Surveying Low Incidence Race and Ethnic Minority Populations by Cell Phone

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Our Presentation

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Project Background

The Oregon Health Insurance Survey

The survey has been administered every other year since 2011

Our team administered the survey via telephone in 2017, 2019, and 2021

Surveys were completed with 8,000 (2019, 2021) and 9,000 (2017) Oregon Households

Data gathered on 18,500 to 21,300 Oregon residents during each cycle

The average survey length varied between 26 and 32 minutes.

30 min

Summary

- The Oregon Health Insurance Survey is an important source of information about health care coverage in Oregon.

- The survey provides detailed information about the impacts of health system reform, health care coverage, access to care, and utilization.

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Sampling Protocol

The Oregon Health Insurance Survey uses a complex sampling protocol.

Sampling stages include:

Geographic stratification based individual counties or county groups:

- 25 geographic strata in 2017
- 19 geographic strata in 2019 and 2021

One primary focus is to gather data on race and ethnic minorities:

Race/Ethnic Group	n
African American	A minimum of 350 Oregon Residents
American Indian or Alaska Native	A minimum of 350 Oregon Residents
Asian	A minimum of 400 Oregon Residents
Hispanic or Latino	A minimum of 1,400 Oregon Residents

The Challenge

The Challenge

Gather sufficient data from population groups that are:

- Generally, less likely to respond to surveys in the first place, and
- Represent a small percentage of the population:

One primary focus is to gather data on race and ethnic minorities:

Race/Ethnic Group	% of Oregon Residents (2019 ACS)
African American	3.0%
American Indian or Alaska Native	3.1%
Asian	6.3%
Hispanic or Latino	13.5%

2017 & 2019 Methodology and Approach

2017 & 2019 Methodology and Approach

Summary

- A dual-frame listed landline and RDD Cell within each geographic strata.

This was supplemented by:

Targeted oversamples drawn statewide:
Records where households with the "likelihood" that the head of household was in one of the low incidence race/ethnic minority populations.
The sample was provided by Marketing Systems Group.

2017 & 2019 Sample Source

- Cellular RDD samples were selected from a probabilistic telephone frame consisting of all possible cellular telephone numbers.

- Targeted cellular oversamples were selected from a Consumer database linked to a database of individuals with a cell phone.

Targeted Cell Phone Sample
Consumer database contained both individual and household level demographics such as age, gender, race/ethnicity, education, and income.
Consumer database was updated quarterly.
Cellular data was compiled from multiple sources.
For each Ethnic group, individual qualifying consumer records with a cell phone were identified and sampled accordingly.

2017 & 2019 Results

How did we do in reaching these low incidence race and ethnic minority populations in 2017 and 2019?

Again, focusing only on the surveys completed by cell phone

- We did OK….

- The incidence of completed surveys among these low incidence populations was higher in the targeted cell phone sample than in the Cell RDD sample; some of the time….

- We generally reached or exceeded our goals for the overall number of completed surveys for the race and ethnic minority populations.

2017 Oregon Health Insurance Survey

| Population | % of Completed Surveys | | Improvement Factor |
	Cell RDD	Targeted Cell	
Black or African American	2.2%	8.2%	3.7
American Indian or Alaskan Native	4.3%	2.3%	0.5*
Asian	2.5%	20.4%	8.3
Hispanic or Latino	12.8%	6.1%	0.5*

Summary

- The Black or African American and Asian targeted samples performed better than the cell RDD.

- *But the American Indian or Alaskan Native and Hispanic or Latino targeted samples performed worse than the cell RDD.

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2019 Oregon Health Insurance Survey

Population	% of Completed Surveys		Improvement Factor
	Cell RDD	Targeted Cell	
Black or African American	**2.0%**	**3.4%**	**1.7**
American Indian or Alaskan Native	**3.4%**	**4.7%**	**1.4**
Asian	**1.8%**	**4.7%**	**2.6**

Summary

- Overall, the targeted sample performed better than the cell RDD.

- But the Black or African American and Asian targeted samples performed worse in 2019 than in 2017.

- The 2019 survey did not include targeted sample for Hispanic or Latino residents.

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2021 Methodology and Approach

2021 Relied on an Alternative Approach

- As in prior years, sampling was still a dual-frame listed landline and RDD Cell within each geographic strata.

- In order to more effectively reach our low incident race and ethnic populations by cell phone, we relied on Marketing Systems Group's Advanced Cellular Frame as the primary method of identifying such households.

On overview of the Advanced Cellular Frame (ACF)

ACF is built on top of the Cellular RDD probabilistic telephone frame where:
40% of the frame is listed (each number has name, address, geography and demographics)
60% of the frame is Not Listed (unknown or unassigned)
ACF pulls on newer technologies to better link name, address, and cell phone together
ACF listed frame contains 50% more known data than the 2017/2019 listed source
ACF incorporates inward and outward migration (people who move and keep their cell phone)
ACF is refreshed quarterly

Our Sample Source in 2021

- ACF provides the ability to create **Disproportionate Sample Designs** without sacrificing coverage.

- ACF split-frame design:
  - Sample was drawn at a 2:1 ratio between *Listed to Not Listed.*
  - Race/Ethnicity data was provided for the *Listed* portion where available.
  - Design allows for a probability of selection for every cellular number in the frame.

- Targeted cellular oversamples were also selected:
  - The four hard-to-reach population groups were each targeted within ACF.
  - For each group, individual qualifying records were identified within the Listed component of ACF and sampled accordingly.

  - <u>For purpose of analysis, we added together the targeted sample records along with the Cell RDD records that included appended demographics.</u>

2021 Results

How did we do in reaching these low incidence race and ethnic minority populations in 2021?

<u>Again, focusing only on the surveys completed by cell phone</u>

- We did much better!

- It increased the percentage of surveys completed among the low incidence populations by a factor of 5 to 24 compared to the cell RDD records without appends.

- It increased the percentage of surveys completed among the low incidence populations by a factor of 4 to 12 compared to the method used in 2019.

- The incidence also significantly exceeded the percentage of these four groups in the actual population.

- We exceeded our goals for number of completed surveys among the four low incidence populations.

2021 Oregon Health Insurance Survey

Population	% of Population	% of Completed Surveys		Improvement Factor Compared to Cell RDD w/o appends	Improvement Factor Compared to Population %
		Cell RDD	ACF Record Flagged for Low Incidence Population Present		
Black or African American	3.0%	1.9%	19.3%	10.0	6.4
American Indian or Alaskan Native	3.1%	3.9%	19.5%	5.0	6.3
Asian	6.3%	2.3%	54.6%	24.0	8.7
Hispanic or Latino	13.5%	4.3%	56.4%	13.3	4.2

2021 Oregon Health Insurance Survey

An example from our 2021 Survey, residents identified as:
- Pacific Islander or Native Hawaiian
- Middle Eastern or North African

Population	% of Completed Surveys		
	Cell RDD	Targeted Cell	Improvement Factor
Pacific Islander or Native Hawaiian	**0.8%**	**23.1%**	**28.2**
Middle Eastern or North African	**0.4%**	**27.3%**	**61.0**

Summary

- Even without drawing specific samples targeting a low incidence population, the demographic information within the Advanced Cellular Frame can be used to more effectively target and complete surveys with specific populations.

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Conclusion

The Advanced Cellular Frame provides an effective method to sample low incidence race and ethnic minority populations when conducting surveys by cell phone.

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Further Research

- Given the range and specificity of the demographic data available, how can we [researchers] best use this in tailoring samples to specific data collection goals?

  - Currently we are using appended demographics for a survey focused on households with children under age 5.
    - Preliminary results show an improvement of more than four or five to one over records without demographic appends.

  - How well does it perform when looking at disaggregated race data?

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Thank you!