

## The World Just Changed!

For a while now I have been trying to keep everyone up to date on SMS efforts to master cell phone research. But last month the whole technology got turned on its ear. Researchers at Nielsen released their small area estimates for cell phone only (CPO) households at the State and metro levels<sup>1</sup>. They say Hawai'i's population is 42.6 percent CPO!

Our own estimates for Hawai'i were between 30 and 35 percent. The previous authority on the issue was CDC using data taken from their National Health Interview Survey<sup>2</sup>. They said Hawai'i was at eight percent, maybe as high as 10 percent. That estimate comes from NHIS 2007 and is based on a sample size of 300 to 360 households<sup>3</sup>. (We're waiting to get the exact number).

At the national level, Nielsen and NHIS numbers are very close. Nielsen says US CPO households are at 24 percent of the total and NIHS says they are at 25 percent for 2009<sup>4</sup>. Nielsen's numbers are based on much larger sample sizes and 2009-2010 data. They peg our CPO population at 42.6 percent, perhaps as high as 45 percent. Nielsen will release new estimates next quarter and we are waiting.

Arbitron produced its own estimates for metro areas in 2010<sup>5</sup>. They didn't produce point estimates for Hawai'i, but we are in their highest CPO classification, 24% or higher. CDC estimates put us in the bottom six States.

If I put together the major characteristics that separate very high CPO areas from the others, I get these: (1) they have a large university or two; (2) they have a military base; (4) they are isolated or at great distances from other places; and (4) they have relatively high landline phone rates. Hawaii has all four marks.

CDC has announced that it is working on a new project to produce small area statistics and I think we can expect a new set of estimates soon. Steve Blumberg is writing the manuscript now and has offered to review our numbers to see if the new estimates will differ greatly from past estimates.

It was important to get the CPO estimate clarified. It was kind of nice to have our own work validated, too.

CPO at 42.6% in Hawai'i. What does that mean? It means that any landline telephone surveys in the State misses 42.6 percent of all households. We have compared our landline and cell phone surveys and find out that landline only surveys make Hawai'i's population

look older, wealthier, and less educated. The home ownership rate goes up by as much as 10 percentage points. You can correct for those things.

Landline only surveys also warp results to make it look like our people smoke fewer cigarettes, drink less alcohol, don't get tested for AIDS. It makes us look like we are safer drivers than we really are, and rely more on television and less on the Internet than is actually the case. You can't weight for all of that. We are misinforming ourselves!

I can't tell how other Hawaii survey research firms are handling this situation. Local surveys have not been reporting a lot of detail on respondent characteristics, so it's hard to check representativeness. For the few clients we know of who are still buying landline only surveys, results do not look representative.

The best method is to combine landline and cell phone surveys using a dual frame sample design. Other research released this year describes dual frame procedures that must be mastered in order to do good fieldwork<sup>6</sup>, manage costs<sup>7</sup>, and weight data correctly<sup>8</sup>. We were certainly pleased to have those reports to beef up our own methods. It's been a long haul and we are thankful for all the help we got along the way. Now we are ready to go to work for you.

<sup>1</sup> Pierce, Christine G., Jonathan Stringfield, Jennifer Hsia, and Misty Saline, The cell phone universe: Methodological considerations for creating cellular and landline telephone estimates from Nielsen Television Surveys, presented to the 65<sup>th</sup> Annual Meeting of the American Association of Public Opinion Research, May 15, 2010.

<sup>2</sup> Blumberg, Stephen H., Julian V. Luke, George Davidson, Michael E. Davern, and Karen Soderberg, Wireless substitution: State-level estimates from the National Health Interview Survey, January-December 2007, National Health Statistics Report, No. 14, Hyattsville, Maryland, National Center for Health Statistics, March 11, 2009.

<sup>3</sup> Cohen, Robin A., and Diane M. Makuo, State, regional, and national estimates of health insurance coverage for people under 65 years of age: National Health Interview Survey, 2004-2006, National Health Statistics Reports, June 19, 2008. On p. 19 authors report the number of persons in sample NHIS, 2004-2006, n = 1,301.

<sup>4</sup> Blumberg, Stephen J, and Julian Luke, Wireless substitution: Early release of estimates from the National Health Interview Survey, July-December 2009, National Center for Health Statistics, May 12, 2010.

- 
- <sup>5</sup> Fleeman, Anna, Richard Griffiths, Robin Gentry, Nicole Wasikowski, Amita Dahra, and Richard Possett, Small-area cell phone only estimates, Presented at the 65<sup>th</sup> Annual Meeting of AAPOR, May 14, 2010.
- <sup>6</sup> De Keulenauer, Femke and Robert Manchin, Differential call scheduling in dual frame telephone surveys: Should we be concerned about “timing effects”? Presented at the 65<sup>th</sup> Annual Meeting of AAPOR, May 13, 2010. See also, Kirgis, Nicole and Jim Lepkowski, A management model for continuous data collection: Reflections from the National Survey of Family Growth, 2007-2010, presented at the 65<sup>th</sup> Annual Meeting of AAPOR, May 13, 2010; and Dutwin, David, Kathleen Call, and Susan Sherr, The effectiveness of stratification by cellular switch points: The Minnesota experience, presented at the 65<sup>th</sup> Annual Meeting of AAPOR, May 13, 2010.
- <sup>7</sup> Guterbock, Thomas M., Paul J. Lavrakas, Trevor N. Thompson, and Randall ZuWallack, The variable costs of cell phone interviewing: Understanding cost and productivity ratios in dual-frame telephone surveys, presents at the 65<sup>th</sup> Annual Meeting of AAPOR, May 14, 2010.
- <sup>8</sup> There are many important sources for the sampling and weighting issue. Some important ones include: Lohr, Sharon L. (2007) Recent developments in multiple frame surveys, Proceedings of the Survey Research Section, American Statistical Association, 2007 Joint Statistical Meetings, Salt Lake City, Utah, August 2, 2007; Delnevo, Christines D. and Randall S. ZuWallack, Random digit dialing cell phone surveys and surveillance systems: data quality, data weighting, and bias, Presented at the 137<sup>th</sup> Annual Meeting & Exposition, BRFSS, Philadelphia, Pennsylvania, November 7-11, 2009; and Battaglia, Michael P., Donna Eisenhower, Stephen Immerwahr, and Kevin Konty, Dual-frame weighting of RDD & cell phone interviews at the local level, presented at the AAPOR 65<sup>th</sup> Annual Conference, May 15, 2010.