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# 2018 Rhode Island Health Insurance Survey Technical Documentation

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# I. Sampling Methodology

This section outlines the sampling process used during the 2018 Rhode Island Health Insurance Survey. The sampling process consisted of two stages with three sampling strata designed to meet overall statewide targets and specific targets for lower income residents.

### Target Population

The target population for the 2018 Rhode Island Health Insurance Survey consisted of all persons in families living in the state of Rhode Island, excluding those persons residing in households where no adult age 18 or over was present. Persons residing in group homes with nine or more persons, group quarters such as dormitories, military barracks and institutions, and those with no fixed household address (i.e., the homeless or residents of institutional group quarters such as jails or hospitals) were also excluded from this survey[1]. In addition, the sample excluded non-permanent residences and vacation residences (qualified households were considered those in which someone resided at least six months of the year). Since the sampling approach relied on the use of a dual frame random digit dial (RDD) cell phone sample and listed land line sample, the sample population only included those households (and residents therein) with working telephones.

### Sample Definition

The stated goal of the sampling approach was to obtain statewide population information on health insurance status, while gathering data on a number of demographic and health variables. The sampling methodology was based on a dual frame telephone sample.

- A dual frame RDD design that included both a cell phone random digit dial (RDD) sample and listed land line sample. Both the landline and cell phone frames were drawn statewide.
- As data collection progressed, an additional sample of listed cellphone records was required.

Overall, the target was to complete surveys with 3,800 Rhode Island households.

Based on estimates of the cell phone penetration among the target population, the goal was to complete approximately 60% of the surveys via cell phone and 40% via landline.

Both the landline and cell phone samples used for this project were generated using software developed by Marketing Systems Group.

[1] The initial screening coded as ineligible such group quarters. In this survey, group quarters' telephone numbers were considered those where a number of unrelated people living in more than one "unit" relied on the same telephone. An example of a unit in this case might be a fraternity house where all those residing in the house use the same phone.

**Surveys with Residents Aged 65 and Older**

A consistent issue with broad based telephone surveys is overrepresentation of older Americans. For a number of reasons individuals aged 65+ are more likely to answer telephone surveys, crowding out resources that could be dedicated toward completing surveys with younger respondents. This presents a problem in health insurance surveys not only because of concerns about representativeness, but also because the overwhelming majority of senior Americans receive health insurance through Medicare. Their insurance status is neither unknown nor within the influence of the State of Rhode Island.

As such, MDR took steps to limit the number of surveys done with households containing only individuals aged 65 and older. As a method of screening the sample, all landline sample used during the course of the survey was pre-screened, eliminating from the sample all records where the head of household is known to be age 65 or older. These households were identified using age information appended to sample records by Marketing Systems Group. All of those households were removed from the sample, and no attempt was be made to contact these sample records.

Using this strategy, MDR was able to limit the rate at which individuals over the age of 65 were represented in the final data set. Individuals over the age of 65 were 15% of the unweighted data elements, compared to 16.8% of the Rhode Island Population as a whole.

# II. Questionnaire Design

The survey questionnaire used during the course of the 2018 Rhode Island Health Insurance Survey was based on the prior 2016 Rhode Island Health Insurance Survey. The final survey was designed in collaboration with Freedman Healthcare, the Rhode Island Executive Office of Health and Human Services, and HealthSource Rhode Island.

The initial steps in survey design focused on a review of the prior 2015 and 2016 survey instruments. For the second stage of the review, Market Decisions Research (MDR) provided a series of questions by topic area that had been included in other state health insurance surveys. In addition, HSRI provided their own list of questions they desired information on.

An initial draft of the survey instrument was submitted to Freedman Healthcare on April 28, 2018. The survey instrument was reviewed by staff at Freedman Healthcare, and staff of the state of Rhode Island. After incorporating changes, a final version of the survey was completed on May 21, 2018. The basic components of the 2018 survey gathered information from Rhode Island residents in the following areas:

1. Household Characteristics
2. Enumeration of the Household
3. Demographic Characteristics of each Household Member
4. Relationships Between Household Members
5. Type of Health Insurance Coverage
6. Private Health Insurance Coverage Characteristics
7. Experiences Enrolling in State Health Insurance Programs
8. Characteristics of the Uninsured
9. Awareness and Knowledge of State Health Insurance Programs
10. Barriers to Enrolling in Health Insurance Among the Uninsured
11. Efforts at Enrolling in Health Insurance Among the Uninsured
12. Interruptions in Insurance Coverage
13. Dental Insurance
14. Health Care Expenditures
15. Barriers to Receiving Health Care
16. Visits to Health Care Providers
17. Use of ER Services
18. Use of Mental Health Services
19. General Health Status
20. Employment Characteristics
21. Access to and Enrollment in Employer Sponsored Health Insurance
22. Income (family level)

The primary changes from the 2016 survey included:

- Adding questions about the potential impact of changes to policy relating to the individual health care mandate.
- Removing questions on military insurance and Medicare plan quality.
- Adding questions on usual source of health care.

**Family Formation**

One important concept that was incorporated into the 2018 Rhode Island Health Insurance Survey was that of family units. This concept is important because of the relationship between variables such as private or governmental insurance coverage and family level characteristics such as income. The survey logic was designed so that all members of a household were grouped into family units based upon their relationships. The survey was structured to ask the questions about each family unit separately.

Family units were identified by establishing the relationship of each member of the household to the identified head of the household. This was done by first collecting the number of people in the household and a name or other identifier for each person. The household was then rostered, and basic demographic information was gathered on each household member (age, gender, marital status, ethnicity, race, level of education, and where the resident was born). The respondents were then asked to describe the relationship of each member of the household to the head of the household. Two follow-up questions then clarified marital relationships between household members besides the head of household and their spouse and any guardian/ward relationships. Based upon this sequence of questions, household members were classified into family units. In general, the rules to assign members to family units were:

1. The head of the household and his/her spouse were classified in the same family unit (always family unit 1)
2. Adults aged 19 and older who were not married to the head of household were classified as a separate family unit
3. Adults aged 18 were initially classified as a separate family unit. An assessment was later made to determine if they should be classified into the same family unit as their parents (see below)
4. Married couples were classified in the same family unit. This included married couples involving someone under age 17
5. Children aged 17 and younger were classified in the same unit as their parent(s)/guardians. If their parent(s) or legal guardian did not live in the household, they were considered a separate family unit. With the exceptions that:
    - Children aged 17 and younger were classified into a separate family unit from their parents in cases where they were married and/or had a child of their own, no matter their residence
6. Adults that were age 18 were classified into a family unit based upon whether they were currently living with their parents, were married and/or had children. If they were not married and did not have any children, they were classified in the same family unit as

their parents (if living in the same household). If they were married and/or had a child of their own, they were classified as a separate family unit (with their spouse and/or child)

7. Finally, those who were identified as the ward of another household member were classified in the same unit as that household member, unless prior rules determined the ward should be classified separately

**Bilingual Interviews**

Once the survey was finalized, it was translated into Spanish to allow for bilingual interviewing. Translation of the survey was completed by MDR staff.

# III. Data Collection

The data collection phase of the 2018 Rhode Island Health Insurance Survey began June 22, 2019 and was completed by December 30, 2018. A total of 3,806 households were interviewed during this period.

In order to meet response rate requirements for this study, a rigorous data collection strategy was used in conducting this survey. This included the following:

- Rotation of call attempts across all seven days at different times of the day according to industry standards for acceptability and legality in telemarketing

For Landline Phones:

- A minimum of 5 callback attempts per telephone number at the screener level (before number was identified as a qualified residential number)
- 2 attempts to convert refusals (the exception were those households that made it clear they were not to be contacted again)
- A minimum of 5 callback attempts for "no answer" or answering machine only telephone non-contacts and for inappropriate contacts (contact only, no most knowledgeable adult home), and scheduled callback appointments
- A brief message with a toll-free number was delivered to answering machine only attempts to encourage participation (messages were left on the first answering machine dispositions)

For Cell Phones

- A minimum of 5 callback attempts per telephone number at the screener level (before number was identified as a qualified residential number)
- 1 attempt to convert refusals (the exception were those households that made it clear they were not to be contacted again).
- A brief message with a toll-free number was delivered to answering machine only attempts to encourage participation (messages were left on the first answering machine dispositions)

Per industry standards, interviews were only conducted during the hours from 9 AM to 9 PM and seven days a week. The only exceptions were specific, scheduled appointments outside this range.

**Responding to Rhode Island Residents Inquiries about the Survey**

One strategy that was used in order to increase response rates was providing reluctant residents with the web address for an informational website created about the survey. This website offered information about what the survey asked, and allowed residents to remove themselves from being called or volunteer to take the survey at a time that worked well for them.

**Scheduling Callback Appointments**

The CATI (Computer Assisted Telephone Interviewing) system used by MDR during the course of this survey is designed to allow interviewers to set callback appointments for a specific date and time. It is also designed to allow a respondent who has begun the survey and cannot complete it to complete it at a later time. This is done so that the respondent can complete the survey at a time that is most convenient for him or her. The interviewer enters the date and time the respondent provides and the respondent is then contacted at that time.

**Survey Length**

The 2018 Rhode Island Health Insurance Survey required respondents to provide a great deal of information about themselves and other family members. The goal was to obtain accurate information about all household members while limiting the time commitment required of the respondent.

On average, the survey required 21.9 minutes to complete. This is similar to, though slightly longer than, the 2016 survey.

**Exclusion of Household Members**

In multiple-family households, it was expected that there would be cases where the respondent would not be able to provide accurate data on every person living in the household. During the course of the survey, the respondent was asked to identify any household member for which he/she felt accurate information could not be provided. During the interview, the respondent was not asked questions relating to these individuals. The interviewer then asked this respondent all survey questions except the questions on household and person characteristics (demographics). Over the course of data collection, 555 household members were excluded since the respondent did not have sufficient knowledge to answer questions about these household members. This represents 6% of the total number of members residing in the households contacted during data collection.

**Pre-Notification Mailings**

Analysis over the course of data collection revealed that the rate of completes achieved was insufficient to complete the survey in a timely manner. In discussions with Freedman Health Care and the State of Rhode Island, it was decided that data collection could not extend into the 2019 year. This would mark the starting point of many new HealthSource Rhode Island health plans as well as many employer plans. As the survey is intended as a point-in-time estimate, this would impact data quality and consistency.

In order to increase the rate of completes achieved, a pre-notification letter was drafted. This letter provided basic information about the survey and was intended to help solicit response by building legitimacy. It included a contact number for Mark Noyes if individuals wanted to request more information. Roughly two dozen calls were generated by this, mostly individuals seeking to be removed from the sample.

Because this required address information the decision was made to shift from an RDD cellphone frame to a listed cellphone frame for this portion of data collection. This sample was generated by MSG.

In total, 57,500 records were sent this letter. A copy of the pre-notification letter is included as an appendix.

# IV. Survey Response Rates and Final Dispositions

The response, cooperation, and refusal rates to the 2018 Rhode Island Health Insurance Survey are presented in Table 1 for the survey as a whole, as well as for the landline sample and cell phone samples.

The rates reported are based on the standard formulas developed by the American Association for Public Opinion Research (AAPOR). The reported response rate is based on AAPOR RR3 formula.

This final sample disposition report is presented in Table 2. It reports dispositions for the survey as a whole, as well as separately for each sampling strata.

**Table 1. Summary of Response, Cooperation, and Refusal Rates by Survey Component and Strata**

| | Response Rate | Respondent Cooperation Rate | Respondent Refusal Rate |
|---|---|---|---|
| **Landline** | 15.8% | 60.8% | 7.7% |
| **Cell Phone** | 14.7% | 94.6% | 6.5% |
| **Total** | 15.1% | 86.6% | 6.7% |

## Table 2. Final Sample Disposition Codes

| Eligible, Interview (Category 1) | Sample | | Total |
|---|---|---|---|
| | Landline | Cell | |
| Complete | 1,085 | 2721 | 3,806 |
| Partial (Call back) | 5 | 32 | 37 |
| **Eligible, Non-interview (Category 2)** | | | |
| Refusal and breakoff (Partial Terminate) | 111 | 297 | 408 |
| Household-level refusal | 681 | 2821 | 3502 |
| Known respondent refusal | 30 | 29 | 59 |
| Scheduled Callback | 1 | 2 | 3 |
| Respondent never available | 1 | 15 | 16 |
| Telephone answering device | 35 | 113 | 148 |
| Physically or mentally unable/incompetent | 0 | 3 | 3 |
| Language problem | 7 | 20 | 27 |
| **Unknown eligibility, non-interview (Category 3)** | | | |
| Always busy | 75 | 679 | 754 |
| No answer | 1,432 | 10896 | 12328 |
| Call blocking | 86 | 1589 | 1675 |
| Hang-up | 614 | 5716 | 6330 |
| No screener completed, residential and live contact made | 32 | 459 | 491 |
| **Not eligible (Category 4)** | | | |
| Fax/data line | 455 | 324 | 779 |
| Non-working/disconnect | 3,414 | 8867 | 12281 |
| Non-working number | 2,641 | 30907 | 33548 |
| Temporarily out of service | 373 | 3383 | 3756 |
| Number changed | 7 | 30 | 37 |
| Cell phone < 18 | 18 | 437 | 455 |
| Pager | 7 | 11 | 18 |
| Non-residence | 0 | 0 | 0 |
| Business, government office, other organizations | 442 | 2448 | 2890 |
| Institution or Group Quarters | 9 | 62 | 71 |
| No eligible respondent | | | 0 |
| Other | 192 | 945 | 1137 |
| Not an eligible residence | 79 | 2857 | 2,936 |
| **Total sample used** | **11,832** | **75,663** | **87,495** |

# V. Total Interviews

A total of 3,806 households were contacted and interviewed. The final data includes data on 8,789 Rhode Island residents. The final dataset also contains data from 220 uninsured Rhode Island residents.

A total of 1,085 surveys were completed via landline telephones and 2,721 were completed via cell phone interviews.

A total of 64 interviews were completed in Spanish.

# VI. Data Cleaning

Any survey process can result in erroneous reporting or recording of data. To ensure the accuracy of the data, MDR conducted data consistency checks on the data files as part of the data file preparation and analysis. The first stage of this process involved checking all data to ensure that responses were consistent. This process involves ensuring that respondents were asked appropriate questions based upon earlier responses to variables, that skip patterns were followed based upon appropriate responses to earlier items, and that respondents provided consistent answers to questions on related concepts.

The initial steps of data consistency checks were programmed into the survey instrument themselves. These included verification items on key issues. An example includes the verification of Medicare coverage as opposed to Medicaid coverage among those under 65. The programmed data checks ensured that respondents were directed to appropriate questions and that answers to some key issues were verified.

There are three possible sources of data errors that the survey programming could not fully account for in its design. These were:

1. Respondents, who after completing questions or entire sections of the survey, changed their minds about the answer they had provided
2. Respondents, whether due to lack of information or unfamiliarity, provided inaccurate information
3. Respondents who answered a question or questions in one fashion and then provided a different answer to a related question later in the interview

In the first case, interviewers could back up in the survey instrument and enter the corrected information. The CATI software used by MDR would then correct answers based upon new branching or skip patterns.

The second case is largely related to knowledge of specific insurance plans, primarily government sponsored plans, which provide coverage to family members. The two most notable examples were respondents who confused Medicare and Medicaid coverage, and respondents that confused Medicaid coverage with coverage through private health insurance.

In the last case, the data was left coded as provided by the respondent. The decision was made not to challenge respondents by indicating they had provided conflicting answers to similar survey questions.

# VII. Data Imputation

### Data Imputation

Given the nature of the survey data collected, it was decided that missing values would be imputed on certain key values, particularly weighting variables. Data imputation is a procedure that determines the likely value of a given variable based upon other known characteristics of the respondent. Imputation relies on answers to other questions to derive the most likely value for the missing value. MDR used data imputation on several of the variables in this research. In the cases where a variable was imputed, the final dataset contains a copy of the variable with imputed values, a copy of the original variable with missing values retained, and a flag variable which identifies which values were imputed and the method used. The research staff used three primary methods of data imputation.

### 1. Logical Imputation

This step involved an assessment of answers to other questions (within the case) to determine if it was possible to deduce the answer to a question with a missing value. In some cases, this was done by evaluating a question that was very similar in nature and content. In other cases, it involved assessing a number of related questions to derive the most likely value. The initial survey design anticipated this approach, somewhat. A number of consistency checks programmed throughout the survey on certain key variables. These consistency checks were used during the course of imputation to impute missing values to certain key variables.

### 2. Donor Substitution Imputation – Hot Deck Imputation

Hot deck imputation relies on the fact that individuals with similarities on a number of variables are likely to be similar on those variables with missing values. The process involves identifying an individual with similar values on other variables and substituting this person's response for the missing value. In each of these cases, a number of variables were used to identify those respondents that were similar to a respondent with a missing value for a specific variable. The types of variables that were used to define characteristics that are "similar" varied depending on the nature of the variable to be imputed. These included key demographic characteristics and variables with a high correlation to the variable imputed. Once defined, the process of imputing the missing value relied on replacement. Based upon defined characteristics, the file was sorted in "serpentine" fashion (alternating ascending and descending sorts on variables). The value from the "nearest neighbor" was then used to replace that of the missing value.

### 3. Regression-Based Imputation

For certain variables, such as income, the use of regression-based imputation was the most suitable method. This process relied on regression analysis to predict the value of the variable. The use of analytical software that is designed to conduct missing values analysis was involved. As with hot deck imputation, the number and type of variables used during regression analysis varied by the variable that was imputed but this also relied on key demographic variables and those correlated with the variable containing missing data.

The primary variables that were imputed were those used in weighting the survey data (gender, race, and ethnicity). In addition, income was also imputed. This was important since missing values would cause problems with the post stratification weighting of the data. Those cases with missing values would not have appropriate adjustments made and this would lead to an increase in variance since their weights would differ from those cases with complete demographic data. The data imputation process "estimated" any missing values in those variables used in post stratification weighting to minimize their impact on data quality. The method of imputation used for these variables is as follows.

**Table 3. Imputed Variables and Methods**

| | |
|---|---|
| Gender | Logical Imputation |
| Age | Logical Imputation |
| Ethnicity | Logical and Hot Deck Imputation |
| Race | Logical and Hot Deck Imputation |
| Language spoken at home | Logical and Hot Deck Imputation |
| Income | Regression Based Imputation |
| Company size (# of employees) | Logical and Hot Deck Imputation |
| Medical Expenditures | Regression Based Imputation |
| Monthly Premium (private health insurance) | Regression Based Imputation |
| Annual Deductible (private health insurance) | Regression Based Imputation |

# VIII. Data Weighting

The data has been weighted to adjust for non-response and also to match the state profile based upon sex, age, race, ethnicity, area of residence, and income. Weighting adjustments were also made for households based upon their access to landlines, cell phones, or both. The weighting procedures involved two primary phases: design weights and raking weighting adjustments.

Market Decisions Research developed design weights based on the probability of selection within a frame with an adjustment for those potentially in two frames. Additionally, MDR incorporated a weighting adjustment for the cell phone only population.

An initial sample weight was assigned to each record in the sample file. This base weight was equal to the inverse of the probability of selecting a number within each of the sampling strata. An adjustment was made to this design weight if there was the possibility they were included in both the landline component and the cell phone component. The final design weight was:

1. Equal to the base weight for those that only had a landline telephone (determined during data collection)
2. Equal to the base weight for those that only had a cell phone (determined during data collection)
3. Equal to twice the base weight for those that had both a landline and a cell phone (determined during data collection)

**Raking Weighting Adjustments**

The purpose of raking is to standardize the weights so they sum to the actual population within Rhode Island as well as summing to the population by area, age, gender, race, ethnicity, income, and whether the household was a cell phone only household. Raking adjustments were made by these various demographic characteristics.

Demographic data on population counts was developed from American Community Survey (ACS) single year estimates, from the US Census Bureau. The data for the cell phone only population was provided by Marketing Systems Group, which provided estimates of cell phone only households for each Rhode Island county.

An initial review of survey and census data was conducted to determine the appropriate steps in the weighting process. The general guideline in post-stratification weighting is that no cell should have fewer than 20 cases. The initial post-stratification weighting was done in six steps:

1. Age by gender by county of residence
2. Race by age by gender
3. Ethnicity by age by gender
4. Income by age by region of the state (Providence County, other counties)
5. Cell phone only household, households with both landline and cell phones or just a landline phone by county
6. Enrollment in a health plan purchased through HSRI

The categories used in the weighting adjustments are provided in Table 4.

The initial raking weighting adjustment applied to the dataset was age within gender within county. This initial weight adjusted the survey data to match the population counts by age cohort and gender within each county within Rhode Island. An adjustment factor was calculated within each county by age by gender cell:

$$Adj(AS) = AS(area - census - actual)/AS(area - survey)$$

Where:

- Adj(AS) was the age cohort by gender weighting adjustment within each county
- AS (area – census – actual) was the actual population within a specific county by age cohort by gender cell
- AS (area – survey) was the weighted survey count within a specific county by age cohort by gender cell (weighted by final family weight)

Adjustments were made to this initial person level weight to adjust for the actual number of residents by race (race by age by gender), then ethnicity (ethnicity by race by gender), income (income by age by area), an adjustment to account for cell phone only households, and an adjustment for enrollment in an exchange plan.

Since the application of any weighting adjustment to the initial person level weight causes the age/gender/county survey counts to vary, raking was utilized. That is, once the race, ethnic origin, income, and other adjustments were applied, the survey counts of age by gender by county did not match the actual population counts. The raking process alternates making weighting adjustments by variables for which there are only marginal counts (for example, weighting by age/gender/county and then by race/age/gender) by making alternating adjustments. Thus, the initial person level weight was adjusted by race, ethnic origin, income, and cell phone only households all in separate adjustments. Then, this new weight was adjusted by age/gender/county so it again matched the demographic profile of Rhode Island by these characteristics. This weight was then adjusted to match the counts based on the other five weighting adjustments so that the survey counts now accurately reflect the population based on race, ethnicity, income, exchange health plan enrollment, and whether they were a cell phone only household. The raking process was repeated until the weighting adjustments converged and the weighted counts matched the state demographic profile by age, gender, county of residence, race, ethnic origin, income, enrollment in a private health plan obtained through the exchange, and the presence of cell phone only households.

**Table 4. Variables Used in Raking Weighting Adjustments**

| | |
|---|---|
| Area | |
| | Bristol County |
| | Kent County |
| | Newport County |
| | Providence County |
| | Washington County |
| Age | |
| | 0-9 |
| | 10-17 |
| | 18-34 |
| | 35-49 |
| | 50-64 |
| | 65+ |
| Gender | |
| | Female |
| | Male |
| Ethnic Origin | |
| | Hispanic |
| | Non-Hispanic |
| Race (based on primary race) | |
| | White |
| | African American |
| | Other Race |
| Family Income (as a percentage of Federal Poverty Level) | |
| | < 100% |
| | 100% to 199% |
| | 200% to 299% |
| | 300% to 399% |
| | 400% to 499% |
| | 500%+ |
| Cell Phone Only Adjustment | |
| | Household with only a cell phone |
| | Household with only a landline or both a cell phone and landline |
| Exchange Plan Enrollment | |
| | Person enrolled in a private health plan obtained through HSRI |
| | Person not enrolled in a private health plan obtained through HSRI |

**Post Stratification Weighting Adjustments for Enrollment in Medicaid and Other State Sponsored Programs**

An issue that is common in all studies that try to measure health insurance coverage is that the population enrolled in Medicaid and other state health insurance programs is generally undercounted. There are a number of reasons that might account for this, such as a greater difficulty in reaching these populations given their lower incomes, and reluctance among some respondents to report enrollment in such programs. This is often referred to as a response driven by social desirability. Among many people, there may be a sense of embarrassment associated with enrollment in a state sponsored health program. Another aspect is confusion of state sponsored insurance programs with Medicare or private insurance. Survey design elements were incorporated to identify cases where there was potential confusion.

In order to determine the potential for an undercount of Medicaid in the survey data, an analysis was undertaken using available administrative data on program enrollees. Based on administrative data, a total of 299,407 Rhode Island residents were enrolled in RIte Care, RIte Share, or other Medicaid programs. After post-stratification weighting, the survey estimate of the population enrolled in RIte Care, RIte Share or other Medicaid programs was approximately 238,000 Rhode Island Residents. This represents an undercount of 20%, which is an increase from the 2015 and 2016 surveys.

Given this undercount, post stratification weighting adjustments were recalculated to adjust for the undercount of enrollees in RIte Care, RIte Share, and Medicaid. These adjustments were based on the number of enrollees calculated from the administrative records. A post-stratification weighting adjustment was made by enrollment in these programs by age by gender to correct for this undercount. The adjustments were made at the state level.

This Medicaid weighting adjustment was then included in the raking process with the six other weighting adjustments so that a total of seven adjustments were made during the raking process:

1. Age by gender by county of residence
2. Race by age by gender
3. Ethnicity by age by gender
4. Income by age by region of the state (Providence County, other counties)
5. Cell phone only household, households with both landline and cell phone or just a landline phone
6. Enrollment in a health plan purchased through HSRI
7. Medicaid program enrollment by age by gender

The raking process was repeated until the weighting adjustments converged and the weighted counts matched the state demographic profile by age, gender, county of residence, race, ethnic origin, income, enrollment in a private health plan obtained through HSRI, the presence of cell phone only households, as well as enrollment in a Medicaid program.

**Population Size Reflected in the Final Dataset**

The weighted dataset is designed to provide data that can be generalized to the non-institutionalized population of Rhode Island (based on ACS estimates) and to allow statements to be made about the state as a whole as well as for various sub-populations with a known standard error and confidence. The population size reflected in the final dataset is 1,047,841 residents.

# Appendices

# Appendix 1. Defining Eligibility for Medicaid or Subsides through the Exchange

## Defining Eligibility for the Uninsured and Potential Eligibility for those with Private Health Insurance

Under the guidelines in the Patient Protection and Affordable Care Act (PPACA), uninsured as well as some privately insured residents are eligible for coverage under the expanded Medicaid program or eligible for some level of premium assistance (tax credits) to assist in purchasing health insurance through the Health Exchange. The new eligibility rules in Rhode Island extend coverage in Medicaid to most adults with incomes under 139% of FPL (including the 5% income offset). Children in families with incomes of 265% of FPL or less would also potentially be eligible for coverage through the state Medicaid program. In addition, those who are pregnant are eligible for Medicaid if their income is less than 258% of FPL.

For those residents that do not meet the income requirements for Medicaid coverage, the PPACA provides tax credits that reduce premium costs. This includes those in families with incomes up to 400% of FPL. Adults in families with incomes between 139% and 400% of FPL (including a 5% income offset) and children in families with incomes between 266% and 400% of FPL who purchase coverage through the Health Insurance Exchange will be eligible for a tax credit to reduce the cost of coverage that began in 2014.

The amount of the tax credit that a resident can receive is based on the premium for the second lowest cost silver plan in the Exchange. A silver plan is a plan that provides the essential benefits and has an actuarial value of 70%, that is, the plan pays 70% of the cost of covered benefits. Further, the amount of the tax credit will vary by income. Those with a lower family income that purchase insurance through the Exchange will receive a larger tax credit to offset the cost of the health insurance. The tax credits are designed such that an individual or family will not spend more than a specific percentage of their income on health insurance premiums.

Under the guidelines, people eligible for public coverage and people offered coverage through an employer are not eligible for premium tax credits unless the employer's plan does not have an actuarial value of at least 60% or unless the person's share of the premium for employer-sponsored insurance exceeds 9.5% of income. People that meet the thresholds for unaffordable employer-sponsored insurance are eligible to enroll in a health insurance Exchange and may also receive tax credits (based on their family income) to reduce the cost of coverage purchased through the Exchange.

The PPACA also limits the total amount that people must pay out-of-pocket for cost sharing for essential benefits. Currently, the limits are based on the maximum out-of-pocket limits for Health Savings Account-qualified health plans (currently $7,350 for single coverage and $14,700 for family coverage).

Based on income guidelines, adults with a family income of less than 139% of Federal Poverty Level (FPL) and children in families earning less than 266% FPL are eligible for coverage through the Medicaid Program. Those not meeting the eligibility requirements for Medicaid but still residing in families earning 400% FPL or less are eligible to receive help to purchase insurance through the Health Exchange (exchange subsidies).

**Eligibility for Medicaid or Exchange Subsidies**

| | **Income Level for Eligibility Adults** | **Income Level for Eligibility Children** |
|---|---|---|
| Eligible for Medicaid | < 139% FPL | < 266% FPL |
| Eligible for Subsidies to Purchase Exchange Plan | 139% - 400% FPL | 266% - 400% FPL |
| Not Eligible for Subsidies to Purchase Exchange Plan | > 400% FPL | > 400% FPL |

Using these general income guidelines, survey data were used to model eligibility for Medicaid or purchasing health insurance through the Exchange among the uninsured. The analyses were based solely on income determinations of eligibility based on self-reported family income. They did not factor in other factors that may impact actual eligibility (such as potential access to other health insurance) or impact income which would affect either eligibility for Medicaid or the level of subsidy through purchase through the Exchange (such as additional state based income offsets that would reduce income in making determinations of eligibility).

## Appendix 2. Defining the Underinsured

Two estimates for underinsured residents in Rhode Island were calculated. The first of these estimates was originally created by the Commonwealth Fund, and is a widely understood and accepted method of estimating the underinsured. The second method, which we refer to as the Market Decisions Research Model, is an original creation of MDR. Based on the Commonwealth Model, it expands and refines the understanding of what it means to be underinsured in ways we consider critical.

### The Commonwealth Fund Model for Calculating the Underinsured

The first measure of underinsurance was based on a formula developed by the Commonwealth Fund. This formula is an attempt to determine individuals who would be financially burdened by medical expenses.

Financial burden, and thus underinsurance, under the Commonwealth Fund formula is determined in two ways: the annual insurance deductible and out-of-pocket medical expenses.

Families are determined to be underinsured if the deductible for their private health insurance exceeds **five percent** of the family's income; thus, a family of four making the Federal Poverty Level (2017) amount of $24,600 annually could not pay more than $1,230.00 in annual deductible without being considered underinsured. A family of one making $24,600 annually with a deductible of more than $1,230.00 would also be considered underinsured despite being over 300% of FPL.

The second method by which an individual can be determined to be underinsured by the Commonwealth Fund method is via out-of-pocket expenses. To determine the level, the Commonwealth Fund formula first splits families into two groups: those earning 200% of FPL or less, and those earning more than 200% of FPL. Families at or beneath 200% of FPL are considered underinsured if their reported out-of-pocket medical expenses exceed **five percent** of family income. Families making more than 200% of FPL are considered underinsured if their reported out-of-pocket medical expenses exceed **10%** of family income. Using the examples above, a family of four making $24,600 would be considered underinsured if their medical expenses exceeded $1,230.00. However, a family of one making $24,600 would require out-of-pocket medical expenses greater than $2,460 in order to be considered underinsured.

An individual may be considered underinsured based on deductible, based on medical expenses, or based on both criteria.

### The Market Decisions Research Model for Calculating the Underinsured

In order to understand the need for the MDR Model it is important to draw a distinction between direct and indirect measures. The Commonwealth Fund Model relies on indirect measures to determine underinsurance- calculating groups reporting high medical expenses or with risks of high medical expenses- and correlating them with direct measures such as reports of deferral of care or delayed care due to cost.

The MDR model builds on the Commonwealth Fund model by adding in other measures indicating financial burden due to the cost of health care; the deferral of care due to costs and difficulty paying medical expenses.

Reported deferral of care due to cost is not captured by the Commonwealth Fund model. As neither an accountable expense, or an economically measurable risk of a future cost, the Commonwealth Fund model has no ability to account for individuals reporting experiencing the event that the model attempts to understand the risk of if the individual does not otherwise meet the criteria. Clearly, if care is not received due to cost then, from an economic perspective, the household's coverage is inadequate.

The Commonwealth Fund model does not ignore the deferral of care but rather considers the deferral of care due to cost as a correlate rather than causal factor.

There is an additional way in which the MDR model broadens the understanding of the underinsured. Underinsurance should be evaluated at the family rather than the individual level. Simply, if one member of the family is underinsured, we would consider all members of the same health insurance unit (most typically a family, which is the term we use throughout) to be underinsured as well. While health care expenses are incurred by an individual it is the family's income that covers these expenses. Thus, the entire family experiences the economic impact of the health care coverage of each of its members. The cost of health care for each individual is an expense that is borne by the entire family. It is not possible for expenses to be isolated to an individual, nor are health insurance policies constructed in order to segment expenses. An individual's health care expenses also cause economic hardship for the entire family. Money spent on care for an ill family member is money that cannot be spent for other household expenses. Like income, expenses and the hardships caused by those expenses are shared. Finally, the expenses of one or more members of the family may lead to other members of the family deferring care because of the family's medical expenses.

Underinsurance must also consider all health care expenses regardless of whether a health care plan provides coverage for a specific expense. A key example is expenses incurred for dental care, which are rarely covered under health care plans and for which people often need to purchase separate coverage. These expenses again come from the common pool of resources dedicated to health care. A lack of coverage in for one or more aspects of health care can lead to directing resources to pay for these health care services at the expense of others. That the health care market is segmented in order to direct the cost of dental care toward individuals rather than to shared insurance pools does not exclude it from being health care, nor does it mitigate the cost.

The MDR model uses the Commonwealth Fund model as a baseline as it includes the key elements of costs incurred and potential risk. We then expand the definition of underinsurance to include:

- Families that experience financial stress in paying for health care
- Families that have members deferring care due to cost

- Expanding the definition of underinsurance to the entire family. That is, if one family member would be identified as underinsured based on these criteria, we consider all members of the family underinsured.

Using the MDR model, a family is considered underinsured if:

- The private insurance deductible for a household member exceeds five percent of family income.
- Out of pocket health care expenses for the family exceed five percent of family income for those with incomes up to 200% of Federal Poverty Level or have health care expenses greater than 10 percent of family income for families earning more than 200% of Federal Poverty Level (excluding premiums for health insurance).
- One or more family members deferred health care due to its cost. This includes deferring:
    - Medical care from a doctor or surgery
    - Routine medical care that that was needed
    - Mental health care or counseling
    - Any type of dental care
    - A diagnostic test such as a CAT scan, MRI, lab work, or x-ray that was recommended
    - Specialist care
    - Prescription Medicines
    - Skipping doses or taking smaller amounts of prescription drugs to make them last longer
- If the family experienced difficulties paying for medical bills

## Appendix 3. Survey Questionnaire

**Included in this document is the short version of the survey instrument that provides the questions but not the response categories. The long version of the survey which includes the response categories is provided as a separate document**

**Survey Introduction**

**Lead in Statement**

Hello, I'm _____ calling on behalf of the state of Rhode Island. We are doing an important study to learn about health insurance coverage and the health insurance needs of Rhode Island residents.
Let me assure you that this is not a sales call, will you help us?
First, is this a residence?

INTS READ AS NEEDED: Your participation counts for a lot because you represent many others in your community. Your information is strictly confidential. This is not a sales call.

**Interviewer persuader statement**

GENERAL RELUCTANCE

We are doing this study on behalf of Rhode Island's Executive Office of Health and Human Services to help the state evaluate the health insurance coverage and health insurance needs of Rhode Island residents.

Your participation in this study is very important. We need to know more about health insurance coverage in Rhode Island to better guide state policy and programs. Will you help us by doing this study?

STUDY LENGTH
The study will take about 15 to 20 minutes, depending on the size of your household. Will you help us by doing this study?

HOW WAS I SELECTED
Your telephone number was selected at random. For our results to be accurate, it is very important that we interview all the people selected at random. Your participation will make this study more accurate. Will you help us?

If you would like to find out more about our study or if you would like to opt out of future calls, you can call Dr. Brian Robertson of Market Decisions at 1-800-293-1538 ext. 102.

## Household Level Information

1. In what Rhode Island County is your home located?

2. What is your zip code?

3. Does this household have a cell phone/landline phone?

4. Now I need to find out how many people live in your household. This includes family, boarders, roommates and anyone else who lives there most of the year. Including yourself, how many people are in your household?

## Person Level Demographics

1. What sex was PERSON assigned at birth?

2. What is PERSON's gender identity?

3. And PERSON's age on her/his/your last birthday? (IF THEY REFUSE: ASK FOLLOW-UP WITH AGE CATEGORIES)

4. Marital Status

5. What was the highest grade in school that PERSON have/has completed?

6. Is/Are PERSON a full-time high school or college student? (asked of those 18 to 26)

7. Is/Are PERSON Hispanic or Latino?

8. Which of the following would you say is PERSON(r/'s) race?

9. Was PERSON born in the United States?

10. IF NOT BORN IN THE UNITED STATES: How long has PERSON lived in the United States?

11. Does PERSON speak a language other than English at home?

12. IF PERSON SPEAKS A LANGUAGE OTHER THAN ENGLISH AT HOME: What is this language?

## Family Unit Formation

1. What is PERSON(r/'s) relationship to FILL HEAD OF HOUSEHOLD?

2. Is/Are PERSON married to anyone who currently lives here or to someone outside the household?

3. Is anyone living here the parent or guardian of PERSON?

4. Who in the household is the main person taking care of PERSON?

## Insurance Coverage

The next questions will be about HEALTH INSURANCE. By this I mean any program or plan that pays any part of hospital or doctor bills. For example, Medicare, Medicaid, RIte Care, Military or Veteran benefits, Blue Cross, United Health Care or Neighborhood Health Plan.

1. Is PERSON covered by ANY type of health insurance? IF YES ASK: Which of the following types of insurance is this person covered by?

    - Private health insurance (Employer based or company like Blue Cross)
    - Medicare
    - RIte Care
    - Medicaid or Rhode Island Medical Assistance
    - Military, Veterans, or TRICARE (formally known as CHAMPUS)
    - Some other type of insurance? (SPECIFY)
    - RHODY HEALTH PARTNERS
    - CONNECTCARE CHOICE
    - RITE SHARE
    - HEALTHSOURCE RI
    - THROUGH THE STATE (BUT NOT AS STATE EMPLOYEE)
    - SSI/SSDI/WELFARE/DISABILITY
    - INDIAN HEALTH SERVICES
    - NO INSURANCE COVERAGE
    - DK/REF

2. VERIFICATION FOR THOSE THAT ARE UNINSURED: You indicated PERSON is not covered by health insurance, is this correct?

3. SOURCE OF CARE FOLLOW-UP FOR THE UNINSURED: Does anyone else pay for PERSON's bills when they seek medical care?

4. SOURCE OF INSURANCE E FOLLOW-UP FOR THOSE INDICATING HEALTHSOURCE RI: Do you know if PERSON is enrolled in RIte Care, RIte Share or if PERSON is enrolled in a private health plan?

Insurance Coverage Verifications:

5. I noticed that PERSON is 65 or older and you indicated this person was NOT covered by Medicare. Is this correct?

6. FOR THOSE 65+ THAT INDICATE PRIVATE HEALTH INSURANCE COVERAGE: You indicated PERSON is covered by private insurance. Is this private insurance policy a PRIVATE Medicare supplement such as those offered by AARP, United Health Care, or Blue Cross Blue Shield, or other plans that help cover expenses not paid by Medicare, OR is this a separate private health insurance plan?
   IF THEY SAY PRIVATE INSURANCE: Is this Medicare Advantage Plan OR is this a private health insurance plan through an employer?

7. ASK OF THOSE < 65 INDICATING MEDICARE COVERAGE: Just to verify, is PERSON covered by national MEDICARE, or are they covered through the state's MEDICAID program including RIte Care, RIte Share Connect Care, or by both MEDICARE and MEDICAID?

8. ASK OF THOSE 65+ AND INDICATING MEDICAID COVERAGE: Just to verify, is PERSON covered by the STATE MEDICAID program including RIte Care, RIte Share, Connect Care or Rhody Health Partners, or are they covered through the NATIONAL MEDICARE program for those 65 and older, or by both MEDICAID and MEDICARE?

9. ASK OF THOSE 65+ WITH MEDICARE: Does PERSON have a PRIVATE Medicare supplement such those offered by AARP, United Health Care, or Blue Cross Blue Shield, or other plans to help cover expenses not paid by Medicare or a Medicare Advantage Plan?

## Private Insurance Follow-ups

1. Are the people you indicated above as covered by private insurance ALL covered under the SAME health insurance plan?

2. Next, I need to know which members of the household are covered by each of these private health insurance plans. Who is covered under PERSON's policy?

3. Is PERSON's PRIVATE HEALTH INSURANCE provided through Blue Cross, United Healthcare, Neighborhood Health Plan or some other company?

4. ASK OF THOSE WITH NEIGHBORHOOD, UHC: Does PERSON have insurance through Rhode Island's RIte Care Program?

5. ASK OF THOSE WITH BLUE CROSS, NEIGHBORHOOD, OR UHC: Did PERSON enroll for this health plan through HealthSource RI?

6. ASK OF THOSE INDICATING COVERAGE SOURCE IS HEALTHSOURCE RI: Is this insurance provided by Blue Cross Blue Shield, Neighborhood Health Plan, or UnitedHealthcare?

7. Is PERSON's plan provided through YOUR OR SOMEONE ELSE'S EMPLOYER?

8. ASK OF THOSE WITH EMPLOYER BASED INSURANCE THROUGH NEIGHBORHOOD, UHC: Is PERSON receiving premium assistance from the state of Rhode Island's RIte Share program to help pay the cost of PERSON's monthly premium?

9. IF NOT ESI: Is PERSON (r/'s) insurance provided by COBRA or a former employer, a retirement plan, a school, college, or university, or was the plan purchased directly or the premium paid out of pocket?

10. ASK OF THOSE WITH A PLAN THROUGH HEALTHSOURCE RI: What type of plan is this? Is it a bronze, silver, gold, or platinum plan?

11. ASK OF THOSE WITH A PLAN THROUGH HEALTHSOURCE RI: Did PERSON receive financial assistance or tax credits to help pay for the health insurance plan PERSON purchased through HealthSource RI? (Financial assistance is provided to certain people to help them pay their monthly premiums. The amount is based on you and your family's income).

12. ASK OF THOSE WITH A PLAN THROUGH HEALTHSOURCE RI: Without the help you received in paying your monthly bill, would you have enrolled in a health care plan through the HealthSource RI?

13. Do/Does PERSON(r/'s) health insurance plan cover the costs of prescription drugs?

14. What is the monthly premium paid for PERSON's health insurance?

15. Has the amount paid in premiums for PERSON's health insurance plan increased during the past year?

16. How much is the deductible for everyone covered under this health insurance? This is the amount you must pay every year for medical care BEFORE the insurance begins to pay the bills. Please do not include premium expenses.

17. Does PERSON have a Health Savings Account or HSA?

18. IF HAVE HSA: How much did PERSON contribute to their HSA account during the past 12 months?

19. IF HAVE HSA: How much did PERSON's employer contribute to their HSA account during the past 12 months?

20. Can dependents be covered under PERSON's health insurance?

21. How would you rate the choice of doctors and other providers available?

22. How would you rate the range of services covered by PERSON's current health insurance coverage?

23. How would you rate the quality of care available?

24. ASK IF COVERED BY PRIVATE INSURANCE AND AGED 18-26: Does person currently have private health insurance for medical bills through a parent's health insurance

25. ASK IF NOT COVERED BY PRIVATE INSURANCE AND AGED 18-26: Does PERSON's PARENTS have private health insurance that allows coverage of children?

## Medicaid Insurance Follow-ups

1. For these next questions, please think about the household members that are currently covered by RIte Care, RIte Share or other state sponsored health insurance programs, such as Medicaid or medical assistance programs like Rhody Health Partners or Connect Care Choice.

2. If state sponsored health insurance programs were no longer available for members of your household, would they be able to get private health insurance coverage?

3. How would you rate the choice of doctors and other providers available?

4. How would you rate the range of services covered by PERSON's current health insurance coverage?

5. How would you rate the quality of care available?

6. Compared to LAST YEAR have there been changes in the coverage provided by RIte Care, RIte Share or Medicaid that limited which health care providers you or others could see for care?

## Questions of Those Who Are Uninsured

1. How long have/has PERSON been without health insurance coverage?

2. How does cost rate as the reason why PERSON is not currently covered by insurance?

3. What are the main reasons that PERSON is not currently covered by any government or private health insurance plan?

4. Next, I am going to read some possible reasons why PERSON may no longer have health insurance coverage. Is this a reason PERSON no longer has health insurance coverage?

    - You or another member of the family lost their job.
    - You or another member of the family are no longer eligible for insurance through their employer because of a reduction in the number of hours they work.
    - An employer stopped offering health insurance coverage to you or another family member.
    - Our family could no longer afford the cost of the premiums for health insurance through an employer for PERSON.
    - PERSON lost their coverage or became ineligible for RIte Care or Medicaid.
    - PERSON is not interested in insurance.

5. Earlier you indicated that PERSON had health insurance coverage during the past 12 months. What type of health insurance coverage did PERSON have?

## Medicaid Awareness and Knowledge

(Asked of households with uninsured members)

1. What are the reasons that members of the household have not enrolled in one of the State's Health Insurance Programs?

2. Next I would like to ask you about possible reasons why the uninsured residents in the household have not enrolled in RIte Care. Please tell me whether each of the following is a major reason, a minor reason, or not a reason at all.

    - I don't think we would be eligible for it because our employer offers health insurance.
    - I don't think we would be eligible because my household makes too much money.
    - We would be concerned about being able to see the doctors or health care providers I want to.
    - Our household wouldn't want to be receiving government assistance.
    - The uninsured members of our household don't really need health insurance coverage.
    - Our household would worry that the costs would be too high.
    - I would be concerned about the quality of care.
    - I would be concerned that health care professionals would treat me or my family differently.

3. There are certain requirements based on age and income for eligibility to enroll in RIte Care. If the uninsured members of your household were eligible to enroll in the RIte Care program, how interested would they be in enrolling?

4. Have you or others in your household visited the web site for HealthSource RI?

5. IF THEY HAVE VISITED HEALTHSOURCE RI WEBSITE: What types of information did you look for on the website?

6. IF THEY HAVE VISITED HEALTHSOURCE RI WEBSITE: How easy was it to find the information you were looking for ?

7. At any time since October 2017, did any of the uninsured members of your household apply for health insurance coverage through HealthSource RI or some other way?

8. ASK IF HH APPLIED FOR HEALTH INSURANCE: Did the uninsured members of the household apply for Medicaid or RIte Care, Private Health Insurance (through HealthSource RI), or some other insurance?

9. ASK IF HH APPLIED FOR HEALTH INSURANCE: What happened with the application(s)?

10. ASK OF THOSE VISITING OR CONTACTING HEALTHSOURCE RI BUT NOT APPLYING: Next, I would like you to think about the reasons you did not CHOOSE a health care plan through HealthSource RI. Why didn't you select a health care plan?

11. How familiar are you with the help that is available through the Affordable Care Act to pay for health insurance?

12. As you may know there is help to pay for health insurance as a result of the Affordable Care Act and state assistance. Did you check to see if you were eligible for any help to pay for your health insurance?

13. Has your family paid the tax penalty for uninsured members not having health coverage in 2017?

14. How important was the tax penalty in the decision whether to buy health insurance for uninsured family members?

## Interruptions in Coverage

1. Have/has PERSON been without coverage anytime in the last 12 months?

2. For how long was PERSON without health insurance coverage, even if that gap in coverage was longer than 12 months?

3. Why were/was PERSON without coverage?

4. How long has PERSON been covered under their CURRENT health insurance?

5. IF LESS THAN 12 MONTHS: What type of health insurance coverage did PERSON have prior to their current coverage during the past 12 months?

6. Why did PERSON change health insurance coverage?

7. Was PERSON covered under the SAME health insurance plan 12 months or one year ago?

8. ASK OF THOSE INDICATING DIFFERENT COVERAGE A YEAR AGO: What type of health insurance coverage did PERSON have one year ago?

## Dental Insurance

1. Is anyone now covered by an insurance plan that pays for routine dental care, such as cleanings and fillings?

## Doctor Visits and Point of Medical Care

1. How many times did PERSON see a doctor or health care provider during the past 12 months?

2. How many of those visits were for strictly routine check-ups, that is, when PERSON were/was not sick?

3. How long does it usually take to travel to the household's usual place for routine medical care?

4. Is there a place that PERSON usually goes when you/he/she is sick or needs medical attention?

5. What kind of place do/does PERSON go most often?

6. Is this the same place PERSON usually go/goes when you/he/she need(s) routine or preventive care, such as a regular check-up/well baby check-up?

7. What kind of place does PERSON usually go to when you/he/she needs routine or preventive care, such as a check-up?

8. Next, I'm going to read you a list of problems some people experience when they try to get health care. Please tell me if you or other family members had any of the following problems during the past 12 months:

    - You (or another family member) were unable to get an appointment with a primary care physician as soon as you thought one was needed.
    - You (or another family member) were unable to get an appointment with a primary care physician at a convenient time
    - You (or another family member) were unable to get an appointment with a specialist as soon as you thought one was needed.
    - You (or another family member) were unable to get an appointment with a specialist at a convenient time
    - Was there any other reason you or your family experience problems (SPECIFY)

9. Next, I'm going to read you a list of problems some people experience when they try to get health care. During the past 12 months did anyone in the household...

    - Unable to get an appointment at the doctor's office or clinic as soon as one was needed?
    - Unable to get an appointment with a primary care physician at a convenient time?
    - Were unable to get an appointment with a specialist as soon as you thought one was needed.
    - Were unable to get an appointment with a specialist at a convenient time

10. DURING THE PAST 12 MONTHS, did PERSON or anyone in the household seek medical care in a hospital emergency room for any reason?

11. In the past 12 months, how many times did PERSON receive care in a hospital emergency room?

12. I'm going to read you a list of reasons why some people go to the emergency room. Please tell me if any of these were important reasons for PERSON'S last visit to a hospital emergency room.

    - They were so ill or injured that they needed immediate medical attention
    - They needed care after normal hours at the doctor's office or clinic
    - The family owed money to the doctor's office or clinic
    - It was more convenient to go to the hospital emergency room
    - The doctor's office or clinic told them to go to the emergency room
    - Some other reason? (SPECIFY)

13. During the past 12 months, did anyone visit a walk-in or urgent care facility when they were sick or injured?

14. During the past 12 month did anyone in the household receive mental health care?

15. Did those seeking care experience any problems accessing this (mental health) care?

## Health Care Expenses and Barriers

1. Over the last 12 months, about how much has your household had to pay OUT OF POCKET for:

    PROMPT: Out of pocket expenses are the amount of money paid that is NOT covered by any insurance or special assistance you might have. It DOES NOT include the premium you may pay for your insurance coverage.

    - Your family's prescription medications.
    - Dental and Vision care.

- Mental health care.
- All OTHER medical expenses, including for doctors, hospitals, and tests. This would include common medical expenses such as over the counter medications, first aid materials, and so on.

2. During the past 12 months, was there any time when anyone in the household needed any of the following but didn't get it because they could not afford it:

    - Routine medical care that that was needed?
    - Medical care from a doctor or surgery?
    - Mental health care or counseling?
    - Dental care including checkups?
    - A diagnostic test such as a CAT scan, MRI, lab work, or x-ray that was recommended by a doctor or other care provider?
    - Prescription Medicines?

3. During the past 12 months, was there any time that you or anyone in the household skipped doses or took smaller amounts of their prescription drugs to make them last longer?

4. During the past 12 months, did anyone in the household receive any medical bill for more than $500 that had to be paid out-of-pocket?

5. During the last 12 months, were there times that there were problems paying for medical bills for anyone in your household?

6. Has anyone in the household ever delayed or not gotten care because they could not find a doctor or other health care provider or a healthcare provider was not available at the time they needed care? (What type of care?)

7. During the past 12 months, have any of the following happened to your family because of medical bills?
    - Unable to pay for basic necessities like food, heat or rent
    - Used up all or most of savings
    - Had large credit card debt or had to take a loan or debt against the home
    - Filed for medical bankruptcy

8. Has anyone in your household ever delayed or not gotten PHYSICAL OR MENTAL health care because they could not find or did not know a doctor or other health care provider who accepts RIte Care, RIte Share, or Medicaid? (What type of care?)

9. Has anyone in your household ever delayed or not gotten PHYSICAL OR MENTAL health care because they could not find or did not know a doctor or other health care provider who accepts their insurance? (What type of care?)

## General Health Status

1. Would you say PERSON's health, in general, is…?

2. Is any household member currently pregnant?

3. Is anyone LIMITED IN ANY WAY in any activities because of physical, mental or emotional problems?

## Employment

1. We are almost done with the survey. This next series of questions is about jobs and employment. Answers to these questions are important because they help us understand about health issues and sources of health insurance. Also, I want to emphasize that the information you provide will be kept confidential and will only be used in combined form and will not be combined with other information that could identify you in any way.

2. Is PERSON currently... [EMPLOYMENT CATEGORIES]

3. Do/Does PERSON typically work for pay?

4. What is the total number of hours PERSON usually works per week?

5. On this job, are/is PERSON employed by a private company or business, a government agency, in active military duty, self-employed, working in a family business or farm, or something else?

6. Thinking about the employer PERSON works for, which industry most closely describes the employer's main business? – LONG VERSION INCLUDES CODES

7. Do/Does PERSON work for the federal government, state government, or local government such as a county or city, or a public school or college?

8. About how many people are employed by this employer, at all locations?

## Employer Sponsored Insurance

(Asked of those who do not currently have health insurance through their employer)

1. Does the place where PERSON works at offer health insurance as a benefit to any of its employees?

2. Can dependents be covered under that health insurance?

3. Why was health insurance coverage not taken?

4. Next, I am going to read some possible reasons why PERSON may not have coverage through his/her employer or labor union. For each let me know if this is a reason why PERSON did not enroll in his/her employer's health insurance plan.

    - PERSON has not worked for his/her employer long enough to qualify for health insurance benefits.
    - PERSON works too few hours to qualify for health insurance benefits.
    - The health insurance offered through PERSON's employer costs too much.
    - The health insurance offered through PERSON's employer does not meet PERSON's needs in terms of what type of health care is covered.

5. If PERSON had the option, how likely would PERSON be to enrolling his/her employer's health insurance plan? (IF NOT LIKELY ASK: Why is this?)

## Family Income

(Questions will be asked for each identified family unit)

1. The next questions are about income that your FAMILY received during 2017. During the entire year of 2017, what was the total income for THIS FAMILY before taxes, including money from jobs, investments, social security, retirement income, child support, unemployment payments, public assistance, and so on?

2. IF REFUSE OR DK: It is important to understand incomes so we can better understand insurance coverage and concerns about insurance. Which of the following income ranges is closest to your family's 2017 total income from all sources? (INCOME CATEGORIES WILL BE BASED ON FPL DEFINITIONS)

## Closing

That is the conclusion of this interview for your family.

IF SOMEONE IN HOUSEHOLD IS UNINSURED: If you or anyone else is interested in finding out about state health insurance programs for people WITHOUT insurance, you can find out more by visiting the Health Source Rhode Island Web site: http://www.healthsourceri.com.

## Appendix 4. Pre-Notification Letter

[**FIRST_NAME] [LAST_NAME**],
[STREET ADDRESS]
[CITY], [ST] [ZIP]

Dear [FIRST_NAME] [LAST_NAME],

**You have been selected to participate in the 2018 Rhode Island Household Health Insurance Survey!** This important survey will allow the state to advance its mission of improving the health of Rhode Islanders. The survey is conducted by phone and will ask questions about healthcare coverage for all members of your household. Your participation is greatly appreciated!

**Who will be calling me?**
Market Decisions Research is an independent research firm located in Portland, Maine. You will see "Maine Research" or the telephone number 207-767-6440 on your caller ID.

**What should I do?**
You don't have to do anything! You can expect a call in the next few days.

**What does the survey ask?**
The survey will ask questions regarding your household's current health coverage, the source of coverage, your use of healthcare, and difficulties you may have had getting the care you need. To better understand survey participants and household members, we will ask for some basic information about age, gender, income, and employment.

The information provided is **completely private** and your answers will be **strictly confidential**.

**Who is sponsoring the survey?**
This survey is being conducted on behalf of The Rhode Island Executive Office of Health and Human Services and HealthSource RI - the state health exchange.

**Want some more information?**
Visit ***rihealthsurvey.com*** for more information about this important survey. The website allows participants to set themselves as a priority, or to be taken off our calling list. Want to talk to me personally? Call me at 1-800-293-1538, ext. 114. If I cannot be reached, please leave a message and I will get back to you.

Thank you,

Mark Noyes, MPH
Study Director
Rhode Island Health Insurance Survey

# Appendix 5. Status Report Recommending Data Collection Protocol Alterations

## Status and Recommendation

As of the December 5th, 2018, Market Decisions Research (MDR) has completed 3,531 surveys. MDR projects that they will complete e a minimum of 3,800 surveys by December 31st, 2018 and potentially slightly above this number.

MDR is confident that, based on current estimates and analysis of the data collected thus far, that completing 3,800 surveys will produce estimates with similar data quality (precision, margin of error, tests of statistical significance) to that produced in 2016.

Why is this?

## A Change in Sampling Approach

Various groups have different propensities to complete surveys. Individuals over the age of 65 are most likely to do surveys, while individuals age 18 to 24 are the least likely to complete surveys. In 2016 MDR attempted to limit the number of 65 and older data elements by increasing the percentage of surveys completed by cell phone since younger individuals are more likely to be exclusively cell phone users, and older individuals are more likely to be landline phone users. Even pursuing this strategy, MDR ended data collection with individuals age 65+ as 27% of the unweighted data set (16% of the RI population).

In 2018 MDR altered the sampling methodology to limit the numbers of respondents age 65 and older and to increase the numbers of respondents under age 65. In this iteration of the survey, MDR pursued a strategy in which all landline phone numbers were screened for the age of household head. Those with an age greater than 64 were then removed from the sample prior to data collection. This has not completely removed them from the data set, but has maintained the rate at which they appear to one far closer to the actual population.

## The Impact of the Change on Data Quality

In the population most of interest to this study, MDR estimates a final population count at 3,800 surveys that is nearly identical to the 2016 final data set among those age 18-64.

| | 2018 completing 3800 survey | 2016 completing 5011 surveys | Difference |
|---|---|---|---|
| Age 18 to 64 | 6,065 | 6,130 | 65 |
| Age 65+ | 1,405 | 2,703 | 861 |

The strategy we used will result in numbers of respondents aged 18-64 comparable to the 2018 survey while completing 1,200 fewer surveys.

**The Impact on Data Collection Effort**

Although these methodology changes sustained data quality, it made data collection significantly more challenging. MDR's sampling strategy explicitly excluded those identifies as 65+ from the landline sample. This led to an increase in the amount of time required to complete surveys since those 65 and older are most likely to complete a survey. MDR estimates that, had a sampling strategy similar to 2016 been pursued, more than 700 addition surveys would have been completed at this point. That being said, nearly all of them would have been with individuals age 65+. These surveys would have made progress toward the overall survey goal count, but would have not provide any additional statistical power or useful analytical ability. MDR's change in methodology increased the rate at which those populations most of interest.

MDR has also observed a shift in patterns of the uninsured which bears some attention. Currently, the rate at which MDR has completed surveys for those who are uninsured is lower than in 2016, despite a similar number of individuals interviewed. In addition, there has been a shift of the concentration of the uninsured by age and income. It's important to understand these figures are based on unweighted counts of incomplete data. Further data collection and data weighting are necessary to provide a truly representative data set.

**Our recommendation**

To summarize, MDR believes that a final data set of 3,800 surveys, using the current sampling methodology, will ultimately yield a data set capable of providing similar deliverables to 2016. These deliverables will contain similar numbers of individuals in the populations most of interest to HSRI and yield similar confidence intervals, similar comparisons of significance, and similar analytical power as the 2016 data set.

# Background

As a result of this downward trend that we have been observing for the last few months, we instituted a strategy in November that covered three objectives.

- HIS Survey website
- Pre-Notification Letter
- Shift sampling distribution to a 50/50 cell/landline

# Analysis

**Is there anything that we can do to improve in December?**

MDR has identified a pool of potential survey respondents for renewed effort. There is a pool of individuals who were flagged as bilingual Spanish speaking but did not ultimately complete a survey. MDR is re-contacting these individuals in hopes of completing further surveys with the uninsured and younger individuals.

**Can this survey be pushed out until January 2019? Do we stop on Dec 31 or continue to January?**

The survey instrument was created as a point-in-time measurement, estimating a respondent household's current insurance status when the survey is taken. On January 1, 2019, insurance policies purchased during the previous open enrollment period take effect and, because of patient protection clauses in the ACA, plans cannot generally be canceled for at least three months due to non-payment. The effect of this is clear in individual enrollment numbers; there is a large decline in enrollment after March of any given calendar year.

MDR strongly advises against any data collection in 2019 as it would have serious repercussions on the ability of the data to be compared to prior administrations. However, if this course is selected, MDR has plans in place by which to conduct additional surveys in 2019.

**Understand the statistical significance of completing 3800 vs 4000 vs 4200 surveys and the impact to the effectiveness of the data.**

MDR believes that for the populations of greatest interest, given the rates at which these individuals appear in the data set, there is almost no meaningful difference in the data quality at 3,800, 4,000 and 4,200 completes. MDR estimates that among the uninsured, an increase in survey totals from 3,800 to 4,200 would have almost no effect on confidence intervals.

**Can we assess which strategy has had the greatest impact on the current participation rate and then apply that to the current operations?**

MDR has found pre-notification letters to be a useful tool in increasing rate of completion. As such, all current data collection is being sent pre-notification letters before calls are attempted. In addition, MDR is re-contacting individuals who at some point requested an interview in Spanish.

**Understand all of the high value metrics and what is statistically significant for them. Example: Uninsured rate, we need 13 individuals. What are the other high value metrics that will be impacted. How many more individuals do we need? Can we establish a critical path based on high value metrics?**

MDR currently estimates that, at 3,800 completes, the RI HIS 2018 survey will result in respondent counts among those age 18 to 64 that are comparable to 2018. There will be fewer respondents over age 65.

For one particularly difficult to survey population, those age 18-24; we estimate we will have numbers almost identical to 2018 even though we completed 1,200 fewer surveys.

| | 2018 completing 3800 surveys | 2016 completing 5011 surveys |
|---|---|---|
| 18 to 24 | 789 | 800 |

Among the uninsured, MDR predicts achieving more than 200 individuals in 2018, which is generally considered a large enough pool for most analytic purposes. MDR is also taking steps to further increase the rate at which such individuals are identified.

**Does a data set of 3800 individuals line up with data from previous surveys?**

The number of surveys completed will have no bearing on the ability of the data to be compared to prior administrations. The data will all remain completely comparable. And as stated the 2018 data set will contain nearly an identical number of respondents aged 18 to 64 as the 2016 data set, even though we will have completed 1,200 fewer surveys.

# Options

**Define the statistical significance of 3800 vs 4000 vs 4200 surveys. What is the margin of error on the uninsured rate of 3800 vs 4000 vs 4200 surveys?**

Based on current projections of data collection, MDR estimates that the final confidence interval among the population level uninsured at the following for the quoted sample rates.

| | **3800 Surveys** | **4000 Surveys** | **4200 Surveys** |
|---|---|---|---|
| Confidence Interval | 0.52% | 0.54% | 0.56% |

Of course, MDR cannot definitively say that these will be the confidence intervals until the data is fully analyzed and weighted. However, these will be within the realistic scope of change. Increasing the number of surveys completed by these amounts is extremely unlikely to have meaningful impact on the final confidence of the measurements

**Based on the 136 forecast, we push the final delivery date out 2 (4000) or 4 (4200) weeks to January 2019. Is data collected in 2019 quality data when we correlate it with 2018 data?**

For the reasons outlined above, combining information collected in early 2019 to late 2018 is possible but we believe would not provide data of any better quality and perhaps have negative impacts due to changes in insurance status.

**Create a critical path mission critical metric plan, their current participation rate (ie Uninsured rate, we need 13 individuals) and establish a plan specific to these metrics.**

MDR believes that collecting 3,800 surveys in total would provide a final data set meeting all of HSRI's needs in all areas of important measurement. As previously stated, the counts among the population of greatest will be nearly identical to 2016. Results will be fully comparable to previous estimates, and will likely possess similar confidence intervals.

Should HSRI feel that it is necessary to complete 4,200 MDR has plans in place to do so. MDR has contacted their data collection partners who can provide assistance in meeting this goal.

However, the remaining completes would be completed using landline sample (which would achieve the 50/50 split of landlines and cell phones which has been agreed upon). Because of our current focus on cell phones at 3800 the split will be 55% cell and 45% landline.

1. Final Plan
- Statistical Significance
- Cost/Benefit Analysis
- Critical Path Metrics
- Timeline