

Telephone Surveys (FAQ)

What is the purpose of telephone surveys?

Surveys are conducted in order to learn characteristics of a population. They use a representative sample of the population from the geographic area in question, although there may be biases which are addressed below. Telephone surveys are appealing because they are cost efficient, allow quality control over the process, and can be conducted in a relatively short time period compared to surveys conducted in person or through the mail (Lavrakas, 1993).

How are the telephone surveys used in the Wisconsin County Health Rankings conducted?

The Wisconsin County Health Rankings uses results from two major telephone surveys: the Behavioral Risk Factor Surveillance System (BRFSS) and the Family Health Survey (FHS). Both of these surveys are based on random-digit-dialing (RDD)

Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is conducted by the Centers for Disease Control (CDC) and focuses on obtaining state-specific data on preventive health practices and risk behaviors (tobacco use, health care coverage, etc.) (<http://www.cdc.gov/brfss/>). The actual survey is made up of three components: a core component that is used annually, optional modules that vary annually, and state specific questions that vary by state. [For example](#), in 2007 Wisconsin added a diabetes specific module to the survey. In total there are between 90-150 questions that are asked and the survey takes approximately 15-20 minutes to complete. In each household reached, one adult member is surveyed ([BRFSS Web Site](#)).

The survey design uses a disproportionate stratified sample (DSS) to increase the likelihood of reaching working numbers. The total pool of telephone numbers (not including cell phones) is divided into two groups and sampled separately. One group is made up of high-density populations that are expected to contain many households. The second group is made up of low-density populations that are expected to contain fewer households. Samples are then taken from both population groups; however, more samples are taken from the high-density populations in order to be more efficient with time and resources in reaching households. In order to account for biases that may occur due to households that do not have landline phones or cell-phone only households, a final weight is used in an attempt to off-set this bias (CDC website).

Starting in 2005, the Wisconsin Partnership Fund for a Healthy Future gave a grant to the Wisconsin BRFSS in order to oversample counties with small populations. This is important to ensure that data from small counties is more representative of the overall county population (<http://dhs.wisconsin.gov/stats/pdf/WisconsinBRFSSProjectsrev.pdf>).

Family Health Survey (FHS)

The second major RDD survey is the [Family Health Survey](#) which is conducted by the Wisconsin Department of Health Services. This differs from the BRFSS in that it takes into account children living in the households. Like the BRFSS, it only samples households with landlines and does not use cell-phone numbers in its sample pool.

The 72 counties in Wisconsin are divided into seven groups that can be sampled at different rates depending on the population size. In total, approximately 6,000 residents are surveyed about income levels, health insurance, employment status, diseases, along with other questions. To learn more about how the FHS is conducted watch this [presentation](#) by the Department of Health Services

What are some of the current concerns with interpreting results from RDD surveys?

1. **Telephone coverage:** The main question to ask regarding coverage is “Does the population with telephone coverage differ from the population without telephone coverage?” Historically, research has shown that there is a non-coverage bias. People without a telephone are more likely to be a minority, live in a rural area, and/or have less education (Kempf, 2007). A weight needs to be incorporated into the results to prevent an underestimate of a subset of the population. Of particular interest is that people without landline telephones consist of two groups: people without any telephone service (approximately 2% of the adult population) and the rapidly increasing group of people with only cell phones.
2. **Cell phones:** Many telephone surveys (including the BRFSS and FHS) that are based on RDD do not include cell phones. According to the National Health Interview Survey (NHIS) conducted by the CDC from July-December 2007, 16% of Americans had cellular phones only (CPO) for their household and 22% that had a landline received almost all calls on their cellular phone.

The CPO group itself is not homogeneous. People use CPO for different reasons and it is important to understand the different characteristics in order to accurately assess the effect of using or omitting cell phones in surveys. The NHIS reports that 31% of renters were CPO whereas only 8% of homeowners were CPO. Additionally, minorities and the poor are more likely to be CPO.

Clearly, there is great potential for bias by excluding cell phones from the survey sample. However, inclusion of cell phones can be difficult and costly (see page 3 for more information on this topic). Until there is a standard protocol on how to incorporate cell phone numbers with landline numbers, survey researchers should provide clear information about how they conduct surveys. They should describe whether they used a landline, cell-phone, or a landline and cell-phone sample as well as any weights used to account for possible bias (AAPOR, 2008).

3. **Response Bias:** It has been shown that there is a difference in population characteristics between people that take one-to-three calls to be reached and people that take four or more calls to be reached (see the above link to the DHS presentation). Therefore, it is important to have survey methodology to reduce the bias that would be seen if only one or two calls to households were made before giving up. Both the FHS and the BRFSS address this bias by having a wide call spread. There are 15 call attempts placed to each household dispersed across all times of the day and evening to try to reach the residents.

4. **Reliability:** Surveys are only effective if the questions asked are accurately reflecting the true conditions of the population in question. One problem that has been studied is the reliability of answers given to certain questions. For example, questions that can be determined by appearance, such as exercise and diet, may not be accurately answered over the phone and may be more accurately answered in person. On the flip side, personal questions may be more accurately answered over the phone due to the respondent having more privacy than in an in-person interview (Kempf, 2007).

Why can't cell phone numbers simply be added to the database of numbers to be called?

There are a few reasons that complicate this:

- The Telephone Consumer Protection Act (TCPA) is a federal law that prohibits use of an auto dialer to reach cell phone numbers (AAPOR, 2008). The solution for this issue is to manually dial numbers, but the trade-off is significantly increased time and costs (AAPOR, 2008).
- Traditional RDD surveys are conducted at a household level whereas cell phones are typically owned at an individual level (Kempf, 2007). Depending on the data being collected, this could potentially decrease response rate. For example, if a researcher reaches a household member that does not want to participate, they could try calling again and reach another household member that is willing to participate. With a cell phone owner, if they do not choose to participate, there is not much the researcher can do to get a response from that number.
- There is a lower response rate in cell phones compared to landlines (AAPOR, 2008). This is due to different factors: many cell phone owners view their cell phone as a personal number, many have to pay for incoming calls, making them less likely to take a 20 minute survey, respondents may be in the middle of another activity and cannot participate, or they may be in a public space and not want to answer personal questions (such as disease states or certain behaviors) (AAPOR, 2008).
- There is an issue with overlapping cell phone and landline populations (Kempf, 2007). Most people that own a cell phone also have a landline. One solution would be to screen for a CPO sample in order to prevent some people from potentially being called twice, although this may not be a very cost-effective method (Kennedy, 2007). The Wisconsin BRFSS is one of 21 states this year that will participate in a cell-phone-only household study in order to try to better represent the entire population (<http://dhs.wisconsin.gov/stats/pdf/WisconsinBRFSSProjectsrev.pdf>).
- Most surveys are interested in gathering data from a specific geographic location (such as a city, county or state) and cell phones allow for people to retain their numbers for a geographic area even if they are not currently residing in that area (AAPOR, 2008). This may give an inaccurate view of problems and characteristics of a certain location.

References

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