

Identifying HUD-Assisted Housing Units within the ACS: An Overview of the Process and Uses

Emily Molfino, Census Bureau

Shawn Bucholtz, Housing and Urban Development

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Background

- 4.6 million households receive HUD rental assistance.
- Limited information about HUD-assisted households.
- HUD has unit-level addresses for *most* of the HUD-assisted households.
- HUD has SSNs for *all* HUD-assisted household members.

Background

- We used HUD's address and SSN information to identify HUD-assisted households in the ACS.
- In each year of the ACS, we are able to identify approximately 70,000 interviewed ACS households as being HUD-assisted.
- By matching the two data sources, we can learn more about HUD-assisted households without having to conduct expensive one-off surveys.

Outline

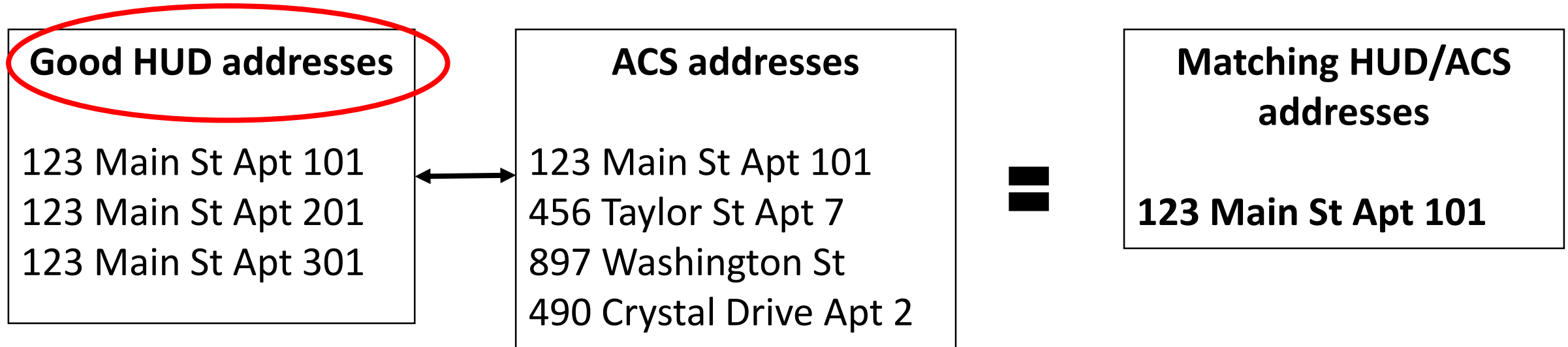
- How did we perform the match?
- Did our matching process work?
- What have we learned from the matched data?
- How can you get access to the matched data?

How did we perform the match?

- Traditional address matching
- Imputed unit-level address matching
- Person-level matching

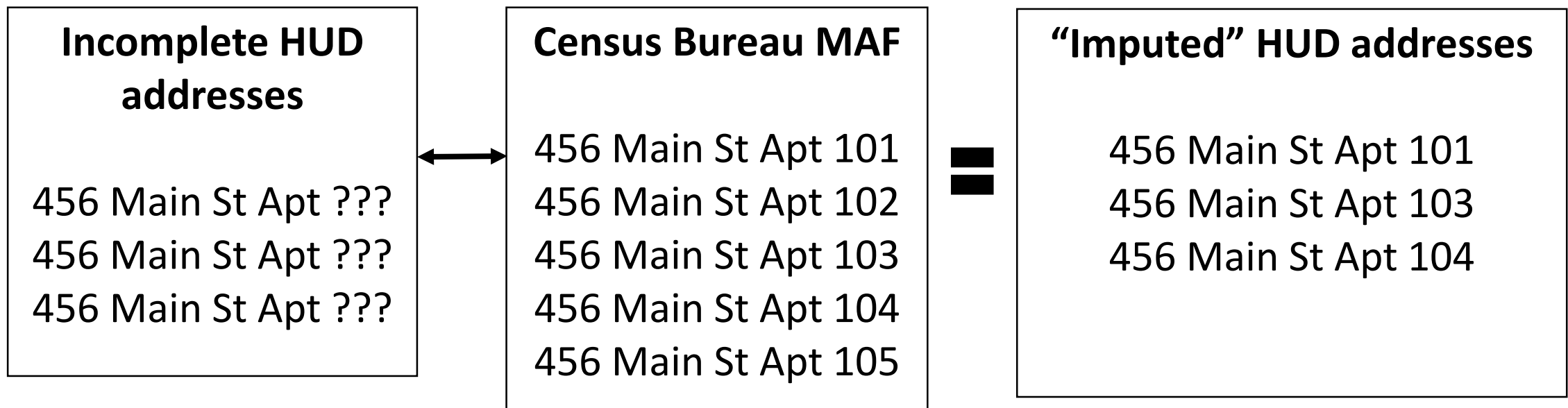
How did we perform the match?

Technique #1: Traditional address matching



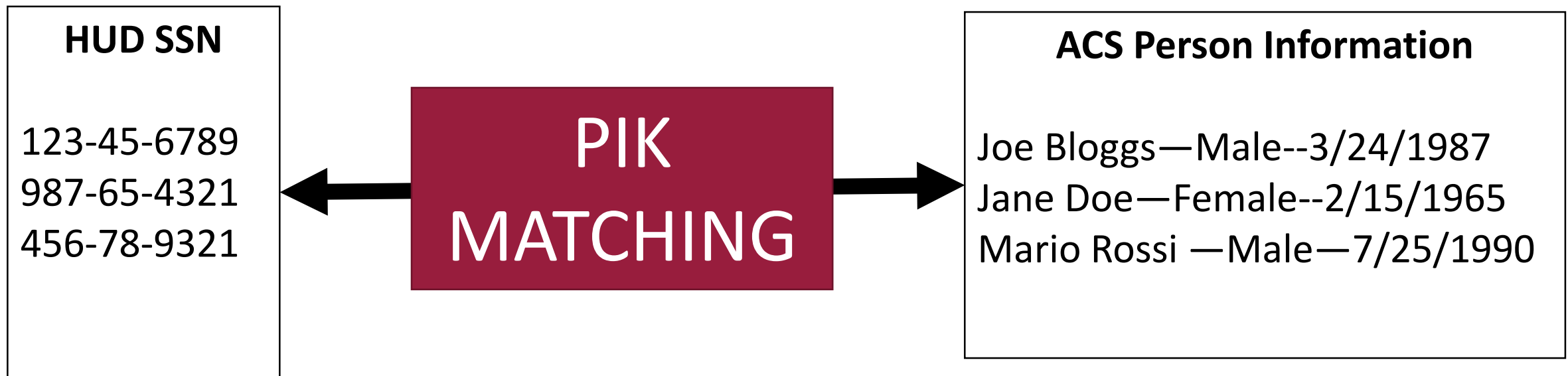
How did we perform the match?

Technique #2: “Imputed” unit-level address matching



How did we perform the match?

Technique #3: Person-level matching



How did we perform the match?

Final Output

ACS Record ID	ACS Information				HUD Assisted?	Additional HUD Household Information					
100001					Yes						
100002					No						
100003					No						
100004					No						
100005					Yes						

Did the matching process work?

- “Imputed” nature of match means errors may occur.
- We measure success with two metrics.

Did the matching process work?

- Global totals agreement: Compare *true* counts of HUD-assisted households to ACS-weighted counts of HUD-assisted households.

Process	2017 Count
Step 1: HUD records provided to Census	4,740,000
Step 2: HUD records are matched to the ACS, leading to ACS cases being flagged as HUD-assisted	~70,000
Step 3: Calculate the ACS-weighted estimate of HUD-assisted households	4,580,000

Did the matching process work?

Year	ACS-weighted estimate of HUD-assisted households
2011	96.9%
2012	98.1%
2013	96.6%
2014	97.9%
2015	97.9%
2016	96.8%
2017	96.6%

Note: MOEs were not calculated for the ACS weighted estimates

Did the matching process work?

- Record-level agreement: Calculate record-level agreement rates between common attributes

HUD Bedrooms	ACS bedrooms
2	2
3	2
2	3
1	1
3	3



In Common attribute	Agreement Rate
Number of Bedrooms (+/- 1 room)	95.2%
Householder Age (+/- 2 years)	85.0%
Presence of Child under 17	93.3%
Census Tract	90.2%
Oldest House Member (+/- 2 years)	82.5%

Did the matching process work?

- Metric 2: Calculate record-level agreement rates between common attributes

Common attribute agreement	Share of matched records
No agreement in five common attributes	0.3%
1 out of 5 common attributes are equal	1.3%
2 out of 5 common attributes are equal	4.7%
3 out of 5 common attributes are equal	10.8%
4 out of 5 common attributes are equal	11.9%
5 out of 5 common attributes are equal	71.2%

94%

What have we learned from the matched data?

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- What we knew: HUD-VASH program houses approximately 78,000 veterans in HUD-assisted housing.
- What we learned: Approximately 210,000 additional veterans live in HUD-assisted housing.



What have we learned from the matched data?

- What we knew: Approximately 200,000 HUD-assisted households are headed by a person of AAPI descent.
- What we learned: Approximately 55,000 HUD-assisted households include a person of Chinese descent.



What have we learned from the matched data?

- What we knew: Nothing!
- What we learned: In 2014, approximately 54 of HUD-assisted households had access to high-speed internet at home.
- What we learned: In 2014, approximately 54 of HUD-assisted households had a desktop or laptop at home.



Access

- Access to the ACS/HUD internal use files is available to researchers through a Census Bureau Research Data Center (RDC) who obtain Special Sworn Status and approval for their project.
- https://www.census.gov/ces/pdf/Research_Proposal_Guidelines.pdf
- All estimates produced from the ACS/HUD IUFs must go through Census Bureau disclosure review.

Thank you

Emily Molfino

Emily.Molfino@census.gov

Appendix A: Full Weighted Estimate Comparison

Year	Metric	All HUD Programs	Public Housing	HVCP	PBRA
2011	HUD records provided to Census	4,770,000	1,050,000	2,200,000	1,510,000
	ACS-weighted estimate of HUD-assisted households	4,620,000	1,030,000	2,190,000	1,390,000
	ACS estimate as share of HUD records	96.9%	98.1%	99.5%	92.1%
2012	HUD records provided to Census	4,710,000	1,050,000	2,210,000	1,440,000
	ACS-weighted estimate of HUD-assisted households	4,620,000	1,040,000	2,210,000	1,360,000
	ACS estimate as share of HUD records	98.1%	99.0%	100.0%	94.4%
2013	HUD records provided to Census	4,720,000	1,040,000	2,190,000	1,480,000
	ACS-weighted estimate of HUD-assisted households	4,560,000	1,040,000	2,140,000	1,390,000
	ACS estimate as share of HUD records	96.6%	100.0%	97.7%	93.9%
2014	HUD records provided to Census	4,700,000	1,050,000	2,190,000	1,460,000
	ACS-weighted estimate of HUD-assisted households	4,600,000	1,070,000	2,120,000	1,400,000
	ACS estimate as share of HUD records	97.9%	101.9%	96.8%	95.9%

Note: MOEs were not calculated for the ACS weighted estimates.

Appendix A: Full Weighted Estimate Comparison

Year	Metric	All HUD Programs	Public Housing	HVCP	PBRA
2015	HUD records provided to Census	4,730,000	1,030,000	2,250,000	1,450,000
	ACS-weighted estimate of HUD-assisted households	4,630,000	1,050,000	2,210,000	1,370,000
	ACS estimate as share of HUD records	97.9%	101.9%	98.2%	94.5%
2016	HUD records provided to Census	4,760,000	1,010,000	2,300,000	1,450,000
	ACS-weighted estimate of HUD-assisted households	4,610,000	1,000,000	2,230,000	1,370,000
	ACS estimate as share of HUD records	96.8%	99.0%	97.0%	94.5%
2017	HUD records provided to Census	4,740,000	980,000	2,310,000	1,450,000
	ACS-weighted estimate of HUD-assisted households	4,580,000	980,000	2,240,000	1,370,000
	ACS estimate as share of HUD records	96.6%	100.0%	97.0%	94.5%

Note: MOEs were not calculated for the ACS weighted estimates.