.01	2.02	7.20	0.13	7.83	0.38	0.38	6.06	
OTHER_NAME2	Frequency	80	0	0	0	3	0	0	0	**83**
	Row Pct	96.39	0.00	0.00	0.00	3.61	0.00	0.00	0.00	
OUTMOV_NAME	Frequency	1	0	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
RACE	Frequency	377	9	51	1	69	7	0	96	**610**
	Row Pct	61.80	1.48	8.36	0.16	11.31	1.15	0.00	15.74	
REF_PERS	Frequency	117	11	10	0	16	3	0	58	**215**
	Row Pct	54.42	5.12	4.65	0.00	7.44	1.40	0.00	26.98	
RELATION1	Frequency	294	5	57	0	39	5	0	195	**595**
	Row Pct	49.41	0.84	9.58	0.00	6.55	0.84	0.00	32.77	
RELATION_REVIEW	Frequency	1	0	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SEX	Frequency	474	2	51	0	167	2	1	66	**763**
	Row Pct	62.12	0.26	6.68	0.00	21.89	0.26	0.13	8.65	
SOR	Frequency	9	0	1	0	5	1	0	2	**18**
	Row Pct	50.00	0.00	5.56	0.00	27.78	5.56	0.00	11.11	
SPAN_ORIG	Frequency	496	11	34	1	75	3	0	84	**704**
	Row Pct	70.45	1.56	4.83	0.14	10.65	0.43	0.00	11.93	
SPAN_ORIG2	Frequency	41	0	4	0	11	0	0	10	**66**
	Row Pct	62.12	0.00	6.06	0.00	16.67	0.00	0.00	15.15	
TENURE	Frequency	162	10	15	0	16	3	0	59	**265**
	Row Pct	61.13	3.77	5.66	0.00	6.04	1.13	0.00	22.26	
Total	**Frequency**	**4,165**	**86**	**294**	**51**	**603**	**49**	**6**	**691**	**5,945**
	Row Pct	**70.06**	**1.45**	**4.95**	**0.86**	**10.14**	**0.82**	**0.10**	**11.62**	
Frequency Missing = 1104										

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 7: Module F - Alternate Address Questions

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
COLLEGE_ADDR1	Frequency	15	0	17	3	3	**38**
	Row Pct	39.47	0.00	44.74	7.89	7.89	
COLLEGE_AFFIL	Frequency	1	0	2	0	1	**4**
	Row Pct	25.00	0.00	50.00	0.00	25.00	
COLLEGE_ATTND1	Frequency	118	0	22	0	1	**141**
	Row Pct	83.69	0.00	15.60	0.00	0.71	
COLLEGE_ATTND2	Frequency	7	0	3	4	3	**18**
	Row Pct	38.89	0.00	16.67	22.22	16.67	
COLLEGE_CROSS	Frequency	2	0	2	0	0	**4**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
COLLEGE_LNDMRKS	Frequency	3	0	3	0	0	**6**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
COLLEGE_NAME1	Frequency	2	0	6	0	1	**9**
	Row Pct	22.22	0.00	66.67	0.00	11.11	
COLLEGE_NEIGHBOR	Frequency	2	0	6	0	1	**9**
	Row Pct	22.22	0.00	66.67	0.00	11.11	
GQ_PLACE	Frequency	1	0	1	0	0	**2**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
JOB_ADDR1	Frequency	1	0	5	0	0	**6**
	Row Pct	16.67	0.00	83.33	0.00	0.00	
JOB_AWAY1	Frequency	190	0	57	3	0	**250**
	Row Pct	76.00	0.00	22.80	1.20	0.00	
JOB_AWAY2	Frequency	1	0	1	0	0	**2**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
JOB_CROSS	Frequency	0	0	4	0	0	**4**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
JOB_LNDMRKS	Frequency	2	0	1	0	0	**3**
	Row Pct	66.67	0.00	33.33	0.00	0.00	
JOB_NEIGHBOR	Frequency	1	0	1	0	0	**2**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
JOB_PLACE	Frequency	4	0	1	0	0	**5**
	Row Pct	80.00	0.00	20.00	0.00	0.00	
JOB_RES	Frequency	1	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	
MIL_AWAY1	Frequency	199	0	43	1	0	**243**
	Row Pct	81.89	0.00	17.70	0.41	0.00	
MIL_AWAY2	Frequency	0	0	2	0	0	**2**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
MIL_STAY	Frequency	2	0	1	0	2	**5**
	Row Pct	40.00	0.00	20.00	0.00	40.00	
MIL_TIME	Frequency	3	0	0	0	3	**6**
	Row Pct	50.00	0.00	0.00	0.00	50.00	
OTHER_ADDR1	Frequency	10	0	3	0	1	**14**
	Row Pct	71.43	0.00	21.43	0.00	7.14	
OTHER_CROSS	Frequency	2	0	4	0	0	**6**
	Row Pct	33.33	0.00	66.67	0.00	0.00	
OTHER_LNDMRKS	Frequency	2	0	5	0	0	**7**
	Row Pct	28.57	0.00	71.43	0.00	0.00	

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
OTHER_NEIGHBOR	Frequency	2	0	5	0	0	**7**
	Row Pct	28.57	0.00	71.43	0.00	0.00	
OTHER_PLACE1	Frequency	209	0	49	0	1	**259**
	Row Pct	80.69	0.00	18.92	0.00	0.39	
OTHER_PLACE2	Frequency	0	0	5	1	1	**7**
	Row Pct	0.00	0.00	71.43	14.29	14.29	
RES_INTRO	Frequency	208	1	25	0	0	**234**
	Row Pct	88.89	0.43	10.68	0.00	0.00	
SEAS_ADDR1	Frequency	5	0	8	1	3	**17**
	Row Pct	29.41	0.00	47.06	5.88	17.65	
SEAS_CROSS	Frequency	2	0	2	0	0	**4**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
SEAS_HOME1	Frequency	218	0	41	1	2	**262**
	Row Pct	83.21	0.00	15.65	0.38	0.76	
SEAS_HOME2	Frequency	2	0	6	2	1	**11**
	Row Pct	18.18	0.00	54.55	18.18	9.09	
SEAS_LNDMRKS	Frequency	0	0	2	0	0	**2**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
SEAS_NEIGHBOR	Frequency	0	0	3	0	0	**3**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
SHARED_ADDR1	Frequency	17	1	4	0	3	**25**
	Row Pct	68.00	4.00	16.00	0.00	12.00	
SHARED_CROSS	Frequency	3	0	6	0	0	**9**
	Row Pct	33.33	0.00	66.67	0.00	0.00	
SHARED_CUST1	Frequency	168	0	89	0	0	**257**
	Row Pct	65.37	0.00	34.63	0.00	0.00	
SHARED_CUST2	Frequency	4	1	3	1	2	**11**
	Row Pct	36.36	9.09	27.27	9.09	18.18	
SHARED_LNDMRKS	Frequency	3	0	4	0	0	**7**
	Row Pct	42.86	0.00	57.14	0.00	0.00	
SHARED_MILE	Frequency	0	0	1	0	0	**1**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
Total	**Frequency**	**1,410**	**3**	**443**	**17**	**29**	**1,902**
	Row Pct	**74.13**	**0.16**	**23.29**	**0.89**	**1.52**	
Frequency Missing = 4							

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior								Total
		CA	CL	CWI	DK	I/O	QA	REF	UCA	
COLLEGE_ADDR1	Frequency	23	1	1	0	5	2	0	6	**38**
	Row Pct	60.53	2.63	2.63	0.00	13.16	5.26	0.00	15.79	
COLLEGE_AFFIL	Frequency	2	0	0	0	1	0	0	1	**4**
	Row Pct	50.00	0.00	0.00	0.00	25.00	0.00	0.00	25.00	
COLLEGE_ATTND1	Frequency	114	10	8	0	3	1	0	2	**138**
	Row Pct	82.61	7.25	5.80	0.00	2.17	0.72	0.00	1.45	
COLLEGE_ATTND2	Frequency	18	0	1	1	0	0	0	0	**20**
	Row Pct	90.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	
COLLEGE_CROSS	Frequency	0	1	0	0	3	0	0	0	**4**
	Row Pct	0.00	25.00	0.00	0.00	75.00	0.00	0.00	0.00	
COLLEGE_LNDMRKS	Frequency	4	0	0	0	1	0	0	1	**6**
	Row Pct	66.67	0.00	0.00	0.00	16.67	0.00	0.00	16.67	
COLLEGE_NAME1	Frequency	7	0	0	0	0	0	0	2	**9**
	Row Pct	77.78	0.00	0.00	0.00	0.00	0.00	0.00	22.22	
COLLEGE_NEIGHBOR	Frequency	1	1	1	2	2	0	0	2	**9**
	Row Pct	11.11	11.11	11.11	22.22	22.22	0.00	0.00	22.22	
GQ_PLACE	Frequency	1	0	0	0	1	0	0	0	**2**
	Row Pct	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	
JOB_ADDR1	Frequency	2	1	0	1	0	0	0	2	**6**
	Row Pct	33.33	16.67	0.00	16.67	0.00	0.00	0.00	33.33	
JOB_AWAY1	Frequency	202	4	3	1	32	1	0	5	**248**
	Row Pct	81.45	1.61	1.21	0.40	12.90	0.40	0.00	2.02	
JOB_AWAY2	Frequency	2	0	0	0	0	0	0	0	**2**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
JOB_CROSS	Frequency	1	0	0	1	2	0	0	0	**4**
	Row Pct	25.00	0.00	0.00	25.00	50.00	0.00	0.00	0.00	
JOB_LNDMRKS	Frequency	0	0	0	0	2	0	0	1	**3**
	Row Pct	0.00	0.00	0.00	0.00	66.67	0.00	0.00	33.33	
JOB_NEIGHBOR	Frequency	0	0	0	1	0	0	0	1	**2**
	Row Pct	0.00	0.00	0.00	50.00	0.00	0.00	0.00	50.00	
JOB_PLACE	Frequency	2	0	1	0	1	1	0	0	**5**
	Row Pct	40.00	0.00	20.00	0.00	20.00	20.00	0.00	0.00	
JOB_RES	Frequency	1	0	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MIL_AWAY1	Frequency	216	3	2	2	19	0	0	1	**243**
	Row Pct	88.89	1.23	0.82	0.82	7.82	0.00	0.00	0.41	
MIL_AWAY2	Frequency	2	0	0	0	0	0	0	0	**2**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MIL_STAY	Frequency	2	0	0	0	3	0	0	0	**5**
	Row Pct	40.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00	
MIL_TIME	Frequency	6	0	0	0	1	0	0	0	**7**
	Row Pct	85.71	0.00	0.00	0.00	14.29	0.00	0.00	0.00	
OTHER_ADDR1	Frequency	9	1	1	0	1	0	0	3	**15**
	Row Pct	60.00	6.67	6.67	0.00	6.67	0.00	0.00	20.00	
OTHER_CROSS	Frequency	4	1	0	0	1	0	0	0	**6**
	Row Pct	66.67	16.67	0.00	0.00	16.67	0.00	0.00	0.00	
OTHER_LNDMRKS	Frequency	6	0	0	0	0	0	0	0	**6**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Question Name		Respondent Behavior								Total
		CA	CL	CWI	DK	I/O	QA	REF	UCA	
OTHER_NEIGHBOR	Frequency	3	1	0	0	3	0	0	0	**7**
	Row Pct	42.86	14.29	0.00	0.00	42.86	0.00	0.00	0.00	
OTHER_PLACE1	Frequency	197	10	7	0	37	2	1	5	**259**
	Row Pct	76.06	3.86	2.70	0.00	14.29	0.77	0.39	1.93	
OTHER_PLACE2	Frequency	6	0	0	0	0	0	0	2	**8**
	Row Pct	75.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00	
RES_INTRO	Frequency	32	0	0	0	2	0	0	0	**34**
	Row Pct	94.12	0.00	0.00	0.00	5.88	0.00	0.00	0.00	
SEAS_ADDR1	Frequency	15	0	0	0	2	0	1	0	**18**
	Row Pct	83.33	0.00	0.00	0.00	11.11	0.00	5.56	0.00	
SEAS_CROSS	Frequency	2	0	0	1	0	1	0	0	**4**
	Row Pct	50.00	0.00	0.00	25.00	0.00	25.00	0.00	0.00	
SEAS_HOME1	Frequency	219	5	6	0	24	1	0	6	**261**
	Row Pct	83.91	1.92	2.30	0.00	9.20	0.38	0.00	2.30	
SEAS_HOME2	Frequency	9	0	0	0	2	0	0	2	**13**
	Row Pct	69.23	0.00	0.00	0.00	15.38	0.00	0.00	15.38	
SEAS_LNDMRKS	Frequency	1	0	0	1	0	0	0	0	**2**
	Row Pct	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	
SEAS_NEIGHBOR	Frequency	2	0	0	0	0	0	0	1	**3**
	Row Pct	66.67	0.00	0.00	0.00	0.00	0.00	0.00	33.33	
SHARED_ADDR1	Frequency	16	0	0	3	3	1	0	2	**25**
	Row Pct	64.00	0.00	0.00	12.00	12.00	4.00	0.00	8.00	
SHARED_CROSS	Frequency	5	2	0	0	2	0	0	0	**9**
	Row Pct	55.56	22.22	0.00	0.00	22.22	0.00	0.00	0.00	
SHARED_CUST1	Frequency	207	5	10	1	23	0	0	12	**258**
	Row Pct	80.23	1.94	3.88	0.39	8.91	0.00	0.00	4.65	
SHARED_CUST2	Frequency	8	0	1	0	2	0	0	1	**12**
	Row Pct	66.67	0.00	8.33	0.00	16.67	0.00	0.00	8.33	
SHARED_LNDMRKS	Frequency	4	0	1	0	1	1	0	0	**7**
	Row Pct	57.14	0.00	14.29	0.00	14.29	14.29	0.00	0.00	
SHARED_MILE	Frequency	1	0	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	**Frequency**	**1,352**	**46**	**43**	**15**	**179**	**11**	**2**	**58**	**1,706**
	Row Pct	**79.25**	**2.70**	**2.52**	**0.88**	**10.49**	**0.64**	**0.12**	**3.40**	
Frequency Missing = 436										

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 8: Module G - Group Quarters

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
GQ_ADDR1	Frequency	0	0	6	1	0	**7**
	Row Pct	0.00	0.00	85.71	14.29	0.00	
GQ_ADDR1a	Frequency	2	0	5	0	0	**7**
	Row Pct	28.57	0.00	71.43	0.00	0.00	
GQ_CD	Frequency	2	0	5	0	0	**7**
	Row Pct	28.57	0.00	71.43	0.00	0.00	
GQ_CROSS	Frequency	0	0	4	0	0	**4**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
GQ_LNDMRKS	Frequency	0	0	2	0	0	**2**
	Row Pct	0.00	0.00	100.00	0.00	0.00	
GQ_PLACE	Frequency	213	5	401	1	25	**645**
	Row Pct	33.02	0.78	62.17	0.16	3.88	
GQ_TYPE	Frequency	1	0	5	0	0	**6**
	Row Pct	16.67	0.00	83.33	0.00	0.00	
GQ_TYPE3	Frequency	1	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	
Total	**Frequency**	**219**	**5**	**428**	**2**	**25**	**679**
	Row Pct	**32.25**	**0.74**	**63.03**	**0.29**	**3.68**	
Frequency Missing = 3							

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior								Total
		CA	CL	CWI	DK	I/O	QA	REF	UCA	
GQ_ADDR1	Frequency	3	0	0	3	0	0	0	1	7
	Row Pct	42.86	0.00	0.00	42.86	0.00	0.00	0.00	14.29	
GQ_ADDR1a	Frequency	3	2	0	0	0	1	0	1	7
	Row Pct	42.86	28.57	0.00	0.00	0.00	14.29	0.00	14.29	
GQ_CD	Frequency	3	0	0	2	0	2	0	0	7
	Row Pct	42.86	0.00	0.00	28.57	0.00	28.57	0.00	0.00	
GQ_CROSS	Frequency	2	0	0	0	1	1	0	0	4
	Row Pct	50.00	0.00	0.00	0.00	25.00	25.00	0.00	0.00	
GQ_LNDMRKS	Frequency	0	0	0	0	0	0	0	2	2
	Row Pct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	
GQ_PLACE	Frequency	540	28	4	1	69	0	1	18	661
	Row Pct	81.69	4.24	0.61	0.15	10.44	0.00	0.15	2.72	
GQ_TYPE	Frequency	4	0	0	0	1	0	0	1	6
	Row Pct	66.67	0.00	0.00	0.00	16.67	0.00	0.00	16.67	
GQ_TYPE3	Frequency	1	0	0	0	0	0	0	0	1
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	Frequency	556	30	4	6	71	4	1	23	695
	Row Pct	80.00	4.32	0.58	0.86	10.22	0.58	0.14	3.31	
Frequency Missing = 183										

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 9: Modules H & I - Verifying Alternate Addresses

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
MOVE	Frequency	37	2	19	3	3	64
	Row Pct	57.81	3.13	29.69	4.69	4.69	
MOVE_APRIL	Frequency	0	0	1	0	0	1
	Row Pct	0.00	0.00	100.00	0.00	0.00	
MOVE_DATE	Frequency	6	2	3	0	3	14
	Row Pct	42.86	14.29	21.43	0.00	21.43	
MOVE_NOTES	Frequency	6	2	7	0	0	15
	Row Pct	40.00	13.33	46.67	0.00	0.00	
REVIEW_ADDRESS1	Frequency	93	2	49	0	4	148
	Row Pct	62.84	1.35	33.11	0.00	2.70	
REVIEW_NEIGHBOR	Frequency	1	0	2	0	0	3
	Row Pct	33.33	0.00	66.67	0.00	0.00	
VERIFY_ADDRESS	Frequency	176	1	49	1	0	227
	Row Pct	77.53	0.44	21.59	0.44	0.00	
VERIFY_ADDRESS2	Frequency	0	0	1	0	0	1
	Row Pct	0.00	0.00	100.00	0.00	0.00	
VERIFY_ADDRESS3	Frequency	0	0	1	0	0	1
	Row Pct	0.00	0.00	100.00	0.00	0.00	
VERIFY_CROSS	Frequency	0	0	2	0	0	2
	Row Pct	0.00	0.00	100.00	0.00	0.00	
VERIFY_NEIGHBOR	Frequency	1	0	0	0	0	1
	Row Pct	100.00	0.00	0.00	0.00	0.00	
Total	Frequency	320	9	134	4	10	477
	Row Pct	67.09	1.89	28.09	0.84	2.10	
Frequency Missing = 2							

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior							Total
		CA	CL	CWI	DK	I/O	QA	UCA	
MOVE	Frequency	45	2	3	0	9	0	4	**63**
	Row Pct	71.43	3.17	4.76	0.00	14.29	0.00	6.35	
MOVE_APRIL	Frequency	1	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
MOVE_DATE	Frequency	6	1	0	0	3	2	2	**14**
	Row Pct	42.86	7.14	0.00	0.00	21.43	14.29	14.29	
MOVE_NOTES	Frequency	7	3	0	0	4	0	1	**15**
	Row Pct	46.67	20.00	0.00	0.00	26.67	0.00	6.67	
REVIEW_ADDRESS1	Frequency	117	1	1	0	20	2	4	**145**
	Row Pct	80.69	0.69	0.69	0.00	13.79	1.38	2.76	
REVIEW_NEIGHBOR	Frequency	3	0	0	0	0	0	0	**3**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
VERIFY_ADDRESS	Frequency	208	2	0	0	15	1	1	**227**
	Row Pct	91.63	0.88	0.00	0.00	6.61	0.44	0.44	
VERIFY_ADDRESS2	Frequency	0	0	1	0	0	0	0	**1**
	Row Pct	0.00	0.00	100.00	0.00	0.00	0.00	0.00	
VERIFY_ADDRESS3	Frequency	0	0	0	1	0	0	0	**1**
	Row Pct	0.00	0.00	0.00	100.00	0.00	0.00	0.00	
VERIFY_CROSS	Frequency	1	0	0	0	1	0	0	**2**
	Row Pct	50.00	0.00	0.00	0.00	50.00	0.00	0.00	
VERIFY_NEIGHBOR	Frequency	0	0	0	0	1	0	0	**1**
	Row Pct	0.00	0.00	0.00	0.00	100.00	0.00	0.00	
Total	**Frequency**	**388**	**9**	**5**	**1**	**53**	**5**	**12**	**473**
	Row Pct	**82.03**	**1.90**	**1.06**	**0.21**	**11.21**	**1.06**	**2.54**	
Frequency Missing = 27									

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 10: Module J - Census Day Address Determination

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
CD_ADDR1	Frequency	48	1	30	7	3	**89**
	Row Pct	53.93	1.12	33.71	7.87	3.37	
CD_ADDRESS2	Frequency	6	0	6	0	0	**12**
	Row Pct	50.00	0.00	50.00	0.00	0.00	
CYCLE1	Frequency	19	0	11	0	2	**32**
	Row Pct	59.38	0.00	34.38	0.00	6.25	
CYCLE_MTH	Frequency	2	0	3	0	0	**5**
	Row Pct	40.00	0.00	60.00	0.00	0.00	
CYCLE_NOTES	Frequency	5	0	9	0	2	**16**
	Row Pct	31.25	0.00	56.25	0.00	12.50	
CYCLE_YR	Frequency	4	0	5	1	0	**10**
	Row Pct	40.00	0.00	50.00	10.00	0.00	
CYLCE_WK	Frequency	8	0	1	0	1	**10**
	Row Pct	80.00	0.00	10.00	0.00	10.00	
NOW_ADDR1	Frequency	1	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	
WHERE_CD	Frequency	4	0	0	2	1	**7**
	Row Pct	57.14	0.00	0.00	28.57	14.29	
Total	**Frequency**	**97**	**1**	**65**	**10**	**9**	**182**
	Row Pct	**53.30**	**0.55**	**35.71**	**5.49**	**4.95**	

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior							Total
		CA	CL	CWI	DK	I/O	QA	UCA	
CD_ADDR1	Frequency	61	0	2	2	9	1	13	**88**
	Row Pct	69.32	0.00	2.27	2.27	10.23	1.14	14.77	
CD_ADDRESS2	Frequency	3	0	0	2	4	1	2	**12**
	Row Pct	25.00	0.00	0.00	16.67	33.33	8.33	16.67	
CYCLE1	Frequency	24	1	0	0	0	0	7	**32**
	Row Pct	75.00	3.13	0.00	0.00	0.00	0.00	21.88	
CYCLE_MTH	Frequency	4	0	0	0	0	0	1	**5**
	Row Pct	80.00	0.00	0.00	0.00	0.00	0.00	20.00	
CYCLE_NOTES	Frequency	6	1	0	1	2	0	5	**15**
	Row Pct	40.00	6.67	0.00	6.67	13.33	0.00	33.33	
CYCLE_YR	Frequency	9	0	0	0	0	0	1	**10**
	Row Pct	90.00	0.00	0.00	0.00	0.00	0.00	10.00	
CYLCE_WK	Frequency	7	1	1	0	1	0	0	**10**
	Row Pct	70.00	10.00	10.00	0.00	10.00	0.00	0.00	
NOW_ADDR1	Frequency	1	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
WHERE_CD	Frequency	6	0	0	0	0	0	1	**7**
	Row Pct	85.71	0.00	0.00	0.00	0.00	0.00	14.29	
Total	**Frequency**	**121**	**3**	**3**	**5**	**16**	**2**	**30**	**180**
	Row Pct	**67.22**	**1.67**	**1.67**	**2.78**	**8.89**	**1.11**	**16.67**	
Frequency Missing = 12									

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 11: Module K - Interview Day Residence Determination

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
NOW_ADDR1	Frequency	47	0	21	9	6	**83**
	Row Pct	56.63	0.00	25.30	10.84	**7.23**	
NOW_NOTES	Frequency	9	1	6	3	1	**20**
	Row Pct	45.00	5.00	30.00	15.00	**5.00**	
NOW_TIME	Frequency	16	2	9	0	1	**28**
	Row Pct	57.14	7.14	32.14	0.00	**3.57**	
NOW_TYPE	Frequency	0	0	1	0	0	**1**
	Row Pct	0.00	0.00	100.00	0.00	**0.00**	
Total	**Frequency**	**72**	**3**	**37**	**12**	**8**	**132**
	Row Pct	**54.55**	**2.27**	**28.03**	**9.09**	**6.06**	
Frequency Missing = 1							

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior							Total
		CA	CL	CWI	DK	I/O	QA	UCA	
NOW_ADDR1	Frequency	53	1	3	0	11	0	15	**83**
	Row Pct	63.86	1.20	3.61	0.00	13.25	0.00	18.07	
NOW_NOTES	Frequency	12	1	2	0	3	1	2	**21**
	Row Pct	57.14	4.76	9.52	0.00	14.29	4.76	9.52	
NOW_TIME	Frequency	14	1	1	3	4	0	5	**28**
	Row Pct	50.00	3.57	3.57	10.71	14.29	0.00	17.86	
NOW_TYPE	Frequency	0	0	0	0	0	0	1	**1**
	Row Pct	0.00	0.00	0.00	0.00	0.00	0.00	100.00	
Total	**Frequency**	**79**	**3**	**6**	**3**	**18**	**1**	**23**	**133**
	Row Pct	**59.40**	**2.26**	**4.51**	**2.26**	**13.53**	**0.75**	**17.29**	
Frequency Missing = 11									

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 12: Module L - In-mover Address

Interviewer Behavior

Question Name		Interviewer Behavior				Total
		ES	MC	V+	V-	
ALT_ADDR_NAME	Frequency	31	12	0	0	**43**
	Row Pct	72.09	27.91	0.00	0.00	
ALT_ADDR_NAME1	Frequency	13	8	0	0	**21**
	Row Pct	61.90	38.10	0.00	0.00	
ALT_ADDR_NEIGHBORS2	Frequency	16	20	1	0	**37**
	Row Pct	43.24	54.05	2.70	0.00	
ALT_ADDR_OWN	Frequency	11	30	0	0	**41**
	Row Pct	26.83	73.17	0.00	0.00	
ALT_ADDR_RELATED	Frequency	9	8	0	1	**18**
	Row Pct	50.00	44.44	0.00	5.56	
Total	**Frequency**	**80**	**78**	**1**	**1**	**160**
	Row Pct	**50.00**	**48.75**	**0.63**	**0.63**	
Frequency Missing = 1						

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior							Total
		CA	CL	CWI	DK	I/O	QA	UCA	
ALT_ADDR_NAME	Frequency	31	1	5	3	2	0	1	**43**
	Row Pct	72.09	2.33	11.63	6.98	4.65	0.00	2.33	
ALT_ADDR_NAME1	Frequency	18	0	1	0	1	0	1	**21**
	Row Pct	85.71	0.00	4.76	0.00	4.76	0.00	4.76	
ALT_ADDR_NEIGHBORS2	Frequency	13	0	1	12	7	1	3	**37**
	Row Pct	35.14	0.00	2.70	32.43	18.92	2.70	8.11	
ALT_ADDR_OWN	Frequency	26	2	2	2	2	0	7	**41**
	Row Pct	63.41	4.88	4.88	4.88	4.88	0.00	17.07	
ALT_ADDR_RELATED	Frequency	12	0	3	0	2	0	1	**18**
	Row Pct	66.67	0.00	16.67	0.00	11.11	0.00	5.56	
Total	**Frequency**	**100**	**3**	**12**	**17**	**14**	**1**	**13**	**160**
	Row Pct	**62.50**	**1.88**	**7.50**	**10.63**	**8.75**	**0.63**	**8.13**	
Frequency Missing = 3									

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 13: Modules M and W - Sample Address on Census Day

Interviewer Behavior

Question Name		Interviewer Behavior				Total
		ES	I/O	MC	V-	
CD_STATUS1	Frequency	16	0	6	1	**23**
	Row Pct	69.57	0.00	26.09	4.35	
CD_STATUS2	Frequency	2	0	9	1	**12**
	Row Pct	16.67	0.00	75.00	8.33	
CD_STATUS3	Frequency	0	1	0	0	**1**
	Row Pct	0.00	100.00	0.00	0.00	
WHO_ROSTER	Frequency	0	0	2	0	**2**
	Row Pct	0.00	0.00	100.00	0.00	
Total	**Frequency**	**18**	**1**	**17**	**2**	**38**
	Row Pct	**47.37**	**2.63**	**44.74**	**5.26**	

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior							Total
		CA	CL	CWI	DK	I/O	QA	UCA	
CD_STATUS1	Frequency	8	4	2	6	2	0	1	**23**
	Row Pct	34.78	17.39	8.70	26.09	8.70	0.00	4.35	
CD_STATUS2	Frequency	5	1	1	1	0	1	3	**12**
	Row Pct	41.67	8.33	8.33	8.33	0.00	8.33	25.00	
CD_STATUS3	Frequency	0	0	0	0	1	0	0	**1**
	Row Pct	0.00	0.00	0.00	0.00	100.00	0.00	0.00	
WHO_ROSTER	Frequency	0	0	0	1	0	0	1	**2**
	Row Pct	0.00	0.00	0.00	50.00	0.00	0.00	50.00	
Total	**Frequency**	**13**	**5**	**3**	**8**	**3**	**1**	**5**	**38**
	Row Pct	**34.21**	**13.16**	**7.89**	**21.05**	**7.89**	**2.63**	**13.16**	
Frequency Missing = 2									

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 14: Module N - Respondent Questions

Interviewer Behavior

Question Name		Interviewer Behavior					Total
		ES	I/O	MC	V+	V-	
BEST_TIME	Frequency	85	0	166	0	0	**251**
	Row Pct	33.86	0.00	66.14	0.00	0.00	
GQ_PLACE	Frequency	1	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	
PRX_LOC	Frequency	2	0	4	0	0	**6**
	Row Pct	33.33	0.00	66.67	0.00	0.00	
R_NAME	Frequency	3	0	2	0	0	**5**
	Row Pct	60.00	0.00	40.00	0.00	0.00	
R_PHONE	Frequency	211	2	47	1	1	**262**
	Row Pct	80.53	0.76	17.94	0.38	0.38	
Total	**Frequency**	**302**	**2**	**219**	**1**	**1**	**525**
	Row Pct	**57.52**	**0.38**	**41.71**	**0.19**	**0.19**	

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Respondent Behavior

Question Name		Respondent Behavior								Total
		CA	CL	CWI	DK	I/O	QA	REF	UCA	
BEST_TIME	Frequency	184	1	7	2	16	3	0	36	**249**
	Row Pct	73.90	0.40	2.81	0.80	6.43	1.20	0.00	14.46	
GQ_PLACE	Frequency	1	0	0	0	0	0	0	0	**1**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRX_LOC	Frequency	6	0	0	0	0	0	0	0	**6**
	Row Pct	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
R_NAME	Frequency	4	0	0	0	1	0	0	0	**5**
	Row Pct	80.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	
R_PHONE	Frequency	237	6	0	2	5	0	7	5	**262**
	Row Pct	90.46	2.29	0.00	0.76	1.91	0.00	2.67	1.91	
Total	**Frequency**	**432**	**7**	**7**	**4**	**22**	**3**	**7**	**41**	**523**
	Row Pct	**82.60**	**1.34**	**1.34**	**0.76**	**4.21**	**0.57**	**1.34**	**7.84**	
Frequency Missing = 13										

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx

Appendix 15: Break-ins

Module	Question Name	Break-ins		Total Administrations
B	NAME_BABY	Frequency	27	**267**
		Row Pct	10.11	
	NAME_FIND	Frequency	2	**262**
		Row Pct	0.76	
	NAME_OFTEN	Frequency	5	**266**
		Row Pct	1.88	
	NAME_REL	Frequency	12	**262**
		Row Pct	4.58	
	ROSTER_CROSS	Frequency	1	**21**
		Row Pct	4.76	
	ROSTER_LNDMRKS	Frequency	2	**17**
		Row Pct	11.76	
	ROSTER_REV	Frequency	5	**263**
		Row Pct	1.9	
	ROSTER1B	Frequency	2	**267**
		Row Pct	0.75	
C	HERE_CD	Frequency	34	**777**
		Row Pct	4.38	
	INMVR_ADDR1	Frequency	1	**68**
		Row Pct	1.47	
	INMVR_BACK	Frequency	6	**83**
		Row Pct	7.23	
	INMVR_CROSS	Frequency	2	**36**
		Row Pct	5.56	
	INMVR_LNDMRKS	Frequency	2	**36**
		Row Pct	5.56	
	INMVR_TYPE1	Frequency	9	**60**
		Row Pct	15.00	
D	OUT_MOV	Frequency	16	**245**
		Row Pct	6.53	
	OUT_MOVADDR1	Frequency	1	**11**
		Row Pct	9.09	
	OUTMOV_KNOWLEDGE	Frequency	2	**22**
		Row Pct	9.09	
	OUTMOV_TYPE1	Frequency	4	**11**
		Row Pct	36.36	

Module	Question Name	Break-ins		Total Administrations
E	ASIAN	Frequency	3	**105**
		Row Pct	2.86	
	CONFIRM_AGE	Frequency	11	**847**
		Row Pct	1.30	
	DOB	Frequency	8	**885**
		Row Pct	0.90	
	OTHER_NAME	Frequency	20	**880**
		Row Pct	2.27	
	OTHER_NAME2	Frequency	2	**168**
		Row Pct	1.19	
	RACE	Frequency	88	**877**
		Row Pct	10.03	
	REF_PERS	Frequency	2	**234**
		Row Pct	0.85	
	RELATION1	Frequency	22	**622**
		Row Pct	3.54	
	SEX	Frequency	15	**883**
		Row Pct	1.70	
	SPAN_ORIG	Frequency	21	**888**
		Row Pct	2.36	
	SPAN_ORIG2	Frequency	15	**108**
		Row Pct	13.89	
	TENURE	Frequency	48	**264**
		Row Pct	18.18	

Module	Question Name	Break-ins		Total Administrations
F	COLLEGE_ADDR1	Frequency	1	**38**
		Row Pct	2.63	
	COLLEGE_LNDMRKS	Frequency	1	**6**
		Row Pct	16.67	
	COLLEGE_NAME1	Frequency	1	**9**
		Row Pct	11.11	
	JOB_AWAY1	Frequency	4	**250**
		Row Pct	1.60	
	MIL_AWAY1	Frequency	3	**243**
		Row Pct	1.23	
	MIL_STAY	Frequency	1	**5**
		Row Pct	20.00	
	OTHER_LNDMRKS	Frequency	1	**7**
		Row Pct	14.29	
	OTHER_PLACE1	Frequency	4	**259**
		Row Pct	1.54	
	OTHER_PLACE2	Frequency	1	**7**
		Row Pct	14.29	
	RES_INTRO	Frequency	7	**234**
		Row Pct	2.99	
	SEAS_HOME1	Frequency	3	**262**
		Row Pct	262	
	SHARED_CUST1	Frequency	39	**257**
		Row Pct	15.18	
G	GQ_PLACE	Frequency	25	**645**
		Row Pct	3.88	
	GQ_TYPE	Frequency	1	**6**
		Row Pct	16.67	
HI	MOVE	Frequency	2	**64**
		Row Pct	3.13	
	REVIEW_ADDRESS1	Frequency	3	**148**
		Row Pct	2.03	
	VERIFY_ADDRESS	Frequency	5	**227**
		Row Pct	2.20	
J	CD_ADDR1	Frequency	3	**89**
		Row Pct	3.37	
	CYCLE_MTH	Frequency	1	**5**
		Row Pct	20.00	
	CYCLE1	Frequency	3	**32**
		Row Pct	9.38	

Module	Question Name	Break-ins		Total Administrations
K	NOW_ADDR1	Frequency	4	**83**
		Row Pct	4.82	
	NOW_TIME	Frequency	3	**28**
		Row Pct	10.71	
L	ALT_ADDR_NAME1	Frequency	1	**21**
		Row Pct	4.76	
	ALT_ADDR_OWN	Frequency	10	**41**
		Row Pct	24.39	
	ALT_ADDR_RELATED	Frequency	2	**18**
		Row Pct	11.11	
N	BEST_TIME	Frequency	7	**251**
		Row Pct	2.79	
	R_PHONE	Frequency	2	**262**
		Row Pct	0.76	

Source: CCM PI 2010 Behavior Coding Frequencies.xlsx