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This issue brief provides an overview of the 2018 End-to-End Census Test, often called the ‘dress rehearsal.’ It provides basic information on what observers and stakeholders should expect. Subsequent issue briefs on the test will follow with analysis based on Census Bureau information and independent monitoring efforts.

The 2018 End-to-End (E2E) Test is fundamental to the 2020 Census’ goal: “to count everyone once, only once and in the right place.”¹ The E2E “dress rehearsal” is the last, most comprehensive test before early 2020 Census operations begin in 2019.² Yet, this test is not a true dress rehearsal compared to previous censuses. It has been pared down, including through cuts to outreach programs aiming to get out the count,³ and all planned dress rehearsal locations were cancelled except for Providence County, Rhode Island.⁴

Peak self-response operations for the test, when households respond to the form by mail, online, or by phone, have run from March-May 2018.⁵ Related operations continue until August, alongside administrative and communications operations that aim to “improve coverage” of the count, such as Non-Response Follow-Up (NRFU), which takes place from May through July.⁶

Why Providence?

The Census Bureau has called Providence County “an ideal community” for the test.⁷ It has:

- A mix of urban and suburban neighborhoods.
- A high level of racial and linguistic diversity, roughly resembling national demographics.
 - About 62% non-Hispanic white, 22% Hispanic, 12% black, 5% Asian American.
- Three E2E Test locations were planned, but two were canceled due to funding uncertainty and shortfalls.⁸ The Census Bureau was able to test only address canvassing⁹ in these cancelled areas:

- **West Virginia:** Nearly one-third of residents lacked high-quality residential broadband.¹⁰ This site would have given the bureau insight into how rural areas respond to the census.¹¹
- **Pierce Co., Washington:** A suburban setting (Tacoma)¹² with adjacent military bases and American Indian reservations base.¹³

What is Being Tested During the E2E Test?

Previously, census dress rehearsals have attempted to test virtually all aspects of decennial census operations. However, funding uncertainty and shortfalls led the Census Bureau to limit the parameters of the 2018 test.

PRIMARY OBJECTIVES¹⁴

- Ensure primary 2020 Census operations, systems, and field infrastructure integrate smoothly.
- Ensure all technology infrastructure is capable of being scaled up to handle large amounts of traffic.
- Ultimately, produce prototypes of 2020 Census geographic and data products.¹⁵

DESIGN

The dress rehearsal will employ two contact strategies to encourage households to self-respond (Figure 1):¹⁶

- **“Internet First”:** Respondents receive invitation letter on first contact prompting them to go online and answer questionnaire with unique code.
- **“Internet Choice”:** Respondents receive questionnaire on first contact, but can also go online and fill out form.
- All households also may respond by phone.
- Test universe includes both English and English/Spanish bilingual households, with 275,000 housing units contacted in total.
- It is important to test these two mailing strategies because of differential rates¹⁷ of Internet access:
 - Among all American adults, 84% have access, but only 81% of Hispanics and 51% of Limited English Proficiency households do.
- The questionnaire consists of 10 questions, including questions on age, sex, household relationship, race, Hispanic origin, and housing tenure.¹⁸ There is no citizenship question, as the

Figure 1. E2E Test Mailing Dates, 2018

Panel	Cohort	Mailing 1 Internet First or (Internet Choice)	Mailing 2 Letter	Mailing 3* Postcard	Mailing 4* Letter and Questionnaire	Mailing 5* “It’s not too late” Postcard
Internet First	1	March 16	March 20	March 30	April 12	April 23
	2	March 20	March 23	April 3	April 16	April 26
	3	March 23	March 27	April 6	April 19	April 30
Internet Choice	N/A	March 16	March 20	March 30	April 12	April 23

Source: U.S. Census Bureau, 2018.

*Targeted only to nonrespondents

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E2E questions were finalized before the decision to include the question on the 2020 Census.¹⁹

OPERATIONS TO IMPROVE THE COUNT

- **Questionnaire assistance**²⁰ will be available by telephone and in different languages to help answer questions about the form and other frequently asked questions. For the first time, users can choose to submit their household's information over phone at that time.
- **Non-ID processing**²¹ uses internal bureau processes to compare online responses without a pre-assigned ID to Census address databases to confirm and identify unique household responses. It is a part of NRFU operations for first time.²²
- **Partnership** and community engagement strategies with US Postal Service:
 - **Informed Delivery service:** Subscribers receive emails that include color images of the exterior, address side of incoming mail. On the day Census Bureau mail arrives, the email will also include a link to the online E2E Test questionnaire.²³
 - **Promotion:** Bureau will place signage and flyers in post offices to encourage responses.
 - **Interactive kiosks** placed in post offices so customers can fill out questionnaires online.²⁴

2020 Census Preparations Raise Concerns

IMPORTANT OPPORTUNITIES MISSED

The 2018 test cancellations follow 2017 cancellations,²⁵ which were the only opportunities to test enumeration for hard-to-count²⁶ populations in rural and remote communities, including AIAN communities on **tribal lands**,²⁷ and in **Puerto Rico** to test internet self-response operation in multilingual areas.²⁸

Due to prior funding constraints, the E2E Test will not incorporate outreach programs (partnership and advertising) outlined in the 2020 Census Integrated Communications Plan, which are different from the USPS partnership.²⁹ The bureau is engaging local partners (potentially ranging from libraries to churches to barbershops) and soliciting local input through workshops.³⁰ However, both community leaders and national and regional bureau staff have expressed concerns that the late addition of the citizenship





question prevented it from being tested in the E2E Test.³¹ Though the question is not on the test, community leaders are reporting negative reactions, including people not responding, because of increased fear of the federal government.³² Lack of guidance from Commerce Secretary Ross's Office on how to address concerns about the citizenship question for the 2020 Census may also affect the 2020 count.

POTENTIAL PITFALLS WITH NEW IT SYSTEMS

The bureau must overcome potential pitfalls associated with new technologies:

- **Automated training:** Enumerators subject to automated training were unprepared for most difficult non-response follow-up cases during 2015 testing of potential 2020 Census operations.³³ Hard-to-count communities are most likely to be affected by lack of sufficient training for field staff.
- **Poor connectivity:** Address canvassers in WV in 2017 had internet connectivity challenges.³⁴
 - Dead spots where Internet and cell phone service not available for census field workers.
 - Only certain cell service providers worked in certain areas. To access internet or cell service in those areas, workers sometimes needed to drive far from their assignments.
- **Overestimated efficiency from automation:**
 - During the 2015 Census Test, enumerators only followed route optimized by automation 67% of the time and exceeded allowed NRFU contact attempt limit.
 - Since 1/3 of enumerators deviated from their routes, efficiency and cost savings were not as great as originally anticipated.

Figure 2. Re-engineering, Automation, & Connectivity in 2020 Census Field Operations

Streamlined Office and Staffing Structure	Increased Use of Technology	Increased Management and Staff Productivity
 Area Census Office Manager	<ul style="list-style-type: none"> • Automated and optimized work assignments 	<ul style="list-style-type: none"> • Increased visibility into case status for improved workforce management
 Census Field Manager	<ul style="list-style-type: none"> • Automated recruiting training, payroll, and expense reporting 	<ul style="list-style-type: none"> • Redesigned quality assurance operations
 Census Field	<ul style="list-style-type: none"> • Ability to conduct address updates and enumeration on same device 	<ul style="list-style-type: none"> • Improved communications
 Listers and Enumerators	<ul style="list-style-type: none"> • Reduced paper and manual processing 	

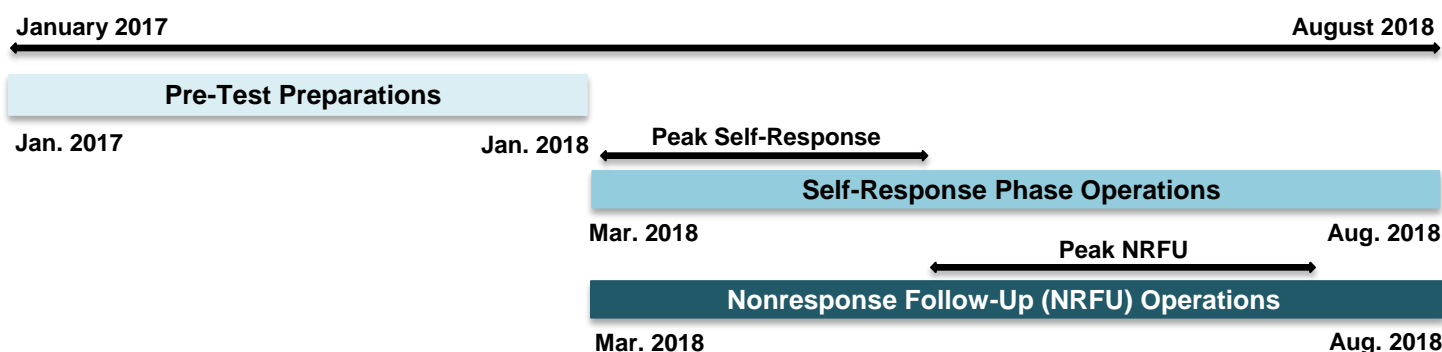
Source: Adapted from the U.S. Census Bureau, 2016

Acknowledgements

The authors Sophie Khan, Casey Goldvale, and Indivar Dutta-Gupta thank the following individuals for their input and feedback while producing this issue brief: Rosalind Gold of the National Association of Latino Elected and Appointed Officials (NALEO), Chris Harley, Terri Ann Lowenthal, Terry Ao Minnis of Asian Americans Advancing Justice (AAJC), and Corrine Yu of the Leadership Conference Education Fund. Please contact Indivar Dutta-Gupta (id141@georgetown.edu) with any questions.

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Figure 3. E2E Test Timeline



Source: GCPI ESOI, 2018

Detailed E2E Test Operational Timelines³⁵

PRE-TEST PREPARATIONS (IN ALL E2E Test LOCATIONS)		
Activity	Date	Explanation
Open Regional Census Centers (including New York office overseeing E2E Test)	January 3, 2017	Regional offices are responsible for all data collection, data dissemination, and census operations in a designated geographic area. ³⁶
Conduct production census field supervisor (CFS) training	July 31, 2017	CFS's are trained to supervise Census Takers/Enumerators who will be out in the field during the E2E Test. ³⁷
Conduct quality control (QC) CFS training	August 8, 2017	Quality control training for Census Field Supervisors for address canvassing. ³⁸
Conduct production lister training	August 18, 2017	Production listers are trained to perform address canvassing. ³⁹
Conduct QC lister training	August 25, 2017	QC listers are trained to conduct quality control for address canvassing operation. ⁴⁰
Conduct address canvassing (Providence County, Rhode Island; Pierce County, Washington; and Bluefield-Beckley-Oak Hill, West Virginia)	August 2017-October 2017	Census Bureau field staff verify addresses in these areas so that Bureau has a complete list of correct addresses to send letters, forms, and other materials. ⁴¹
Conduct quality control for address canvassing operation	September 2017-October 2017	QC listers canvass a sample of the household addresses to evaluate the Census Bureau's Master Address File's (MAF) accuracy. ⁴²

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SELF-RESPONSE PHASE (JUST PROVIDENCE)		
Activity	Date	Explanation
Self-response phase begins (Respondents can start answering online in Mid-March for RI)	March 2018 - May 2018	Respondents in Providence respond to census form online, by telephone, or with a paper form. ⁴³
Mail out materials to first set of Internet First and Internet Choice households	March 16, 2018	Materials are mailed to Providence households in three waves over a week's time in an effort to reduce the likelihood of IT system overload with Internet response. Most households will receive information about how to respond online or on the phone and selected households will also receive a paper copy of the questionnaire. ⁴⁴
Mail out materials to second set of Internet First households	March 20, 2018	Second wave of mailings.
Mail out materials to third set of Internet First households	March 23, 2018	Third wave of mailings.
Send follow up materials to all respondents	March 20, 2018 - April 30, 2018	Respondents receive a second mailing automatically reminding them to fill out their form. Those who do not respond may receive up to three more mailings, including postcards, a letter, and the questionnaire itself. These mailing dates are staggered based on when the respondent was sent their first mailing. ⁴⁵
Census Day	April 1, 2018	Reference day for the E2E data collection.
Conduct Update Leave Operation	April 9, 2018 – May 4, 2018	Update address information and census maps and hand-deliver invitation letter and questionnaires to homes in areas where it may be hard to deliver mail. ⁴⁶
Conduct operations related to self-response phase, including Non-ID Processing (Internet responses without unique code)	March 16, 2018 – July 31, 2018	During this window, households can respond on their own to the E2E questionnaire online, while the Census Bureau will implement internal processes for comparing responses submitted without a pre-assigned ID to the MAF to confirm and identify unique household or person responses. ⁴⁷

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Conduct Census Questionnaire Assistance	March 16, 2018 – July 31, 2018	Call center staff provide questionnaire assistance for respondents over the phone by answering questions about specific items on the Census form or other frequently asked questions about the E2E Test. CQA staff can also directly record and submit questionnaire responses. ⁴⁸
Conduct Paper Data Capture	March 16, 2018 – August 31, 2018	An automated system captures and converts data from paper questionnaires for data entry into Census Bureau records. The system is overseen by Bureau staff who conduct quality assurance and translate non-English responses. ⁴⁹

Nonresponse Follow-Up (JUST PROVIDENCE)		
Activity	Date	Explanation
Vacant/Nonexistent Address Removal from Nonresponse Follow-Up (NRFU) ⁵⁰	Ongoing prior to NRFU visits	Census Bureau staff use administrative records to delete housing units that are vacant or nonexistent from the list of households that will be part of NRFU operations.
Conduct NRFU training ⁵¹	March 19, 2018	Census IT and operational systems are ready for Census staff training for NRFU operation. ⁵²
Conduct NRFU	May 9, 2018 – July 24, 2018	Enumerators follow up with those who did not self-respond by making at least one in-person visit up to a certain number of times. The Bureau then determines if any still unresponsive occupied households can be enumerated using “high quality” administrative records. ⁵³ Enumerators will continue to visit households that cannot be counted this way until they respond (in person or even on-line). After 3 rd visit, enumerators can try to collect information from a reliable “proxy” or make up to 3 more visits or calls. ⁵⁴
Conduct NRFU reinterview (Quality control operation)	May 10 – July 31, 2018	After checking for signs of falsification on completed forms, different enumerators interview any flagged cases either over the phone or in person. A maximum of 10 percent of flagged cases will be re-interviewed. ⁵⁵
Conduct all Group Quarters (GQ) training ⁵⁶	June 11, 2018	Census IT and operational systems are ready for Census staff training on GQ enumeration. The GQ

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		population includes institutional facilities like nursing homes, mental hospitals, wards for chronically ill patients, hospices, and prison wards, and noninstitutional facilities like dorms, barracks, group homes, missions, and flophouses. ⁵⁷
Conduct GQ advance contact	June 18, 2018 – July 10, 2018	Staff verify information in the bureau’s records, and ask group quarters administrators for expected count and their preferred date and method of enumeration. ⁵⁸
Conduct Service-Based Enumeration ⁵⁹ <i>(Note: The GQ Operation schedule for the E2E Test does not mirror the schedule for the actual census.)</i>	July 25, 2018 – July 27, 2018	Bureau staff collect data via in-person enumeration for people without a usual place of residence, such as those in one-night homeless shelters or sleeping in outdoor locations, as well as documents from shelters with specific information about clients. ⁶⁰
Conduct GQ enumeration <i>(Note: The GQ Operation schedule for the E2E Test does not mirror the schedule for the actual census.)</i> ⁶¹	July 30, 2018 – August 24, 2018	For most GQs, each GQ facility can choose from various methods to count its residents, including online self-response, facility self-enumeration, bureau staff in-person enumeration, facility-based detailed documentation about residents, or mailing back modified paper questionnaires. ⁶²

Source: GCPI ESOI, 2018

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