



This document was prepared by and for Census Bureau staff to aid in future research and planning, but the Census Bureau is making the document publicly available in order to share the information with as wide an audience as possible. Questions about the document should be directed to Kevin Deardorff at (301) 763-6033 or kevin.e.deardorff@census.gov

September 27, 2012

2010 CENSUS PLANNING MEMORANDA SERIES

No. 240

MEMORANDUM FOR The Distribution List

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

Subject: 2010 Census Investigation of Methods to Evaluate the Coverage of
Group Quarters Population

Attached is the 2010 Census Investigation of Methods to Evaluate the Coverage of Group Quarters Population Report. The Quality Process for the 2010 Census Test Evaluations, Experiments, and Assessments was applied to the methodology development and review process. The report is sound and appropriate for completeness and accuracy.

If you have any questions about this document, please contact Yuling Pan at (301) 763-4950.

Attachment

September 25, 2012

Investigation of Methods to Evaluate the Coverage of Group Quarters Populations Report

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

Final

ANNA Y. CHAN

Center for Survey Measurement

This page intentionally left blank.

Table of Contents

Executive Summary	vi
1 Introduction	1
1.1 Scope	1
1.2 Intended Audience.....	1
2 Background	1
2.1 Definition of Group Quarters	1
2.2 Number of Group Quarters Populations in 2010	2
2.3 Diversity of Group Quarters Populations.....	3
2.4 Group Quarters in the Census Coverage Measurement Surveys, 1980-2010	3
2.5 Methods for Current Group Quarters Enumeration	4
2.6 Looking Forward: 2020 Group Quarters Enumeration.....	4
2.7 Research Questions	5
3 Methodology	5
3.1 Phase One – Group Quarters Observations and In-Depth Interviews.....	5
3.2 Phase Two – Ethnographic Studies.....	6
3.3 Phase Three – Survey Research Study.....	7
3.3.1 Pilot Coverage Measurement Study – University Student Housing.....	7
4 Limitations	8
5 Results	8
5.1 What Factors Affect the Success of a Group Quarters’ Population Coverage Study in Different Types of Group Quarters?.....	8
5.2 What Type of Study Would Aid in Understanding Coverage in GQs and How Would it be Best Assessed?.....	13
5.3 Do Different Types of Group Quarters Need Different Methods to Assess Coverage?	17
6 Related Evaluations, Experiments, and/or Assessments	19
7 Conclusions and Recommendations.....	20
7.1 Conclusions	20
7.2 Recommendations and Future Research for Coverage Measurement Program for Group Quarters Populations.....	21
8 Acknowledgements	24
9 References	24
Appendix A: Tables	27
Table A1: Types of Group Quarters by Type Codes.....	27
Table A2: Number of Group Quarters Facilities Studied by IMEGQP Research Project	28

Table A3: Residents Mobility by Group Quarters Types.....	29
Table A4: Qualitative Assessment of Administrative Data by Types of Group Quarters	30
Appendix B: Brief Summaries from Ethnographic Studies.....	31
B1 Correctional Facilities – Jails and Prisons	31
B2 State Prisons and Juvenile Correctional Facilities	35
B3 Health Related Group Quarters.....	38
B4 University Student Housing.....	42
B5 Group Homes and Military Group Quarters	46
B6 Population Experiencing Homelessness	49

List of Tables

Table 1. Group Quarters Populations by Seven Major Types of Group Quarters- Census 2000 and 2010 Census	2
Table 2. Types of Group Quarters by the Names of Researchers Who Conducted the Ethnographic Studies	6
Table 3. Turnover Rates of Selected Group Quarters Types	10
Table 4. Ethnographic Alternate Enumeration Compared with Census Enumeration	14
Table 5. Quality Framework for Administrative Records	16

List of Figures

Percentage of Agreement between Self-Reported and Administrative Data on Race/Ethnicity .	15
---	----

Executive Summary

The Investigation of Methods to Evaluate the Coverage of Group Quarters Populations (IMECGQP) research project was implemented as a research component under the 2010 Census Program for Evaluations and Experiments. The main purpose of the project was to explore feasible methods for conducting a within group quarters' person coverage measurement study in future decennial censuses since group quarters were excluded from the Census 2000 Accuracy and Coverage Evaluation and 2010 Census Coverage Measurement programs. The Post Enumeration Survey associated with the Census 1990 was the last formal evaluation of population coverage in group quarters. The 1990 Post Enumeration Survey included limited types of non-institutional group quarters (excluding military group quarters, homeless shelters, soup kitchens, targeted non-sheltered outdoor locations), and excluded all group quarters in remote, rural Alaska and all institutional group quarters. The coverage for group quarters populations in the 1990 Post Enumeration Survey was unrepresentative and poorer compare to those for housing unit populations (Killion,1997). Results of this project will inform research and development plans for the 2020 Census coverage measurement evaluation for group quarters populations.

In 2010, about 8.0 million individuals resided in group quarters facilities (U.S. Census Bureau, 2010). The seven major types of group quarters include: (1) Correctional Facilities for Adults; (2) Juvenile Facilities; (3) Nursing Facilities or Skilled Nursing Facilities; (4) Other Institutional Facilities (e.g. Hospices); (5) College and University Student Housing; (6) Military Quarters; and (7) Other Non-Institutional Facilities (e.g. workers dormitories, homeless shelters and soup kitchens). The first four types of group quarters are referred to as institutional facilities and the latter three groups are referred to as non-institutional facilities.

The high level research questions that guide the design of this research project are listed below.

- 1) What factors affect the success of group quarters population coverage measurement evaluations in different types of group quarters facilities?
- 2) What type of study would aid in understanding coverage in group quarters and how would it be best assessed?
- 3) Do different types of group quarters need different methods to assess coverage?

Methods

The IMECGQP project incorporated multiple research methods to compile the data required to address the research questions. Two census staff and seven experienced ethnographers comprised the research team. Together, the researchers studied 67 group quarters facilities covering all seven major types of group quarters. The researchers collected data in three phases from March 2009 to June 2011. They employed qualitative methods, including observations, in-depth interviews, focus groups, and ethnography; collected administrative records from selected group quarters facilities and conducted two surveys with students and inmates. The first survey is a pilot self-administered post-enumeration survey with college students and the second survey is a self-administered questionnaire with inmates in state prisons. The goal of the two surveys is to study issues and methods relating to group quarters population coverage.

Results

This report synthesizes and presents results from multiple research activities to address the three high level research questions. First, the researchers identified numerous social and contextual factors that may affect the Census Bureau's ability to conduct a Coverage Measurement Person Interview in different types of group quarters to address the first research question. The key factors include the: (1) complex living arrangements and high turnover rates of some facilities; (2) special aspects of residents' lives; (3) access to the facilities; and (4) cooperation from group quarters staff. These factors point towards the need to revisit the appropriate timing of coverage measurement operations for group quarters, the specialized training for Coverage Measurement Evaluation staff to encourage cooperation and participation, and the need to identify different data collection modes (other than using Person Interview) for different types of group quarters.

Second, the researchers identified three types of assessment studies that aided in understanding the coverage in group quarters. They include (1) an alternative ethnographic enumeration and records verification study conducted on or near Census Day (April 1 of the census year); (2) a pilot coverage measurement-liked study conducted at two universities' student housing prior to their closing; and (3) a qualitative assessment of the data quality of state prisons' administrative records. The coverage of group quarters populations in the first two studies was very accurate. The timing of a coverage measurement evaluation study is the most challenging issue for student populations residing in college housing. The results from the pilot test suggest that it is possible to conduct a coverage study immediately after the Group Quarters Enumeration operation. Results from the third study suggest that while the group quarters coverage for state prisons could be excellent (Chan 2012a), more research is needed to understand the coverage of group quarters populations when using administrative records in other types of group quarters.

Overall findings for this research project suggest that different types of group quarters need targeted methods to assess within group quarters population coverage. A tailored methodological approach is recommended to study coverage of each group quarters type and possibly each facility even though the latter may be difficult to achieve. Such an approach will enhance the quality of data collected. The selection of methods and timing of a coverage measurement evaluation for each group quarters should be based on: (1) the methods of data collection used by the group quarters enumeration operation; (2) the turnover rates of the sampled facilities; (3) the types of residents and factors affecting their ability to participate; and (4) the size of the group quarters facilities.

Conclusions and Discussions

The high turn-over or complete seasonal closure of some facilities (such as colleges or migrant workers dormitories) have important implications for the timing of a coverage measurement study of the group quarters populations. The high proportion of movers (residents who moved in after the Census Day) hampers the ability of a post-enumeration survey to capture the same group quarters populations residing at the facilities on Census Day. The inability to match the group quarters' populations sampled for the coverage measurement study to the original census population essentially eliminates the conventional post-enumeration survey method for certain types of group quarters, such as university student housing. The timing of Census Day

necessitates that completing a coverage measurement study with these types of group quarters requires the Group Quarter Enumeration operation to begin or close out earlier.

Different modes of data collection may be needed for group quarters with challenging access or lack of cooperation among residents and staff. A tailored design approach is recommended to ensure a successful 2020 Census coverage measurement of different types of group quarters. The data collection methods and coverage measurement evaluation conducted for each group quarter should vary depending on the methods of data collection used by the Group Quarters Enumeration operation, the turnover rates of the sampled facilities, the types of residents and factors affecting their ability to participate in a coverage survey study, and the size of the group quarters facilities.

Recommendations and Future Research

The results of the study point toward a number of recommendations concerning methods and timing for data collection, ways to improve participation and cooperation from respondents and group quarters' staff, and ways to improve group quarters interviewers' training, which need to be strengthened. The list below summarizes the three main recommendations along with suggested areas for future research.

1. Conduct a Tailored Coverage Measurement Evaluation Study for Limited Types of Group Quarters:
 - Conduct a post-enumeration survey shortly after Group Quarters Enumeration
 - Conduct a post-enumeration survey on Census Day for Group Quarters where Administrative Records are provided at the Census Bureau headquarters level and not at the facility level
 - Use mixed-mode data collection methods for a coverage measurement evaluation study (web-based, computer-assisted-personal-interview and paper survey)
 - Exclude group quarters types such as domestic violence shelters
2. Improve Cooperation and Participation of a Coverage Measurement Evaluation study:
 - Provide education and information about the coverage measurement program and the decennial census to sampled group quarters before the studies take place
 - Publicize the coverage measurement program
 - Three research questions are proposed:
 - How to better capture attentions of group quarters residents?
 - How to create inviting design and easy online survey?
 - What type of advertisement and information provision method about the group quarters' coverage measurement program and the U.S. Census Bureau should be developed?
 - Examine how the provision of web links to survey respondents selected for a post-enumeration survey relates to response rates
 - Test provision of information about the census coverage measurement program on the Census Bureau's web site
 - Test the effectiveness of mandatory messages
 - Test the effectiveness of incentives for census coverage measurement survey participants

- Test the effectiveness of provision of information that could include graphical data when it is appropriate as an incentive for why participation matters
 - Provide appropriate training and provide resources for facility staff
 - Provide Dedicated Protocol for group quarters in census coverage measurement operations
 - Provide a personal letter to thank facility staff who assist in census coverage measurement operations
3. Collect Available Administrative Records to Develop Edit Checks to Detect False Information being provided by Post-Enumeration Survey Respondents. The research findings of the pilot coverage measurement-like survey with students suggest they may not provide accurate information if they feel obliged to respond but have privacy and confidentiality concerns about the survey.

This page intentionally left blank.

1 Introduction

This report summarizes multiple research activities associated with the Investigation of Methods to Evaluate the Coverage of Group Quarters Populations (IMECGQP) research project. The author focuses on synthesizing and presenting results that inform the design phase of the Coverage Measurement Program in the 2020 Census, which aims to start estimating within Group Quarters (GQs) person coverage. This report will not discuss issues relating to coverage error of the GQs frame.

1.1 Scope

The main purpose of the IMEGQP research project is to explore the feasibility and to identify potential data collection methods to measure coverage of GQ populations for the 2020 Census as part of the 2020 Census coverage measurement evaluation (CME) program. The three objectives are to: (1) identify factors that may affect the potential implementation of a CME study for the GQ populations; (2) prioritize certain types of GQs where a CME application may be most feasible; and (3) identify issues and areas that require more immediate research.

The IMEGQP project was implemented as a research component under the 2010 Census Program for Evaluations and Experiments (CPEX). Projects under the 2010 CPEX will guide future census design, as well as benefit other ongoing programs conducted by the Census Bureau, such as the American Community Survey.

1.2 Intended Audience

The intended audience for this report is Census Bureau staff and anyone who is interested in research regarding the design of within GQs person CME and broader audiences who are interested in GQs populations in general.

2 Background

2.1 Definition of Group Quarters

The Census Definitions Working Group defines GQs as:

“a place where people live or stay, in a group living arrangement that is owned or managed by an entity or organization providing housing and/or services for the residents. This is not a typical household-type living arrangement. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People living in group quarters are usually not related to each other” (U.S. Census Bureau, 2009).

The Working Group identified seven major types of GQs and 28 sub-categories for the 2010 Census (U.S. Census Bureau 2010). The seven major types of GQs include: (1) Correctional Facilities for Adults; (2) Juvenile Facilities; (3) Nursing Facilities or Skilled

Nursing Facilities; (4) Other Institutional Facilities; (5) College and University Student Housing; (6) Military Quarters; and (7) Other Non-Institutional Facilities. Table A1 in Appendix A provides the complete list of 28 GQs classifications in the 2010 Census.

2.2 Number of Group Quarters Populations in 2010

The 2010 Census enumerated nearly eight million individuals in GQs facilities, which accounts for about three percent of the total U.S. population (U.S. Census Bureau 2010). Table 1 below shows the numbers and percentages of population enumerated under each major GQs types in 2000 and 2010.

Table 1. Group Quarters Populations by Seven Major Types of Group Quarters- Census 2000 and 2010 Census

TYPE OF GROUP QUARTERS	Census 2000		2010 Census	
	Number	Percent	Number	Percent
Group Quarters Populations	7,778,633	100%	7,987,323	100%
Institutionalized populations	(4,059,039)		(3,993,659)	
Correctional facilities for adults	1,976,019	25.4%	2,263,602	28.3%
Juvenile facilities	*		151,315	1.9%
Nursing facilities/Skilled-nursing facilities	1,720,500	22.1%	1,502,264	18.8%
Other institutional facilities*	362,520	4.7%	76,478	1.0%
Non-institutionalized populations	(3,719,594)		(3,993,664)	
College/University student housing	2,064,128	26.4%	2,521,090	31.6%
Military quarters	355,155	4.6%	338,191	4.2%
Other non-institutional facilities	1,300,311	16.8%	1,134,383	14.2%

Source: Census 2000 Summary File 1 Table P037 and 2010 Census Summary File 1: Table P43

*Juvenile facilities with a total population count of 128,279, consisting of 1.6 percent of the group quarters population, were grouped under non-institutional GQs in the 2000 summary table.

Among the different types of GQs, three of the largest groups accounted for close to 79 percent of the total GQ population in 2010. These are students residing in college or university student housing (31.6 percent), adults in correctional facilities (28.3 percent), and patients in nursing homes (18.8 percent). The same three groups made up 74 percent of the total GQ population in 2000. Of interest, both the correctional facilities and student housing populations grew in number and proportion over the decade while the reverse was true for the population in skilled nursing facilities. The “non-institutional facilities” is the next largest GQ type (1.1 million, 14.2 percent in 2010) that comprises nine different groups of GQs facilities in 2010. Military GQs had about 340,000 residents (4.2 percent). Juvenile facilities had about 151,000 residents in 2010.

2.3 Diversity of Group Quarters Populations

The functions and purposes of GQ facilities differ widely from one GQ type to another. The same is true even among the GQs classified under a major GQ type. For instance, among all GQs classified under “other non-institutional facilities”, GQs as varied as soup kitchens, adult group homes, merchant vessels, workers dormitories and religious GQs are included. The diverse populations enumerated within the GQ universe present unique and varied challenges to conducting a coverage evaluation study for the GQ populations.

2.4 Group Quarters in the Census Coverage Measurement Surveys, 1980-2010

The Census Bureau uses a dual estimation system to measure coverage of the population in the decennial censuses since 1980. Of relevance to this research project, the post-enumeration survey programs in the past conducted 2010 Census Coverage Measurement (CCM) Person Interview (PI) with persons residing at sampled GQs in the summer following the completion of the decennial census operation. The coverage measurement operations involve case-by-case matching of persons in an independent survey from geographically representative sampled group quarters, listed independently from the census. Unmatched cases were re-interviewed (Jonas 2003) to determine who was missed or counted in error. The three key points about the past coverage measurement programs for GQs are: (1) the method and mode for conducting person coverage was a post-enumeration survey using an in-person interview; (2) the coverage measurement sample was drawn from an independent listing of GQs; and (3) the timing of the CCM PI was a few months after the decennial census operation is completed. The last point has been a challenge. Capturing the same population at the same GQ facility three or four months after enumeration had proven difficult in past coverage measurement studies. The next section discussed this particular challenge and why the census coverage measure surveys had excluded GQs since 1990.

The post-enumeration survey-based coverage measurement program associated with the 1980 Census was called the Post-Enumeration Program (PEP); in the 1990 Census it was called the Post-Enumeration Survey (PES); in 2000 it was called the Accuracy and Coverage Evaluation (A.C.E.); and for the 2010 Census it is called CCM. The 1990 PES was the last survey that included only some types of non-institutional group quarters and excluded all institution group quarters, military group quarters, homeless shelters, soup kitchens, targeted non-sheltered outdoor locations and all group quarters in remote, rural Alaska. Hence, the 1990 GQ coverage study was unrepresentative of the total GQ population in the U.S. The PES coverage of the sampled GQs was poorer than that of housing units (HU) in terms of the operation’s ability to conduct case-by-case matching (Killion, 1997). Only 53.0 percent of the GQ population in the weighted 1990 PES sample had an initial status of match compared with 91.5 percent of the housing unit (HU) population. The weighted percentage of initial match status of “unresolved” for the PES GQ sample was very high compared to housing unit populations: 18.1 percent compared with 1.5 percent, respectively. The high turnover rate of residents in some GQ facilities contributed to a high percentage of movers (residents moved in after the Census Day) in the PES (19 percent) and a large number of initial unmatched and unresolved cases. The match status for these unresolved cases has to be imputed as either a status of “match” or “unmatch.” Due to the small GQ sample size, the imputation

has to be based on HU sample, which reduced the quality of the imputed status and the coverage study. Another 28.9 percent of the PES GQ sample has an initial status of “un-match.” Given the non-representativeness and poor coverage of GQ populations in the 1990 PES, the decision was made to attempt to conduct as rigorous an enumeration of GQs as possible, and exclude GQ populations from the ACE associated with the Census 2000 (Killion,1997). The 2010 CCM program also excluded the evaluation of GQ populations due to resource and time constraints (Singh, 2005).

2.5 Methods for Current Group Quarters Enumeration

The U.S. Census Bureau enumerates GQ populations in a separate operation from the populations residing in HUs, such as houses, apartments, and trailer homes. Since GQ residents are mostly unrelated to one another, instead of a household census form that was mailed to each HU address, if at all possible, each GQ’s resident received a hand delivered paper form from a census enumerator in 2010. The 2010 Group Quarters Enumeration (GQE) operation utilized four different forms to collect information for GQ populations. The most commonly used form is the Individual Census Report (ICR), which contained seven questions. Two other forms, the Military Census Report (MCR), contained six questions and the Shipboard Census Report (SCR) contained eight questions that are provided for residents of military quarters, military ships, and maritime or merchant vessels, respectively. In addition, persons experiencing homelessness could fill out a “Be Counted” form and would be counted in the closest shelter or GQ facilities (if no shelter is identified in the area) where their forms are collected. However, the Be Counted form is not part of the GQE operation.

The ICR collects personal information about the person only. There are three acceptable methods to complete the ICR form: (a) self-administered by the GQ residents; (b) enumerator administered face-to-face interview; or (c) proxy interview, that is, information provided by staff, family members, or via use of administrative records (ARs) provided by the GQ facilities.

The use of ARs as primary sources of data to complete the ICR form is common and often necessary when the target population resides in GQs. Of the 7.8 million people residing at GQs in 2000, 7.1 million were enumerated by the ICR form. In 2000, almost 52 percent of decennial census data collected from 7.1 million ICR forms came from ARs (Jonas 2003) . The percentages of ARs usage were largest for nursing homes (72.8 percent) , hospitals (65.8 percent) , group homes (59.5 percent) , and correctional institutions (56.3percent) . Colleges and universities were the only facility where usage of ARs were low (30.2 percent) and residents filled out most of the ICRs themselves (57.5 percent) (Jonas, 2003: Table 6.1b).

2.6 Looking Forward: 2020 Group Quarters Enumeration

Advances in computer technology and the availability of electronic record keeping systems provide the Census Bureau with the opportunity to collect some of the GQ ARs data in electronic format. The GQE Operation is proposing to conduct research to develop procedures to collect electronic AR files from all GQs (U.S. Census Bureau, 2011). An electronic GQE will reduce the data collection period and will minimize the burden for GQ staff and residents. The GQE operation may be completely transparent to most GQ staff and

residents, in particular, if the data were not collected at the facility level. Future coverage measurement programs can consider conducting their post-enumeration survey shortly after Census Day, if not on Census Day. The author has taken this “looking and guessing forward” approach under consideration when providing recommendations for future research in Section 7.

2.7 Research Questions

The high level research questions that guide the design of this evaluation project are listed below.

1. What types of factors affect the success of a GQ population coverage study in different types of GQs?
2. What type of study would aid in understanding coverage in GQs and how would it be best assessed?
3. Do different types of GQs need different methods to assess coverage?

3 Methodology

This project incorporated multiple qualitative methods (including observations, in-depth interviews and focus groups), conducted ethnographic alternative enumeration on or near Census Day with several GQ facilities, and tested a post-enumeration coverage measurement-like survey with students residing at college housing. The research team for the IMECGQP project consisted of two census staff members and seven university faculty members. All were experienced ethnographers with unique training, research experiences, expertise and ability to gain access to one or two types of GQs. Together, the research team studied 67 GQ facilities across the U.S., covering 16 different types of GQs in all seven broad GQ categories in three distinct phases. Sections 3.1 through 3.3 discuss the method used in each of the three phases in greater detail. Table A2 in Appendix A summarizes the types of GQs included in the multiple research activities. Data collection for this research project took place between March 2009 and June 2011.

3.1 Phase One – Group Quarters Observations and In-Depth Interviews

Prior to the 2010 Census, the author and the research support staff observed hundreds of interviews conducted at 26 different GQ facilities sampled for the American Community Survey (ACS) in different parts of the United States. Residents from these facilities participated in the ACS between March and June, 2009. The findings from these observations guided the development of research questions and protocols, used for qualitative in-depth interviews, conducted between August and October 2009. The two researchers conducted 15 one-hour interviews with GQ staff and administrators at 15 different GQ facilities in the metro D.C. area. Results from these observations and in-depth interviews provided important information regarding the feasibility of potential data collection methods for future coverage measurement studies, and issues relevant to the data quality for various types of GQ facilities. The findings guided the development of the ethnographic studies in the second phase of this project.

3.2 Phase Two – Ethnographic Studies

During the 2010 Census, seven external researchers, who are experts in the various types of GQ populations, conducted ethnographic studies in all seven major types of GQs. Below is a table showing the list of GQs by the names of the researchers who had conducted the ethnographic studies.

Table 2. Types of Group Quarters by the Names of Researchers Who Conducted the Ethnographic Studies

Types of Group Quarters	Ethnographers
CORRECTIONAL FACILITIES FOR ADULTS Female State Prisons and Local jails Male State Prisons	Professor Barbara Owen Professor Michelle Inderbitzen
JUVENILE FACILITIES Correctional Facilities Intended for Juveniles	Professor Michelle Inderbitzen
HEALTH RELATED GROUP QUARTERS Nursing Facilities/Skilled-Nursing Facilities In-Patient Hospice Facilities	Professor Sonia Salari
COLLEGE/UNIVERSITY STUDENT HOUSING University Student Housing	Professor Keri Stephens
MILITARY QUARTERS Military Quarters	Professor Susan Dewey
OTHER NONINSTITUTIONAL FACILITIES Emergency and Transitional Shelters for People Experiencing Homelessness Soup Kitchens	Professor Irene Glasser and Professor Eric Hirsch
Group Homes and Transitional Shelters Intended for Women Experiencing Domestic Violence	Professor Susan Dewey

Ethnography is the systematic study of the entire culture of a particular group or phenomenon. The ethnographers become immersed in the culture as active participants and record extensive field notes. Ethnographic fieldwork involves documenting peoples’ beliefs and practices from an insider perspective. Findings from such studies are ideal to generate research ideas and testable hypotheses for future research.

The ethnographic studies focused on identifying contextual and social factors that may affect the Census Bureau’s ability to conduct a post-enumeration survey that yields quality data. The ethnographers conducted fieldwork in a total of 24 different facilities in eight different states before, during, and after the 2010 GQE. These facilities were chosen because they were near the ethnographers or because they were sites of already established cooperation. Ethnographers’ field work spanned January to June 2010. Two of the external researchers conducted additional follow-up focus group studies in spring 2011 with group home administrators (Dewey 2012) and students at one university (Stephens 2012).

Congruent with an ethnographic study, the seven external ethnographers incorporated various qualitative methods to conduct their fieldwork. These methods included: (1) participatory

observation; (2) informal interviews (3) focus groups; and (5) document acquisitions. Each ethnographer focused on one or two GQ types in the study. Depending on the size of the GQs, ethnographers studied one to eleven sites. Each of them tailored the study design to best suit the sampled GQ facilities.

Ethnographic Alternate Enumeration

Three ethnographers conducted a “qualitative coverage assessment study” with their selected GQs, including group homes for women, health care facilities, and large state prison (Dewey and Chan, 2012; Inderbitzen and Chan, 2012; Salari and Chan, 2012) . They conducted an “alternative ethnographic enumeration” on or near Census Day and verified information provided by administrative records.

3.3 Phase Three – Survey Research Study

Limited resources restricted the small scale survey study to two major GQ types: (1) College Student Housing and (2) Correctional facilities. The first study was a pilot post-enumeration coverage measurement-like survey study with college students. The goal was to examine the feasibility of conducting a pilot coverage measurement survey shortly after the decennial census and before the university housing closed and whether an alternative mode of data collection, a self-administered paper instrument, can be used for the conventional CCM PI. The second study explored the feasibility of inmates completing a self-administered paper questionnaire. This study examined the consistency of the information collected from inmates and information found in administrative records.

3.3.1 Pilot Coverage Measurement Study – University Student Housing

The author conducted a small scale post-enumeration census coverage measurement-like survey study at two universities (University A and University B) from different states (Chan, 2012b). A total of 510 students were selected for the study; 468 were from University A and 32 from University B. For safety concern and operational feasibility, University A’s Residence Life Director agreed to have the pilot coverage study conducted at University A if a self-administered paper questionnaire is used instead of an in-person conventional CCM PI. Three residence halls were selected from the complete list of residence halls from University A. At the time of the sample selection (late February 2010), 470 students were residing in the selected residence halls but 2 had left by the time the survey was conducted. The questionnaires were mailed to University A on April 16, 2010, one week after the 2010 Census enumeration was completed at the university and three weeks before the student housing closed for the semester. Residence hall directors and assistants distributed and collected completed questionnaires (individually sealed in provided envelopes) from the 468 selected students. The completed questionnaires were shipped back to Census Bureau’s Headquarters for data coding. The remaining 42 questionnaires were hand delivered to two fraternity/sorority houses in University B by the author on May 24 2010, a few weeks after the census enumeration was completed and three weeks before the student housing closed. The president of a sorority distributed the forms to its 25 members during a regular house function. A resident in a nearby fraternity was assigned by a university official to distribute

the forms to his fellow residents (17 residents). Overall, almost 66 percent of the students returned the questionnaire. The response rates varied for each university. About 58 percent of respondents from University A returned the questionnaire; 88 percent of the residents from the sorority and 47 percent of the residents from the fraternity in University B returned the questionnaire (Chan, 2012b). After the pilot study was completed, the researchers conducted a debriefing focus group with 10 students from University A (Stephens, 2010). The objective of the focus group was to study students' perception and experiences with the decennial census and the pilot survey study that was distributed only one week after the census form was collected.

3.3.2 Prison Survey Study

Two ethnographers and the author conducted the Prison Survey Study in 2010 and 2011 at three state prisons (one male and two female prisons) in two western states. The majority of the inmates who participated in the study were randomly selected by the prisons' administrative staff while some volunteered to participate in the study (Chan, 2012a; Chan and Owen, 2012; Inderbitzen and Chan, 2012). A total of 165 inmates participated in the study. The objectives of this study were: (1) to evaluate the quality of data provided by the administrative records for decennial enumeration and the data provided by the inmates and (2) to help develop a new questionnaire for studying GQ coverage in correctional facilities.

Assessment Study of Data Quality of Administrative Records

The researchers studying the correctional facilities collected administrative records from facilities that were willing to provide data (Inderbitzen and Chan, 2012; Owen and Chan, 2012). Comparison with the survey data from the Prison Survey Study enabled the assessment of the data quality provided by the state prisons' administrative records (Chan, 2012a). Results for the assessment are presented in Section 5.2.3.

4 Limitations

This research project included 67 GQs in all seven major types of GQs but they represented only 16 of the 28 classified GQ types. Although the researchers collected in-depth data on these GQs and identified future research for the development of methods to measure coverage of the GQ population in the 2020 Census, our non-probability sample of GQs will limit our ability to generalize or interpret results to the larger GQ populations residing in over 205,000 GQ facilities in the U.S. (Williams, Barrett and Williams, 2012). Therefore, additional future research is needed.

5 Results

5.1 What Factors Affect the Success of a Group Quarters' Population Coverage Study in Different Types of Group Quarters?

Findings from the various research activities suggest that there are numerous social and contextual factors that may affect the Census Bureau's ability to conduct a CME study in

different types of GQs. The key factors include the: (1) complex living arrangements and high turnover rates of people staying at some of the GQ facilities; (2) aspects of residents' lives; (3) access to the facilities; and (4) cooperation from GQ staff.

5.1.1 Complex Living Arrangement and High Turnover Rates

Complex living arrangements of some GQ populations, such as the cyclical nature of serial temporary residence, the seasonal variation of GQ operations (e.g., workers dormitories, homeless shelters), and the short term stay and high turnover rates of residents due to the nature of care or assistance provided by some GQs, have important implications for the timing of a census coverage measurement operation. Complex living arrangements include ones occupied by servicemen in the military, adults staying at group homes and residential treatment centers, people living in homeless shelters, people committed to county jail, people serving in the merchant marines and students at college housing.

It is common to find a high level of overlap among residents in one type of GQ and another. In particular, ethnographers noted that residents who stay in group homes, homeless shelters, and treatment centers cycle between these various types of GQ facilities and the homes of friends and relatives. They will cycle through these various types of dwellings during the winter months and may live outdoors when weather allows. The cycle repeats when the winter months return. This observation implies that capturing these populations at the same facility three or four months after census enumeration (the typical time frame for census coverage measurement programs) will be difficult.

Table A3 in Appendix A summarizes the mobility of GQ residents. The findings are based on information collected from ACS observations and in-depth interviews with GQ staff during phase one and phase two of this project. Table A3 shows the variability and diversity between different types of GQ in terms of residents' typical length of stay, the range of possible stay offered by the facilities, evidence of stability or high turnover rates, and the types of movements in various GQ types.

The short length of stay of residents at some GQs led to the difficulty of recapturing the same residents if a CME study is conducted months later. Table 3 below summarized the turnover rates of major GQ types. Facilities such as hospices had turnover rate as short as one day while inmates at federal and state prisons are likely to be at the same facilities for years. Alternative data collection methods, such as collecting administrative records either retrospectively or from independent sources may be more appropriate and fruitful (see Section 5.2.3). A CME survey operation should be targeted towards GQs with relatively lower turn-over rates but a prompt CME may be necessary for student population even though they have low turn-over rates.

Table 3. Turnover Rates of Selected Group Quarters Types

Types of Group Quarters	Turn Over Rates
Hospices	Very high
Residential Treatment Center	Very high
Detention Centers and Local Jails	Very high
Homeless Shelters	Very high
Military Group Quarters	Very High
Skilled Nursing Facilities with Short Term Care Unit	High
Transitional Housing	Medium
Maritime/Merchant Vessels	Medium but out of reach
College or University Student Housing	Low but complete closure starting in April
Skilled Nursing Facilities Focusing on Long Term Care Services	Low
Federal or State Prisons	Very low
Juvenile Facilities	Not enough information

Source: Appendix A3.

5.1.2 Aspects of Residents’ Lives

This section highlights aspects of residents’ lives in different types of GQs that may affect their intention to participate and their cooperation with a census coverage measurement study. The four key aspects are: (1) availability and the nature of everyday life; (2) health and literacy; (3) life histories and other aspects of lives; and (4) experiences with the government.

(1) Availability and Nature of Everyday Life

College Student Housing and Juvenile Facilities

Today’s college students are constantly on the go and they are inseparable from their electronic devices (Stephens, Heller and Chan, 2012). There are many activities that will compete with their attention for a government survey. However, students do have daily gaps of time in between classes and other activities. A brief coverage measurement questionnaire could be filled out if the students’ attention is captured and if they are convinced that this is important for them to do (Stephens, 2011). College students are proficient in multi-media usage. Students are good candidates for web-based surveys (Stephens, Heller and Chan, 2012).

Although the services and functions provided by juvenile facilities are different from those of a higher education institution, the same types of distractions and habits of media usage applies to residents in this type of GQ as well. Residents from both types of GQs may benefit from a web-based survey mode if a survey approach is used to measure the GQ population coverage for the 2020 Census.

Correctional Facilities and Health Related Group Quarters.

Unlike the hectic life styles maintained by college students, inmates in correctional facilities and patients in health care facilities lead a more routine life. There are long stretches of time daily where they would be able to complete a census form or survey or to participate in an

interview. We observed that it was common for experienced ACS field representatives (FR) to conduct ten out of ten interviews with inmates. The lack of urgency and the opportunity to be interviewed and be pulled away from their locked cell provide excellent incentives for some inmates to participate in a non-sensitive government survey. Chan and Owen (2012) concluded that it is even feasible to conduct face-to-face interviews in maximum security state prisons. Of 80 inmates randomly selected from the two sampled prisons, 85 percent participated in the voluntary interview. The respective response rate was 75 percent and 95 percent for the male and female state prisons. The higher refusals among the male prisoners were mainly due to (1) language problems and (2) researchers arriving during their one hour free time of the day - a precious commodity for maximum security prison's inmates.

Similarly, in some long term care facilities, administrators informed us that many of the patients at their facilities welcome an interruption to the routine TV shows or bingo game in which they were participating, or the "naps" they were having. We observed that during the ACS interviews, respondents welcome the nice "change" to their daily routine. However, if the patients interrupted them during activities that they do enjoy, patients are more apt to decline our request.

Group Home, Homeless Shelters, Soup Kitchens, Residential Treatment Centers

Our ethnographers noted residents in this group of facilities are emotionally fraught and suffered from acute awareness of life threatening risk. They are busy rebuilding their lives by completing high school, looking for employment or receiving job training. These aspects of their daily life may reduce their availability and may lead to their heightened frustration with census requirements. To be able to conduct coverage measurement-like interviews with residents from these types of GQs will require specific cultural and sensitivity training for the interviewing staff (Dewey and Chan, 2012; Inderbitzen and Chan, 2012; Owen and Chan, 2012).

Merchant vessels

Based on information collected from the in-depth interviews with seamen, we found that merchant marines tend to work in rotations. For instance, they will work on board a civilian vessel consecutively for 60 days at a time and will rotate off the vessels for the same duration of time. In a typical year, they may work on board a ship three times. Different shipping companies have different rules about the length of a rotation. While on board ship, the daily shift is generally 12 hours long. There are many hours of downtime when the seamen are not working. Similar to students, they may not complete a census form because they believe that someone at the permanent home of the seaman may include him or her on the housing unit census form. None of the crew who were interviewed by the author on board their vessel reported ever noticing or seeing a census form, let alone completing one. Few of the crew used a computer and rarely used the internet. These observations suggest that it is difficult to conduct a web based survey with this population. Among married crew members who were interviewed, they believed their spouse listed them as living at home.

(2) Health and Literacy

A common constraint that limits the ability of residents in various GQs (group homes, residential treatment center, homeless shelters, health facilities and correctional facilities) to participate in a post-enumeration survey, is their poor physical or mental health. Some may have literacy issues as well. Chan and Owen (2012) encountered a few inmates who could not complete a survey because of poor eyesight or illiteracy.

(3) Life Histories and Other Aspects of their Lives

The life strains and traumas experienced by some residents in GQs make it difficult for them to attend to a seemingly non-salient event such as filling out a census form or survey. The impact of abuse, violence, homelessness, drug addictions and/or mental health issues on their daily lives is significant. Some of these populations are suffering from serious post traumatic stress disorders, and others have developed a deep sense of distrust for people in general (Dewey and Chan, 2012, Glasses, Hirsch and Chan, 2010). For example, a census worker, who is a stranger, asking for personal information will not be well received by these populations. Future census coverage measurement programs need to carefully consider how to approach GQs that serve high proportion of residents with such life histories.

(4) Experiences with Government

Our ethnographers observed that many GQ residents have had many experiences with the government and its agencies, such as the criminal justice systems and the social welfare programs. A common theme generalized from the ethnographers is that many of these GQ residents have experienced “social services fatigue.” The conditions of service provision, the frequent surveillance, the exhausting nature of disclosure regarding private lives - especially for those on public aid, have led some residents to ignore the Census Bureau’s request as just another government agency that they have to contend with daily. Future CME operations should provide adequate advertisement regarding the Census Bureau and the information and importance of a CME study.

5.1.3 Access

Findings from this project show that it is difficult to obtain permission to access several GQ types, in particular, correctional facilities, military group quarters, juvenile facilities with protective orders, college or university student housing and group homes serving abuse victims. Some of the main reasons for administrators to refuse access are security, safety, privacy and confidentiality concerns for the residents and census interviewers (Inderbitzen and Chan, 2012, Owen and Chan, 2012, Stephens and Chan, 2012). As a result, many GQ staff serve as the gatekeepers for our target respondents and have important influences on the participation and cooperation of the respondents for a CME study.

The researchers encountered three privacy acts and believed that there could be more of such laws that can hinder the Census Bureau’s ability to obtain easy access to GQs, the residents

and their administrative records. These include laws that mandate protection of confidentiality: (1) Family Educational Rights and Privacy Act (FERPA) for college students who can “opt out” of college administrative records; (2) Health Insurance Portability and Accountability Act of 1996 (HIPAA) for health care facilities; and (3) Violence Against Women Act (VAWA). Perceptions of the requirements of these acts may reduce cooperation from administrators to allow access to GQ residents as well as the Administrative Records maintained by the GQs. In order to gain access, Census Bureau’s CME staff needs to have adequate and appropriate training to work with the GQ staff.

5.1.4 Staff Cooperation

The ethnographers identified two main issues that affected the cooperation of GQ staff during the 2010 Census and their attitudes towards the Census Bureau afterwards. First, the ethnographers unanimously reported that the GQ staff that they observed or interviewed exhibited “*census fatigue*”. Multiple census-related contacts created this “census fatigue” phenomenon. Among staff in large GQs, the extra work to accommodate the census operation is both burdensome and costly (unpaid work for staff). Staff had to prepare a roster listing names and location of each resident for the enumerators. Some staff had to escort the enumerators during the enumeration, assemble the individual packets to be delivered to and collected from the residents in case access was denied to census workers. They had to look up administrative records for missing responses or prepare the administrative records if the facility decides not to let enumerators distribute and collect the ICR forms.

Second, ethnographers reported that many GQ staff have had *negative experiences* and have expressed dissatisfaction with the 2010 Census GQE operation (Dewey and Chan, 2012, Inderbitzen and Chan, 2012; Owen and Chan, 2012; Salari and Chan, 2012; Stephens and Chan, 2012). The negative experiences include (1) poor communication with GQ staff; (2) insufficient knowledge and sensitivity training regarding working with GQ facilities; and (3) lack of preparedness for and knowledge about the enumeration. Third, GQ staff had *limited awareness and understanding about the Census Bureau*. Few of them understand the differences between the decennial census and other census surveys. As a result of these issues, staff cooperation could be a challenge when a census coverage measurement operation, another census survey, is conducted at the same time at the same facilities after the census operation is supposed to be over. Workers hired for the CME operations need to establish positive interactions with the GQ staff and provide damage control to counter any negative exchanges that may have occurred between GQs and census workers.

5.2 What Type of Study Would Aid in Understanding Coverage in GQs and How Would it be Best Assessed?

The researchers conducted three types of assessment studies that aid in understanding the coverage in GQs. The first was an ethnographic alternative enumeration conducted on or a day after Census Day. The second was a pilot post enumeration coverage survey conducted with students at two universities. The last assessment study was an exploratory study examining the accuracy of the administrative data maintained by various types of GQs. A

modified framework was adopted to guide the conceptualization and measurement of GQ AR data quality. (For more details about the modified framework, see Chan, 2012a).

5.2.1 Ethnographic Alternate Enumeration

Three ethnographers conducted an “alternative enumeration” (taking literal “head counts”) either on or the day after Census Day. They verified whether residents listed on the ARs were physically present or residents they enumerated were listed on the ARs. The researchers assessed the accuracy of other information (if available or possible) on the ARs. These verification studies were conducted in six small facilities with less than 200 residents. They included group homes for women, skilled nursing facilities and one hospice, with less than 200 residents (Dewey and Chan, 2012; Chan, 2012; Salari and Chan, 2012). The count results for the alternative ethnographic enumeration and final population counts from the decennial data were comparable but there were some discrepancies. Table 4 shows the counts resulting from ethnographic enumeration and the census population count. The results suggest using alternative ethnographic enumeration is a potential method to measure coverage. Our ethnographic data show that the extra four persons were counted by the “be-counted form”. Given the facilities reported only the number of residents and did not provide the names of the residents for privacy reason, these four individuals were double counted. In this case, we found that coverage error is possible.

Table 4. Ethnographic Alternate Enumeration Compared with Census Enumeration

	Alternate Ethnographic Enumeration Counts	Final Population Counts in Decennial File
Transitional Housing	99	103
Emergency Shelter (DVS)	4	No data
Long Term Care for Veterans	79	79
Hospice	15	15
Nursing Facilities (Alzheimer Care)	66	66

Source: Ethnographers’ reports (internal unpublished)

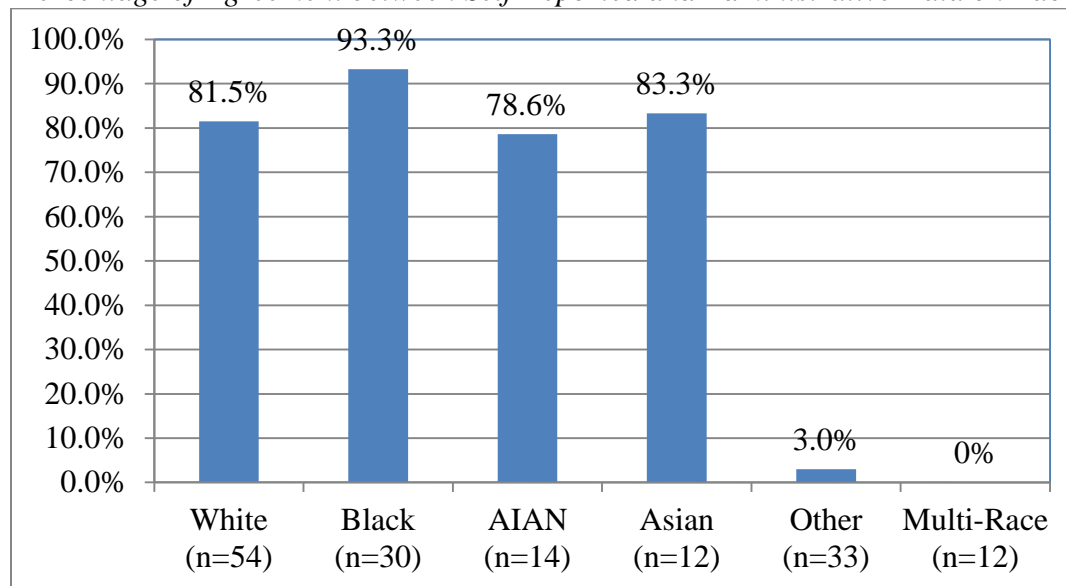
Dewey, S. and Chan, A. (2012). “2010 Census Group Quarters Ethnographic Study: Group Homes for Women and Military Group Quarters.” Unpublished draft internal report. U.S. Census Bureau, Washington, D.C.

Salari, S. and Chan, A. (2012). “Population Measurement in Health Related Group Quarters: Ethnographic Study of Long Term and Hospice Care.” Unpublished internal draft report, U.S. Census Bureau, Washington, D.C.

In one large male state prison (over 2000 inmates), our researcher spoke with 87 inmates and verified whether their names were listed on the daily roster provided by the prison (Inderbitzen and Chan, 2012). In 2011, Chan and Owen (2012) conducted a similar survey study in two state prisons. The results suggest that the person coverage of ARs obtained from all three state prisons had excellent coverage. However, the agreement rate between prisoner’s self identified race and ethnicity did not match those data from the ARs well (Chan and Owen, 2012b; Inderbitzen and Chan, 2012; Owen and Chan, 2012). Overall, among the 155 inmates who have participated in the prison survey studies, almost 30 percent (47 of 155) self identified as of Hispanic origin. The agreement rate for those who self identified as of Hispanic origin on the survey is lower than those who identified themselves

as non-Hispanics (79 percent compared with 98 percent respectively) when compared to the information provided by the ARs. The ICR-like form collects a person’s race information and Hispanic origin separately. The prison records used the combined format where Hispanic origin is one category for the race/ethnicity variable. Despite the Office of Management and Budget’s guidelines for allowing multiple race responses for the combined race format, the state prison records did not contain any multiple responses to the race/ethnicity question. About 7.7 percent of inmates, (12 of 155) reported more than one race on the survey and none could be listed as multi-race individuals on the ARs. Another 21.3 percent (33 of 155) self-identified themselves as “others” for the race question. The majority (84.5 percent) of these inmates, who reported “other” as their race, was listed as Hispanics on the ARs and only three percent of them were also listed as “other” on the ARs. The agreement rate between inmates’ self identified race and the listed race on the ARs differed by race. Graph 1 shows that in our study sample, besides those who self-identified as “multirace” or of “other” race, the agreement rate between inmates’ self identified race was lowest for American Indian and Alaskan Native (78.6 percent) and highest for black inmates (93.3 percent).

Percentage of Agreement between Self-Reported and Administrative Data on Race/Ethnicity



NOTE: “AIAN” stands for “American Indian or Alaska Native.”

Source: Chan, A. (2012a). “Qualitative Assessment of Administrative Records: The Case of State Prisons.” Proceeding Paper for the 2011 Federal Committee for Statistical Methodology Conference, Washington D.C., January 10-12, 2012.

5.2.2 Pilot Coverage Measurement Survey Study

Findings from the pilot study (Chan, 2012b) suggest that it is feasible to use a paper survey to conduct a coverage study with college students if it is done shortly (one week) after the decennial census is completed and before the university residence halls closed. Although only 66 percent of the students (337 of 510) returned the questionnaire, close to 90 percent of the returned questionnaires were completed (303 of 337). The remaining 10 percent were

returned blank. Excluding the blank surveys; the final response rate for this study was 59 percent. The response rates for the three sites were: 58 percent for University A, 88 percent for the sorority and 47 percent for the fraternity.

The coverage of the ARs in the University study was high. Almost 89 percent of the students' names matched to the ARs data. Another 10 percent constituted possible matches to un-named records based on the reported room number and sex of the respondents. The remaining one percent, three students, in the survey were not listed on the ARs provided for the sampled residence halls. We suspected these students provided falsified information in the pilot coverage measurement study. Students who participated in the pilot coverage measurement-like survey provided very complete contact information. Over 92 percent of them provided an alternative address where they live sometimes. About 95 percent of them provided their parents phone number; another 33 percent provided a secondary phone number.

5.2.3 Assessment Study of Data Quality in Administrative Records

In Census 2000, a large proportion of the ICR forms were completed using ARs provided by GQ facilities (Jonas, 2003). The AR information is an important source of data for generating census statistics. To aid our understanding of the coverage in GQ populations, it is essential to conduct an assessment study on the data quality of these ARs. A framework was selected to guide the qualitative assessment of the quality of ARs (Chan, 2012a) provided and/or maintained by different types of GQs. Table 5 provides the definitions of five data quality indicators measured for this assessment study based on the data quality framework developed for register-based data and other health record studies (Nordholt, Ossen, and Daas, 2011; Pipino, Lee and Wang, 2002). Register-based data refer to administrative data sources maintained in a registry. The five data quality indicators include: relevancy, timeliness, coverage, item non-response and consistency of the data.

Table 5. Quality Framework for Administrative Records

Quality Indicators	Definitions
Relevancy	Meet the purpose of data collection and to the extent to which data are applicable and helpful for the statistical goal at hand
Timeliness, Updates and Time lag	Point in time data; the extent to which the data are sufficiently up-to-date for the task at hand
Coverage (i.e., over-coverage and under-coverage)	The extent to which the data cover the target population and are of sufficient breadth and depth for the task at hand
Item Non-response	The extent to which the data for each record are complete
Reliability or Consistency	The extent to which data from different sources are comparable

Table A4 (Appendix A) summarizes the results of the qualitative assessment by the types of GQs based on information collected from all three phases of this project. Overall, many GQ

facilities maintain relevant data that meet the purpose of the data collection for a census CME. Most facilities update their records in a timely manner but many do not. In those cases, retrospective ARs printed weeks later may in fact be more accurate than ARs printed on the day of a decennial census operation. The group quarters coverage for state prisons appears excellent and the item response for each inmate was complete (Chan, 2012a). Similar results were found for the coverage of ARs of students sampled for the pilot study, but ten percent of all the information other than the sex of the students was missing. Our evaluation on the coverage of ARs for state prisons and university student housing is qualitative. Our non probability sample limits our ability to generalize our findings beyond our study sample. The results presented in Table A4 need to be replicated with a probability sample. More research is needed to examine the coverage of group quarters populations in other types of GQ facilities that regularly provides administrative records for decennial census purposes.

5.3 Do Different Types of Group Quarters Need Different Methods to Assess Coverage?

Research findings reported earlier strongly suggest the necessity of a tailored methodological approach to study coverage of each GQ type and possibly each facility. Such an approach will enhance the quality of data collected by the CME operation with the GQ populations. The selection of methods and timing of CME for each GQ should be based on: (1) methods of data collection used by GQE operation; (2) turnover rates of the sampled facilities; (3) the types of residents and factors affecting their ability to participate; and (4) the size of the GQ facilities.

The two major methods of data collection for a coverage study are a post-enumeration survey and administrative records that could be acquired either from the GQ facilities, the central office (agency level), or other independent sources. For small facilities, CME can utilize the ethnographic alternative enumeration and verification method as the third approach. Methods of data collection for a CME study should depend on whether the 2020 GQE operation is collecting electronic ARs from all GQs or if the ICR will be completed using printed ARs or by self-response from residents or proxies.

Advances in communication technology provide new and unexplored potentials for researchers to capitalize on and to utilize in collecting data for a post-enumeration survey. The census CME operation should be prepared to utilize a mixed-mode data collection (MMDC) method to conduct a post-enumeration survey. In 2010, we found that our student population was ready to complete a web-based survey. Our student interviewees and focus groups respondents lamented the out-datedness of the paper census form and the paper pilot CME questionnaire. Inmates in correctional facilities were willing and capable of completing a self-administered survey but the security concerns and access constraints had limited the survey to paper mode.

The timing of a CME program for GQs should be determined by the methods of the decennial GQE operation and the turnover rates of the different types of GQ facilities. The

CME operations should obtain such information early in the process to prioritize their field work and conduct the survey with facilities with the highest turnover rates first.

Below is a list of recommended tailored approaches for each major type of GQ studies. Suggested mode of data collection and respective research are listed for considerations. If resources are limited, the priority of research and for inclusion in the CME GQ operations should be given in the order that it is presented.

5.3.1 Recommended Tailored Approach for Census Coverage Measurement Evaluation by Major Group Quarters Types

1) College and University Student Housing and Juvenile Facilities

The two major GQ types share the common age group who are most accustomed to technology and self-administered surveys. How can we best use media to conduct a coverage measurement survey? We recommend the following area of research for these two types of GQs:

- a) Explore the use of media and web-based surveys
 - Use different media options for coverage measurement for students and juveniles
 - Market the coverage measurement using an education frame
- b) Provide gate keepers (such as resident assistants and hall directors) with link access to web surveys.
 - Target student and younger GQ populations
 - Test the effectiveness of on-demand information through hyperlinking to explain why certain questions are asked (Stephens 2011).
 - Provide training and resources for the residence hall staff (our gatekeepers to our respondents)

2) Skilled Nursing Facilities and Other Health Related Institutional Facilities

We recommend a self-administered paper survey as well as an interviewer administered computer assisted personal interview (CAPI) for these two GQ types. An alternative ethnographic method is plausible if the facility is small, which will minimize burden on GQ staff. We recommend the following area of research:

- a) Explore the quality of retrospective administrative records as an alternative source of data for a census CME
- b) Explore ways to follow up on un-matched records.

3) Correctional Facilities

With the exception of local jails, our findings suggest that the person coverage of ARs is rather accurate due to the custody nature of these facilities. The following area research should be considered:

- a) Conduct a probability sample survey with all types of correctional facilities during dress rehearsal to verify the coverage of ARs obtained in the census GQE

by comparing to those collected for the dress rehearsal survey. Empirical findings can help decide whether certain types of GQs such as federal and state prisons could be excluded from future CME operations

b) Explore the data quality of the sample survey.

4) Other Non-Institutional Facilities

a) Group Homes for Adults

- Consider mixed-mode data collection approach based on characteristics of residents
- Feasible CME methods include: a post-enumeration survey or an ethnographic enumeration or an independent administrative records collection (e.g. domestic violence shelters or facilities that provides protective services for women and children who were experiencing physical and/or sexual abuses should be excluded from post-enumeration survey and alternative methods should be used)

b) Emergency and Transitional Shelters

- Examine the data quality and utility of other independent ARs such as the Homeless Management Information Systems (HMIS), funded by Department of Housing and Urban Development, which records individuals who stay in homeless shelters (Glasser, Hirsch and Chan 2012).

c) Maritime/Merchant Vessels

- Retrospective Records Study
 - Collect records from the four Unions that have records for 85 percent to 95 percent of all seaman who are union members: Seafarer's International Union (SIU) for unlicensed mariners; National Maritime Union (NMU), American Maritime Officers and the Master Mates and Pilots Organizations.
 - Collect employment records from the operating company who keeps permanent record for those who are onboard of each ship and when. Collect the Personnel Action Report (PARS) for the Military Sealift Command. All seaman onboard ship on Census Day could be identified from payroll and PARS information.

d) Residential Treatment Centers for Adults

- Collect ARs and cross check with retrospective leave slips for residents who were signed out on Census Day; sometimes they do not return to the same facility after receiving their court sentencing.

5) Military Group Quarters

Military agencies should have rather complete personnel payroll and or personnel action records (PARS) for their employees. Retrospective records could be collected for assessment. High quality retrospective records may be used for coverage evaluation study.

6 Related Evaluations, Experiments, and/or Assessments

Three assessments reports conducted under the 2010 Census Program for Evaluations and Experiments are related to the current evaluation report. These include: (1) 2010 Census Group Quarters Validation Operation Assessment Report, (2) 2010 Census Group Quarters Enumeration Assessment, and (3) 2010 Census Service-Based Enumeration, Group Homes, and Carnival Locations Address List Update Assessment.

7 Conclusions and Recommendations

7.1 Conclusions

This report addressed three high level research questions that aim to inform research and development plans for the 2020 Census coverage measurement program for group quarters' population coverage. It summarized the types of factors that affect the success of GQ population coverage, presented results on various studies conducted to aid in the understanding of coverage in GQs, and discussed the need to utilize tailored and mixed-mode data collection methods to assess coverage in GQ populations.

The key factors that may affect the Census Bureau's ability to conduct a coverage study of GQs include (1) the complex living arrangements and high turn-over rates of residents at some facilities, (2) the aspects of residents' lives that hamper their willingness to participate in a survey, (3) the challenges for census workers to access GQs facilities; and (4) the lack of cooperation from GQ staff. These factors highlight the need to revisit the timing of a coverage measurement study for GQs and to identify different modes of data collection for different types of GQs.

High turn-over or complete seasonal closure of some facilities have important implications for the timing of a coverage measurement study of its population. The timing can also affect the quality of the coverage data collected because it reduces the probability that the post-enumeration survey will capture the same GQ population residing at the facilities on Census Day. The inability to match our sampled coverage measurement populations (P-sample) to the original census sample (E-sample) for the GQs essentially eliminates this methodology for certain types of GQs. In addition, coverage measurement operations conducted after the complete closure of some GQs such as college student housing and emergency winter shelter for people experiencing homelessness will be fruitless. The timing of our Census Day, April 1, necessitates completing a GQE with these types of GQs earlier to allow coverage evaluation of such GQ populations.

This project utilized three types of assessment studies that aid in understanding the coverage in GQs. They include (1) an alternative ethnographic enumeration and records verification studies conducted on or near Census Day; (2) a pilot coverage measurement-like survey conducted at a University prior to its closing; (3) an assessment of the data quality of administrative records. A modified framework was used to identify areas where additional research is needed.

Based on the overall research findings of this project, the answer to the third research question, “Do different types of GQs need different methods to assess coverage?” is a resounding “yes”. A tailored methodological approach is recommended to study coverage of each GQ type, and possibly each facility even though the latter may be difficult to achieve. Such an approach will enhance the quality of data collected.

A tailored design approach is recommended to ensure a successful 2020 Census evaluation of coverage for different types of GQs. A different mode of data collection may be needed for GQs with challenging access or lack of cooperation among residents and staff. The timing of a coverage study is the most challenging issue for student populations residing in college housing. They are able to complete a survey but will not be captured in the summer months. The results from the pilot test suggest that it is possible to conduct a coverage study immediately after GQE operation. The selection of methods and timing of CME for each GQ should be based on: (1) methods of data collection used by the GQE operation; (2) turnover rates of the sampled facilities; (3) the types of residents and factors affecting their ability to participate; and (4) the size of the GQ facilities.

7.2 Recommendations and Future Research for Coverage Measurement Program for Group Quarters Populations

7.2.1 Conduct a Tailored Census Coverage Measurement Evaluation Study for Limited Types of GQs

The data collection methods and timing of a CME study for each GQ should vary depending on the methods of data collection used by the GQE operation, the turnover rates of the sampled facilities, the types of residents and factors affecting their ability to participate in a coverage survey study, and the size of the GQ facilities. For instance, requesting ARs for a CME study as the main source of information is inappropriate if the facilities have already provided ARs for census GQs enumeration unless the ARs come from an independent source or are printed retrospectively after the data were updated.

The Census Bureau’s CME operations should exclude GQs that have extremely high turnover rates where residents are likely to have a usual residence elsewhere and GQs where aspects of residents’ private lives (such as patients in hospices, homeless shelters) precludes further burden from a coverage measurement survey.

(1) Conduct Coverage Measurement Evaluation Shortly after Group Quarters Enumeration

If a post-enumeration questionnaire is the selected method for data collection, it should be distributed shortly after Group Quarters enumeration. Results from our survey study suggest that establishing excellent rapport with GQ facilities prior to the decennial census will enable the CME operations to be effectively undertaken promptly after the GQE operation is completed. Our researchers found out ahead of time when GQE was to be conducted at the study facilities and arranged to conduct the pilot student test with the assistance and approval from the university. This recommendation requires that census CME operation’s field period overlap the GQE operation unless the latter operation shortens its field period.

(2) Conduct Post-Enumeration Questionnaire on Census Day for Group Quarters where Administrative Records are provided at the Agency level

For GQs where staff will not be interacting with census enumerators because ARs are provided at the agency level, a post-enumeration questionnaire should be conducted on Census Day or as close to Census Day as possible.

(3) Use Mixed-Mode Method for Group Quarters Coverage Measurement

The method for CME study should be tailored to each GQ type and each individual facility based on the data collection used for the GQE operation and the availability and needs of residents. If a post-enumeration survey is used, it should be available in different modes: paper, CAPI or web based. Collecting retrospective ARs and ARs on the day of the CME operations may be an alternative for GQs if the facility has relevant and quality records and the residents have already completed a census form. Using alternative ethnographic enumeration method is also plausible for smaller GQs.

7.2.2 Improve Cooperation and Participation in Coverage Measurement Evaluation of the Group Quarters Populations

1) Provide education and information about coverage measurement evaluation study and the decennial census to sampled Group Quarters before the studies will take place.

Currently, the website designated for decennial census operations does not provide any information regarding GQ facilities. Many GQ staff are gatekeepers and key points of contact between the residents and the CME operations. These staff members serve as important facilitators who distribute both information and the survey to the respondents. Providing the staff and respondents with an understanding of the CME study and knowledge about the importance of the decennial census enumeration in GQs will enhance the participation of coverage measurement study and the data quality.

(2) Publicize the Coverage Measurement Evaluation Operation

Two areas of research questions are proposed:

- How to better capture attentions of GQs residents, especially those who are busy and or mobile?
- How to create inviting design and easy online survey (attention and time are both precious commodity to many residents)?
- What type of advertisement and information provision method about the CME study and the U.S. Census Bureau should be developed?
 - Examine how the provision of web link to post-enumeration survey respondents relates to response rates
 - Test provision of information on the decennial census web site

Likewise, the decennial census website needs to publicize the coverage measurement operation for Group Quarters. It is important to help residents understand why they should care about the coverage measurement survey. In particular, for those who did complete an ICR form, they may consider the post-enumeration questionnaire as redundant (Stephens, 2011).

(3) Test the Effectiveness of Mandatory Messages

Student respondents who participated in the focus groups study on media usage of college students (Stephens 2011) agreed that if a mandatory message is on the post-enumeration questionnaire, they will be more likely to complete the questionnaire.

(4) Test the Effectiveness of Token Incentives for Coverage Measurement Survey Participants

When conducting a GQ post-enumeration survey, the evaluation operations should consider the provision of inexpensive, practical tokens of appreciation such as bus tokens for persons experiencing homelessness, a candy bar for inmates, and food or beverages for college students. These were suggestions recommended by administrators that will certainly improve the cooperation and participation in a coverage measurement survey. In fact, one research team provided bus tokens to homeless interviewees and the tokens were greatly appreciated.

(5) Provide appropriate training and provide resources for facility staff

For GQs where the residents are inaccessible to Census Bureau staff, appropriate training should be provided to GQ staff. They facilitate distributing or collecting paper questionnaires or sending web link to their residents, and they are often approached with questions. They need to have tools such as U.S. Census Bureau materials and related Census Bureau web sites for their role as facilitators. This information will help the facilities' staff explain the purpose, importance and content of the survey to their residents properly.

(6) Provide Dedicated Protocol for Group Quarters Coverage Measurement Evaluation Operations

A dedicated protocol should be developed for GQs' post-enumeration survey. It should be different from those designed for HU coverage measurement personal interview and tailored for each major GQ types.

(7) Provide a Personal Letter to Thank Facility Staff who Bore the Burden of Assisting in the Coverage Measurement Evaluation Operation

Finally, it is common for facility staff to receive an advance letter, but the actual staff who assist our operation seldom receive appropriate appreciation letters from the Census Bureau at the close out of the operation. A simple thank you letter with potential web links to the final data on GQs may enhance future cooperation.

7.2.3 Develop Quality Check for Survey Data

Students who have privacy and confidentiality concerns admit that they simply do not provide factual information if they feel obliged to provide information (Stephens 2011). This reporting is consistent with the findings in the pilot survey test (Chan 2012b); one percent of

the returned surveys (3 of 303) had obvious made-up information (phony names, incorrect sex in rooms that are unisex and/or non-existing room numbers). It is essential to collect electronic ARs for validation purposes.

8 Acknowledgements

The author of this report would like to thank the following people who provided valuable contributions and assistance to the development, implementation, and completion of the Investigation of Methods to Evaluate Group Quarters Populations.

To all GQ staff, administrators and group quarters residents who have volunteered to speak with all the researchers and provided invaluable information that make this project possible.

To the researchers who conducted the ethnographic studies: Professor Susan Dewey, Professor Irene Glasses, Professor Eric Hirsch, Professor Michelle Inderbitzen, Professor Barbara Owen, Professor Sonia Salari, Professor Keri Stephens and Abigail Heller.

To critical reviewers and colleagues who provided helpful comments and assistance along the way: Lou Avenilla, Diane Barrett, Patrick Cantwell, Asaph Young Chun, Diane Cronkite, Gia Donnelly, Dora Durante, Steve Lubkemann, Peter Miller, Mary Mulry, Elizabeth Nichols, Yuling Pan, Magda Ramos, Patricia Sanchez, David Whitford and Tommy Wright.

To current and former CSM and CSMR colleagues who helped with various aspects of this project: George Higbie, Ann Dimler, Temika Holland, Matthew Gore, Heather Marsh, and Sarah Wilson.

To ACSO and FLD colleagues who arranged the ACS observations for the researchers: Judy Belton, Fern Bradshaw, Yorlunza Price Brown, Henry Rose, and Jeffrey Wright.

To countless FRs in various Regional Offices who took on the researchers as observers.

9 References

Chan, A. (2012a). "Qualitative Assessment of Administrative Records: The Case of State Prisons." Proceeding Paper for the 2011 Federal Committee for Statistical Methodology Conference, Washington D.C., January 10-12, 2012.

_____(2012b). "2010 Census Coverage Measurement Pilot Study: Residence Hall Study". Unpublished internal draft report. U.S. Census Bureau, Washington, D.C.

Chan, A. and Owen. B. (2011). "A Qualitative Review of Coverage of the Group Quarters Populations in State Prisons: Self-Reports, Alternate Addresses and Conceptions of Home." Unpublished internal draft report. U.S. Census Bureau, Washington, D.C.

Daas, P.J.H., Arends-Tóth, J., Schouten, B. and Kujivenhoven, L. (2008). "Quality Framework for the Evaluation of Administrative Data." Proceedings Paper for the 2008

European Conferences on Quality in Official Statistics. Access on December 14, 2011.
<http://www.pietdaas.nl/beta/pubs/pubs/21Daas.pdf>.

Dewey, S. and Chan, A. (2012). "2010 Census Group Quarters Ethnographic Study: Group Homes for Women and Military Group Quarters." Unpublished draft internal report. U.S. Census Bureau, Washington, D.C.

Glasser, I., Hirsch, E. and Chan, A. (2012). "Ethnographic Research on Homeless Populations." Unpublished internal draft report. U.S. Census Bureau, Washington, D.C.

Inderbitzen, M. and Chan, A. (2012). "Ethnographic Study of Group Quarters in the 2010 Census: Prisons for Adults and Juvenile Correctional Facilities." Unpublished internal draft report, U.S. Census Bureau, Washington, D.C.

Jonas, K. (2003). *Group Quarters Enumeration*. Census 2000 Evaluation E.5, Revision 1, August 6, 2003. Retrieved on March 13, 2012.
<http://www.census.gov/pred/www/rpts/E.5%20R.pdf>

Killon, R. (1997). "Group Quarters and the Integrated Coverage Measurement Survey." Memorandum for Census 2000 Committee on Statistical Policy, August 7, 1997.

Owen, B. and Chan, A. (2012). "Using Ethnography to Investigate Coverage of the Group Quarters (GQ) Population: Jails and Prisons." Unpublished internal draft report, U.S. Census Bureau, Washington, D.C.

Nordholt, E., Ossen, S. and Daas, P. (2011). "Research on the Quality of Registers to make Data Decisions in the Dutch Virtual Census." ISI 2001 Proceeding Paper.

NHPCO, (2010). National Hospice and Palliative Care Organization Facts and Figures: Hospice Care in America. Retrieved on March 11, 2012.
http://www.nhpc.org/files/public/statistics_research/hospice_facts_figures_oct-2010.pdf.

Pipino, L., Lee, Y. and Yang, R. (2002). "Data Quality Assessment." *Communications of the ACS*. V 45: 211-218.

Rothhaas, C., Letina, F. and Hill, J. (2011). *2010 Decennial Census: Item Nonresponse and Imputation Assessment Report*. Accessed on March 30, 2012.
<http://2010.census.gov/2010census/pdf/2010%20Decennial%20Census%20Item%20Nonresponse%20and%20Imputation%20Assessment%20Report.pdf>

Salari, S. and Chan, A. (2012). "Population Measurement in Health Related Group Quarters: Ethnographic Study of Long Term and Hospice Care." Unpublished internal draft report, U.S. Census Bureau, Washington, D.C.

- Singh, R. (2005). "2010 Census Coverage Measurement---Updated Plans." DSSD 2010 Census Coverage Measurement Memorandum Series #A-06, November 29, 2005.
- Stephens, K. (2010). "The 2010 Residence Hall Coverage Measurement Pilot Study Focus Group Report." Unpublished internal report, U.S. Census Bureau, Washington, D.C. June 20, 2010.
- _____ (2011) "Focus Group Report: Using Technology to Administer Surveys to College Students." Unpublished internal report, U.S. Census Bureau, Washington, D.C. October 20, 2011.
- Stephens, K., Heller, A. and Chan, A. (2012). "2010 Census Ethnographic Study Residence Hall Report." Unpublished internal draft report, U.S. Census Bureau, Washington, D.C.
- U.S. Census Bureau. (2009). "2010 Census Group Quarters Definitions and Code List." Signed Internal Memorandum, September 17, 2009.
- _____ (2010) "Household Relationship and Group Quarters Population: 2010", American Factfinder, QT-P12. 2010 Census Summary File 1. Retrieved on March 13, 2012. http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_QTP12&prodType=table
- _____ (2011). "Change Request #16 - *Using Administrative Records for GQs for a new business case titled Group Quarters Administrative Records.*" Internal unpublished change request document, September 2011.
- Williams, J., Barrett, D and Williams, A. (2012). "2010 Census Group Quarters Validation Operation Assessment Report." Unpublished internal draft report, U.S. Census Bureau, Washington, D.C., March 5, 2012.

Appendix A: Tables

Table A1: Types of Group Quarters by Type Codes

Type Codes	CORRECTIONAL FACILITIES FOR ADULTS
101	Federal Detention Centers
102	Federal Prisons
103	State Prisons
104	Local Jails and Other Municipal Confinement Facilities
105	Correctional Residential Facilities
106	Military Disciplinary Barracks and Jails
JUVENILE FACILITIES	
201	Group Homes for Juveniles (non-correctional)
202	Residential Treatment Centers for Juveniles (non-correctional)
203	Correctional Facilities Intended for Juveniles
NURSING FACILITIES/SKILLED-NURSING FACILITIES	
301	Nursing Facilities/Skilled-Nursing Facilities
OTHER INSTITUTIONAL FACILITIES	
401	Mental Hospitals and Psychiatric Units in Other Hospitals
402	Hospitals with Patients Who Have No Usual Home Elsewhere
403	In-Patient Hospice Facilities
404	Military Treatment Facilities with Assigned Patients
405	Residential Schools for People with Disabilities
COLLEGE/UNIVERSITY STUDENT HOUSING	
501	College/University Student Housing
MILITARY QUARTERS	
601	Military Quarters
602	Military Ships
OTHER NONINSTITUTIONAL FACILITIES	
701	Emergency and Transitional Shelters (with Sleeping Facilities) for People Experiencing Homelessness
702	Soup Kitchens
704	Regularly Scheduled Mobile Food Vans
706	Targeted Non-Sheltered Outdoor Locations
801	Group Homes Intended for Adults
802	Residential Treatment Centers for Adults
900	Maritime/Merchant Vessels
901	Workers' Group Living Quarters and Job Corps Centers
903	Living Quarters for Victims of Natural Disasters
904	Religious Group Quarters and Domestic Violence Shelters

Table A2: Number of Group Quarters Facilities Studied by IMEGQP Research Project

Type		Phase One		Phase Two	Phase Three	
Code	Total	ACS Observations	In-depth Interviews	Ethnography	Survey Study	
CORRECTIONAL FACILITIES FOR ADULTS						
101	Federal Detention Centers	1				
103	State Prisons	2		5	3 (1)*	
104	Local Jails and Other Municipal Confinement Facilities	4	2	1		
JUVENILE FACILITIES						
201	Group Homes for Juveniles (non-correctional)		1			
203	Correctional Facilities Intended for Juveniles			2		
NURSING FACILITIES/SKILLED-NURSING FACILITIES						
301	Nursing Facilities/Skilled-Nursing Facilities	6	1	2		
OTHER INSTITUTIONAL FACILITIES						
403	In-Patient Hospice Facilities		1	1		
COLLEGE/UNIVERSITY STUDENT HOUSING						
501	College/University Student Housing	7	2	1	2 (1)*	
MILITARY QUARTERS						
601	Military Quarters	1	1	1		
602	Military Ships	1				
OTHER NONINSTITUTIONAL FACILITIES						
701	Emergency and Transitional Shelters (with Sleeping Facilities) for People Experiencing Homelessness	1	2	2		
702	Soup Kitchens			5		
801	Group Homes Intended for Adults	3		4		
802	Residential Treatment Centers for Adults		1			
900	Maritime/Merchant Vessels		3			
901	Workers' Group Living Quarters and Job Corps Centers		1			
*Number in parenthesis are GQs that have not be studied in the earlier phases		67	26	15	24	2

Table A3: Residents Mobility by Group Quarters Types

Types of Group Quarters	Typical length of stay	Range of stay	Evidence of Stability or High Turn Over	Movements
Federal or State Prisons	More than one year	One year to life in prison	Fairly stable population	Count does change. Movements are likely to be within and between facilities, court, and hospitals. Inmates who have completed their sentence could be released.
Detention Centers and Local Jails	Less than one year	One day to 18 months	High turnover rate*	Count changes hourly and daily.
Juvenile Facilities	Depends	½ day to 2 years	Not enough information	Not enough information
Skilled Nursing Facilities with Short Term Care Unit	Depends	2 weeks to three month	Judging from the short length of stay, the turnover rate could be high among those staying for short turn care	Between facilities and doctor offices
Skilled Nursing Facilities Focusing on Long Term Care Services	Months and years	weeks to years	Fairly stable population: 85 percent to 90 percent of the residents will still be there three to four months after census enumeration	Between home, doctor offices or hospitals, most return at the end of the day
Hospices	Mean and median length of stay: 69 days and 21.1 days (NHPCO 2010)	½ day to months	Very high; one sampled facility serves about 20 patients and estimated 20 to 30 deaths per month	High mortality
College or University Student Housing	One school year	One semester to 4 or more years	Rather stable during the year, but close latest by third week of May for semester-based school and up to third week of June weeks for quarter-based school.**	Between classes, sometime home and alternative places to sleep
Military Group Quarters	Depends	Mostly one day to few weeks except military schools	Possible if records are used ***	Daily or weekly.
Homeless Shelters	Single shelter– hours to one night Family shelters– three weeks	One night to a few weeks	High turn over	Hourly movements, count changes hourly
Transitional Housing	Three months	One month to 2 years	Stable during the stay.	Daily between work and housing
Residential Treatment Center	Four weeks for typical programs	One day to two years	High turnover and high recidivism rates	Daily between court, other health facilities, work, job interviews.
Maritime/Merchant Vessels	Couple of months	Weeks to months	Stable crew but rotated throughout the year	Rotations between ships; between ships and usual home elsewhere

* For example, in one facility in the study sample, there were 13,000 intakes in a single year; facility maximum capacity for the facility is 750.

**For example, in one sampled site, only 2 of 470 students moved out between February and April 1, 2010.

***During an ACS observation, two of ten ACS sampled person listed on the roster did not live or work at the facilities anymore. Only one of the ten sample persons actually stay overnight

Table A4: Qualitative Assessment of Administrative Data by Types of Group Quarters

Types of Group Quarters	Relevancy	Item Completeness	Timeliness	Reliability	Evidence of records coverage Accuracy or Error
Federal or State Prisons	Relevant data are collected except addresses	<ul style="list-style-type: none"> • Complete • No alternative address or mostly outdated or inaccurate 	Real time and retrospective printing possible	<ul style="list-style-type: none"> • Name (Alias) • Age and date of birth – very accurate • Race and Ethnicity - problematic 	Should be very accuracy if the complete records are provided
Detention Centers and Local Jails	Relevant data	Need more research	Record updated within days	Need more research	Possible error
Juvenile Facilities	Need more research	Need more research	Not always up to date	Need more research	Listed residents may not be in the facilities
Skilled Nursing Facilities with Short Term Care	Relevant	Need more research	Updated every night per federal laws (theoretically)	Need more research	Possible error – listed patients may not be at the facilities
Skilled Nursing Facilities Focusing on Long Term Care	Relevant	Need more research		Need more research	Possible error – listed patients were not at the facilities during ACS observations
Hospices	Relevant	Need more research	Updated frequently	Need more research	Extreme short term stay may not be listed; list is generated by recall at some facilities
College or University Student Housing	Relevant	Relevant data are not always available including names and address are often missing*	Real-time – ARs most accurate if printed on or near Census Day; cannot print retrospectively	<ul style="list-style-type: none"> • Missing information on name –impossible to match survey data to census data • Race and Ethnicity – unreliable and different categories are used, e.g. no race and ethnicity were provided for foreign students but were listed as foreign students) 	Listed residents may not be at the facilities
Military Group Quarters	Relevant	Need more research	Not timely	Need more research	Possible error – listed servicemen were not at the facilities during ACS observation
Homeless Shelters	Relevant	Missing names	Up to date	Need more research	Potential – explore U.S. HUD Homeless Management Information System
Transitional Housing	Relevant	Need more research	Need more research	Need more research	Accurate records
Residential Treatment Center	Relevant	Need more research	Updated regularly	Need more research	Need more research
Maritime/Merchant Vessels	Not enough information	Complete	Need more research	Need more research	Should be accurate (Union and Coast guard requirements)

* About 10 percent of obtained records from University A only had the sex information for the students to protect the confidentiality of students; other universities' do not always keep information on race and ethnicity on student housing records

Appendix B: Brief Summaries from Ethnographic Studies

B1 Correctional Facilities – Jails and Prisons

By Professor Barbara Owen

In examining the factors that shape the ability of the Census Bureau to accurately count those confined to correctional facilities, a qualitative case study was conducted to assess the 2010 enumeration in these Group Quarters. These data are also the basis for recommendations about future census CME programs to both assess census coverage accuracy and improve census processes in correctional group quarters. The study also identifies social, cultural, operational and other dynamic factors that affect census coverage and may produce coverage errors. The 2010 Census is described through qualitative observations and unstructured interviews in three primary study sites and three secondary sites. The primary sites include two women's state prisons and one county jail, conducted between March and May 2010. Secondary sites were a large male prison visited during the observation of the American Community Survey (ACS), the state correctional agency main office and a small women's prison in another state. Problems and successes specifically related to coverage accuracy are also described. Several research questions directed this qualitative investigation:

1. How was the 2010 Census conducted in two women's prisons and one jail?
2. What factors affect the quality of data collected in these correctional Group Quarters?
3. What types of coverage and enumeration problems exist in prisons and jails?
4. How can a census coverage evaluation follow-up study be conducted in prisons and jails?
5. What is the best approach to ensuring an accurate and complete enumeration in correctional Group Quarters for the 2020 Census?

RESULTS

Administrative records, defined as those used to administer government programs, were used in all of the facilities observed in this study. Hard copies of these records ("rosters" in correctional parlance) were provided by individual facilities to Census Bureau enumerators who then entered the data on the ICRs. Due to the custodial nature of prisons and jails, these rosters were judged to be of high quality in terms of accurate and complete listings of all present when a comprehensive listing was printed. The Census Bureau can have a high level of confidence in the use of administrative records when a complete and comprehensive roster is obtained.

The use of administrative rosters, in theory, did not introduce any obvious errors into the enumeration process. In practice, however, incomplete rosters that do not list the entire population create the potential for undercounting. Misalignment between official census categories of race and ethnicity and the administrative rosters resulted in subjective, and often arbitrary, ICR completions. Truncated names in delimited roster fields may also contribute to

inadequate enumeration. Coding errors can be introduced in transferring data printed from electronic data bases by hand into the machine-readable ICR forms.

Several contextual factors must also be considered in planning and assessing census coverage measurement: population dynamics created by releases, transfers and other forms of population movement; operational issues such as security and day-to-day demands of institutional life; and inmate and staff culture. This study found that perspectives on task completion and authority structures affected the interaction between institutional staff and the census enumerators and should be considered in future census activities. Any second enumeration must consider the extreme fluidity of correctional populations over a short time.

While the Census Bureau can have confidence in the completeness of the administrative data, several aspects of the decennial census planning and execution process were less successful and may affect coverage. Census Bureau workers and correctional staff at each site negotiated a unique, non-standardized and independent method of producing these rosters. Different rosters were used in each of two main prison sites. There was no evidence of a consistent protocol or common methodology at any of the observed study sites or in the state correctional agency's main office. This lack of coordination, particularly failing to provide adequate information to the individual facilities about specific census requirements, using different types of rosters and staying out of contact with the facilities leading up to the facilities, introduced potential coverage errors.

“Correctional courtesies” (a type of professional behavior specific to jails and prisons) were also missing in interactions between facility and Census Bureau staff, contributing to frustrations and census fatigue at these sites.

It is also important to note that differences among correctional group quarters affect census process improvement. Jails (made up of both short-term pre-trial detention inmates and those sentenced to less than a year) and prisons (composed of sentenced inmates, typically serving over one year) require different approaches in census improvement and assessing census coverage errors. Jails, with a high level of population turnover, may present a challenge as their inmates may be counted in both housing unit and GQ enumerations. The decentralized and local nature of jail administration requires a local, facility-level data collection approach. Prisons, with a somewhat less fluid population, and more centralized administration (state and federal, for the most part) present an opportunity to test a data collection approach at an agency, rather than facility, level.

RECOMMENDATIONS

Census Coverage Measurement (CCM):

A second enumeration of the correctional populations enumerated during the decennial census is possible and could, most optimally, be conducted by using specifically programmed agency-wide automated data for both the initial census and the CCM study for prison GQs. Agency-level data have the capacity to be programmed both in real time (covering the census period) and retrospectively (listing the population a second time for the original period covered by the census enumeration) to compare data collected during the decennial enumeration and at any time in the

future. These data could be programmed to produce output organized by institution and aligned with census blocks. Agency-level data would be available for all state and federal prisons systems and may also be found in jails with sophisticated data management capabilities. This would require long-term planning and development with the data managers or researchers at the headquarters or central office of each state and federal prison system, but would improve data quality, the possibility of a CCM study and reduce costs by coordinating and collecting data at a centralized level. Jails would need a different approach which must be carefully considered due to their decentralized administrative structure, rapid turnover and varied data management capabilities.

Another area relating to coverage measurement concerns the types of data contained within each administrative data set. While names, birthdates and sex are highly reliable in correctional administrative records, the mismatch between federal labels for race and ethnicity and widely variant labels used in these correctional systems illustrate the need to examine these important categories to improve census coverage.

Census Process Improvement

State and Federal prisons data are best approached from an agency, rather than individual, perspective. The 2010 Census was based on a facility/census block orientation. This resulted in an individual and negotiated enumeration process at the three facilities observed here and, presumably, all of the 1,185 state and Federal correctional facilities in the U.S. If administrative data are to be used in correctional GQs for the 2010 Census, examining the use of agency-wide data in these 51 systems should be considered. In addition to reducing the burden on the individual facilities, an agency-wide approach would produce consistent reports across these state and Federal correctional GQs. An agency approach would also reduce inefficiencies for census field staff. Working at an agency level to customize these administrative reports would provide the population lists for large numbers of individuals in a relatively short time.

Investing time in an agency approach presents additional benefits for accuracy and cost-savings. Working closely with agency programmers, preparation for the 2020 Census could result in more consistent definitions of the race and ethnic categories both across the system and with the established census categories. Gaining knowledge of the structure and content of these data bases could also result in the development of “census subroutines” in electronic form, eliminating the need to code data from hard copies into machine-readable forms. Such an approach would not be appropriate for the over 3,000 county jails, with one exception. The large, urban jails are likely to maintain data bases similar to these prisons and could be included in a modified agency approach.

Dedicated protocols and correctional specialists

Related to this agency approach is the development of a correctional protocol for these GQs. These protocols would structure enumerations at jails and prisons in a common and consistent way. Should the individual facility approach be retained, a protocol that names the optimal type of population report, a lexicon that translates racial and ethnic categories and other negotiated and subjective decisions that introduce coverage errors might reduce such errors.

Prior to the 2020 Enumeration, a written protocol should be developed with specific information pertinent to correctional settings. A review of the protocols used in the Correctional ACS may be instructive. While each state prison system and the Federal Bureau of Prisons would need a customized section (whether an agency approach is adopted or the individual facility approach is retained), the time invested in an agency-wide approach would produce benefits, such as reducing regional office time and providing consistent records within each system. Investing time at determining the best type of data for the upcoming censuses and developing a system-wide protocol will avoid the duplication of effort and the potential for subjective results present in the observed approach which relied on negotiations and enumerations at these sites.

The Census Bureau should also consider developing correctional specialists who have a solid grasp of census issues in correctional facilities. Deploying these specialists throughout a given system, despite crossing Census Bureau regional office boundaries, may also introduce efficiencies. Whether the Census Bureau adopts an agency approach for prisons or continues to use the individual facility approach, collaborating with agency population data managers to determine the best approach will introduce efficiencies and standardize the process throughout the system. At minimum, system-wide contact information or a dedicated “hotline” for further information should be developed.

Research

A survey of correctional approaches of all state and Federal prisons and a stratified random sample of U.S. jails should be conducted to determine the range of enumeration approaches used by correctional facilities for 2010 Census. This survey can serve double duty in exploring the utility of automated enumerations using these system-wide data bases in future enumerations.

To test the potential for inmate self-enumeration in correctional facilities, a self-enumeration pilot project mirroring the community (free world housing unit) approach should be developed. Process and outcome evaluation methodologies should be employed through a multi-level collaboration.

Appendix B: Brief Summaries from Ethnographic Studies

B2 State Prisons and Juvenile Correctional Facilities

By Professor Michelle Inderbitzen

The purpose of this qualitative study was to explore the factors that shape the ability of the Census Bureau to accurately count individuals confined to state juvenile correctional facilities and prisons. The preparation and process of the 2010 enumeration was observed at both the agency level and the institution level. The primary agencies and sites included in this study included one state's Juvenile Authority and a juvenile correctional facility for females, and the same state's Department of Corrections and four state prisons for men

In contrast to many other Group Quarters, a primary responsibility of both juvenile correctional facilities and prisons is security and public safety. Thus, the institutions and their central agencies have clear records of which individuals are in which facility at any given time. Virtually all juvenile correctional facilities and state prisons do "counts" at least four times a day (Sykes, 1958; Jacobson-Hardy, 2002; Johnson, 2002; Inderbitzen, 2007), and corrections workers are responsible for keeping close track of the youth or inmates in their units. The challenges of enumerating the population of correctional facilities, then, are generally not in capturing accurate names and numbers of residents in any given institution. Instead, safety concerns and the closed culture of correctional facilities provide the obstacles for enumeration and Census Coverage Measurement (CCM) studies.

The state in this study was perhaps unique in that the Juvenile Authority and the Department of Corrections share a portion of their population (young people sentenced as adults may serve part or all of their sentences in juvenile correctional facilities where there is more opportunity for education and rehabilitation), and administrators and leaders at the central offices of both agencies work closely together on a regular basis. In addition, the number of individual in custody is relatively low – the Juvenile Authority has approximately 900 youth in close custody facilities, and the Department of Corrections houses approximately 14,000 inmates in state prisons.

The process of the 2010 Census was most notable for the interaction between state agencies and with their own institutions. A decentralized approach was initially decided upon for the enumeration of state juvenile correctional facilities and prisons, but leaders in the Department of Corrections changed course and chose to provide administrative records and completed Individual Census Reports for all 14,000 inmates from the central agency's Research Office. At the same time, the DOC reached out to the Juvenile Authority and coordinated plans for the enumeration; working together to avoid miscounting of their shared population, each agency provided similar administrative data for the individuals in their custody to the local census office.

Regarding a Census Coverage Measurement study, a second enumeration of the juvenile correctional facilities and adult prisons enumerated in 2010 Census is possible and could be done quite easily using state juvenile justice agencies' and Departments of Corrections' administrative

data. The stability of the population will vary by institution, but the central agencies have the ability to track individuals and populations over time. Leaders of the Juvenile Authority and the Department of Corrections clearly understand the importance of accurate data and research, and they were extremely cooperative in working with this study and the Census Bureau.

Recommendations

- **Provide education and information about Census Coverage Measurement (CCM) studies and the decennial census to state juvenile justice agencies and Departments of Corrections several months before the studies or enumeration will take place.**

Information should include details about the purpose and importance of CCM studies and the decennial census, and procedures and options for enumeration of state-run correctional facilities. Efforts should be made to ensure the information reaches the appropriate administrative staff members in the central agencies who can then delegate responsibility and make plans for the studies. Identifying key contact persons will enable direct personal communication and help prevent information and plans from getting lost in the bureaucracy.

- **Approach the central offices of state juvenile justice and Department of Corrections agencies to discuss and strategize procedure for validation and enumeration before researchers or local census workers approach individual institutions.**

After working to generally educate and inform administrators about Census Coverage Measurement (CCM) studies or the decennial census, researchers or workers can avoid confusion and wasted effort by first gaining the cooperation of the directors and leaders of juvenile justice agencies and state Departments of Corrections. State agencies can then make a purposeful decision as to whether to coordinate a centralized approach or let each institution make its own arrangements. At the national level, consider appointing a “Prison Czar” with expertise in data collection in prison populations to take responsibility for coordinating enumeration and collecting data from all juvenile correctional facilities and state and federal prisons.

- **Provide more specific training for researchers and enumerators working with juvenile correctional facilities and prisons.**

The Census Bureau should consider developing a new training module in consultation with American Community Survey workers who regularly go into juvenile and adult correctional facilities to collect survey data. Specific protocols could be developed for approaching and entering juvenile correctional facilities and prisons. In addition, records could be kept on key contact persons (records should include both office and individual) in each state’s juvenile justice agency and Department of Corrections so that new researchers would have a clear idea as to first contact.

- **Delineate more clearly the hierarchical decision-making process within census operations.**

To avoid frustration at the local level, the Census Bureau should make very clear at what point local researchers or office managers can make final decisions regarding data and procedure. When questions arise, timely and definitive answers to questions from local field offices would help to smooth the process and ease frustration.

- **Conduct further research on the accuracy of administrative records and how they might be improved at the state and local level to provide better and more detailed information.**

The accuracy of juvenile justice agencies' and Departments of Corrections' administrative data could be checked as part of a Census Coverage Measurement study. In-person enumeration of a sample of youth and inmates would allow incarcerated individuals to self-report their own demographic information. That information could then be compared to agency administrative records to gauge the general accuracy of states' data.

- **Consider research on intake facilities and procedures for state juvenile justice agencies and Departments of Corrections.**

Intake is the inmate's first step into a state juvenile correctional facility or prison, and it is an important point where administrative records are created and finalized for individual inmates. Future research should analyze intake facilities and the variety of ways that administrative records are created. Once a clear understanding of the process has been attained, the Census Bureau could consider asking state agencies to add categories to their collection of data on race and ethnicity to better match the categories and level of detail in census data.

Appendix B: Brief Summaries from Ethnographic Studies

B3 Health Related Group Quarters

By Professor Sonia Salari

Health Related Group Quarters (HRGQ) populations include but are not limited to those residents who live in skilled nursing facilities, long term and in-patient end of life care. Residents typically have serious disabilities from poor health status, dementia, mental illness, injuries or a history of developmental delay. Population transitions are rapid in these facilities, due to change from a high rate of death, discharge, admission, rehabilitation and short term respite care services.

This ethnographic research study examined three Health Related Group Quarters (HRGQ) facilities using a mixed-mode data collection method approach including resident and facility observations, an analysis of the 2010 decennial census enumeration, alternative resident list creation, and post-enumeration interviews of selected informants. The research questions examined 1) What resistance or blockage to access was experienced by outsiders gaining access? 2) What were the resident characteristics and limitations? 3) How often did transitions and turnover exist in the population? 4) How was the census enumeration conducted, and what problems arose? and 5) What is the potential for an accurate post-enumeration survey to determine Census Coverage Measurement (CCM) in HRGQ facilities?

Facility entry required extensive researcher training in resident's rights, HIPAA protocol, and institutional safety. In addition, there were security, health and background checks. Observations indicated a diverse resident population. There were serious disabilities noted for at least half of the residents in the facilities studied, including dementia, stroke and the physical effects of terminal decline. Those with severe limitations were sometimes segregated within the institution (e.g., the behavioral dementia unit), and were not considered viable candidates for census self report. However, cognitive disability was not universal in the facilities observed and it was determined that some residents could have meaningfully participated in the decennial census enumeration. Options for resident self enumeration may be considered in the future, and family representatives should also be considered for provision of resident information. The use of facility administrative lists would be the last resort for the provision of resident information.

Census enumerators assumed administrative lists were the best method for counting the health related group quarters population. Controversy was observed as one facility administrator expressed strong opposition to the exclusive use of lists. Two main points emerged, 1) Who has the right to access resident information and 2) What is the perceived burden on the facility to help compose lists?

Resident rights specify a hierarchy for decision making and information gathering, beginning with the resident, the family members and lastly, the facility. Census enumerators in this study primarily sought administrative lists, without consideration of other information

gathering methods. There was a perceived burden on the business goals in long term care facilities when resources were taxed by staff assistance with administrative lists.

Long term care facility staff and management were not always hospitable to the census enumerators. Personnel commonly showed signs of “census fatigue” where they became exhausted by census procedures and personnel. The result of this process sometimes led to a lack of cooperation among key personnel, and would potentially harm chances of successful CCM. The Hospice facility was different, because their goals were to minimize burden on dying patients and their families. The administrator appreciated the exclusive use of administrative lists, and hoped it remains an option in the future.

Based on the study findings it was determined the most realistic plan for CCM would involve the use of administrative lists created and maintained from the official census date. Careful planning and implementation for list creation would be required, along with staff member assistance. This research revealed a need for resident or family notification, advanced planning with the facility and staff compensation for CCM administrative list creation. The timing of CCM is crucial, as very little time should elapse between the decennial census and the secondary count. Rapid population transitions from death, discharge, respite care arrangements, hospitalizations and new admissions require an immediate second count. Beyond that critical time frame, the risk of inaccuracy increases. Encouraging staff cooperation will require creative solutions because CCM does not have the level of recognition or legitimacy the decennial census typically receives.

Census Enumeration and Census Coverage Measurement Recommendations: Recommendations for decennial census enumeration

The Census Bureau Group Quarters definitions need to accurately reflect the realities of competition in modern skilled nursing facilities. As an adaptation to competitive markets, many facilities actively recruit and create new categories of residents to fill beds. Assisted living, respite, short term rehabilitative services, and hospice care are often housed together influencing enumeration and requiring a mix of methods.

Census enumerators should prepare for a diverse Skilled Nursing Facility population. Those with severe cognitive disability or behavioral problems require information obtained through family proxies or the use of administrative lists. Terminal decline may mark a time when respondents and/or family members are under stress and not interested in reporting information to the census. In contrast, residents who are interested and cognitively aware can self report or have information verbally obtained by an enumerator. Workers should provide administrators at least one month’s advanced notice to anticipate a selection process to determine candidates for self report, family contact for proxy reporting or the use of administrative data.

Family contact permission for administrative records use could be obtained on an opt-in basis communicated through mail or electronic format. If administrators are aware of the need for this input, they can ask for it ahead of time, during admission procedures.

Even when administrative records are collected by the census enumerator, residents should be visited personally in the institution for verification of accuracy of the lists. Disparities may arise if lists are disorganized or out of date, due to the rapid pace of death, transfer and admission.

Short term rehabilitative Skilled Nursing Facility (SNF) stays funded by Medicare are now commonplace. Duplicate counting is likely to occur in these populations when community based family members include them on the household census form. Information about the “usual home elsewhere” is of particular salience to these temporarily institutionalized persons, and should be collected to prevent a double count.

It is important in long term care and hospice facilities to report resident admission dates. This research noted cases where residents were admitted and died on the census date. Poor health and patterns associated with transfers, admissions and discharges can complicate the census enumeration in health related group quarters.

Computerized data storage is the norm in the health related group quarters facilities studied. Compliance with census requirements often involved transferring information from computer to paper. HRGQ facilities are capable of securing data in computerized format. Future enumeration will be considered particularly burdensome for facilities if they cannot utilize computer records and send data to the census electronically. It is recommended that the Census Bureau devise a way to receive data in secured electronic format. This will significantly cut down the census fatigue and burden experienced by HRGQ administrators.

RECOMMENDATIONS FOR CCM

The rapid pace of transfers, admissions and deaths in HRGQ facilities require the population to be counted immediately after the decennial census. A CCM second enumeration would suffer from inaccuracy if time is permitted to elapse. This is particularly true of hospice inpatient residents, who are admitted and die with regularity. Skilled Nursing Facilities also contain residents enrolled in hospice, so the rate of mortality can be substantial.

It is recommended that CCM be measured exclusively through the use of administrative record lists. The decennial census may be conducted with self or family reports, but the CCM would need family permissions to be conducted through facility record lists.

Plans for CCM must be well publicized with the facility administrators. The decennial census has publicized legitimacy that a CCM does not have, and the facility must be treated respectfully to ensure cooperation.

CCM schedules should be sensitive to facility administrative business pressures. In this research, “month end” was a stressful time for administrators, and they were more resistant and less likely to cooperate with census operations. Each facility needs a pre-established plan for the second enumeration, which would be sensitive to the pressures of the SNF business schedule.

“census fatigue” was common in facilities with recently completed decennial census enumeration. Once this perception exists, the likelihood of cooperation with CCM is diminished. Incentives will be required for further participation. Monetary rewards were suggested for staff who help create the administrative list. In this study, an administrator estimated the staff cost to be about \$300 per employee. Without outside compensation, the facility is considered to be burdened in terms of time and money.

Facility quality varies and some struggle with disorganization, negative public reputation or poor quality. Records in these facilities may be poorly maintained or difficult to access. Strategies should be devised to assist the CCM process under negative institutional conditions.

Appendix B: Brief Summaries from Ethnographic Studies

B4 University Student Housing

By Professor Keri Stephens

Residence halls on college campuses constitute one of the largest group quarters types identified by the Census Bureau. Contemporary residence halls are quite different from the dorms of the past where men lived separately from women. Today, residence halls vary in size, style, and culture even within a single college campus. It is possible to be in a nurturing freshman-only hall, an honors hall, or a mega-hall with thousands of residents. Yet among today's students, few of these rooms even have a telephone plugged into the wall; the students use their mobile phones as their primary communication device. They rely on the resources found on the Internet for their classes and to provide them their new social life. Time is a valued commodity in this fast-paced environment and April 2010 was the first time these 18-22 year olds had ever completed a decennial census.

This study was conducted in spring 2010 on a large college campus in the southwestern US. The project incorporated a multi data collection method approach that is congruent with an ethnographic study. Prior to the distribution of the 2010 Census, a research team took detailed field notes and conducted interviews to better understand residence halls and the media and message habits of college students in 2010. Direct observation of the enumeration and post-decennial interviews allowed the researchers to better understand concerns with the enumeration and the dynamic factors that could affect a future coverage measurement effort. To capitalize on the fact that this was a large campus, the interviews examined several different residence halls and the attitudes of both staff and residents. Shortly after the residence hall enumeration, we assisted in conducting a pilot coverage measurement survey pretesting project on this same campus. A focus group was conducted to help understand the social perceptions of residence hall members that experienced a coverage measurement. The data were analyzed using ethnographic thematic analysis as well as coding and constant comparative analysis.

The major findings were organized around four research questions: What is a 2010 residence hall? What enumeration problems existed in the residence halls during the 2010 Census? What communication media and technologies are most helpful to reach a college student population? What are the social and dynamic factors in a residence hall that affect a coverage measurement? The residence hall findings focus on describing who lives in a residence hall, the organizational culture differences between halls, the importance of security, flexible supervision, and the programming requirements on the staff.

The problems found in the 2010 enumeration in the residence halls were categorized into seven categories and a final best practices category. Those categories were: limited awareness, timing on a college campus, myths about the census, varying distribution practices, temporary status, family conversations, staff concerns, and "I'm too busy." The communication media used to reach a college population represented a combination of traditional media—e.g., flyers posted around campus—and a variety of electronic and

computer-mediated communication tools. It is important to note that the messages allowed inside the residence halls are restricted. Using paper-based 2010 Census forms was not necessarily a poor choice, especially considering that they were distributed through an organized organizational structure with established rules concerning mandatory meetings, yet having online options for form distribution and information would have been helpful. We also present a summary of how students use newer media in 2010 and three case studies elaborate on these practices. The final findings concerning the social and dynamic factors affecting a coverage measurement are presented in three major themes: the unique factors present in the pilot coverage measurement study, the completion paradox, and the nanny state created by organizational control.

Coverage Measurement Recommendations

- **Timing: Move the residence hall 2020 enumeration date one to two months earlier**

The current timing of the 2010 decennial in residence halls (April 1-May 15) makes it almost impossible to conduct a coverage measurement before the residents have moved out of their halls at the end of the semester (or quarter).

- **Timing and Methods: Combine the coverage measurement with administrative check-out procedures**

Considering the protective culture of the residence halls, the extremely busy end of the semester, and residence hall staff's desire for efficiency, it makes sense to combine the coverage measurement with an existing administrative procedure. We propose additional studies to assess the impact of the timing of the re-enumeration in combination with various administrative processes. An experiment designed to manipulate the effects of conducting a separate coverage measurement compared with combining the re-enumeration with check-out could reveal an appropriate strategy.

- **Use different media options for the coverage measurement**

The redundancy and media expectation findings from this study suggest that using the same medium (paper in this case) for both surveys might introduce some systematic response bias that is more statistically troublesome than using a combination of administration media. We propose conducting a series of experimental studies to determine how to use different media to capture attention and then convince the students to complete the 2020 Census. One of these studies would be patterned after the Advance Letter Study (Goldstein and Jennings, 2002) where they found that sending a letter prior to making a phone call positively influenced response rate.

- **Market the coverage measurement using an education frame**

Since these coverage measurements will occur on a college student population, it is important to help them understand why they should care about the survey, especially when it is the second one they will receive and it will feel redundant. The goal is to establish relevancy and one potential way is to explain why a repeated measure is important. We propose conducting several experiments where the messages provided are manipulated to justify why they should complete the coverage measurement. This

type of study would be similar to the confidential wording and mandatory appeals experimental study by Dillman, Singer, Clark, and Treat (1996).

- **Provide training and resources for the residence hall staff**

The residence hall staff needs to know what is expected of them and they must have access to Census Bureau materials to help them properly explain the process to their residents. We propose that the Census Bureau create targeted materials for college students that are easy to find on the Internet and are specifically for their situation as a group quarter.

- **Assess the impact incentives would have on participation**

College students in 2010 are heavily motivated by incentives. We recommend that the Census Bureau assess this recommendation and consider providing some programming funding (likely in the form of food) to the residence halls as an incentive for participation. We believe that the value of this particular incentive (food) is not likely to change in the next decade.

Broad Census Residence Hall Specific Recommendations for Census and CCM

- **RAs should be facilitators, not enumerators**

The RAs in our study were very conscientious and most of them did a good job, but we feel that placing that much responsibility on an untrained, unpaid, non-census worker is unfair and can compromise data integrity. We are also assuming that there will be some type of online enumeration option for 2020 and that will reduce the number of residence hall members needing to be enumerated in person. RAs would make excellent census facilitators and, if provided appropriate tools, they are willing to host programs about the census and post instructions for accessing the forms.

- **Forewarn staff and students**

To better prepare all parties for census completion, giving all university staff and students multiple messages that provide advance warning (termed forewarning) is recommended.

- **Develop cooperative relationships with residence halls**

One of the biggest differences between enumerating the broad population when compared to a group quarter has to do with how an organization functions to control (at least to some extent) its members. Instead of individuals making decisions to either participate or not, the organization serves as an additional gatekeeper to individual participation. By creating a stronger collaboration between the university and the census, these hurdles can be addressed more easily.

Broad Census Media and Communication Channel Specific Recommendations

- **Use media to administer the census that meet expectations and provide options**

While it is difficult to predict if the current media expectations for the census will be the same for the 2020 Census as they were in the 2010 Census, we can broaden our understandings of these media disconnects to make recommendations for the 2020

Census. It is important to realize that using paper-based forms and requiring students to appear in person to be enumerated represented a media disconnect from how they are accustomed to taking a survey. It is most common that these students take online surveys. We recommend that the Census Bureau conduct studies approximately five years from the next decennial and consider using technology that fits within the norm of how surveys are administered to this college student demographic.

- **Use a multiple communication channel approach to reach the college student demographic**

While the Census Bureau tends to use mass media channels (most notably TV, radio, and direct mail), other types of communication campaigns recognize the importance of interpersonal and organizational channels for communication. We recommend that the Census Bureau use interpersonal channels, such as notifying parents about how their students will need to be enumerated. In combination with these interpersonal channels, we also recommend relying on organizational channels for information dissemination. Using a trusted organization as a communication channel allows the Census Bureau to harness the credibility of several organizations—residence halls, the University, and student organizations—to deliver the messages.

- **Provide stakeholders easy ways to seek information**

During the past decade there has been a trend away from providing information, to having people pull the information (most often from an electronic resource) when they need it. The college student demographic is fairly adept at finding information on the Internet, but they are also impatient when their search yields limited information. We recommend several things to overcome this problem in the 2020 Census. First, there must be Internet-based tools targeted to the college student demographic. This information should have a section that provides information on residence halls (and probably apartments as well). Having a list of Frequently Asked Questions (FAQs) may be a great resource for students and the staff facilitating the enumeration.

Appendix B: Brief Summaries from Ethnographic Studies

B5 Group Homes and Military Group Quarters

By Professor Susan Dewey

As part of the 2010 Census Ethnographic Study of Group Quarters (GQ) populations, this report presents ethnographic research findings on two types of GQ facilities: group homes for women who are victims of domestic violence and military barracks. The Census Bureau defines group quarters as places where people live or stay, in a group living arrangement that is owned or managed by an entity or organization providing housing and/or services to its residents (U.S. Census Bureau, 2009). Group quarters can include, but are not limited to, federal detention centers, residential treatment centers, college/university student housing, group homes for adult women, and military barracks.

Findings are based upon ethnographic data gathered through participant observation and semi-structured interviews with GQ staff at three group homes for women (GQ 1-3) and one military facility (GQ 4), observation of the decennial enumeration in two GQ facilities, and observation of the administration of the American Community Survey (ACS) at a skilled nursing facility. Data collected in four GQ facilities between late January 2010 and May 30, 2010 comprised: fieldnotes based upon a combined total of 136 hours of participant observation, 12 semi-structured interviews, decennial enumeration observations in two facilities under study, and the ACS observation. I compiled an alternative roster for Census Day based upon administrative records obtained from two facilities to allow for a matching study in the near future. This report provides suggestions for carrying out further research for a Census Coverage Measurement (CCM) study for these types of group quarters. These suggestions are based upon this study's two central research questions, which seek to ascertain [1] the social and contextual aspects of the residents' living arrangements that impacted the accuracy of the 2010 Census enumeration and [2] the social factors that may affect the success of a 2020 CCM study.

Seven social and contextual aspects that may have impacted the accuracy of the 2010 Census enumeration at group homes for women were identified: [1] gradual shift from activist to professionalized sphere; [2] complexity of living arrangements; [3] social services fatigue; [4] emotionally fraught nature of everyday life; [5] impact of trauma; [6] frequency of mental illness and addiction recovery; [7] problems with literacy. This study identified four primary social dynamics that are likely to impact the implementation of a CCM study, including: [1] recent negative experiences with the 2010 Census enumeration at DV-oriented GQ facilities; [2] seasonal variations in population levels; [3] restricted access to administrative records; [4] variability of administrative records reliability at DV-oriented GQ facilities. This report contains seven recommendations for methodologies and procedures that could be used to carry out a CCM study at DV-oriented GQs:

- Create a sampling frame for CCM: Measure coverage at group homes for women using the National Network to End Domestic Violence's comprehensive list of the 2,000 DV-oriented facilities in the U.S. This list would allow for the assessment of

the applicability of type codes on the Group Quarters Validation Questionnaire by matching these with the GQ facilities classified by census workers using the Questionnaire as either “Type Code 801 Group Homes Intended for Adults” or “Type Code 904 Religious Group Quarters or Domestic Violence Shelter.” Many DV-oriented GQ facilities do not fall neatly into either category and there is considerable potential for misclassification using the current type codes, which could result in an under-count of women living in DV-oriented GQ facilities via their enumeration at a type of facility that is not specifically classified as a DV-related facility.

- Randomly sample DV GQs for CCM: Create an accurate list of DV-oriented GQ facilities using the matching exercise described above as soon as possible after the enumeration in order to allow for enough time for matching, sample selection, and training to conduct a CCM. From this list, randomly select DV-oriented GQ facilities for voluntary participation in a CCM study, which will involve simplified, streamlined communication between a single census worker and a single Census Bureau point of contact.
- Use tailored protocol appropriate for DV GQs: Provision of this report’s recommended protocol to census workers who will carry out future enumerations and CCM, which will minimize the time burden placed upon GQ staff by the Census Bureau. This report contains a detailed protocol for census workers’ initial contact with the facility and emphasizes the need for consistent, streamlined information to be conveyed from the GQ point of contact to the Census Bureau point of contact.
- Methods for conducting CCM in DV GQs: Provision of options to staff at group homes for women from Census Bureau point of contact to GQ point of contact regarding participation in CCM. These options for DV-oriented GQs which opt to be included in the CCM study could include: [1] facility self-enumeration to be completed by facility staff using modified, limited use of administrative records; [2] census-improvement directed focus groups with GQ staff and, if possible, residents.
- Use administrative records for CCM: Clarify the legal means by which the Census Bureau can persuade GQ facilities bound by confidentiality regulations, including DV-oriented GQ facilities, residential drug and alcohol treatment programs, and psychiatric institutions, to share their administrative records. Obtaining access to these records will be one method for the Census Bureau to assess the accuracy of the enumeration at such facilities.
- Further research: Conduct further ethnographic research on the social realities that help to shape the residence identities of low income women and their families. Populations of particular interest include women who have recently left DV-oriented GQ facilities, women using drop-in centers for street sex workers and addicts, and minors in complex custody arrangements and/or GQ facilities. This would help CCM by presenting a clearer picture of the fluidity of such populations.

The social and contextual factors that may have impacted the accuracy of the 2010 Census enumeration at the military barracks included [1] the military culture of compliance with federal government requirements, and [2] characteristics of pre-deployment living arrangements. CCM success at military facilities may be impacted by [1] population fluidity

and [2] a high level of organization. This report contains three recommendations for alternative CCM at military facilities:

- Assess coverage error at military GQs using administrative records. “Boots on ground” numbers, which record the numbers of troops resident on base on any given day, are available through the Office of Public Affairs, which exists at every military facility. More detailed records containing names, dates of birth, ethnicity, and alternative address need to be pursued through the Office of the Judge Advocate General (JAG), the legal branch of the U.S. Armed Forces.
- Coverage error at military GQs could also be assessed by conducting a matching exercise at randomly selected military GQ facilities to determine how often individuals complete both the Individual Census Report (ICR) and the Military Census Report (MCR) due to the mandatory nature of MCR completion among military GQ residents.
- Measure population fluidity over a 12-month period at military GQs using accessible administrative records known as “boots on ground numbers,” which simply count the number of residents present on a given day, to determine if sufficient population variations exist to warrant a follow-up survey at a different time of year.

Appendix B: Brief Summaries from Ethnographic Studies

B6 Population Experiencing Homelessness

By Professor Irene Glasser and Eric Hirsch

We sought to discover what types of census coverage for homeless populations would lead to the most complete and accurate count of homeless populations. We also sought to understand whether a Census Coverage Measurement (CCM) study would be feasible for homeless populations.

In this report we analyze some of the social dynamics and factors most likely to affect census coverage and we propose modifications of the census coverage strategies that would ensure more complete coverage of homeless populations wherever they are located.

In order to make these recommendations we pursued the research approach of ethnographic observations within sites that serve the homeless populations in three cities in a Northeastern state. These sites included single and family shelters, soup kitchens, and a day center and group home for the mentally ill. We observed situations in which people were barred from a shelter or were not admitted. We also observed the actual census enumeration in two soup kitchens and observed the American Community Survey (ACS) in a transitional housing program for formerly homeless persons. We conducted two post enumeration focus groups that asked homeless people themselves how they had experienced the census and how the census could be improved. We conducted numerous in depth interviews with staff of homeless service sites. We gathered demographic information on over 50 homeless individuals and families with whom we spoke. We also found out, from the group quarters administrators, how many people were enumerated by the census takers on the night of the census.

Our conclusions are that if the person is in a group quarters (i.e., shelter or group home) the evening of the census, that there is often a high level of cooperation between the homeless individuals, the group quarters administrators, and the census takers and almost everyone appears to be included in the census. We learned from one of the post enumeration focus groups that the group quarters residents understand that cooperating with “the authorities” (participant’s words) which includes the census, is the price one pays for entering a shelter and that the benefits of receiving shelter for the night outweighs the costs of anonymity.

We also learned from our conversations with the administrators of all of the group quarters that there was a positive attitude toward cooperating with the census. When the census takers came to the group quarters, if someone was not available to fill out their own form (e.g., they were sleeping) the administrator did it for them. In these days of competitive funding, it is our observation that most service providers are eager to count the *maximum* number of people residing with them.

On the other hand, for those *not* staying in a shelter (such as those who have been barred for the night or those who live out of doors) being included in the census remains a challenge. Most of the people with whom we spoke appear to cycle from the shelter, to living out of doors (in this study, it included living at the cemetery, in vans, cars, and staying in the hospital emergency room for the night), to occasionally staying in a motel room when they have some money, to staying with family or friends very temporarily.

We were surprised in our direct observation of the census at two of the soup kitchens that the two census teams had different strategies with different results. It did not appear that the census staff conducting the soup kitchen count, which was a major strategy for counting those living out of doors, had done adequate preparation.

We also learned, from our conversations with homeless people and our post enumeration focus groups, that homeless individuals believe that they would *not* be counted in the household of a family or friend, even if they were staying there for months, because anyone living “in housing” (the local term for public housing or rent subsidized housing) would get into trouble for harboring a person not on the lease. Since housing is such a precious commodity, homeless individuals are very aware of the needs of the families and friends with whom they double up.

The census has discrete categories for those living in households, for those in group quarters, and for those living outside. However, the reality is that homeless single adults often cycle, within a short period of time (days) through all of these situations, depending on the weather, their relationships at the group quarters, and their relationships with their families and friends. We discovered through our five months of ethnographic research with homeless populations that where homeless people stay is characterized by a great deal of *fluidity*, which makes the census for homeless populations very challenging. This makes any follow up study, such as a Census Coverage Measurement, extremely difficult unless done within days of the census.

Based on our ethnographic study we recommend improved census preparation for the enumeration of the out of doors homeless. Although we observed good preparation of the census takers with the group quarters administrators, we did not observe comparable evidence of the census takers working with those who know the out of doors populations.

The census taken at the soup kitchens is a major strategy intended to reach the out of doors homeless and to reach those who may not be counted any other place, including the doubled up homeless. Our observations here lead us to think that there was a lack of consistency and preparation among the soup kitchen census teams in terms of strategies to reach the maximum number of soup kitchen guests and the foreign language competencies of the census workers. We also recommend more than one visit to the major soup kitchens for the enumeration.

There is a great need for on-going research on how to include everyone who stays in a household on April 1, including those staying in households on a very temporary basis. The

homeless population in group quarters and out of doors overlaps with the doubled up homeless population, who are very difficult to count.

Due to the significant extent of mental illness and substance abuse among some of the homeless who are often in a state of flux in terms of their sleeping arrangements, we recommend further research on how and under what circumstances homeless people can be asked questions that they understand and can answer accurately.

For those homeless individuals who missed being counted in the shelter, soup kitchen, and targeted non sheltered outdoor locations, and may be using the Be Counted form after that, it is our observation that homeless people, who may also have untreated mental illness and substance abuse, can have a hard time remembering where they were on April 1, 2010. We recommend research that tries to uncover the most effective strategy for a meaningful way to count the homeless after the three day service-based enumeration. This includes enumeration at shelters provided for people experiencing homelessness, soup kitchens and targeted non-sheltered outdoor locations.

The Be Counted forms should be distributed to all of the major places that homeless people congregate, including the large bus terminals in the state. We also recommend ongoing distribution and explanation of the Be Counted forms in the soup kitchens. There could also be a 1-800 number that is widely publicized within the homeless community, for people to call if they realize that they were not counted.

Given the importance of the peer to peer network in homeless populations, more homeless or formerly homeless people could be recruited to work on the census.

We recommend that the Census Bureau and the Department of Housing and Urban Development (HUD) increase their level of contact with each other in the area of the development of homeless enumeration methodology for the benefit of both agencies. Both agencies have considerable knowledge and a wealth of research on how to best count homeless individuals and families which could be utilized by both agencies. HUD funded homeless services now collect information on an on-going basis through the Homeless Information Management System (HMIS) which records homeless individuals as they stay in homeless shelters. HUD has also mandated that each Continuum of Care (the organizing group for homeless services in each area) conduct a yearly Point in Time count of all homeless individuals and families (both sheltered and unsheltered).

Finally, we recommend that two areas for further research for including homeless populations in the decennial count is more ethnographic work on household members who are not likely to be included on the household census form and a pilot testing of how to better utilize the Be Counted forms.