APPENDIX V

METHODOLOGY OF
2011 MONTANA HEALTH INSURANCE SURVEYS

The purpose of the 2011 Health Insurance Surveys is a:

- Study of the insured, underinsured and uninsured Montanans
- Study of Montana's current insurance market
- Formal assessment of cycling.

Many of the information needs to complete these tasks are only available through primary research. BBER designed two surveys to gather some of this information: a survey of businesses and a survey of households.

The surveys are designed to help policy-makers and health planners examine the efficiency, capacity, and flexibility of Montana's health insurance system to meet current needs and future demands.

The household telephone survey provides health policy-makers and planners a model of different groups of Montanans and their current insurance coverage status. The survey explores how different groups are insured and why the uninsured are not insured. A large subset of the respondents was also asked about their utilization of health services.

The business survey filled in gaps in our knowledge about Montana businesses offering of health insurance to their employees.

Household Survey Design and Administration

The 2011 Health Insurance questionnaire was adapted from the questionnaire used in a similar survey conducted in 2002. The earlier questionnaire was provided by SHADAC, a respected health insurance research organization. The questionnaire was divided into three modules:

- Health insurance coverage
- Health insurance details
- Health status and demographics

The health insurance coverage module asked about what type of health insurance covered each household member. Nine common forms of health coverage were explicitly asked and followed up with a confirmation question. After health insurance of each household member was established a series of questions were obtained details about their coverage including, premiums, deductibles and availability of other coverage. Those with no coverage or intermittent coverage were asked about past coverage and why they were not covered. Household with only Medicare coverage were not interviewed further. The final module asked about health status, use of medical facilities, employment status and educational attainment of the primary wage earner. Household income was also included in this module. The complete questionnaire is found in Appendix I.

The 2011 Health Insurance Survey is was administered by telephone using a Computer-Assisted Telephone Interviewing (CATI) process. Sampling was conducted using a Random-Digit Dial (RDD) process. The population sampled was all adult Montanans who live in a household with a working telephone. A working telephone is defined as a landline or cell phone. This population should not be

confused with all Montanans, since it excludes households without working telephones, the institutional population, and Montanans absent from the state during the survey period. The approximate sampling error for this survey is plus or minus 2.0 percent. This means that using this study design, in 95 of 100 samples a sampled mean would be within 2.0 percent of the population mean. Estimates using subsets of these data will have higher sampling error rates.

The survey was administered from September 12, 2011 through February 27, 2012. Of the 4,662 eligible respondents contacted, 2,306 (49.5 percent) participated in the survey. This cooperation rate is considered typical for a survey of this type.[1]

Respondents who lived in households with landline telephones were selected randomly within households. The person answering the telephone had the same probability of being selected as any adult member of the household. If the selected member of the household was not home, an appointment was made to interview the absent respondent. Sampled individuals who were out of state during the administration period and individuals with medical problems that precluded participation were ineligible. Telephone numbers drawn by the RDD process were ineligible if they were out-of-service, fax machines, or businesses. Numbers for which there was no answer were called repeatedly, during morning, evening, and weekend hours. Those numbers that still did not answer were ineligible.

BBER also implemented additional sampling procedures to mitigate any possible under-coverage bias due to the high proportion of younger adults and lower income persons who live in wireless-only households. BBER conducted interviews with 647 adults who use wireless telephones. This yielded 361 completed interviews with adults who live in wireless-only households. BBER purchased a list of residential, wireless telephone numbers from Survey Samples International, Inc. and randomly selected numbers sufficient to yield the 647 completed interviews of households using wireless telephones. Wireless telephone respondents received $2.00 as compensation for any telephone charge imposed on them as a result of the interview.

BBER documented case status in a manner that allows calculation and reporting of a unit response rate using the American Association for Public Opinion Research (2008) standard definition (RR3).[2] The response rate for this survey was 42.3 percent. This response rate is excellent for rigorously conducted RDD surveys.[3]

Following collection, the data were inspected to ensure no duplicate cases were included and to correct any interviewer miskeys. Appropriate data labels were added. Appropriate composite variables, post-stratification weights, and flags were also added to the data set to facilitate analysis. Missing values for

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[1] Groves, Robert, M. et. al. 2004. *Survey Methodology*. New York: John Wiley & Sons. pp. 184-187.

[2] American Association for Public Opinion Research. 2008. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 4th edition.* Lexana, Kansas: AAPOR.

[3] Groves, Robert, M. et. al. 2004. *Survey Methodology*. New York: John Wiley & Sons. pp. 184-187.

age and income were imputed using the hot deck method to facilitate comparison with the 2010 Census. Hot deck imputation substitutes the responses of similar cases for missing data.

Two data sets were then prepared: a data set with data for each household member and a household data set. Insurance coverage rates and estimates of the uninsured and underinsured come from the individual data set. Demographics and detailed information come from the household data set.

Post-stratification weights were applied to the data. This is a common data processing technique that has been shown to improve the accuracy of estimates. The data are weighted by age and sex. Data were not weighted to telephone type as the age and sex weights adjusted the sample so that the number of cell only households was very close to the expected number.

The Respondents

The table below describes the respondent households and provides benchmarks against which they may be compared. Just over half (52.5 percent) of respondents are female, and nearly half (47.5 percent) are male. The percentage of females and males in this sample is close to the 2010 Census.

Table 1.1 Comparisons of Respondents and 2010 Census

| | 2011 HOUSEHOLD SURVEY | | 2010 ACS & CENSUS |
	Unweighted	Weighted	
MEDIAN AGE	51	40	40
MALES	50	39	39
FEMALES	52	41	41
MALES	47.5%	50.0%	50.0%
FEMALES	52.5%	50.0%	50.0%
MEDIAN HOUSEHOLD INCOME	$54,000	$54,554	$42,666
MEDIAN FAMILY INCOME	$60,000	$60,000	$54,507

The median age of respondents is 51 years, while the median age of Montanans in 2010 was 40. The age difference is statistically significant. It is likely that older people are easier to reach on the telephone. Post-stratification weights adjust the data for age and sex.

Median household and family incomes are higher for the 2011 Household Survey than comparable numbers from the US Census American Community Survey. This difference is statistically significant. The difference probably due to the in-person interviews conducted by the Census Bureau; they are able to reach persons without telephones and probably lower incomes. Any estimates related to poverty level are conservative.

Business Survey Design and Administration

The data were collected by the Survey Research Center at The University of Montana-Missoula, Bureau of Business and Economic Research, from July 27, 2011 through September 14, 2011. A key objective of the survey was to fill in gaps in our knowledge about Montana business offering of health insurance to their employees.

The 2011 Montana Employer Survey was a repeat stratified random telephone survey of businesses located in Montana. The sample for the survey was drawn from the list of employers called by BBER in 2003. Many firms in the original sample were no longer in business. Those firms were replaced by randomly selecting firms that started conducting business in May 2003 from the list of Montana firms covered by unemployment insurance maintained by the Research and Analysis Bureau of the Montana Department of Labor and Industry. In 2011, businesses interviewed in 2006 that were not in business were replaced by new firms that started after March 2006. The new firms were from a list purchased from Survey Samples International (SSI). Sampling from unemployment rosters was no longer feasible due to bureaucratic changes.

The survey sampling methodology was designed to obtain a higher number of completed interviews from larger businesses because most Montana businesses have fewer than 10 employees. In order to achieve these goals, the survey was conducted as a stratified random sample, where the strata were business size.

A total of 516 interviews were completed. The overall completion rate to the 2011 Montana Employer Survey was 70 percent. Three hundred and nineteen firms from the original 520 firms that participated in the 2003 Montana Employer Survey completed the 2011 questionnaire. Forty-six of the firms added in 2006 participated. In 2011, an additional 251 firms were added to the sample. 151 firms completed the questionnaire. Figure 1.1 shows the distribution of the longitudinal participation.

Table 1.2 shows the completion rate calculation. The cooperation rate of long-term business respondents was 75.9 percent while only 58.6 percent of new businesses participated in the survey. This discrepancy in participation may be due to the size of the older firms and the rapport that BBER has established by repeatedly interviewing Montana businesses.

Post-stratification weights for the 2011 Business insurance Survey were constructed to adjust for the fact that not all of the firms were selected with the same probability. Firm size was the strata. Weights were used on comparisons for overall sample, but not used when analyzing individual strata.

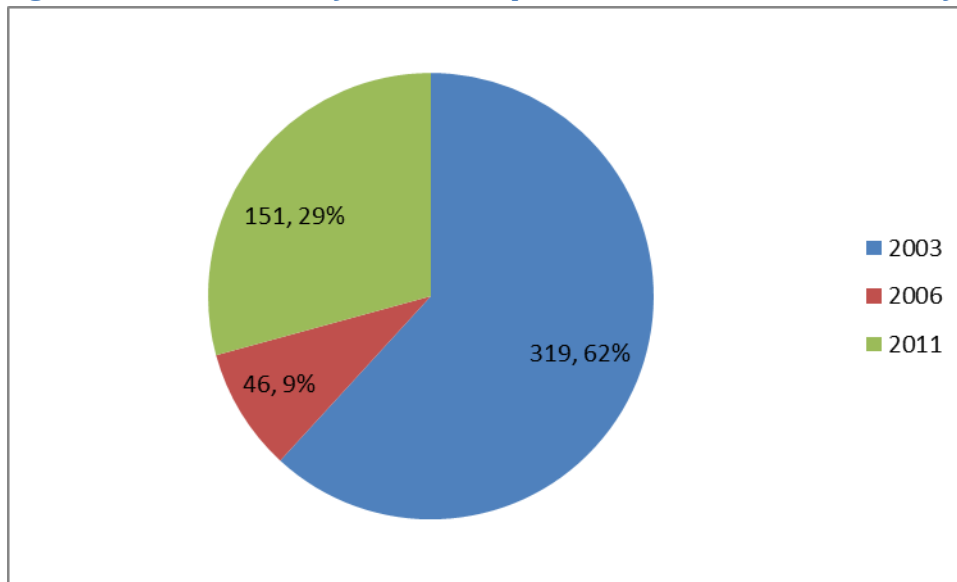*Figure 1.1: Distribution of Firm Participation, Business Insurance Surveys*

Table 1.2: Business Survey Completion Rate Calculation

	PREVIOUS SAMPLE	NEW SAMPLE	ALL COMPLETIONS
COMPLETIONS	365	151	516
REFUSALS	38	24	62
UNRESOLVED APPOINTMENTS	6	35	41
UNREACHABLE	46	33	79
KNOWN OUT OF BUSINESS	31	8	39
COMPLETION RATE	75.1%	60.2%	70.0%