

Operational Quality Metrics FAQs

Last updated 10.06.22

1. Why is the Census Bureau releasing the Operational Quality Metrics?

In the years following each decennial census, the Census Bureau releases metrics evaluating the quality of data collection operations and resulting population data in assessments and evaluations. After the 2020 Census, we began releasing select quality indicators sooner. We believe early insight into how well the 2020 Census was managed and implemented is vital given concerns about how census results may have been affected by the coronavirus pandemic, natural disasters, and other widespread events that occurred during data collection.

A first set of metrics, available in April 2021, describes how data for all addresses, including housing units and group quarters, were collected. A second set, available in May 2021, focuses on how housing unit data were collected and describes the population size of occupied housing units. A third release, available in August 2021, includes two tables. The first (August 18, 2021) contains summary statistics of county-level and tract-level metrics previously included in Release 1 at the state level. The second (August 25, 2021) contains item nonresponse rates for demographic characteristics across operations. Both tables contain data for housing units and group quarters. The fourth release (October 2022) contains the same operational metrics included in the state-level summary statistics (Release 3 Table 1), but for individual counties and a subset of those metrics for individual tracts.

2. What are the differences between what is included in each of the Operational Quality Metrics releases?

Each set of Operational Quality Metrics shows a different angle of how 2020 Census data were collected, providing insight into the quality of operations across the nation.

Release 1 (April 2021), Release 3 Table 1 (August 18, 2021), and Release 4 (October 2022) describe information for all addresses included in the 2020 Census. This broad, comprehensive view provides context behind each operation and data collection method for addresses including:

- Housing units: Places where residents live or stay separately, such as houses, apartments, or mobile homes.
- Group quarters: Places where residents live or stay in a group living arrangement, such as nursing homes, college dormitories, and military barracks.

Release 1 (April 2021) and Release 3 Table 1 (August 18, 2021) do not include:

- Transitory locations included in the Enumeration at Transitory Locations (ETL) operation, such as RV parks or marinas.
- Addresses added late in data collection, or between the September 27, 2020, deadline for adding new addresses and the October 15, 2020, response deadline.

Release 2 (May 2021) focuses on all housing units confirmed in the 2020 Census, rather than all addresses included in the census. This set of metrics leverages the Census Bureau's work in processing

2020 Census responses to include data for transitory locations collected in the ETL operation, as well as data for housing units added late in data collection. Because this release is focused on housing units confirmed to exist in 2020 Census operations, group quarters and deleted units are not included.

The second table of Release 3 (August 25, 2021) contains item nonresponse rates for demographic characteristics across operations. For context, item nonresponse rates for the 2010 Census were also released.

3. What other quality metrics will the Census Bureau release for the 2020 Census?

We will release a host [of assessments and evaluations](#) in the coming years. The topics of these reports vary widely, including assessments of each data collection operation, assessments of communication and outreach methods, and evaluations that analyze, interpret, and synthesize the effectiveness of census components and their impact on data quality, coverage, or both.

In addition, the Census Bureau has engaged in several efforts to assess the quality of the 2020 Census. These include comparing results to [2020 Demographic Analysis Estimates](#), conducting [the Post-Enumeration Survey](#) to measure coverage error, and collaborating with external experts who will provide independent quality analyses.

See the [2020 Census Data Quality](#) page for a detailed summary of these efforts.

4. Will the Census Bureau release detailed data behind the Operational Quality Metrics to the public, such as frequency counts and microdata?

No, the microdata and frequency counts used to calculate these metrics will not be released to the public because of privacy and confidentiality requirements.

5. What disclosure avoidance techniques have been applied to the Operational Quality Metrics?

All metrics included in the Operational Quality Metric releases have been reviewed for [disclosure risk](#) in accordance with U.S. Census Bureau disclosure review standards. No formal privacy (also known as differential privacy) techniques were applied to Release 1 (April 2021) or Release 3 (August 2021). Additional protections beyond aggregation and rounding were applied to Release 2 (May 2021) metrics to prevent disclosure of official statistics yet to be released. Release 4 (October 2022) incorporates formal data privacy techniques to produce metrics at the tract and county levels.

6. How does providing Operational Quality Metrics for individual counties and tracts affect the Privacy Loss Budget (PLB) available for producing the 2020 Census data products?

To produce these metrics, we chose disclosure avoidance parameters that affect the overall [PLB](#) for 2020 Census data products as little as possible to produce quality statistics while safeguarding respondent confidentiality.

The global PLB for the 2020 Census has not yet been finalized. However, all 2020 Census data products impact the overall strength of confidentiality protection of each statistical release. In response to feedback from external stakeholders, the U.S. Census Bureau's Data Stewardship Executive Policy (DSEP) committee determined that the public benefit of releasing these county- and tract-level operational metrics merited the additional PLB expenditure.

7. Will the Operational Quality Metrics detail how the coronavirus pandemic affected 2020 Census operations?

The four sets of metrics we released in 2021 and 2022 provide many results and insights into how the 2020 Census was conducted. Variability in the results across states, localities, and operations is expected. Factors within our control, such as planned changes to the way we collected data, and factors outside our control, such as normal changes in our population, respondent behavior, and the coronavirus, all play a part. Attributing a difference or magnitude of a difference to a specific factor will be nearly impossible. Rather, our analysis will focus on understanding whether the differences we see are explainable given the collective factors.

8. Why are there differences between results included in the Self-Response Rates Map and the Operational Quality Metrics?

The Operational Quality Metrics use final, processed census data to describe how the nation's addresses were counted. On the other hand, to inform the country about how each community was responding throughout the 2020 Census, the [2020 Census Self-Response Rates Map](#) focused on housing units invited to self-respond.

These percentages measure two different things for different purposes. The Self-Response Rates Map measured participation during the 2020 Census among households that were invited to respond on their own online, by phone, or by mail. These rates are available down to the census tract level and were key to informing outreach during the 2020 Census. They also helped us plan for the volume of addresses census takers would need to follow up with to collect responses in person.

The percentages in the Operational Quality Metrics take a broader view. The first release (April 2021) and the third release (August 18, 2021) look at self-response among all addresses in the 2020 Census — not just among households invited to respond on their own. By looking at all addresses, we're able to show a breakdown of what percentage was resolved through self-response, another operation, or remained unresolved. For example, the denominator for the percentages in these releases also include:

- Households in very remote areas like parts of northern Maine and remote Alaska that are counted in person by a census taker.

- Group quarters such as college dorms, prisons, and nursing homes.

The second release (May 2021) uses census data processing results to look at self-response among all housing units identified in the 2020 Census. In addition to housing units invited to self-respond, these include:

- Households in remote areas counted by a census taker, as in the first release.
- Places like boats, tents, and RVs counted as part of the Enumeration of Transitory Locations operation.

Release 4 (October 2022) includes all address types described above. To describe household residents and how their data were collected, the second release does not include deleted units.

The operational metrics also take into account our data processing procedures, which include unduplication, matching responses submitted without a Census ID to existing addresses, and adding new addresses.

9. Why are there differences between some of the Operational Quality Metrics and preliminary 2020 Census results that were released earlier?

We released several preliminary quality indicators during and immediately after data collection to help others begin to assess the quality of the census. For example, we released preliminary metrics on [Administrative Records](#) usage in the Nonresponse Followup (NRFU) operation and [NRFU proxy enumeration rates](#). These rates changed because we resolved cases and removed duplicate responses during [data processing](#).

Additionally, item nonresponse rates from a preliminary dataset were shared as part of a Freedom of Information Act (FOIA) response. Those rates were calculated using a preliminary data file with duplicate responses. For Release 3 Table 2, we calculated the rates using a file that was unduplicated and we see that the 2020 Census item nonresponse rates are lower than we had initially thought.

10. What factors should I consider when making comparisons between the 2010 and 2020 censuses?

Comparisons between the 2010 and 2020 Operational Quality Metrics reveal how and whether 2020 Census results align with trends seen in the previous census, a meaningful indicator of data quality. However, in addition to demographic and behavioral shifts over the past decade, many differences are a result of operational changes and new factors in the 2020 Census environment.

The Census Bureau applied new technological innovations to increase the efficiency and accuracy of self-response operations, Nonresponse Followup (NRFU), and census data processing. The 2020 Census was the first decennial census that incorporated an online self-response option as the primary mode of data collection. Both the census questionnaire and the targeted advertisement campaign used to encourage self-response, were offered in more languages than in previous censuses. We also contacted households using new, targeted mailing strategies.

The NRFU operation incorporated several improvements, including integration of the survey instrument and enumerator management systems on an iPhone. In addition, for the 2020 Census, the administrative records enumeration operation was added to use high-quality data we already have about households to count people who otherwise hadn't responded. The addition of the internet self-response instrument and streamlined systems allowed self-response to continue throughout NRFU, thus removing cases from the NRFU workload in real time. The 2020 Census also incorporated improvements to the training, contact strategies, and management of NRFU census takers.

New data processing procedures were added in the 2020 Census to help us meet our mission of counting everyone once, only once, in the right place. For example, a new process was added to use administrative records to place individuals that were recorded in more than one household at the right address. To do this, we used administrative records that were unavailable in previous decennial censuses. Because of this operation, some addresses were left unresolved without a population count, which can be found in the "Unresolved, Person Unduplication" category of the operational quality metrics.

Lastly, 2020 Census operational timelines and procedures were adapted to respond to unexpected, widespread events. These include the coronavirus pandemic, tropical storms, hurricanes, wildfires, and legal challenges.

These are among the factors contributing to differences between the 2020 Census and prior censuses.

11. What factors should I consider when making comparisons between states, counties, and tracts?

States and localities differ in their basic characteristics, making it problematic to draw conclusions about differences in data quality between states as measured by operational metrics. Decennial census data collection strategies are targeted by geographic area depending on population characteristics and geographic characteristics. For more information about how census operations varied across the country, see the [2010 Census Local Census Offices with Type of Enumeration Area map](#), the [2020 Census Type of Enumeration Viewer](#), and the [2020 Census Mail Contact Strategies Viewer](#).

Population trends and varying impacts of natural disasters and the coronavirus pandemic also resulted in varying 2020 Census Operational Quality Metrics among states.

12. Why were there higher rates of deleted addresses in the 2020 Census relative to the 2010 Census?

The increase in deleted units during the 2020 Census is an expected outcome of increased operational efficiencies, and the Census Bureau's commitment to a complete, accurate population count.

In the 2010 Census, more deletes occurred before rather than during enumeration. Before 2010 Census enumeration began, field staff were sent to check the existence of each address across the country in an operation called Address Canvassing. Addresses deleted from our address list during Address Canvassing were not included in 2010 Census data collection. Any addresses deleted during enumeration were sent to the Vacant Delete Check operation for confirmation as one of the last steps in the 2010 Census.

To improve the efficiency of Address Canvassing, the 2020 Census employed satellite imagery, administrative data, and other in-office sources to verify the existence of residential addresses rather than checking each location in person. Staff were sent to verify addresses only where change was detected or reliable satellite imagery was unavailable. High-quality addresses deleted during Address Canvassing remained in 2020 Census enumeration operations for confirmation from census field staff, analogous to the 2010 Census Vacant Delete Check operation. In the situations where no one resided at the addresses, these deleted units were often confirmed by proxy respondents in Nonresponse Followup.

As a result of allowing these deleted units to remain in the enumeration universe and following up with them during the 2020 Census enumeration, there appear to be more deletes relative to 2010.

13. When will the item nonresponse rates be available for the characteristics not included in the August 25, 2021, release?

The Item Nonresponse and Imputation Assessment will be released in early 2023. This report will provide item nonresponse rates for all the characteristics included in the August 25 release as well as for the sex, tenure, relationship, undercount, overcount, and telephone questions. Additionally, this assessment will include detailed rates on imputation and substitution.