Comparing Dual Phone Type Respondents from Cell Sample vs Landline Sample in Oregon's 2011 Behavioral Risk Factor Surveillance System (BRFSS)

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Presenter Disclosures

Kathryn Pickle

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

Goals of this Presentation

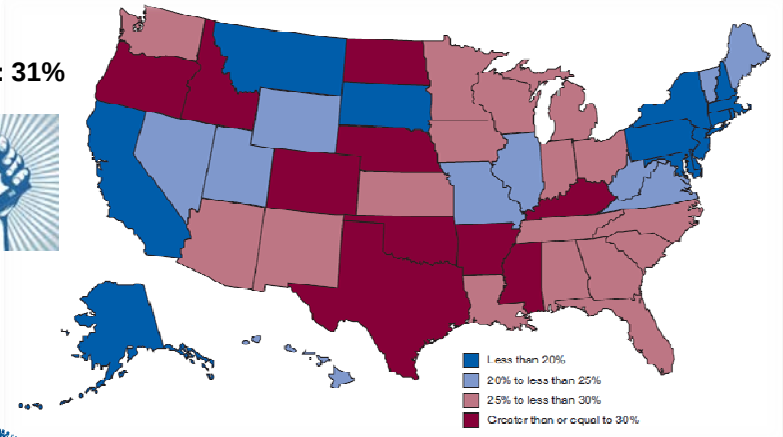
- Explain Oregon's dual frame sampling for BRFSS
- Describe differences between dual phone type respondents from landline and cell phone samples
- Discuss pros and cons of including dual phone type respondents from both sampling frames

Introduction

- CDC BRFSS newer protocol: dual frame sampling (landline and cell)
- Cell sample—interview respondents who only have cell phone, no landline
- Limited use of cell sample because:
  - Cost differential: 3:1 cell vs landline
  - Frame Overlap and weighting issues
  - Issues related to cell phones

Why Including a Cell Sample is Important: Cell-only by State, 2010

OR: 31%



From Blumberg SJ, Luke JV, Ganesh N, et al. Wireless substitution: State-level estimates from the National Health Interview Survey, January 2007–June 2010. National health statistics reports; no 39. Hyattsville, MD: National Center for Health Statistics. 2011.

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Phone Types, Oregon Adults, July 2009- June 2010

- No phone: 2%
- Landline only: 12%
- Cell only: 31%
- Landline and Cell: 56% have both
  - How most calls are received for those with both:
    - Cell-mostly: 27% of dual
    - Both equally: 32%
    - Landline-mostly: 41%

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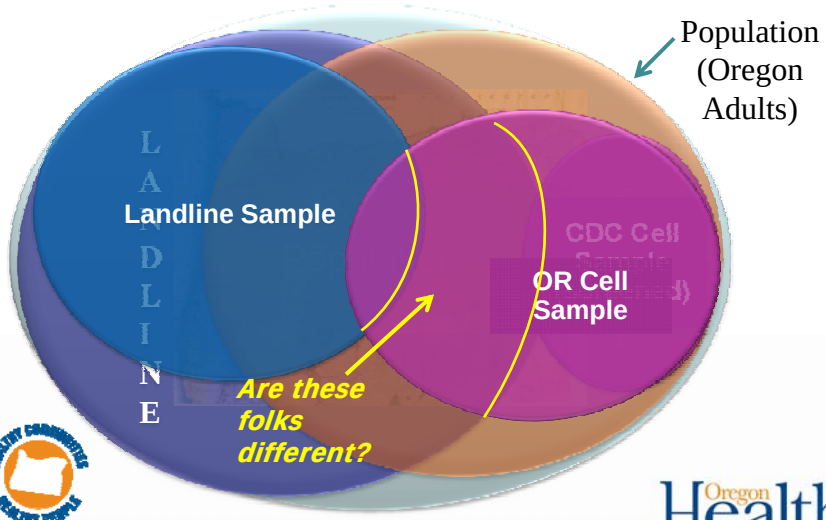
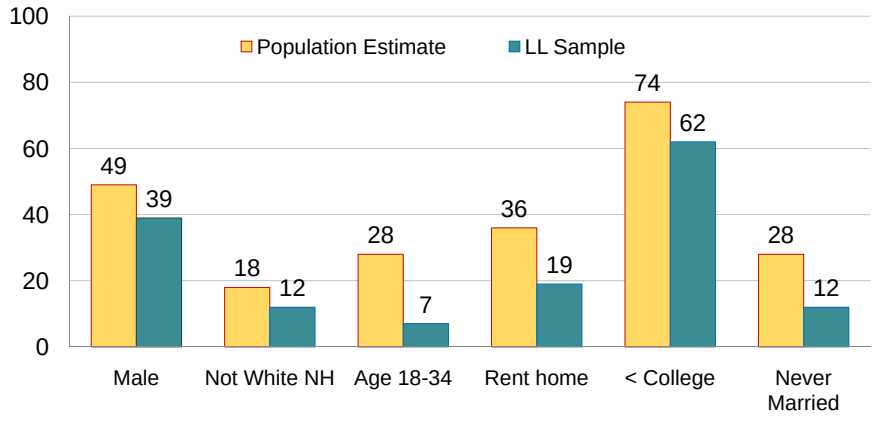
Telephone Survey Frames and Sampling



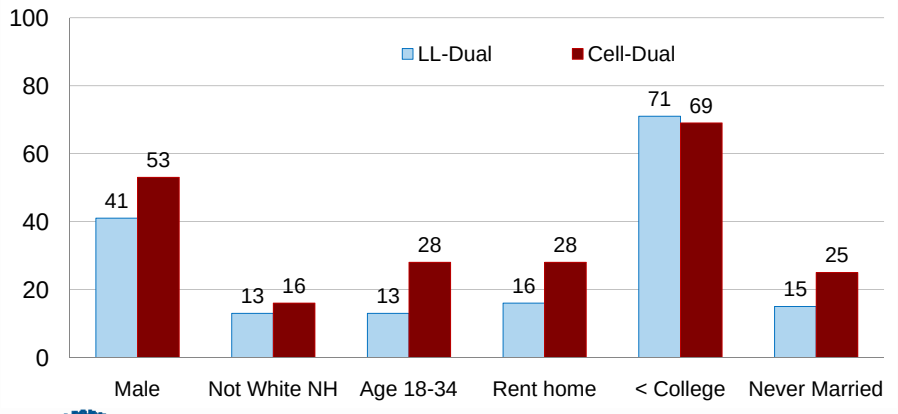
Oregon's Cell Sample

- In 2011, Oregon interviewed cell-only AND dual phone type respondents in cell sample
- Why?
  - What if dual phone type (DPT) respondents reached by cell phone are different from DPT respondents reached by landline?
  - Concerns that potential bias might not be addressed by weighting factors
  - Lower cost differential

Landline Sample Under-Represents Some Population Groups (Oregon, 2011)

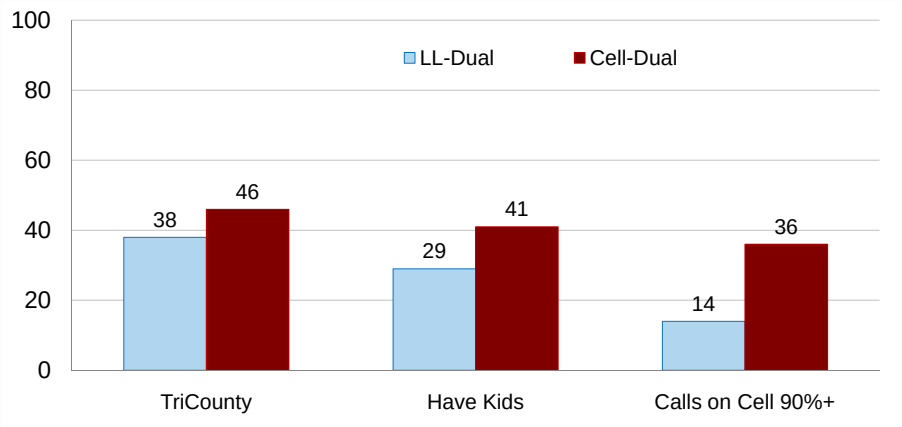


Key Demographic Factors for Dual Phone Type Respondents: Reached by Landline versus Cell



Weighted 2011 Oregon BRFSS

Other Factors for DPT Respondents: Reached by Landline versus Cell



Weighted 2011 Oregon BRFSS

Adjusted Differences between DPT Respondents Reached by Landline versus Cell

- When all factors are taken into account, Dual Phone Type respondents reached by Cell remain different.
  - Logistic models included age, sex, race, education, marital status, and home ownership status.
  - Compared to Landline Duals, Cell Duals are more likely to be male, younger, rent their homes, and have higher education level.

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Health Indicators for Dual Phonetype Respondents, Reached by Landline vs Cell

Indicator	LL-Dual N=2,013	Cell-Dual N=956	P-value
Health Status-Fair or Poor	14.9%	14.5%	0.84
Do not have health insurance	8.8%	14.2%	<0.01
Obesity (BMI >=30.0)	26.9%	26.7%	0.94

Weighted 2011 Oregon BRFSS

Summary

- Demographic characteristics were different for DPT respondents reached by cell versus those reached by landline.
- Bivariate estimates of health status and obesity were similar between groups.
- Lack of health insurance was higher among Cell-reached DPT respondents, and this association remained after adjustment for demographics in a logistic model.
  (OR=1.4, *p*=0.07)

Discussion

- Few differences were found in three health outcomes by contact method, but an important next step will be to conduct analyses with other health outcomes.
- Including Cell-reached DPT respondents will help to increase the raw numbers of males and younger adults in the sample.
- We should consider keeping this Cell-reached dual phone type group in our pool of eligible respondents, because Cell-reached dual phone type respondents are less easily reached by landline.

Thanks!

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Issues and Answers (OR BRFSS Data Contractor): Kathleen Morrison

Additional Slides if needed for Questions

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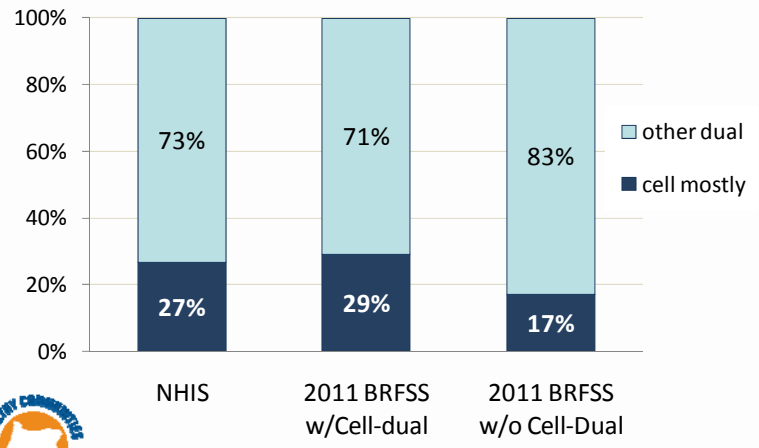
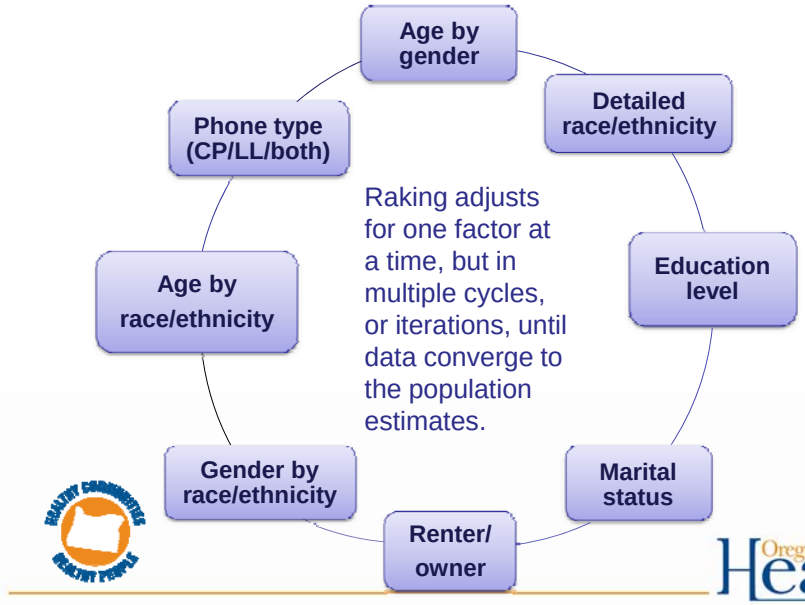
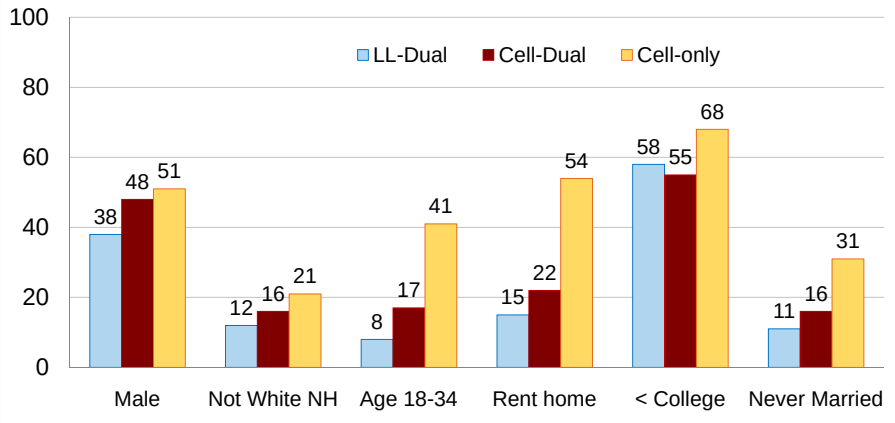
Cell-Mostly: Population Estimate versus Two BRFSS Options (weighted data)



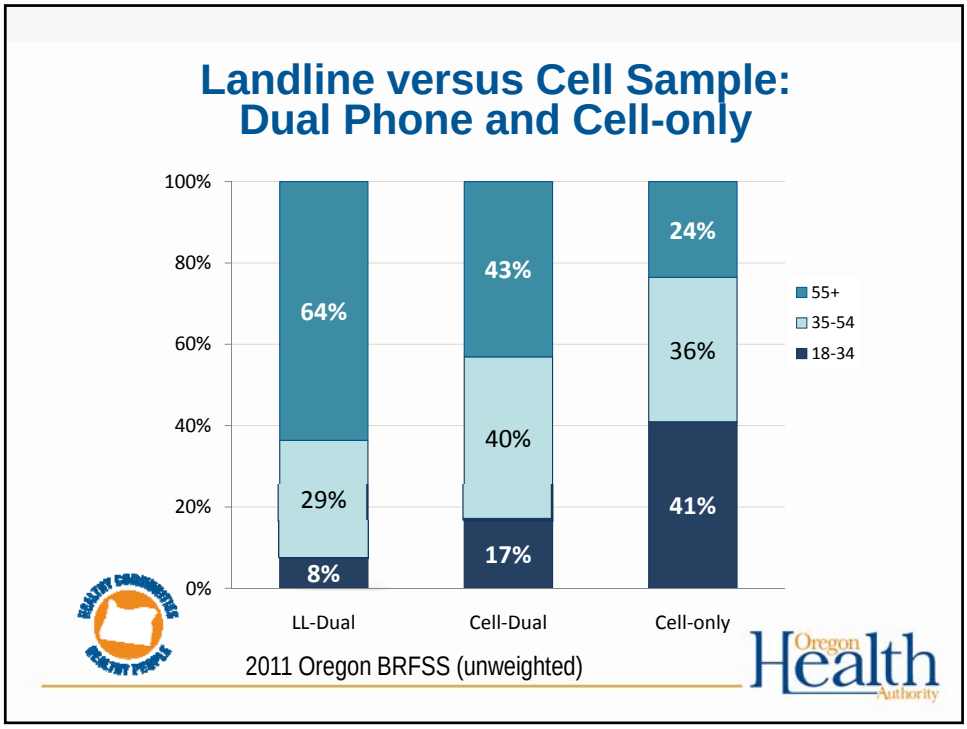
Factors Included in Raked Weighting



DPT Respondents: Reached by Landline or Cell



2011 Oregon BRFSS (unweighted)


Landline versus Cell Sample:
Dual Phone and Cell-only
100%
80%
60%
40%
20%
0%
64%
29%
8%
43%
40%
17%
24%
36%
41%
55+
35-54
18-34
LL-Dual
Cell-Dual
Cell-only
2011 Oregon BRFSS (unweighted)
Oregon Health Authority