Estimating Citizen Voting Age Population in 2020: A Latent-Class Approach

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Outline

1. Citizen Voting Age Population (CVAP) Program
2. Data Sources
3. Latent-Class Model
4. Pilot Study
5. Concluding Remarks

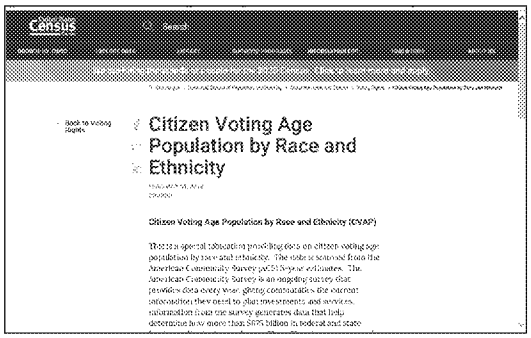
- *This presentation is pre-decisional, for Federal Employees Only*
- *The data in this presentation (Section 4) are released under the following disclosure review number: CBDRB-FY19-CMS-7901*
- *This presentation is given to inform interested parties of ongoing research and to encourage discussion. Views expressed are those of the presenter, not necessarily those of the United States Census Bureau*
- *This work is a collaborative effort, and would not be possible without major contributions from members of the CVAP Technical Working Group, including John Abowd, David Brown, Bill Bell, Tom Mule, and many others*

1. Citizen Voting Age Population (CVAP) Program

A special tabulation of the population of **U.S. citizens** living in housing units and group quarters by

- voting age (under 18, 18+)
- race and ethnicity (11 categories)

produced by the Redistricting and Voting Rights Data Office, U.S. Census Bureau (RDO@CENSUS.GOV)



Source: https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html#

CVAP Uses

Historically used for research, evaluation and enforcement of the *Voting Rights Act*, including estimates required by Section 203 (limited English proficiency within Language Minority Groups)

Data Sources

- Prior to 2010, CVAP was based on the Decennial Census long form
- For the last decade, based on **American Community Survey (ACS)**
  - five-year estimates, updated annually
  - various levels of geography, down to census **block groups**
  - published with **margins of error** (MOEs) reflecting variability due to sampling
  - accuracy is understandably low for small geographies (e.g., tracts and block groups), better for larger areas (e.g., U.S. congressional districts)

Recent developments

March 26, 2018: Secretary of Commerce instructed Census Bureau to

- include a citizenship question on the **2020 Decennial Census** form
- combine census responses with all available **administrative data on citizenship** to produce CVAP tables at the **block level**

June 27, 2019: In ***Department of Commerce vs. New York***, the U.S. Supreme Court upheld a lower court ruling to remand citizenship question back to the Department of Commerce

July 11, 2019: President issued **Executive Order** directing agencies to provide citizenship information to the Census Bureau, with goal of compiling citizenship data for 100% of the population

Instructions for 2020 CVAP data product

Produce **estimated counts** of

- **2020 Census resident persons** who are **citizens** and **18+ years old**,

for 2020 Census tabulation **blocks**, within categories of race and ethnicity

Not Hispanic or Latino

1. American Indian or Native Alaskan (AIAN) alone
2. Asian alone
3. Black or African American alone
4. Native Hawaiian or Other Pacific Islander alone
5. White alone
6. Some Other Race alone
7. AIAN and White
8. Asian and White
9. Black or African American and White
10. AIAN and Black or African American
11. Remainder of two or more race responses

12. Hispanic or Latino

Notes

- Categories of race/ethnicity are those in *P.L. 94-171 Redistricting Data Summary Files*
- Release will coincide with publication of P.L. 94-171 tables by **March 31, 2021**
- In essence, we are **predicting/imputing a citizenship probability** for each person in the 2020 Census who is 18+ years old
  - These predictions are based on citizenship only **from non-Decennial sources**, which requires that we look for Census persons in other data sets (**record linkage**)
  - These data sources have different properties and do not always agree (**harmonization**)
  - No plan to release margins of error, but evaluation of error at different levels of geography will be important (**non-sampling error**)
- All CVAP processing will happen **downstream** from 2020 Census
  - Will use the Census Unedited File (CUF) and Census Edited File (CEF) after they are finalized
  - No CVAP results will be used in the Census or P.L. 94-171 programs
  - CVAP citizenship predictions will be given to the 2020 Disclosure Avoidance System for noise infusion, then tabulation

Methodology

Two approaches now under development

1. **Business rules** (conventional)
   A. Assign a binary (0/1) citizenship value to census persons who can be reliably linked to administrative-data sources and whose status seems conclusive
   B. For all others, predict a probability of citizenship ($0 < p < 1$) by fitting a model (logistic regression) to persons in group A, using predictors from the Census
2. **Latent-class model** (experimental)
   - Treat true citizenship status as a binary latent variable, imperfectly measured by multiple items from various sources
   - Fit the latent-class model, compute probability of citizenship for each person based on all available items
   - Similar to 1, except the "business rules" are probabilistic rather than deterministic, and are obtained from the estimated model parameters

Recommendations on methodology to be delivered by 2020 Census Internal Expert Panel by March 31, 2020

Remainder of this presentation

- Overview of data sources
- Overview of the latent class modeling approach
- Results from a pilot study based on the 2010 American Community Survey

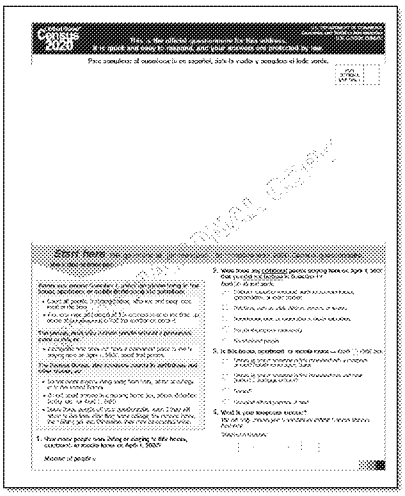
Topics not covered here

- Business-rules approaches
- Details of record linkage and the Person Identification Validation System
- Differential privacy and the 2020 Disclosure Avoidance System
- Many other details of Decennial operations and processing
- Computing environments and implementation strategies

2. Data Sources

2020 Decennial Census

- List of persons in each housing unit (HU) and group quarters (GQ)
- Characteristics of HU/GC
- Characteristics of each person (age, sex, race, ethnicity, relationship)
- Physical location and variables from Master Address File
- No direct measures of citizenship



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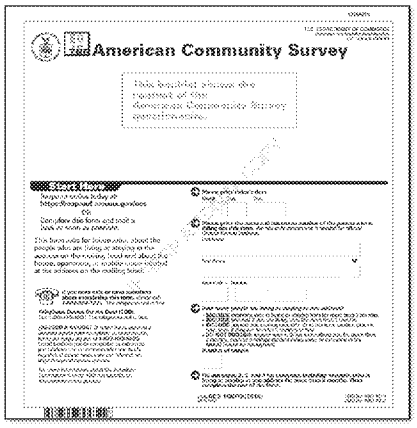
American Community Survey (ACS)

- Annual samples of approximately 3.5 million households per year since 2005
- All items from Decennial Census, plus many more
- Questions about nativity (U.S. or foreign born) and citizenship (natural born, naturalized, non-citizen)



Social Security Administration (SSA) Numident File

- Applications for Social Security Numbers (SSNs) and subsequent transactions
- Primary reference file for the Census Bureau's Person Identification Validation System (PVS) (Wagner and Layne, 2014)
- Nearly 90% of persons in the 2010 Census were successfully found in Numident (Rastogi and O'Hara, 2012)
- Information on nativity, citizenship and non-citizen legal status

Strengths

- Numident report of citizenship can be accepted with high confidence

Weaknesses

- Reports of non-citizenship can be less reliable, because naturalizations are not always reported to SSA
- Poor coverage of resident population without SSNs

Individual Taxpayer Identification Number (ITIN) File

Tax processing number issued to persons who are not eligible for SSNs, including foreign nationals and non-resident aliens

Strengths

- Presence of a valid ITIN indicates that a person is a non-citizen

Weaknesses

- Absence of a valid ITIN gives little evidence for citizenship, because only a small percentage of non-citizens have ITINs (compared to 0% of citizens)

United States Citizenship and Immigration Services (USCIS) Naturalizations File

Covers naturalizations since 2001

Strengths

- All persons who were 18+ when naturalized should be present
- Should address some deficiencies of Numident

Weaknesses

- Children under 18 who were automatically naturalized with their parents are not present if they didn't also apply for a naturalization certificate
- No information prior to 2001

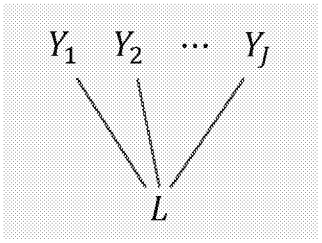
Other Possible Sources of Citizenship Information

- USCIS Lawful Permanent Resident file (green card holders)
- Department of State Passport Data (all U.S. passports)
- Customs and Border Protection Arrival Departure Information System
- Supplemental Nutrition Assistance Program (SNAP) (some states)
- Drivers licenses (some states)

3. Latent-Class Model

Latent-Class (LC) Analysis

- >50 year history in social sciences (Lazarsfeld and Henry, 1968), medical and psychiatric diagnosis (Formann and Kohlmann, 1996), analysis of response errors in surveys (Biemer *et al.*, 2001)
- **Local independence:** Categorical items $Y_1, Y_2, \ldots, Y_J$ are assumed to be conditionally independent given a latent categorical variable L
- L is the unobserved gold standard; $Y_1, Y_2, \ldots, Y_J$ are the imperfect measures of L



LC Regression

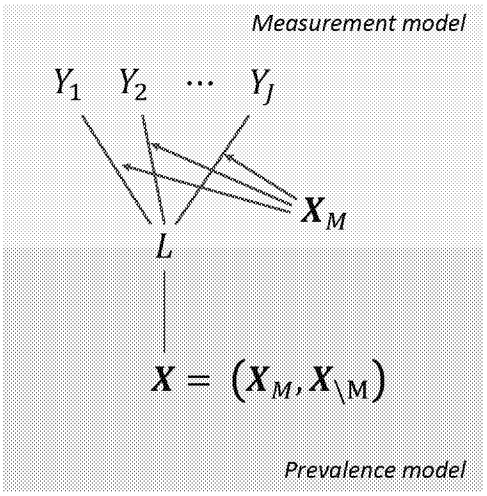
Extends the LC model by introducing a vector of additional covariates $\boldsymbol{X} = (\boldsymbol{X}_M, \boldsymbol{X}_{\backslash \mathrm{M}})$

$\boldsymbol{X}_M$ = moderators of relationships between L and $Y_j's$

$\boldsymbol{X}_{\backslash \mathrm{M}}$ = additional covariates for predicting L

Two Parts

- **Measurement model** describes relationships between L and the items that measure it
- **Prevalence model** describes how the distribution of L varies over the population in relation to predictors (e.g., logistic regression)



Applying LC Regression to CVAP

- L is interpreted as "true" citizenship status for a person enumerated in the 2020 Census
- $Y_1, Y_2, \ldots, Y_J$ are items measuring citizenship from non-Census data sources, ascribed after record-linkage procedure
  - Even if a Y_j were a perfect indicator of citizenship on Census Day, it might still differ from L, because the linkage could be a false match
  - Missing values will occur among the Y_j's because the data sources will cover varying parts of the population, and because some Census persons cannot be matched (e.g. due to insufficient information); a good fitting procedure must be able to handle lots of missing values

Fitting LC Regression Models

- Model parameters are typically estimated by **EM algorithms** (Bandeen-Roche *et al.*, 1997) or by **Markov chain Monte Carlo** (MCMC) (Lanza *et al.*, 2005); some software packages are available
- We advocate a **two-stage method** (Bakk and Kuha, 2018) that is computationally convenient and helps protect against model failure
  1. **Fit the measurement model alone**, ignoring the predictors of prevalence, and save the estimated measurement parameters
  2. **Fit the prevalence model**, fixing the measurement parameters at the values estimated in Stage 1
- The estimated parameters carried over from Stage 1 to Stage 2 can be succinctly summarized as a person-level **Bayes factor**, with a natural interpretation as an **odds multiplier**

Odds

- A translation of probability, which expresses the chance of an event on a scale from 0 (no chance) to +∞ (certain to occur)
- Relationship between p = probability and ω = odds is given by $\omega = p/(1-p)$ and $p = \omega/(\omega+1)$

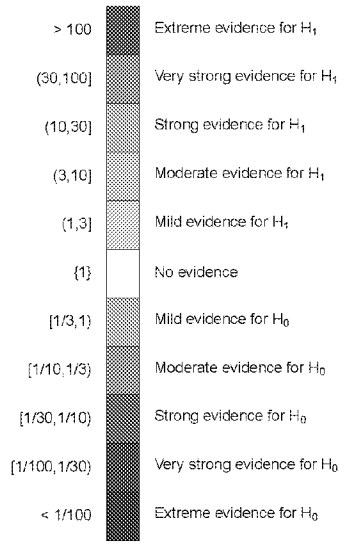
Bayes' Theorem for Hypothesis Testing Using Odds

$$\frac{P(H_1 \mid data)}{P(H_0 \mid data)} = \frac{P(H_1)}{P(H_0)} \times \frac{P(data \mid H_1)}{P(data \mid H_0)}$$

posterior odds = prior odds × Bayes factor

Interpreting a Bayes Factor

- Adapted from Lindley (1961)
- Summarizes the evidence provided by data for comparing one hypothesis to another
- Bayes factor (BF) is the multiplier that updates the odds of H_1 versus H_0 on account of data
- If additional data become available, their evidence contributes another Bayes factor (sequential application of Bayes' Theorem)



Two-Stage Modeling in CVAP

For each person enumerated in the 2020 Census, define H_1 as "person is citizen" ($L = 1$) and H_0 as "person is non-citizen" ($L = 2$)

- **Fit LC measurement model** to linked dataset (Census file plus other sources) and save the person-level Bayes factor (BF), which summarizes the evidence for citizenship contained in the other sources
- **Fit logistic prevalence model**, a regression of the binary latent variable L on predictors from Census $\boldsymbol{X}$ with unknown coefficients $\boldsymbol{\beta}$ plus the logarithm of the Bayes factor

$$\log \frac{P(L = 1)}{P(L = 2)} = \boldsymbol{X}^T \boldsymbol{\beta} + \log BF$$

But how do you do this without knowing L?

Iterative Fitting of the Prevalence Model (EM version)

1. Start with initial guess $\widehat{\boldsymbol{\beta}} = \mathbf{0}$
2. Compute $\hat{L}$ = predicted probability of $L = 1$ for each person as

$$\hat{L} = \text{logit}^{-1}\left(\boldsymbol{X}^T \widehat{\boldsymbol{\beta}} + \log BF \right)$$

3. Update $\widehat{\boldsymbol{\beta}}$ by fitting the logistic regression of $\hat{L}$ on $\boldsymbol{X}$ with $\log BF$ as an offset

$$\log\left(\frac{\hat{L}}{1 - \hat{L}}\right) = \boldsymbol{X}^T \boldsymbol{\beta} + \log BF$$

Repeat 2-3 until convergence

Interpretation of Model Quantities

- Upon convergence, $\hat{L}$ is the person's predicted odds of citizenship
- exp $\left(\boldsymbol{X}^T \widehat{\boldsymbol{\beta}} \right)$ is the person's predicted odds of citizenship based on **Census predictors alone**, without considering other sources
- BF is the multiplier that raises or lowers the predicted odds of citizenship based on evidence from the **non-Census sources** (if none are available, $BF = 1$)

Because of the local independence assumption, BF can be factored as

$$BF = BF_1 \times BF_2 \times \cdots \times BF_J$$

where BF_j is the Bayes factor contributed by non-Census data source j (if the source is unavailable, BF_j = 1)

Additional Details Not Discussed Here

- The procedure just described is an EM algorithm that gives (reduced-information) maximum-likelihood estimates; for the actual application, we plan to use MCMC, which can more easily produce measures of uncertainty
- The actual measurement model may be more complicated, possibly treating voting age as an additional latent classifier
- Prior understanding about the properties of data sources may be reflected through prior distributions
- One measurement model may be fit at the national level, with prevalence models fit separately for each state
- The prevalence models may be more complicated than the logistic regressions shown here, with additional random coefficients that allow for correlation within HU's, within blocks, etc.

4. Pilot Study

Proof of Concept using Data from the American Community Survey (CVAP Working Group, 2019)

- All respondents from **2010 one-year ACS file** (about 4 million persons), matched to 2010-vintage **Numident** and **ITIN** files
- Collapsed race/ethnicity to **five groups**: Non-Hispanic (NH) White Alone, NH Black Alone, NH Asian Alone, NH All Other Races, Hispanic
- Four items measuring citizenship
  - Y_1 = dichotomized citizenship from ACS (citizen, non-citizen)
  - Y_2 = Numident place of birth (U.S, foreign-born)
  - Y_3 = Numident citizenship (citizen, non-citizen)
  - Y_4 = match to ITIN (yes, no)
- Measurement models fit separately to 34 measurement groups defined by voting age, sex, race/ethnicity and relationship (> 10,000 persons per group)

Prior Information for Measurement Models

Each model used prior distributions equivalent to augmenting two-way marginal $L \times Y_j$ frequencies with fictitious persons ("data augmentation prior")

citizen	citizen				100
nonCit	citizen				0
citizen	nonCit				0
nonCit	nonCit				100
citizen		USBorn			100
nonCit		USBorn			0
citizen		foreignBorn			10
nonCit		foreignBorn			90
citizen			citizen		100
nonCit			citizen		0
citizen			nonCit		1000
nonCit			nonCit		1000
citizen				nonMatch	100
nonCit				nonMatch	90
citizen				match	100
nonCit				match	100

Prevalence Models

- Logistic regressions fit separately to 50 states and District of Columbia (equivalent to one logistic regression with full interaction between 50 state indicators and all other predictors)
- Predictors included full interactions of age × sex × race/ethnicity, plus an indicator of whether ACS person could be matched to Numident/ITIN

Computations

- R with external routines in Fortran 2003
- All computations (measurement and prevalence models) run in less than two hours on a single node of IRE, no parallelization

National Estimates (weighted)

Percentage of citizens estimated under LC model and two alternative sets of business rules: one favoring the ACS, another favoring administrative records

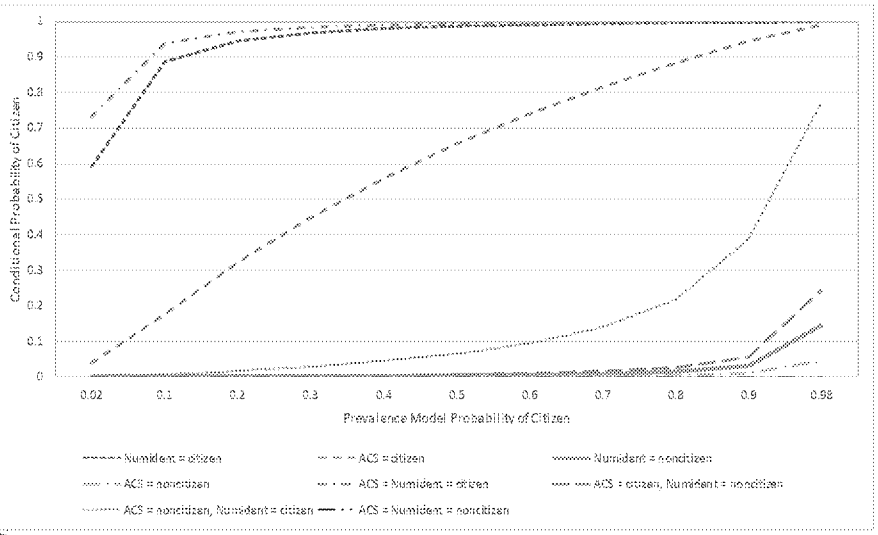
	[illegible]			[illegible]			[illegible]		
	Overall	Age 18+	Age<18	Overall	Age 18+	Age<18	Overall	Age 18+	Age<18
[illegible]	92.6	91.2	97.1	90.4	88.5	96.4	89.3	87.1	96.0
[illegible]	98.5	98.3	99.3	97.7	97.4	99.0	96.9	96.4	98.9
[illegible]	95.9	95.1	98.1	94.0	92.5	97.6	92.6	90.8	97.2
[illegible]	70.7	66.3	86.1	56.8	49.5	82.4	55.7	48.5	80.8
[illegible]	96.2	94.3	98.9	93.3	89.7	98.1	91.8	87.4	97.9
[illegible]	73.6	63.7	92.9	69.2	57.6	91.8	67.4	55.0	91.3

Source: ACS 1-year file, SSA Numident, and ITINs, 2010. The Disclosure Review Board release number is CBDRB-FY19-CMS-7901

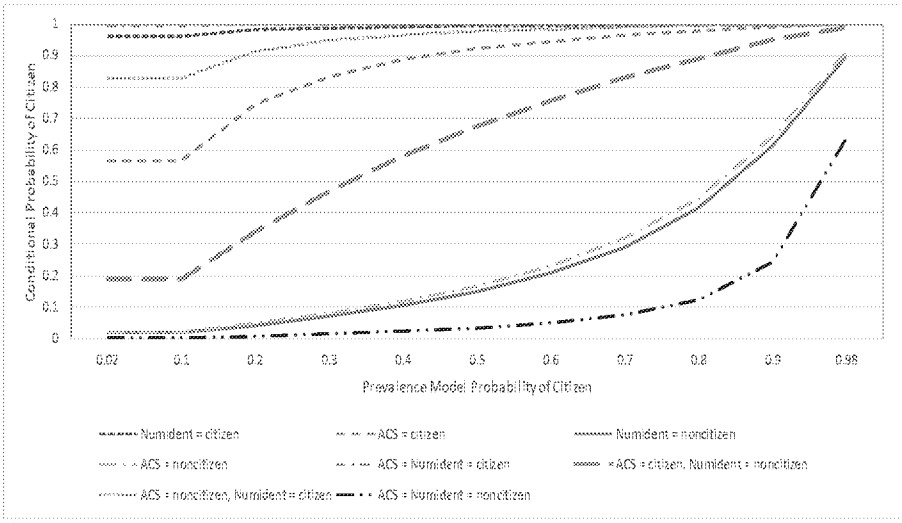
United States Census Bureau

- LC estimates fewer citizens (more non-citizens) than business rules
- Business rules that favor admin records estimate fewer citizens (more non-citizens) than business rules that favor the survey responses
- Where the two sets of business rules diverge, results from the LC model are closer to those favoring admin records

Sample LC Results for NH White male reference persons, 18+



Sample LC Results for Hispanic male non-relatives 18+



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Plots shows the relationship between estimated probability of citizenship

- based on prevalence-model predictors alone ($\boldsymbol{X}$), and
- based on prevalence-model predictors and citizenship items ($\boldsymbol{X}$ and Y_j's)

for various combinations of values for citizenship items

- Deviations from 45-degree diagonal line (scaled for aspect ratio) indicate the strength of evidence for/against citizenship for the given combination of citizenship items
- Perfect indicator of citizenship/non-citizenship would produce a **horizontal line** across top/bottom of plot
- **Numident = citizen** provides strong evidence of citizenship for these NH Whites, even stronger for these Hispanics
- **Numident = non-citizen** provides strong evidence of non-citizenship for these NH Whites, but less conclusive evidence for these Hispanics

- **ACS = citizen** is a weak indicator of citizenship for these NH Whites, stronger indicator for these Hispanics
- **ACS = non-citizen** is a powerful indicator of non-citizenship for these NH Whites, weaker indicator for these Hispanics
- **ACS = Numident = citizen** is a nearly perfect indicator of citizenship for these Hispanics, but not for these NH Whites
- **ACS = Numident = non-citizen** is a nearly perfect indicator of non-citizenship for these NH Whites, but not for these Hispanics

5. Concluding Remarks

- Statistical models for synthesizing data from multiple sources are becoming feasible, even in large-scale applications
- Two-stage LC regression is computationally convenient and produces quantities (Bayes factors) that are intuitively appealing
- Still many details to work out for 2020 CVAP and other programs

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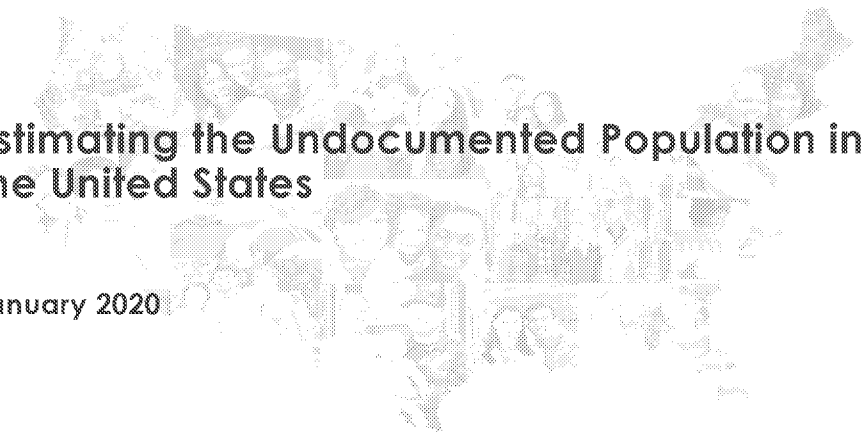
Estimating the Undocumented Population in the United States



January 2020

Pre-decisional

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Methods for Estimating Undocumented Population

There is no source of administrative records for undocumented immigrants. There are methods to come up with estimates.

Estimation methods are based on residuals:

- Residual methods using aggregate data - Office of Immigration Statistics, Center for Migration Studies, Pew Research Center, Census (in the 1980s, 1990s)
- Residual methods matching administrative records to Census – this has not be done

Pre-decisional

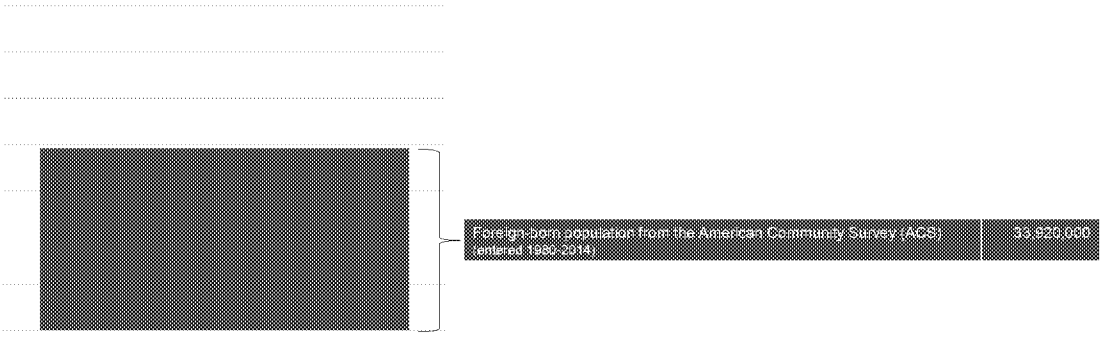
Estimating the Undocumented Population

The Building Blocks

Pre-decisional

Estimating the Undocumented Population Using Aggregate Counts

Estimating the Foreign-Born Population on January 1, 2015



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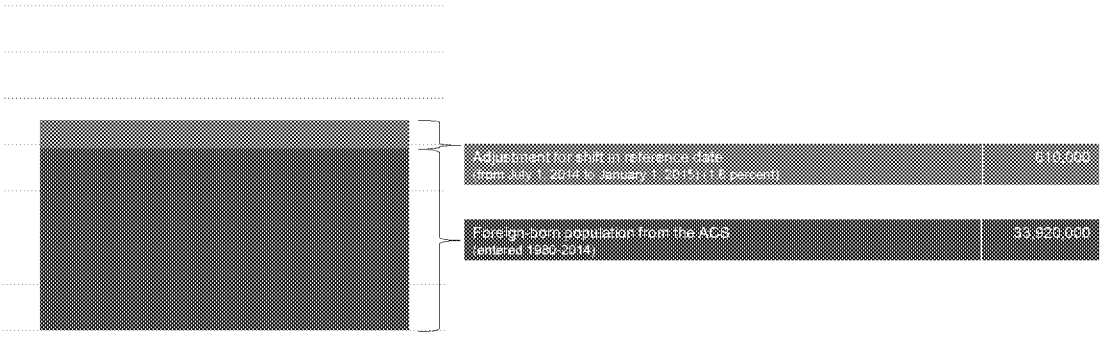
Estimating the Undocumented Population

Estimating the Foreign-Born Population on January 1, 2015



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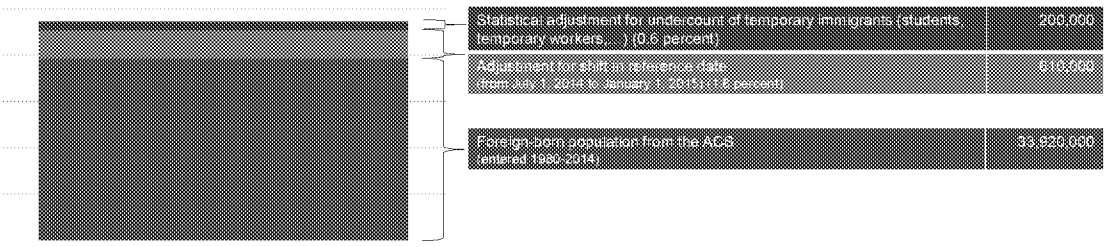

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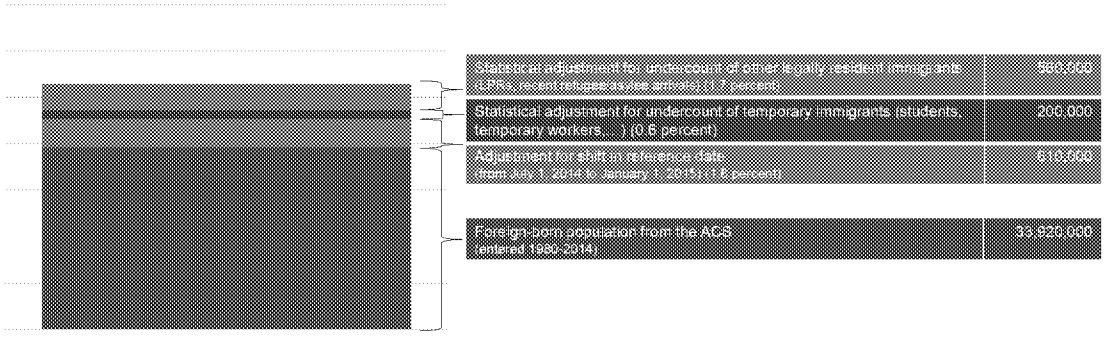

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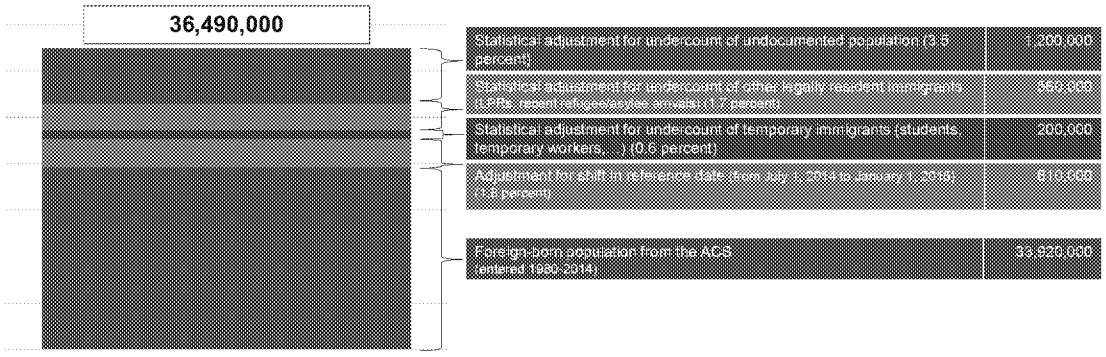
Estimating the Foreign-Born Population on January 1, 2015



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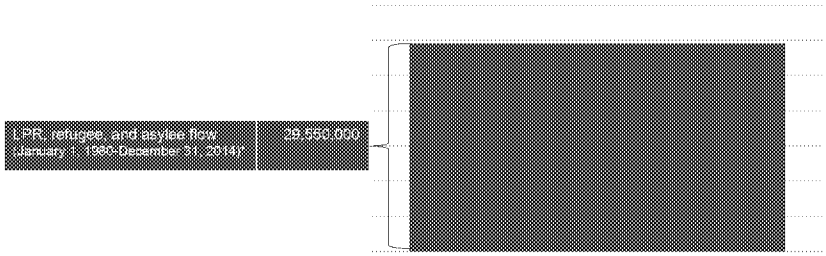
Estimating the Undocumented Population Using Aggregate Counts

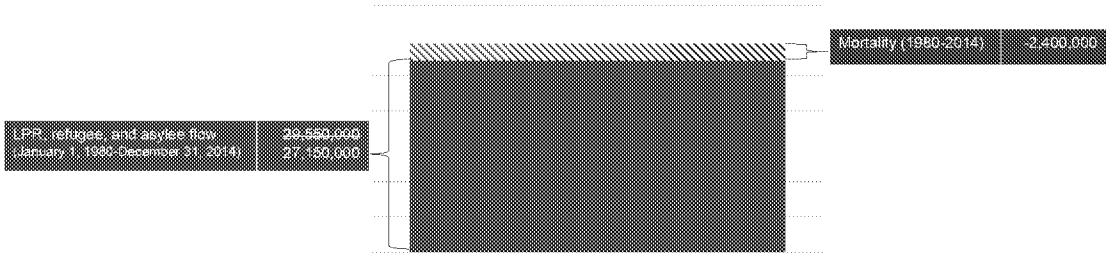
Estimating the Legally Resident Population on January 1, 2015



** Immigration Reform and Control Act of 1986, granted status to persons living in the United States who had emigrated prior to 1982.*

Estimating the Undocumented Population Using Aggregate Counts

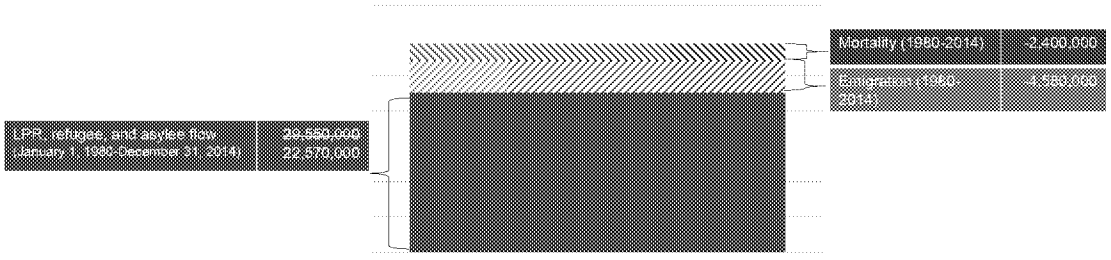
Estimating the Legally Resident Population on January 1, 2015



Pre-decisional

Estimating the Undocumented Population Using Aggregate Counts

Estimating the Legally Resident Population on January 1, 2015



Pre-decisional

Estimating the Undocumented Population Using Aggregate Counts

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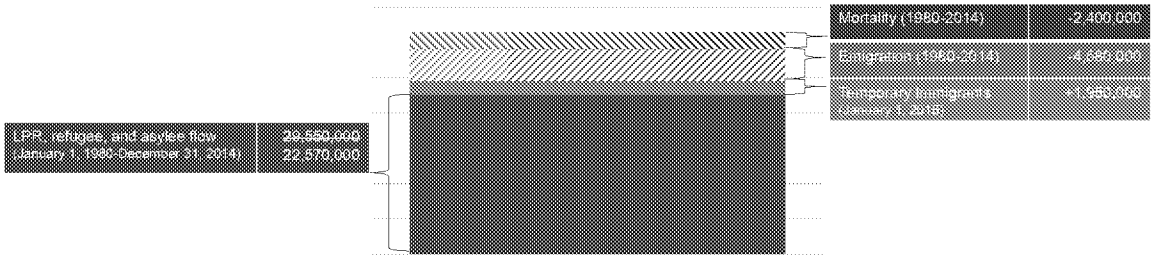

Pre-decisional

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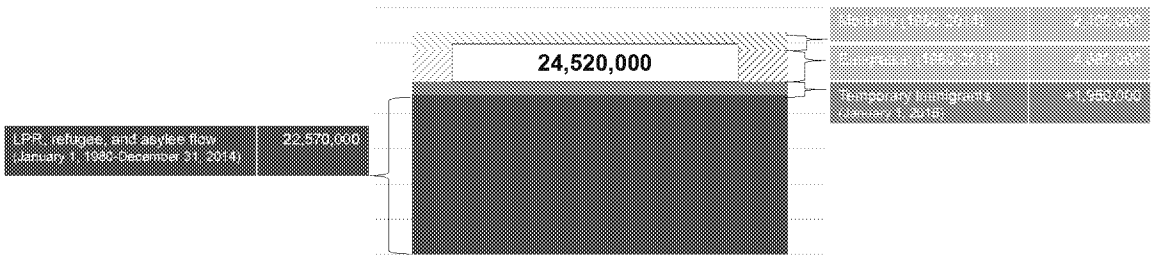
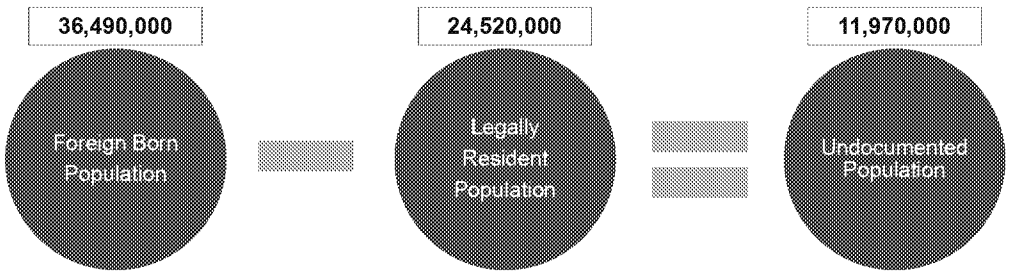


Pre-decisional

Estimating the Undocumented Population Using Aggregate Counts

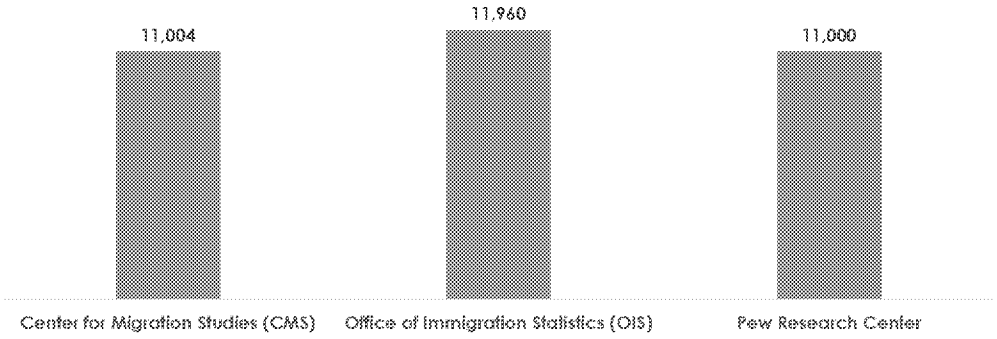
The Estimate



Pre-decisional

Estimates of the Undocumented Population in the United States: 2015

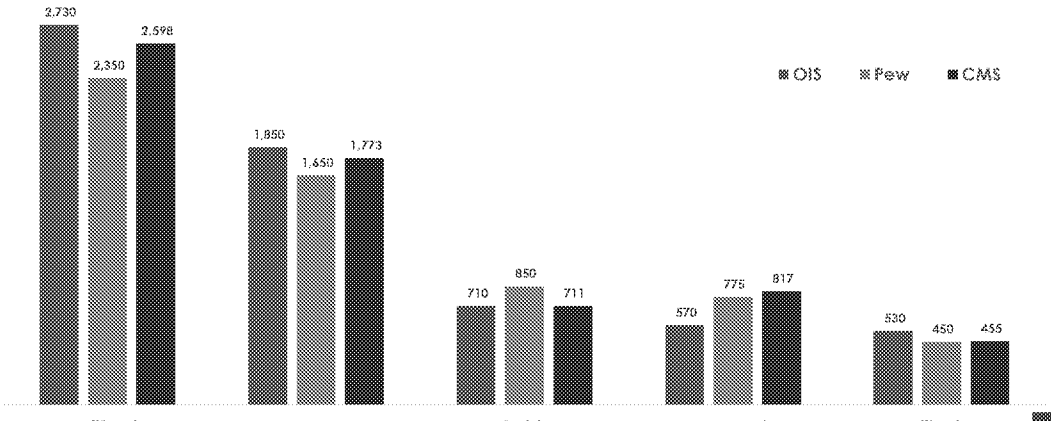
(In thousands)



Source: OIS, 2018; Pew, 2016; CMS, 2016.

Pre-decisional

Estimates of the Undocumented Population in the United States for the Top Five States: 2014



Source: OIS, 2018; Pew, 2016; CMS, 2016.

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Census 2020

Limitations to the Residual Method for Estimating the Undocumented Population

- Assumptions about statistically adjusting for the undercount of the foreign born – limited data on this so different organizations make different assumptions (e.g., OIS uses 2.5 to 10% undercount; Pew uses different percent undercounts by year).
- Mortality estimates – some organizations use outdated mortality rates
- Assumptions about the emigration of the foreign born – limited data on this so different organizations make different assumptions
- Accuracy of year of entry reporting – evidence of heaping on the 0 and 5 year

Pre decisional

Alternative Residual Method Based on Individual Level Administrative Records

Census has or is obtaining individual level administrative records:

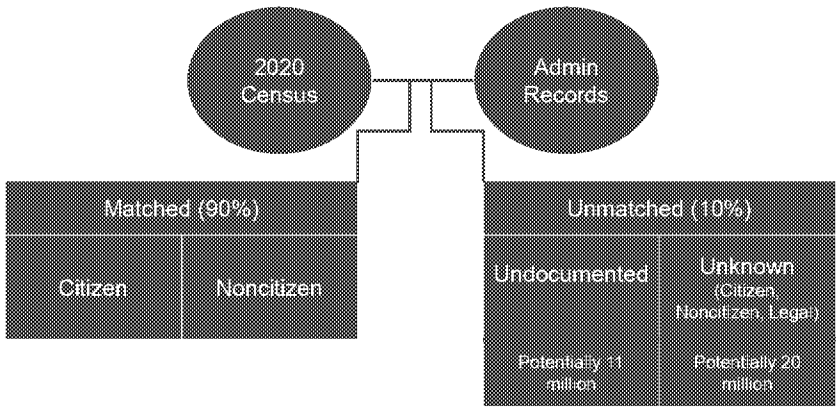
- SSA – Numident file
- IRS – tax filer data
- DHS on LPRs, asylees/refugees, visa holders and naturalizations (New)
- Department of State on passports (New)

Census records with personally identifiable information (PII) (e.g., name, date of birth)

We can match records based on PIKs for about 90% of individuals, the unmatched includes proxy reporting, citizens, noncitizens, and residual.

Pre-decisional

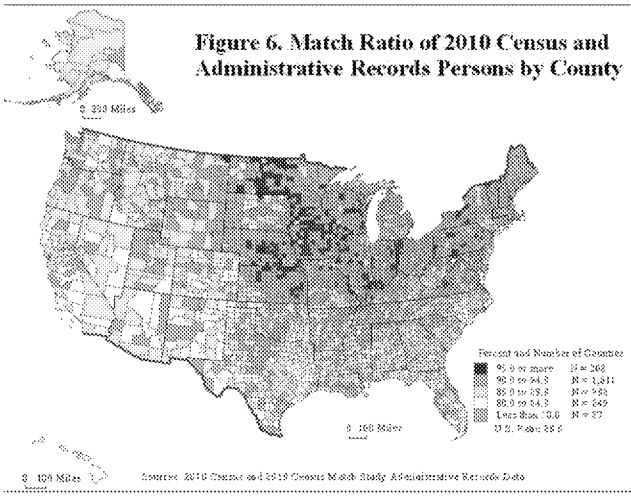
Alternative Residual Method Based on Individual-Level Administrative Records



Pre-decisional

2010 Census Match Study

Figure 6. Match Ratio of 2010 Census and Administrative Records Persons by County



Source: 2010 Census and 2010 Census Match Study Administrative Records Data

Pre-decisional

We would need to model the unmatched

We would need to develop a model to determine who might be a citizen, a noncitizen, or undocumented immigrant.

- **The model provides a probability that the person is a citizen, noncitizen, or undocumented immigrant**

The model is yet to be developed.

Additional Considerations

Timing

- Census Unedited File (CUF)
  - Basis for state totals
  - Available December 2020
- Census Edited File (CEF)
  - Basis of characteristics (age , race, sex,…)
  - Available on a state by state basis in January-March 2021

Disclosure Avoidance

- Only state totals are invariant (actual counts)
- Differential Privacy for 2020 Estimates will be applied to all characteristics (including Citizenship Voting Age Population)

Pre-decisional

Procedures for Identifying and Tabulating Unauthorized Immigrants as Defined in the Presidential Memorandum

Briefing
August 24, 2020

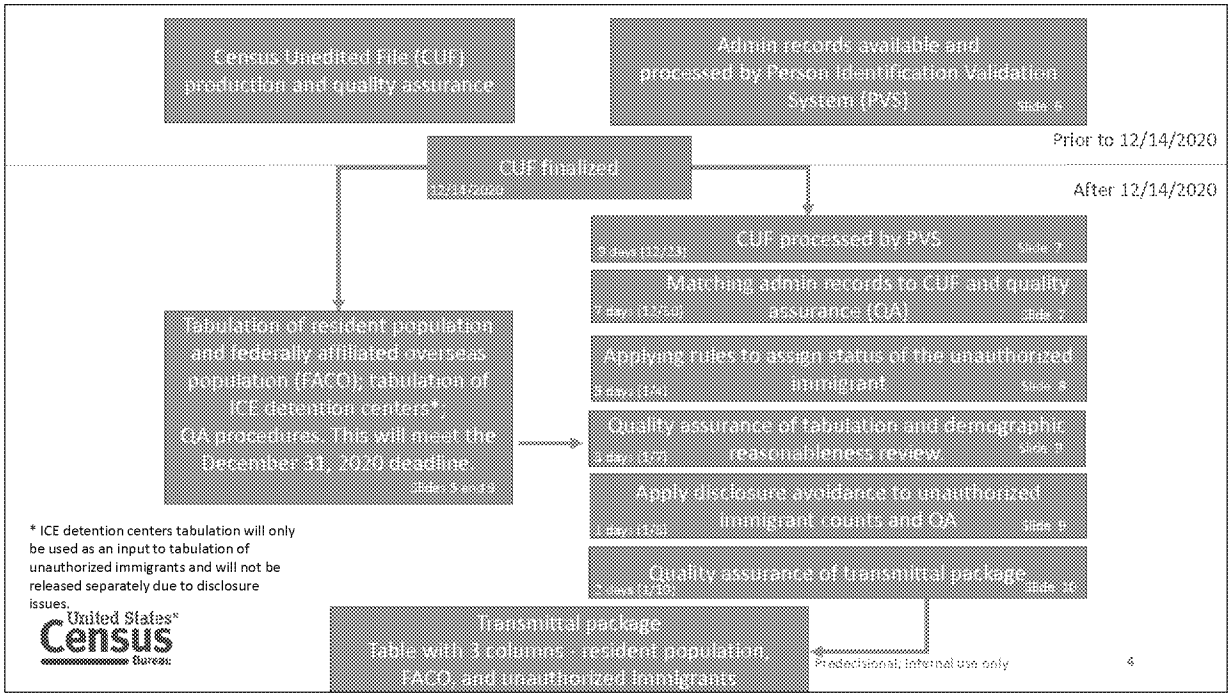
United States Census Bureau

Overview

- Presidential Memorandum teams and data stewardship
- Flowchart of steps needed to complete Presidential Memorandum work and timing
- ICE detention centers tabulation
- Admin records available
- Processing the CUF through the Person Identification Validation System (PVS) and matching to admin records
- Rules for assigning status
- Quality assurance for the counts and applying disclosure avoidance.
- Quality assurance of the transmittal package
- Communication strategy decisions

Presidential Memorandum Teams and Data Stewardship

- Presidential Memorandum (PM) Implementation
  - PM Team
    - Team Leads – Chief Scientist and Chief Demographer
    - Includes experts on admin records, demographers, economists, and statisticians
    - Builds on the experience of the CVAP team for determining methodology and using data sets from the Executive Order 13880
  - PM Executive Guidance Group (EGG)
    - Chair – Director
    - Members – Cogley, Jarmin, Abowd, Creech, Fontenot, Jones, Lamas, Smith, and Velkoff
    - EGG provides the charge to the PM team and gives guidance
- Data Stewardship Executive Policy Committee (DSEP)
  - Membership
    - Chair – Deputy Director/Chief Operating Officer
    - Members – Associate Directors for Decennial, Demographic, Economic, Field, and Research and Methodology; CIO; Chief of Staff; Assistant Directors for Communication and R&M; Chief of PCO; Chief Privacy Officer; two at-large members (Bishop and Lamas)
  - Mission
    - Ensures the Census Bureau maintains its commitment, by fulfilling the legal, ethical, and reporting obligations levied by Title 13 of the U.S. Code, the Privacy Act, and other applicable statutes, including those of governmental and other suppliers of data to the Census Bureau


Census Unedited File (CUF) production and quality assurance
Admin records available and processed by Person Identification Validation System (PVS)
Prior to 12/14/2020
CUF finalized
After 12/14/2020
CUF processed by PVS
Matching admin records to CUF and quality assurance (QA)
Applying rules to assign status of the unauthorized immigrant
Quality assurance of tabulation and demographic reasonableness review
Apply disclosure avoidance to unauthorized immigrant counts and QA
Quality assurance of transmittal package
Tabulation of resident population and federally affiliated overseas population (FACO); tabulation of ICE detention centers*
QA procedures. This will meet the December 31, 2020 deadline.
* ICE detention centers tabulation will only be used as an input to tabulation of unauthorized immigrants and will not be released separately due to disclosure issues.
United States Census Bureau
Transmittal package
Table with 3 columns - resident population, FACO, and unauthorized immigrants
Predecisional, internal use only
4

Tabulating ICE Detention Centers

- Inmates in ICE detention centers were counted as part of the Group Quarters enumeration process.
- When we have the final CUF, we will tabulate these data to create a count of inmates in ICE detention centers for each state.
- This tabulation can be completed by the December 31, 2020 deadline but the data will only be used as part of the final unauthorized immigrant count. They will not be released separately.

Administrative Record Sources

- The administrative record sources include
  - SSA Numident
  - State Department U.S. passports and Worldwide Refugee Admissions Processing System (WRAPS) refugee data
  - USCIS naturalization certificates, lawful permanent residents, refugees, asylees, Deferred Action for Childhood Arrivals (DACA), Special Immigrant Juveniles (SIJ), and lawful permanent resident pending applicants and denials
  - CBP Arrival and Departure Information Systems (ADIS)
  - ICE Student Exchange Visitor Information System (SEVIS) student and exchange visa holders and Enforcement and Removal Operation (ERO) data
  - Department of Interior Incident Management Analysis Reporting System (IMARS) and Law Enforcement Management Information System (LEMIS) data
  - Personal tax identifiers in the range reserved for Individual Taxpayer Identification Numbers (ITINs), which is public information
- These records will be put through the PVS process to assign Protected Identification Keys (PIK) prior to December and will be ready for matching when the CUF is available.
- We are awaiting delivery of 2 files.
- All MOUs need to be modified to allow tabulation of unauthorized immigrants.

Processing the CUF through the PVS and Matching to Admin Records

- First we process the CUF through the PVS
  - Each of the 50 states plus DC will be run through the PVS programs. The process includes over 20 passes for each state in order to assign PIKs.
  - A team will check the quality of the identifiers and review for any errors due to the PVS process.
  - The final step includes generating the of protected identification keys (PIK) files for each state.
- Next we link the CUF to the admin records
  - We have over two dozen unique administrative record files and each file will be separately compared to the CUF looking for a matching PIK.
  - Pertinent information on authorization status will be maintained on a consolidated file.
  - Once each administrative record file has been processed against the CUF, the data will need to be reconciled for any inconsistencies between administrative record files regarding status.
  - Once those issues are identified and resolved, a final file will be ready for processing.

Assignment Rules

We will apply a series of rules to individuals who have a match between the CUF and admin records to assign an authorized/unauthorized status as of April 1, 2020.

It is possible for admin records to have multiple statuses for an individual (e.g., people who enter in an unauthorized status can be given legal status such as refugee; a student on a visa could overstay their visa and become unauthorized).

If definitive admin records show that someone is a citizen, we assign this person citizenship status. This is the reason that we must use all admin records in the process.

People will be classified as an unauthorized immigrant if they are enumerated in the census and match to an admin record that has a clear indication that they are here illegally as of April 1, 2020.

For each state and DC, we will only tabulate unauthorized immigrants who link directly to a census record. Records that do not match are out of scope.

Quality Assurance on Assignment Rules and Demographic Reasonableness Review

- Assignment rules will be independently double-programmed (concurrently) and compared to ensure data quality standards.
- Staff will need to investigate any obvious errors and resolve these issues. Since solving these puzzles is not always straightforward, we estimate this step will take three days.
- Staff will do a demographic reasonableness review of the counts. Typical process: (1) Compare current-year estimates to prior-year estimates (2) Compare to other, similar estimates (benchmarks).
  - No recent Census Bureau estimates of unauthorized immigrants in decennial censuses.
  - Compare to estimates of unauthorized immigrants from Pew Research Center (Pew 2018), Center for Migration Statistics (Warren 2018), and Office of Immigration Statistics (OIS 2018). Specifically, compare levels and rough rank-ordering of states.
- Census will apply disclosure avoidance to the unauthorized immigrant numbers and then produce a final table of unauthorized immigrants as defined as in the Presidential Memorandum.

Quality Assurance of the Transmittal Package

After disclosure avoidance is applied, we will do quality assurance of the transmittal package.

This package will include a table of the resident population, the federally affiliated overseas population, and the unauthorized population for each state.

The Census Bureau will provide this table to the Secretary of Commerce.

Communication Strategy Decisions

- The Census Bureau typically is transparent about methodologies used for data products. We need to decide how to publically communicate the methodologies used to create these tabulations and when to do this communication.
- We recommend that we do a federal register notice on the methodology because transparency requires that the American public understand how we derived the counts of unauthorized immigrants and have the opportunity to comment on that methodology.
- Data dissemination strategy – to be determined at a later date.

Review of 2020 Operational Plan Schedule

August 14, 2020 (Date/Data to be Updated Upon Clearance)

Albert E. Fontenot, Jr.,
Associate Director for Decennial Census Programs

Timothy P. Olson
Associate Director for Field Operations

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United States Census 2020

Operational Timelines: Original and Pandemic-Adjusted

Activity / Operation	Original Dates	Replan Dates
Update Leave (Stateside)	March 15 – April 17	Phased re-opening occurred between May 4 and June 12
Service Based Enumeration	March 30 – April 1	September 22 – 24
Targeted Non-Sheltered Outdoor Locations	March 31 – April 1	September 23 – 24
Group Quarters Enumeration	April 2 – June 5	April 2 – September 3
Enumeration of Transitory Locations	April 9 – May 4	September 3 – 28
Nonresponse Followup*	May 13 – July 31	August 9 – September 30
Delivery of Apportionment Data**	By Statutory Deadline: December 31, 2020	By Statutory Deadline: December 31, 2020
Delivery Redistricting Data**	By Statutory Deadline: March 30, 2021	Plan in Development

*For a period of time, NRFU was 8/11/20-10/31/20.
**For a period of time, delivery of apportionment data by 4/30/21 and redistricting data by 7/31/21, were considered.

Self-Response Rate Summary

As of 11:59pm August 13, 2020

Total Self-Response Rate: 63.6%

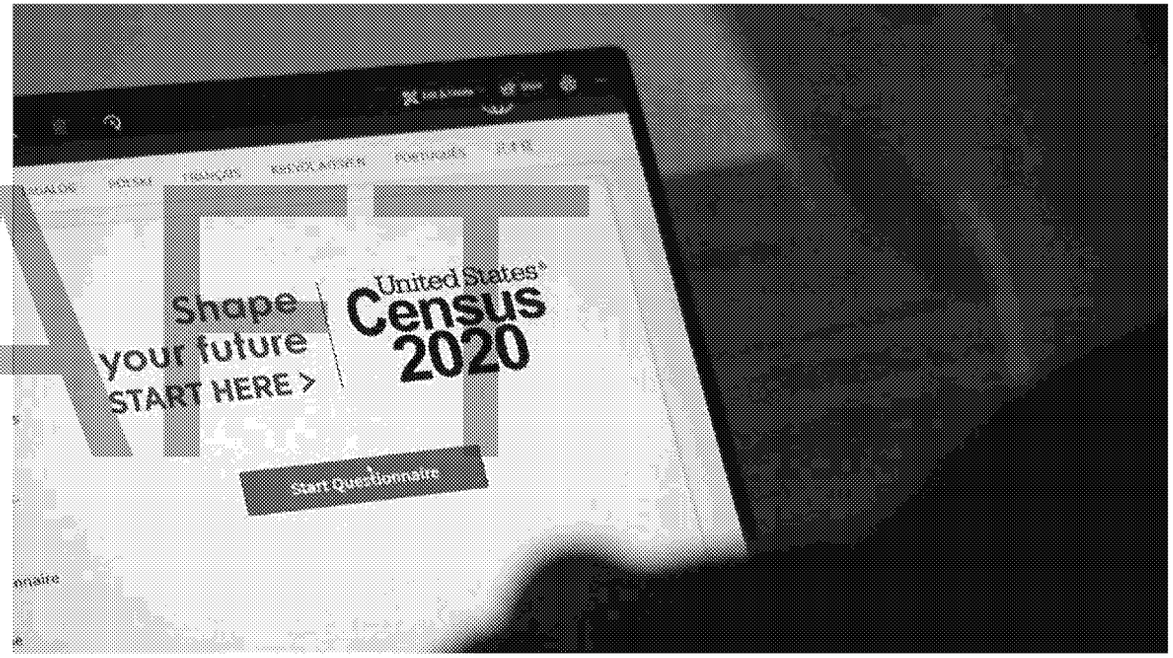
Total Responding Housing Units: 94.0M

Responses by mode:

75.2M (79.9%) – Internet

17.4M (18.6%) – Paper

1.4M (1.5%) – Phone



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Update Leave – Status Update

Operation:

The Update Leave (UL) operation is designed to occur in areas where the majority of housing units either do not have mail delivered to the physical location of the housing unit, or the mail delivery information for the housing unit cannot be verified. A Census Bureau employee physically delivers a 2020 Census invitation to these housing units and updates the census address list. Nonresponding households will be visited by an enumerator during nonresponse followup.

Workload:

- Update Leave Original Workload (does not change): 6,805,523 housing units
- Workload Completed as of March 18 (date field operations were suspended): 736,320 housing units
  - Percentage Completed at suspension: 10.8%
- **The Update Leave workload was completed on August 10, 2020**

Response Rates:

- Total Responses (as of August 13): 2,347,481 (34.5%)
  - Internet: 1,223,025 (52.1%)
  - Paper: 1,078,240 (45.9%)
  - Phone: 46,216 (2.0%)

Group Quarters Enumeration – Status Update

Operation:
Group Quarters Enumeration is the U.S. Census Bureau's special process for counting people who live or stay in group quarters during the 2020 Census. Because group quarters are owned or managed by a third party, the Census Bureau assists group quarters administrators in responding to the census on behalf of residents to ensure a complete and accurate census count.

Group Quarters Enumeration Progress*

Initial Workload	GQs Added	Current Workload	Completed & Closed Cases	Current Workload	Percent Completed & Closed
195,656	15,605	211,261	170,169	41,092	80.6%

*As of August 13, 2020

2020 Census Service-Based Enumeration (SBE) Overview

Background

The SBE operation is conducted at service-based locations and targeted non-sheltered outdoor locations (TNSOLs) to enumerate people experiencing homelessness. These service locations include: emergency and transitional shelters (with sleeping facilities) for people experiencing homelessness, soup kitchens, and regularly scheduled mobile food vans.

Prior to operational adjustments made in lieu of COVID-19, SBE was scheduled to be conducted March 30 – April 1.

Consulted With Major Stakeholders

- In late May/early June we consulted with 67 national and local organizations to assist the Census Bureau in determining the best date to conduct SBE/TNSOL.
- Determining an optimal date to conduct SBE took into consideration the need to conduct a thorough and accurate enumeration, while also understanding the needs of our external partners, which are crucial during SBE.

Operational Decision

- Based on the feedback from our stakeholders, input from Census experts, and consultation with operational team leads, we have selected September 22 – 24 as the dates to conduct SBE and TNSOL.

Current Status

- Updating TNSOLs locations and making appointments with service providers in early September.
- Finalizing training plans for approximately 45,000 SBE field staff.

Nonresponse Followup Field Operations

Early Start of Nonresponse Followup Operations

6 Cycle 1a Area Census Offices (ACOs) began operations on July 16

6 Cycle 1b ACOs began operations on July 23

35 Cycle 2 ACOs were scheduled to begin operations on July 30; however, we started operations earlier in some ACOs where staff was available:

- 17 ACOs – Started July 26 – 29
- 18 ACOs – Started July 30

39 Cycle 3 ACOs were scheduled to begin operations by August 3:

- 15 ACOs – Started July 31
- 16 ACOs – Started August 1
- 8 ACOs – Started August 3

All remaining ACOs were scheduled to begin August 11, but all began operations by August 9:

- 107 ACOs – Started August 3 – 7
- 55 ACOs (all remaining) – August 9

As of August 9 Nonresponse Followup Operations have started in all 248 ACOs

Safety during Field Activities

On August 7, in a joint statement from the Census Bureau and Centers for Disease Control (CDC) on Conducting 2020 Census Non-Response Follow-Up Interviews, the CDC stated that participation in 2020 Census interviews should present a low risk of transmission of COVID-19.

Census takers are trained to rigorously and universally follow these CDC recommendations to mitigate risk of transmission:

- Wearing of face masks.
- Maintaining social distance of 6 ft. or more.
- Practicing hand hygiene.
- Not entering homes, and conducting interviews outside as much as possible or practical.

Providing an Apportionment Count

Objective: The Census Bureau was tasked to develop a plan to provide an apportionment count by the statutory deadline of December 31, 2020.

- **Achieving** an acceptable level of accuracy and completeness, with a goal of resolving at least 99% of Housing Units in every state, comparable with previous censuses.

- **Maintaining** original contact strategy for occupied housing units. Field activities, including number of attempts to contact respondents, will not be changed.

- **Maximizing** staff and production hours for field data collection operations to conclude field data collection by September 30, 2020.

- **Streamlining** backend processing to deliver apportionment counts by the statutory deadline of December 31, 2020.

Nonresponse Followup Field Operations – Current Status

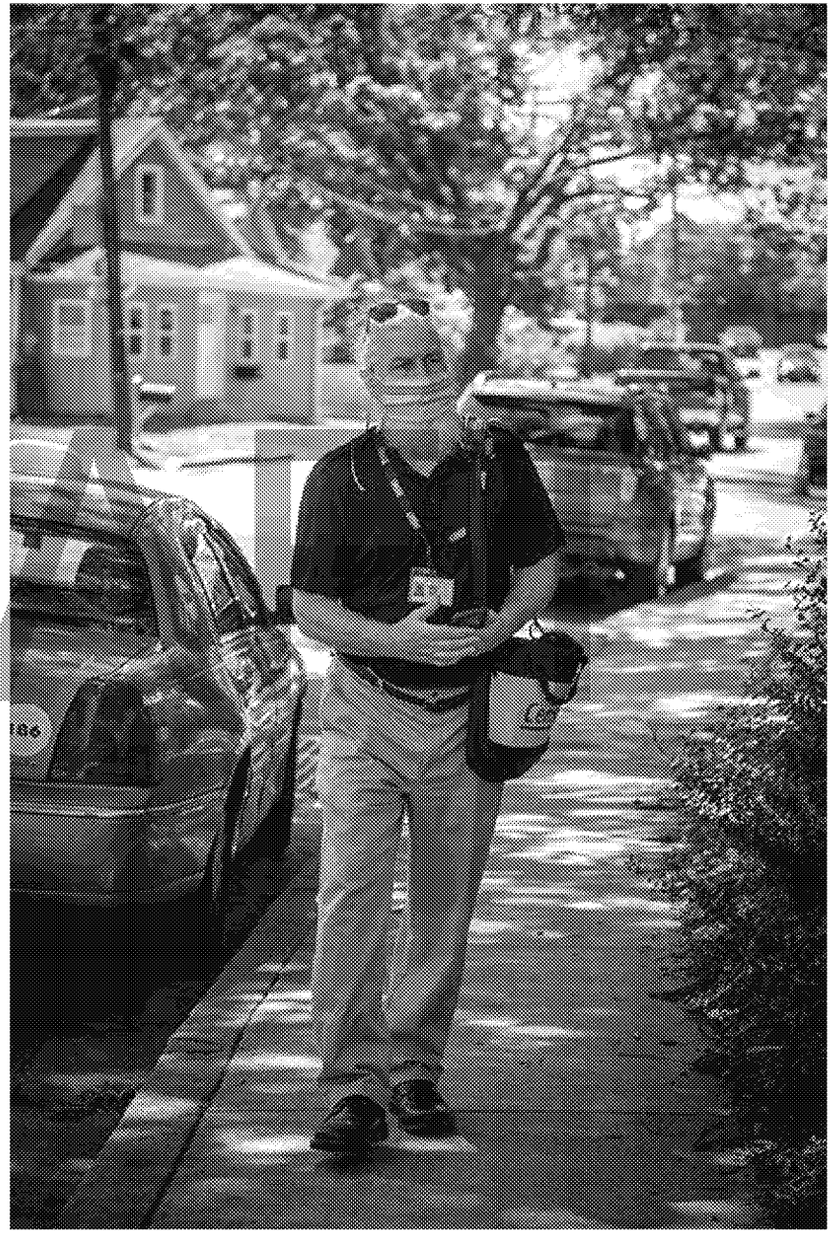
Cycle 1A (6 ACOs) began operations on July 16:
- 55.3% Percent Complete
- 52.7% Percent Goal

Cycle 1B (6 ACOs) began operations on July 23:
- 43.5% Percent Complete
- 41.8% Percent Goal

Cycle 2 (35 ACOs) began operations July 26-30:
- 33.9% Percent Complete
- 28.7% Percent Goal

Cycle 3 (39 ACOs) began operations July 31 - August 3:
- 13.6% Percent Complete
- 4.7% Percent Goal

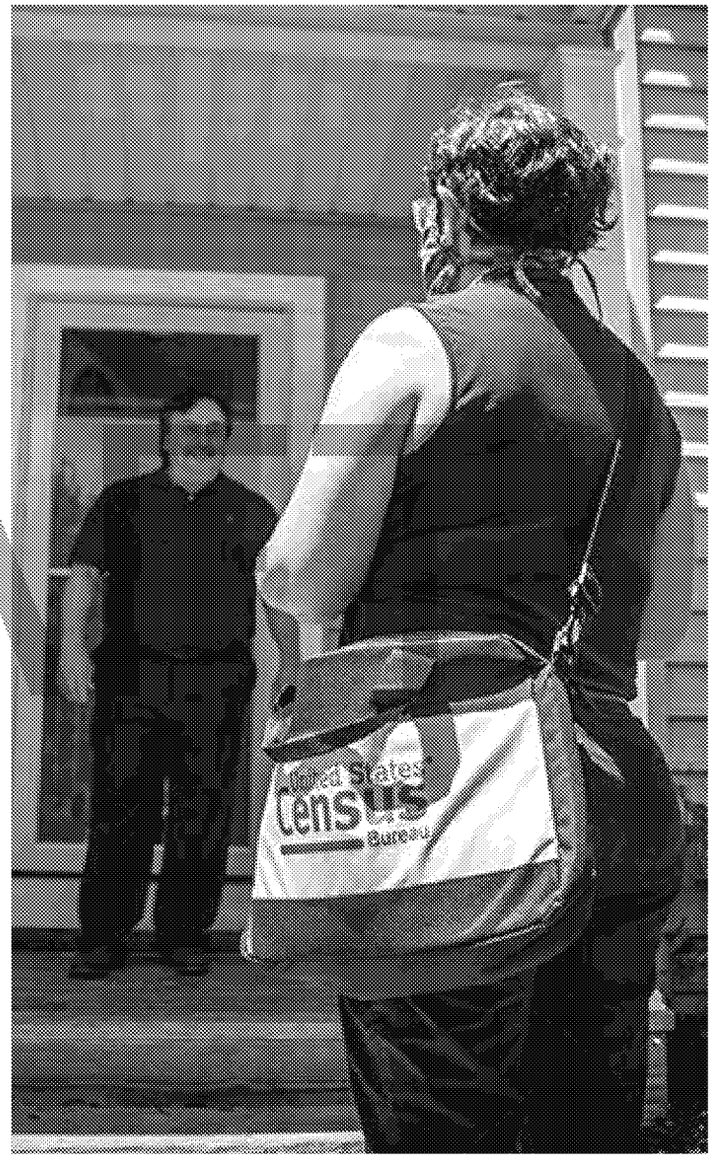
National Metrics (ALL 248 ACOs)
Began operations by August 9:
National Workload: 60,766,676 HUs
Completed Workload: 11,016,892 HUs
- 18.1% Percent Complete
- 10.4% Percent Goal



Maintaining Original Contact Strategy

We are maintaining the original contact strategy for occupied housing units. Field activities, including number of attempts to contact respondents, will not be changed.

- In most cases, census workers will make up to six attempts at each housing unit address to count possible residents.



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United States Census 2020

Increasing Work Hours from Current Enumerators

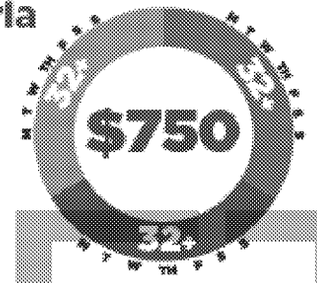
Nonresponse Followup Employee Award Pay

Earn up to an extra
$800
on top of your regular pay.

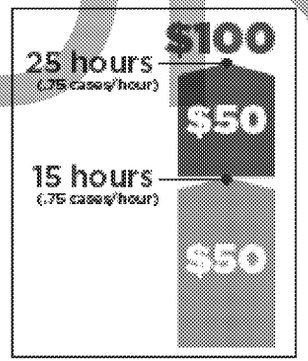
From August 9th through August 29th, Census Field Supervisors and Enumerators who maximize hours worked will have the opportunity to earn **award pay** in addition to their regular pay.

Census Field Supervisor Award Criteria

- Census Field Supervisors who exceed **32** hours or more per week, **between Aug 9–Aug 29**, will earn a **$750** award.



Census Enumerator Award Criteria



x3=$300
+$500=$800

- Enumerators who work between **15** hours and **24** hours per week, and complete **.75** cases/hour, will earn a **$50** award.
- Enumerators who work **25** hours or more per week, and complete **.75** cases/hour, will earn a **$100** award.
- Enumerators who work **25** hours or more per week and complete **.75** cases/hour, **between Aug 9–Aug 29**, will earn a **$500** award.

Keeping Staff Levels Up

Actions	Benefit
Inviting More People to Training	Over selection rates will address higher-than-expected no-show rates of 35%, bringing us closer to our target initial staffing levels.
Continual Replacement Training	Expect to conduct replacement training for at least 135K enumerators due to attrition. Projecting over 11,000 additional training sessions.

Adapting to Dynamic On The Ground Conditions

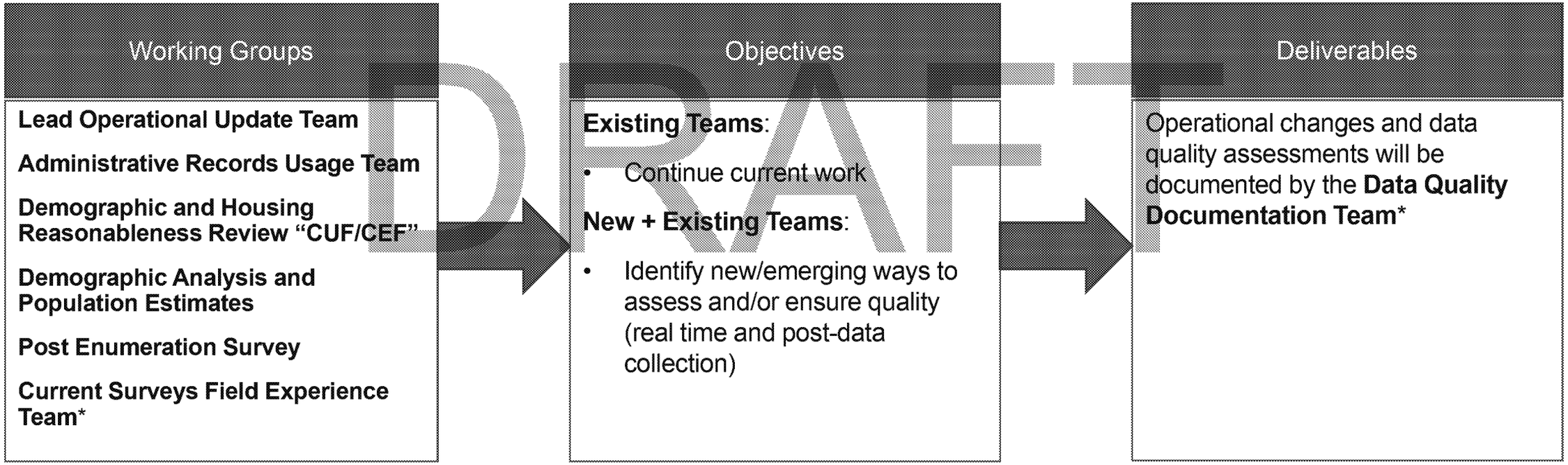
Actions	Benefit
Implement outbound phone calling to supplement in-person contact attempts.	Provides an additional method to enumerate hard to reach communities.
Expand the use of NRFU Travel Teams: • Moving teams that have successfully completed their areas to areas requiring additional attention.	Using experienced staff minimizes the need to train new staff – particularly in areas where new staff are not available. Efficiently accelerates closeout process.
Extending Mobile Questionnaire Assistance (MQA) • Deploying trained staff to assist with self-response in low response areas • Will extend through September 30	MQA representatives are in open, public places in the lowest-responding areas of the nation to encourage people to respond to the 2020 Census. Provides a convenient way for the public to get information about the 2020 Census and self-respond in areas with low response.
Targeted Communications	Continue to promote self-response and cooperation with enumerators by focusing on specific, targeted areas.

Ensuring Quality of Data Collected during Field Operations

- **Employing** expanded technical capacity to conduct analytical Re-Interview selection as the basis for the Re-Interview process.
- **Utilizing** new techniques for the 2020 Census to monitoring quality:
  - **Using** statistical techniques with professional statisticians and analysts to proactively identify, monitor, evaluate, and resolve quality issues.
  - **Analyzing** data and metrics to identify and investigate outliers and other unusual activity.
- **Increasing** efficiency of our strategy for verifying vacant or non-existing Housing Units.

Ensuring High Quality Data from the 2020 Census

Special teams with expertise from within the entire Census Bureau in the fields of census operations, statistical methodology, acquisition and utilization of administrative records, and in the social, economic, and housing subject areas to supplement the existing expert teams and provide extra focus on data quality.



*New team, not previously part of 2020 Census operations

Post Enumeration Data Processing

Professional career staffers at the Census Bureau are evaluating the processes and procedures and incorporating technological developments, such as the improvements in the quality of the Master Address File, to determine how to effectively and accurately deliver apportionment counts by the statutory deadline of December 31, 2020.

This staff will be closely monitoring the collection and processing of the data and assessing any potential impacts on accuracy, data quality, and coverage.

Further updates on our post enumeration data processing will be provided.

Implementation of the Presidential Memo

The Census Bureau has been tasked with developing a legally and methodologically valid process that meets tests of operational feasibility, to accomplish the goals and directives of the Presidential Memorandum to the extent practicable and consistent with applicable law. To achieve this, the Census Bureau will:

- Build upon the decades of continuous experience we have working with administrative records.

- **We will continue full steam ahead with our mission of counting every person, counting them once, and counting them in the right place.**

Thank You

Albert E. Fontenot, Jr.
Associate Director for Decennial Census Programs

Timothy P. Olson
Associate Director for Field Operations

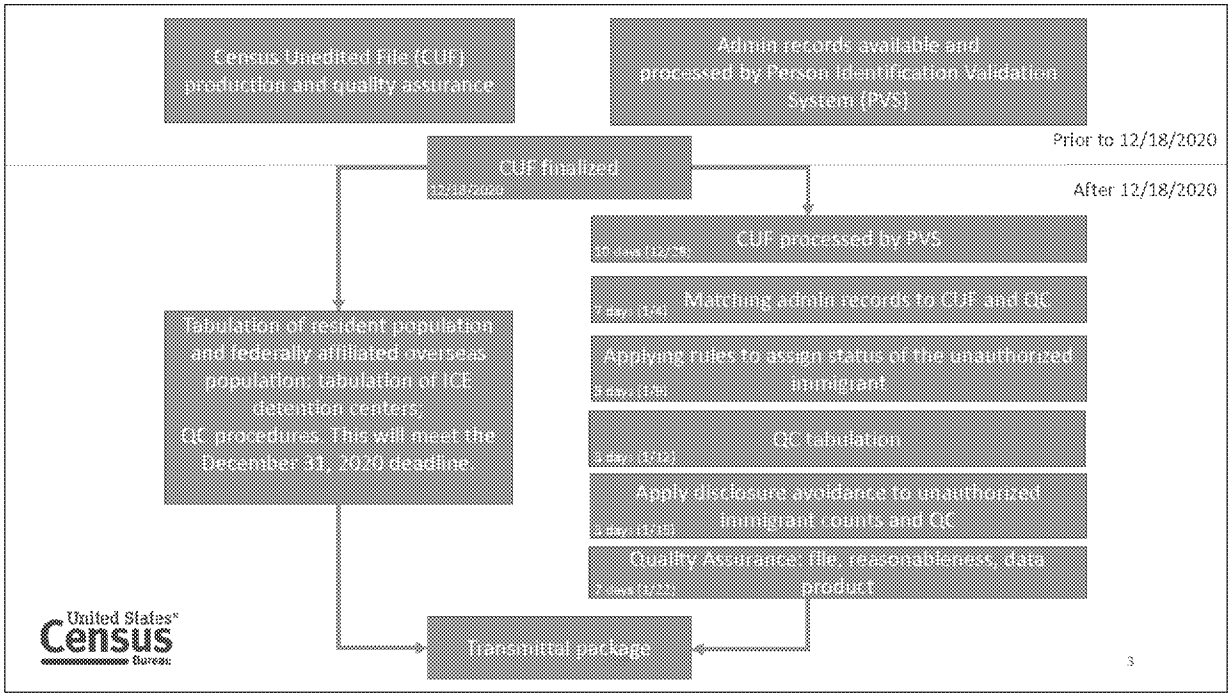
Procedures for Identifying and Tabulating Unauthorized Immigrants as Defined in the Presidential Memorandum

Briefing
August 17, 2020

United States Census Bureau

Overview

- Flowchart of steps needed to complete Presidential Memorandum work and timing
- ICE detention centers tabulation
- Admin records available
- Processing the CUF through the PVS and matching to admin records
- Rules for assigning status
- Quality assurance of the unauthorized immigrant counts
- Communication strategy decision


Census Unedited File (CUF) production and quality assurance
Admin records available and processed by Person Identification Validation System (PVS)
Prior to 12/18/2020
CUF finalized
12/18/2020
After 12/18/2020
CUF processed by PVS
12/19/2020
Matching admin records to CUF and QC
4 days (12/23)
Applying rules to assign status of the unauthorized immigrant
4 days (12/28)
QC tabulation
4 days (1/1)
Apply disclosure avoidance to unauthorized immigrant counts and QC
4 days (1/5)
Quality Assurance: file, reasonableness, data product
4 days (1/9)
Tabulation of resident population and federally affiliated overseas population; tabulation of ICE detention centers; QC procedures. This will meet the December 31, 2020 deadline
Transmittal package
United States Census Bureau
3

Tabulating ICE Detention Centers

- Inmates in ICE detention centers were counted as part of the Group Quarters enumeration process.
- When we have the final CUF, we will tabulate these data to create a count of inmates in ICE detention centers for each state.
- This tabulation can be done by the December 31, 2020 deadline.
- We need to make a decision about whether all inmates are unauthorized. In order to distinguish who is unauthorized, record linkage to the CUF is required pushing this past December 31.

Administrative Record Sources

The administrative record sources include

- SSA Numident
- State Department U.S. passports and Worldwide Refugee Admissions Processing System (WRAPS) refugee data
- USCIS naturalization certificates, lawful permanent residents, refugees, asylees, Deferred Action for Childhood Arrivals (DACA), Special Immigrant Juveniles (SIJ), and lawful permanent resident pending applicants and denials
- CBP Arrival and Departure Information Systems (ADIS)
- ICE Student Exchange Visitor Information System (SEVIS) student and exchange visa holders and Enforcement and Removal Operation (ERO) data
- Department of Interior Incident Management Analysis Reporting System (IMARS) and Law Enforcement Management Information System (LEMIS) data
- Personal tax identifiers in the range reserved for Individual Taxpayer Identification Numbers (ITINs), which is public information

These records will be put through the PVS process to assign Protected Identification Keys (PIK) prior to December and will be ready for matching when the CUF is available.

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Processing the CUF through the PVS and Matching to Admin Records

- First we process the CUF through the PVS
  - Each of the 50 states plus DC will be run through the PVS programs. The process includes over 20 passes for each state in order to assign PIKs.
  - A team will check the quality of the identifiers and review for any errors due to the PVS process.
  - The final step includes generating the crosswalk of protected identification keys (PIK) for each state.
- Next we link the CUF to the admin records
  - We have over two dozen unique administrative record files and each file will be separately compared to the CUF looking for a matching PIK.
  - Pertinent information on authorization status will be maintained on a consolidated file.
  - Once each administrative record file has been processed against the CUF, the data will need to be reconciled for any inconsistencies between administrative record files regarding status.
  - Once those issues are identified and resolved, a final file will be ready for processing.

Assignment Rules

We will apply a series of rules to individuals who have a match between the CUF and admin records to assign an authorized/unauthorized status as of April 1, 2020.

It is possible for admin records to have multiple statuses for an individual (e.g., people who enter in an unauthorized status can be given legal status such as refugee; a student on a visa could overstay their visa and become unauthorized).

If definitive admin records show that someone is a citizen, we assign this person citizenship status. This is the reason that we must use all admin records in the process.

People will be classified as an unauthorized immigrant if they are enumerated in the census and match to an admin record that has a clear indication that they are here illegally as of April 1, 2020.

For each state and DC, we will only tabulate unauthorized immigrants who link directly to a census record. Records that do not match are out of scope.

Quality Assurance on Assignment Rules and Disclosure Avoidance

- Assignment rules will be independently double-programmed (concurrently) and compared to ensure data quality standards.
- Staff will need to investigate any obvious errors and resolve these issues. Since solving these puzzles is not always straightforward, we estimate this step will take three days.
- We will apply disclosure avoidance and then produce the final table of unauthorized immigrants.

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Quality Assurance of the Unauthorized Immigrant Counts

After disclosure avoidance is applied, we will do quality assurance of the tabulated unauthorized immigrant counts:

1. Verify file (e.g., does every state have an count?)
2. Data reasonableness review. Typical process: (1) Compare current-year estimates to prior-year estimates (2) Compare to other, similar estimates (benchmarks).
   - No recent Census Bureau estimates of unauthorized immigrants in decennial censuses.
   - Compare to estimates of unauthorized immigrants from Pew Research Center (Pew 2018), Center for Migration Statistics (Warren 2018), and Office of Immigration Statistics (OIS 2018). Specifically, compare levels and rough rank-ordering of states.
3. Produce a table of the unauthorized immigrants for each state and DC and provide to the Secretary.

United States Census Bureau

Draft

Communication Strategy Decision

- The Census Bureau typically is transparent about methodologies used for data products. We need to decide how to publically communicate the methodologies used to create these tabulations and when to do this communication.
- We recommend that we do a federal register notice on the methodology because transparency requires that the American public understand how we derived the counts of unauthorized immigrants and have the opportunity to comment on that methodology.

Backup slides

Apportionment Calculations

After the CUF is reviewed, apportionment calculations are completed. To do this, the Demographic Directorate:

- Receives and verifies input data files from other divisions
- Sums people in each state
- U.S. Resident Population + Federally Affiliated Overseas Population = Apportionment Population
- Programmers calculate apportionment using Method of Equal Proportions

Apportionment Quality Assurance

For Apportionment, the following quality assurance steps are taken:

- 7 programmers from 3 different divisions, using independently-written code across a variety of software and computing platforms
- Multiple tests prior to production to ensure programmers' code functions correctly
- During production calculations, multiple iterative output files from each programmer are electronically verified to confirm they match
- Final tables electronically and clerically verified

2010 Apportionment Transmittal Package

For the 2010 Census, the following were included in the apportionment transmittal package.

- Memorandum from Census Bureau Director to Secretary of Commerce, with three tables attached:
  - Table 1: Apportionment Population and Number of Representatives by State
  - Table 2: Resident Population by State
  - Table 3: Federally Affiliated Overseas Population by State
- Letter from Secretary of Commerce to President, with one unnumbered table attached:
  - Apportionment Population and Number of Representatives by State (same content as Table 1 that was sent to Secretary of Commerce)

2010 Apportionment Transmittal Memorandum to Secretary of Commerce

United States Census Bureau

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR
DEC 21 2010

MEMORANDUM FOR The Secretary

Through: Rebecca M. Blank
Under Secretary for Economic Affairs

From: Robert M. Groves
Director

Subject: Census 2010 Apportionment Population Counts

Attached is a table showing the apportionment population for each of the 50 States on April 1, 2010, as ascertained by the Twenty-Third Decennial Census of the United States. According to the provisions of Title 13, United States Code, Section 141(b), you are to report these data to the President of the United States on or before December 31, 2010.

Table 1 of the attached package shows the apportionment population for each State, as well as the number of Representatives to which each State is entitled, based on the apportionment population, and the change, if any, since the 2000 Census in the number of Representatives for each State. The U.S. Census Bureau prepared these calculations using the existing size of the U.S. House of Representatives (435 members) and the Method of Equal Proportions, as provided for in Title 2, United States Code, Sections 2a and 2b. The resident population and the overseas population for the 50 States are the two components of the apportionment population. The population of the District of Columbia is not included in the apportionment population.

Also, I am transmitting for your information two additional tables. Table 2 shows the Census 2010 resident population for the 50 States, the District of Columbia, and Puerto Rico. Table 3 shows the overseas population for the 50 States and the District of Columbia. The overseas population is defined as U.S. military and federal civilian employees overseas (and their dependents living with them) allocated to their home state as reported from administrative records by the employing federal agencies.

Attachments

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2010 Apportionment Transmittal Table 1: Apportionment Population and Number of Representatives by State

United States Census Bureau

U.S. Department of Commerce
U.S. Census Bureau

Table 1. APPORTIONMENT POPULATION AND NUMBER OF REPRESENTATIVES, BY STATE: 2010 CENSUS

STATE	APPORTIONMENT POPULATION (APRIL 1, 2010)	NUMBER OF APPORTIONED REPRESENTATIVES BASED ON 2010 CENSUS	CHANGE FROM CENSUS 2000 APPORTIONMENT
Alabama	4,802,982	7	0
Alaska	721,523	1	0
Arizona	6,412,700	9	+1
Arkansas	2,926,229	4	0
California	37,341,989	53	0
Colorado	5,044,930	7	0
Connecticut	3,581,628	5	0
Delaware	899,877	1	0
Florida	18,900,773	27	+2
Georgia	9,727,566	14	+1
Hawaii	1,366,862	2	0
Idaho	1,573,499	2	0
Illinois	12,864,380	18	-1
Indiana	6,501,582	9	0
Iowa	3,053,787	4	-1
Kansas	2,853,118	4	0
Kentucky	4,350,606	6	0
Louisiana	4,553,962	6	-1
Maine	1,333,074	2	0
Maryland	5,789,929	8	0
Massachusetts	6,556,644	9	-1
Michigan	9,911,626	14	-1
Minnesota	5,314,879	8	0
Mississippi	2,979,240	4	0
Missouri	6,011,478	8	-1
Montana	994,416	1	0
Nebraska	1,831,825	3	0
Nevada	2,709,432	4	+1
New Hampshire	1,321,445	2	0
New Jersey	8,801,501	12	-1
New Mexico	2,068,972	3	0
New York	19,421,055	27	-2
North Carolina	9,565,781	13	0
North Dakota	675,905	1	0
Ohio	11,536,496	16	-2
Oklahoma	3,764,882	5	0
Oregon	3,842,006	5	0
Pennsylvania	12,774,905	18	-1
Rhode Island	1,056,247	2	0
South Carolina	4,645,975	7	+1
South Dakota	819,751	1	0
Tennessee	6,375,431	9	0
Texas	25,268,418	36	+4
Utah	2,770,765	4	+1
Vermont	630,337	1	0
Virginia	8,037,736	11	0
Washington	6,753,369	10	+1
West Virginia	1,858,815	3	0
Wisconsin	5,656,230	8	0
Wyoming	568,299	1	0
TOTAL APPORTIONMENT POPULATION[1]	308,183,483	435	

[1] Includes the resident population for the 50 states, as ascertained by the Twenty-Third Decennial Census under Title 13, United States Code, and counts of overseas U.S. military and federal civilian employees (and their dependents living with them) allocable to their home state, as reported by the employing federal agencies. The apportionment population excludes the population of the District of Columbia.