

# ALTERNATIVE METHODS FOR ENUMERATING RESIDENTS OF GROUP QUARTERS IN THE AMERICAN COMMUNITY SURVEY

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This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone a more limited review than official Census Bureau publications. This report is released to inform interested parties of research and to encourage discussion.

## INTRODUCTION TO THE ACS 1997 GQ TEST

The primary purpose of the American Community Survey (ACS) is to provide timely, accurate demographic statistics. With this current information, state and municipal governments can make informed, data-based decisions to plan for welfare, job training, health care, education, commuting patterns, and more. In addition, with up-to-date information about the local community, businesses can plan where and when to expand their operations. The ACS is conducted monthly and provides annual estimates.

In order to provide accurate population estimates and demographic profiles, the survey sample design must include persons residing in housing units and group quarters (GQs). GQs are broadly defined as a type of living quarters where residents share common living space or receive authorized care or custody. There are three broad types of GQs--institutional, noninstitutional, and military. Examples of GQs include college housing, nursing homes, and correctional facilities. Institutional GQs accommodate residents who, in most cases, stay involuntarily and are not allowed to come and go without receiving permission. Noninstitutional GQs accommodate residents who stay voluntarily and are allowed to come and go without receiving permission. Military GQs accommodate military personnel on a military base.

Currently, Decennial Census procedures require a personal visit by a Census Bureau field representative (FR) to all GQs. Due to the size of a monthly ACS sample, personal visits to each sample GQ would be very costly and time consuming. Because of this concern, the Census Bureau developed and tested alternative methods for enumerating residents of GQs. These methods are:

- ⇒ Personal visit (option A)
- ⇒ Part personal visit/part mail (option B)
- ⇒ All mail (option C)

## DESCRIPTION OF THE ACS 1997 GQ TEST

### Sample Design

The 1997 ACS was conducted in seven test sites. In each site, a sample of housing units was selected. In addition to the housing unit sample, a sample of GQs was

selected in one site. Because of its diversity of types of GQs, Franklin County, Ohio was chosen.

The goal of the GQ portion of the 1997 test was to determine the best way to enumerate persons residing at GQs. The objective was to minimize cost, time, GQ staff burden, and respondent burden.

Since the 1997 test did not simulate a production sampling operation and estimates were not provided, GQs were hand-picked. In hand-picking a sample of GQs, we included institutional and noninstitutional GQs, small, medium, and large GQs, most GQ types, GQs with self-responding individuals, GQs with individuals who may require assistance, GQs which are part of larger organizations and GQs located in the same blocks as other GQs.

### Enumeration Options A, B, and C

The following paragraph describes the procedures for each enumeration option.

For **Option A - Personal Visit**, an FR visits the facility; obtains from the GQ (or prepares) a list of either persons or rooms for occupancy; selects a sample and distributes questionnaires; returns to the GQ to collect completed questionnaires and assists any respondents who need help completing the questionnaire. For **Option B - Part Personal Visit/Part Mail**, an FR visits the facility; obtains from the GQ (or prepares) a list of either persons or rooms for occupancy; selects a sample and distributes questionnaires; instructs respondents to complete questionnaires and mail them to the Census Bureau Regional Office (RO) in Detroit, Michigan ; if needed, per RO instructions, follows up questionnaires not returned and assists any respondents who need help completing the questionnaire. For **Option C - All Mail**, the RO obtains a list of persons or rooms for occupancy via phone/fax/mail; selects sample; prepares and mails survey packages containing a questionnaire to each respondent; and mails follow up packages, containing a second questionnaire, to each delinquent respondent.

Table 1 indicates how many GQs were initially selected for each enumeration option.

**Table 1. Number of GQs by Enumeration Option  
(Initial Breakdown)**

Option	Description	Count	Percent
A	Personal visit	19	18.2
B	Part Personal visit/Part mail	48	46.2
C	All Mail	37	35.6
Total		104	100.0

Enumeration options were not assigned based on what was thought would work best. The goal was to assign the options across all major GQ types. In addition, since the main interest was in testing options B and C, a larger portion of GQs were assigned to options B and C. Because of confidentiality rules and the nature of institutional GQs, a decision was made to exclude institutional GQs from option C.

Prior to enumeration, staff in the RO conducted a screening operation to determine if each GQ was in scope and whether the assigned enumeration option was possible. This was called the facility questionnaire operation. In addition, during the facility questionnaire operation, the RO obtained updated information about the GQ and established a contact person for the FR to call to make an appointment to visit.

GQs assigned to options B and C were switched to option A if any of the following were determined:

- ✗ Residents at the GQ required assistance to complete the questionnaires.
- ✗ Residents did not have direct access to mail.
- ✗ The GQ did not provide the RO with a list of rooms or residents from which to sample via the phone, fax, or mail.

GQs were classified as out-of-scope for the following reasons:

- GQ had closed since the 1990 Decennial Census (source of our sample).
- GQ was seasonally closed at the time of enumeration.
- GQ was open, but had no people living there at time of enumeration.
- Residents lived at a GQ for a short length of time (a day or two). (We assumed they already had a chance of selection in the housing unit sample.)
- GQ was closed for renovation
- GQ no longer had residents who stayed overnight.
- GQ was not located.

### The GQ Questionnaire

The ACS individual respondent questionnaire is based upon the long form version of the individual census report form used in the Decennial Census. The questionnaire used for residents of GQs is similar to the regular ACS questionnaire minus the questions on housing

characteristics. One significant difference is that each GQ questionnaire is intended for a single person, whereas each housing unit questionnaire is intended for the entire household.

The GQ respondent questionnaire was designed to be self-enumerating. Respondents completed the questionnaire themselves. If a respondent was unable to complete the questionnaire, the FR attempted to interview the respondent. The FRs were trained on how to change the wording in the questionnaire to make it appropriate for a personal interview.

### Confidentiality, the GQ Contact, and Special Sworn Employees

ACS is conducted under Title 13 of the United States Code. Title 13 requires persons over the age of 18 to respond to the survey to the best of their knowledge and ability. (While Title 13 does not apply to younger persons, many were in sample and were enumerated.)

All information which permits identification of an individual is held strictly confidential and seen by only persons working on ACS. The FRs avoided providing anyone, including GQ staff, with information which links a specific room or person to the specific survey. In addition to the respondent's identity, the FRs maintained the confidentiality of each respondent's answers.

The listing, sampling, and enumeration of individuals in GQs required the assistance of GQ staff. The person who assisted the FR was referred to as the "GQ contact." The GQ contact scheduled the FR's visit; allowed the FR to have access to the facility; provided the FR with a list of persons or rooms for occupancy; and provided additional assistance as necessary.

In some instances, it was necessary for the GQ contact to become a Special Sworn Employee (SSE) of the Census Bureau. This occurred when the GQ contact preferred that the FR not distribute/collect the questionnaires because it may have presented a risk or caused a disturbance in the normal routine; or, enumeration in the GQ required that either the respondent's identity or responses be identified to the GQ contact.

In becoming an SSE, the GQ contact agreed, under oath, not to disclose any information obtained when conducting the survey. SSE status expired in 30 days, but the oath regarding disclosure does not expire.

### FINDINGS FROM THE ACS 1997 GQ TEST Enumeration Options

Table 2 shows the final distribution of GQs after the facility questionnaire screening operation.

**Table 2. Number of GQs by Enumeration Option**

Option	Description	Count	Percent
A	Personal Visit	49	47.1
B	Part Personal Visit/Part Mail	10	9.6
C	All Mail	14	13.5
	Out-of-Scope	31	29.8
Total		104	100.0

Thirty-seven GQs were originally assigned option C. As a result of the facility questionnaire operation, seven of these were declared out-of-scope and sixteen were changed to option A. This resulted in fourteen GQs whose residents were enumerated by option C.

Forty-eight GQ were originally assigned option B. Sixteen were declared out-of-scope and twenty-two were changed to option A. This resulted in ten GQs whose residents were enumerated by option B.

Nineteen GQs were originally assigned option A. Eight were declared out-of-scope. Thirty-eight GQs were switched to option A from options B and C. This resulted in forty-nine GQs whose residents were enumerated by option A.

Common reasons for this switching were residents requiring assistance to complete questionnaires and not having direct access to mail. These reasons were especially common for institutional GQs originally assigned to option B.

A common reason for GQs switching from option C to option A was some GQ contacts were unwilling or unable to provide a list via the phone, fax, or mail.

Since a large number of GQs were switched to option A, we may have difficulty using mail as a means for controlling the cost of the GQ enumeration. However, future tests will target specific types of GQs as candidates for mail enumeration.

**Response Rates**

Outcome codes were defined as shown in Table 3.

**Table 3. Outcome Codes**

Outcome Code	Description
201	Completed interview
203	Partial interview using administrative records
213	Language barrier
216	Resident not home
217	Resident temporarily absent or hospitalized
218	Resident refused
219	Other occupied
226	Vacant unit - regular
233	Other - unoccupied

Questionnaires with outcome codes 201 and 203 had some questions completed. Outcome code 201 represents questionnaires which were completed by the respondent, either by self-response or interview. Outcome code 203 represents questionnaires which were completed using a

GQ's administrative records. Interviews were loosely defined for the GQ portion of the 1997 test. We did not have a clear-cut definition of how much data is necessary to constitute an interview. This will be evaluated in the future. Missing data, which were more prevalent on questionnaires with an outcome code of 203, usually are imputed. However, imputation was not a component of the GQ portion of the 1997 test.

Outcome codes 213 through 219 represent what the Census Bureau traditionally classifies as "Type A" non-interview outcomes. Persons classified as Type As were eligible respondents from whom data were not collected. Usually, a Type A non-interview adjustment is performed in which data for interviewed persons are weighted up to represent both interviewed persons and Type As. However, weighting was not a component of the GQ portion of the 1997 test.

Outcome codes 226 and 233 represent what the Census Bureau traditionally classifies as "Type B" non-interview outcomes. Type Bs are typically units which are temporarily ineligible for interview due to being vacant, converted to business use, or other reasons.

Table 8 shows response rates by enumeration option, institutional/ noninstitutional status, and outcome code. Numbers in parentheses in the two header columns of the tables are total counts of questionnaires. We received 503 questionnaires enumerated by option A, 93 by option B, and 88 by option C.

No questionnaires were classified as non-interviews due to language barriers (outcome code 213).

Table 4 (and subsequent tables) is an analysis of response rates comparing unweighted percentages obtained from a hand-picked sample. Generalizations about the GQ universe can not be made from any comparisons. However, we can at least get an idea from the numbers whether mail looks promising as a method of enumeration.

**Table 4. Percentages of Completed Interviews, Partial Interviews Using Administrative Records and Non-interviews by Enumeration Option**

Total # of cases=684	Option (# of cases)		
	A	B	C
Number of cases	503	93	88
Completed interview	70%	52%	80%
Partial Interview using Administrative Records	13%	2%	-
Non-interview	17%	46%	20%
Total	100%	100%	100%

Table 4 shows that eighty percent of option C questionnaires came back as completed interviews. This

is a high enough percentage to convince us to continue pursuing mail as an enumeration method in the 1998 test. It is important to remember that the option C GQs were noninstitutional GQs qualifying under several screening criteria making them feasible for mail.

Response rates for option B are less promising. Option B was difficult to implement procedurally because of complications caused by mixing personal visits with mail response. Follow up of delinquent respondents was not as thorough due to poor communication between the Regional Office and the Field Representatives.

Although the Census Bureau traditionally anticipates higher response rates, option A rates are encouraging.

Table 5 looks at completed interviews, partial interviews using administrative records, and non-interviews by institutional/noninstitutional status for options A and B. Not surprisingly, Table 5 shows that FRs had to rely on administrative records more in institutional GQs than noninstitutional GQs.

**Table 5. Percentages of Completed Interviews, Partial Interviews Using Administrative Records, and Non-interviews by Institutional (I)/Noninstitutional (N) Status (Options A and B only)**

Total # of cases=596	I	N
Number of Cases	263	333
Completed Interview	64%	69%
Partial Interview Using Administrative Records	22%	3%
Non-interviews	14%	28%
Total	100%	100%

Use of administrative records may appear more promising than it really is. Future tests will evaluate which questions typically can and can not be answered using administrative records and whether the amount of missing data is considered acceptable. At this time, we can not state that using administrative records necessarily lowers non-interview rates in any way.

Table 6 shows non-interview percentages by enumeration option. All option C non-interviews were classified as "other occupied" (outcome code 219). These questionnaires were not mailed back by eligible respondents. Our only follow up for option C consisted of a second mailing.

**Table 6. Non-interviews: Percentages of Outcomes by Enumeration Option**

Total non-interviews=146	Option		
	A	B	C
# of non-interviews	85	43	18
Resident Not Home	12%	30%	-
Resident temporarily absent or hospitalized	5%	-	-
Resident refused	33%	30%	-
Other Occupied	2%	21%	100%
Vacant Unit - Regular	36%	14%	-
Other	12%	5%	-
Total	100%	100%	100%

Table 7 shows non-interview percentages by institutional/noninstitutional status for options A and B

**Table 7. Non-interviews: Percentages of Outcomes By Institutional/Noninstitutional Status (Options A and B only)**

Total non-interviews = 128	I	N
# of non-interviews	36	92
Resident Not Home	-	25%
Resident temporarily Absent or Hospitalized	-	4%
Resident Refused	36%	30%
Other Occupied	14%	7%
Vacant Unit - Regular	39%	25%
Other	11%	9%
Total	100%	100%

### Other Findings

#### Questionnaire Collection

FRs reported that response rates were worse when questionnaires were dropped off, which helped explain the low response rates for option B. FRs felt more confident about enumeration when they stayed at a GQ until all questionnaires were completed, conducting interviews when necessary.

#### Multiple Follow Up Visits

FRs frequently had to make more than one follow up visit to a GQ to collect questionnaires. This is not optimal from a cost perspective.

#### GQ Contact Persons

FRs found that having a good working relationship with GQ contacts was often the key to effective

enumeration.

#### *Special Sworn Employees (SSEs)*

Due to confidentiality and security concerns, GQ staff often had to be sworn in as Special Sworn Employees. Swearing in GQ staff as SSEs is most frequently necessary at institutional GQs with rigid security requirements. Twenty-five GQ staff persons were sworn in as SSEs. The FRs were able to leave questionnaires with SSEs for distribution and collection without violating confidentiality. GQ contacts often wanted to have this kind of control. This also tended to help response rates, since respondents are likely to follow the instructions of people who work at a GQ. Some GQs were switched from option C to option A only because GQ staff had to be made SSEs.

#### *Listing Persons Versus Rooms*

A major procedural issue confronted in the 1997 test was whether to list persons or rooms within a GQ. A room list is more stable over time and affords the possibility of updating existing lists in future enumerations instead of having to re-list every time. However, enumeration is conducted at the person level. Having a person's name is preferable for enumerating by mail. FRs found that GQ contacts were more likely to provide a person list than a room list. This issue is being explored further in the 1998 test.

#### *Coverage*

Coverage was not a focal point of the GQ portion of the 1997 test. Our universe consisted of GQs counted in the 1990 Decennial Census. By 1997, many of these GQs had closed, moved, or were demolished. The universe was especially poor for transient and seasonal GQs, since transient and seasonal GQs existing on April 1st of 1990 were likely not to be in operation when the 1997 test was conducted.

In the future, GQs are supposed to be part of the Bureau's Master Address Files. Hopefully, methodology developed in the future to form and update Master Address Files will maximize coverage of GQs existing at time of enumeration.

#### *Residency Rules*

At the time of the GQ portion of the 1997 test, residency rules were not finalized. GQ residents often have a usual residence elsewhere. As a result, they might have a chance of selection for the housing unit sample. Screening GQs, or people within GQs, to determine if they meet certain residency requirements might enhance coverage by limiting duplication. Residency rules were more well-defined for the housing unit portion of the 1997 test. However, they are an integral part of the GQ portion of the 1998 test.

#### *Proxies*

A proxy is a person who provides a respondent's questionnaire information when the respondent can not be directly enumerated. We disallowed the use of proxy

interviewing in the GQ portion of the 1997 test. We made this decision because of concerns about confidentiality and whether proxies would provide accurate data. FRs reported many situations where use of proxies would have gotten us more interviews. Relatives or guardians of respondents in nursing homes, mental hospitals, and facilities housing children are examples of people who are good candidates for the use of proxies. Often, a GQ contact or social worker knows the data we are trying to collect for GQ respondents, making these types of people proxy candidates as well. We have to be careful to meet confidentiality requirements. Use of proxies is being tested in 1998.

#### *Guardianship*

The concept of guardianship caused timing problems. Permission is often needed from parents or guardians to enumerate children and people who are unable to fill out forms. State institutions in Ohio legally require guardian consent. Time is required to obtain guardian approval through forms sent by GQs to the guardians. Guardianship regulations vary from one GQ to another.

#### *Use of GQ Registers*

GQ registers were almost always used by FRs to develop lists. A register is a computer-generated printout, index card file, or similar mechanism provided by a GQ which allows an FR to list without having to list by walking around the GQ. Walking around is not feasible at many GQs.

#### *Phoning Respondents*

A procedural goal was for FRs to obtain respondent phone numbers whenever possible during listing in case a phone call might help in completing enumeration. Unfortunately, FRs rarely recorded respondent phone numbers on the listing sheet.

#### *Time Between Visits*

For option A, FRs waited until they received word from the GQ contact that questionnaires had been completed before making a return visit. Often, two weeks was sufficient time before the return visit. When guardianship letters were needed, the time before the return visit was between two and two-and-a-half weeks.

#### *Personal Interview*

A relatively small number of personal interviews were conducted. The questionnaire was intended for self response, with personal interviewing used as a last resort. An additional FR-administered questionnaire is being developed for the GQ portion of the 1998 test which features modification of question wording tailored toward interviewing.

### *One FR Not Always Enough*

At a shelter, or any GQ which must be enumerated in a single night, Census Bureau field staff feel that two FRs should visit. One can conduct interviews while the other answers questions from residents. Sending two FRs also enhances safety. However, costs are increased by using the time of two FRs.

### *Phone Number Lookup Operation*

A phone number lookup operation was conducted in Washington in an attempt to determine phone numbers associated with a GQ for the RO to use in conducting the facility questionnaire operation. A private vendor provided the phone numbers. We did not receive phone numbers for every GQ. We have not conclusively determined if the lookup operation was successful in terms of providing information and saving the RO time and money.

### **SUMMARY**

Mail enumeration was sufficiently successful to convince us to continue testing it in 1998. In 1998, we are attempting to target GQ types where mail enumeration can be most effective.

Mixing an initial personal visit with questionnaire return by mail is problematic. We feel this option should only be used when an FR decides that mail return is feasible at a GQ. Personal visit follow up is important in this situation. ROs must closely coordinate with FRs to maximize response and account for all questionnaires.

All personal visit enumeration is feasible but expensive. The cost increases with each return visit. Whenever possible, we should try to limit the total number of visits to two or less for each GQ.

### **GQ Types**

Enumeration by mail is impossible for institutional GQ types, such as prisons. Concerns about security and confidentiality render mail infeasible.

Mail enumeration works best for fraternity and sorority houses. Most are small and can be easily listed and enumerated by mail. Personal visit enumeration does not work well for fraternities and sororities, because more return visits are needed to locate the frequently absent students.

Highly transient GQs should usually be enumerated in a single visit by two FRs.

The scope of the 1997 test did not include all possible GQ types. The age of the sampling frame hindered testing of seasonal and nomadic GQs, like carnivals, campgrounds, and migrant worker camps. We did not attempt to tackle the complicated task of enumerating crews of civilian vessels and military ships in 1997. (Street enumeration of the homeless will not be a feature of ACS.)

Despite these limitations, the test made us confident that most GQs can be enumerated by at least one of our 1997 enumeration options.

**Table 8**

**Response Rates**

Option	Inst/Non	% of 201	% of 203	% of 216	% of 217	% of 218	% of 219	% of 226	% of 233	% totals
A (503)	I (239)	65	23	0	0	5	1	4	2	100
	N (264)	74	4	4	2	6	0	8	2	100
B (93)	I (24)	50	8	0	0	8	13	21	0	100
	N (69)	52	0	19	0	16	9	1	3	100
C (88)	N (88)	80	0	0	0	0	20	0	0	100