Methods Brief: Minnesota Health Insurance Transitions Study (MN-HITS)

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SUMMARY

The Minnesota Health Insurance Transitions Study (MN-HITS) is a longitudinal telephone survey conducted in Minnesota in 2013 to assess change in health insurance coverage and/or access to health care for the population most likely to be eligible for new coverage options in 2014 in Minnesota under the Affordable Care Act (ACA). This brief decribes the development, methodology, and analysis of MN-HITS.

Overview of the Survey

The Minnesota Health Insurance Transitions Study (MN-HITS) is a longitudinal telephone survey of non-institutionalized individuals who either lacked health insurance or had coverage through the non-group market in Minnesota in the fall of 2013. The purpose of the survey was to assess change in health insurance coverage and/or access to health care for the population most likely to be eligible for new Affordable Care Act (ACA) health insurance coverage options in 2014, the first year of expanded Medicaid and subsidized non-group enrollment offered through Minnesota's Marketplace, MNsure. The Minnesota Department of Health (MDH) and the State Health Access Data Assistance Center (SHADAC), housed within the University of Minnesota, School of Public Health, initiated and conducted MN-HITS in 2014. Primary funding was provided by Robert Wood Johnson Foundation's State Health Reform Assistance Network.

Survey Administration

MN-HITS was administered through computer-assisted telephone interviewing (CATI) by Social Science Research Solutions (SSRS), headquartered in Media, Pennsylvania. A total of 493 interviews (482 complete, 11 partial) were conducted in English and Spanish[1] between August 6, 2014 and October 8, 2014. Remuneration ($5) was offered to all cell phone respondents to provide reimbursement for their cell phone minutes. The study was reviewed and approved by both the University of Minnesota and Minnesota Department of Health Institutional Review Boards.

The average length of the MN-HITS interview was 15 minutes for landline interviews and 17 minutes for cell phone interviews. Cell phone interviews required additional time due to extra questions needed to establish eligibility and safety and to gather contact information at the end of the interview to allow for mailing the compensation. Survey interviews conducted in English took on average 16 minutes, compared to 21 minutes for Spanish language interviews.

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[1] In 2014 a total of 15 interviews were completed in Spanish.

Sampling Methodology and Response Rate

The sampling frame for MN-HITS was drawn from respondents to the 2013 Minnesota Health Access (MNHA) Survey, the state's biennial dual-frame random digit dial telephone household survey. The MNHA is designed to assess health insurance coverage and health care access, use, and affordability for a representative sample of the general population in Minnesota. Questions about health insurance coverage are asked for all individuals in a sampled household, while detailed health care access and use questions are asked only about one randomly selected adult or child within the household ("target"); parents respond to questions for child targets.

The sampling frame for MN-HITS was based on a specific group of 2013 MNHA target individuals. Specifically, it included targets who were non-elderly (aged 0-63 years) and reported being uninsured or having non-group coverage (including coverage through the Minnesota Comprehensive Health Association, MCHA, Minnesota's high-risk pool). Because the age determination was based on reported age in the fall of 2013, the final sample included non-elderly adults aged 0-64 in 2014. The sampling frame included 1,510 individuals; 762 respondents lacked health insurance and 748 had non-group health coverage. They were contacted at the phone number on record at the time of the 2013 MNHA.

A total of 218 of uninsured individuals and 275 non-group insured individuals completed the 2014 recontact survey (n=493). The response rate (the American Association for Public Opinion Research Response Rate 3) (AAPOR, 2015) for the 2013 MNHA was 48 percent, and the response rate for the recontact survey was 42.5 percent. These response rates are on the moderate to high end of the distribution for state health insurance surveys (Call, Blewett, Boudreaux, & Turner, 2010) and comparable to a recent statewide recontact survey (SSRS, 2013) conducted in Oregon (Rebekah Gould, written communication, March 2015).

To assess for potential biases due to nonresponse, we compared the total MNHA sample of previously uninsured (762 respondents) and previously non-group insured (748 respondents) with the subgroups that responded to the recontact survey (MN-HITS), 218 and 275 respondents respectively. Bivariate analyses indicated very few differences between the two groups in terms of demographic characteristics, health status, past health care access and utilization, and familiarity with ACA provisions available in the 2013 MNHA. Specifically, out of 32 comparisons, we found significant differences in estimates for two characteristics among the previously uninsured and three among the previously non-group insured (See Appendix 1).[2]

Survey Content

The 2014 MN-HITS questionnaire was based on the 2013 MNHA questionnaire, an instrument developed by SHADAC (Coordinated State Coverage Survey) and adapted for use in Minnesota. The 2013 survey asked about health insurance coverage type, duration of coverage and uninsurance, eligibility for employer-sponsored and public insurance, reasons for being uninsured, access to and utilization of health care, barriers to health care, familiarity with key ACA provisions, several demographic characteristics, and family and household income.

The 2014 MN-HITS questionnaire was designed to determine type of health insurance coverage, but to also cover a number of metrics related to transitions in coverage due to ACA provisions implemented in 2014: purchase of/enrollment

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[2] The only exceptions for the previously uninsured were age (more recontact respondents were aged 55-64 years) and hospitalization use in the past 12 months (fewer recontact respondents had been hospitalized). For the previously insured the exceptions were home ownership (more recontact respondents were home owners), delayed care due to cost for any type of care (more recontact respondents experienced this delayed care), and familiarity with the ACA provision that concede tax credits and subsidies to enroll through the marketplace (fewer recontact respondents were familiar with this provision).

in coverage through MNsure, reasons for transitions in coverage, motivation for enrolling in a coverage plan, pathways to applying for coverage, and access to financial resources and internet service. Items on health insurance literacy and problems using insurance coverage were also added. In order to have benchmark data available and build upon research that assesses the validity and reliability of these measures, measures were drawn or adapted from several national surveys: the Current Population Survey, the Centers for Medicare and Medicaid Services (CMS) Federal Marketplace Survey, the Perry Undem/Enroll America Post-ACA Enrollment Survey, the Commonwealth Fund ACA Tracking Survey, the Urban Institute's Health Reform Monitoring Survey, and the Kaiser Survey of the ACA & Low-income Americans.[3]

The question series on pathways to applying for coverage asked about MNsure resources in particular, along with more general items about assistance-seeking in the process of looking for and enrolling in coverage. Items on health insurance literacy assessed individuals' familiarity with several common health insurance coverage terms. Questions related to financial resources (e.g., credit card and checking account) and internet service (at home, on phone, somewhere else) assessed whether individuals had access to key resources necessary for enrolling in coverage through the Marketplace. Questions about financial protection against medical expenses were also included.

Finally, as with the 2013 survey, the 2014 survey asked about family and household income, reasons for being uninsured, access to and utilization of health care, and barriers to health care to better understand how well insurance translates into access to health care services.

Weighting of Survey Responses

Data were weighted using the 2013 MNHA survey weight and an adjustment for nonresponse in the 2014 recontact survey. Initial MNHA 2013 base weights were generated to account for each respondent's probability of selection (which varied by geographic strata, the number of people in the household, the type of phone used (landline and/or cell phone), and the number of telephones in the household). Using the 2012 American Community Survey, the 2013 MNHA weights were then post-stratified to approximate the distribution of the sample to that of the state's population based on age, race/ethnicity, education, age by education, country of origin (U.S. v. foreign born), home ownership, geography, and household size. To account for the possibility of overestimating the probability of selection for households with active landlines and cell phones (dual frame sample), the type of phone usage (e.g., landline only, cell phone only, or dual) was also included in these weights. A ranking algorithm was used to optimize the iteration process of post-stratification (i.e., lower standard errors within the minimum number of iterations necessary).

While we observed few differences between the 2014 recontact survey respondents and non-respondents, we adjusted for potential response bias in the recontact survey using propensity score weights, which are widely used when adjusting for nonresponse bias in longitudinal studies (Chen, Gelman, Tracy, Norris, & Galea, 2012; Wun, Ezzati-Rice, Baskin, et al., 2004).

We estimated the propensity score for the previously uninsured and non-group insured samples separately. The final weights were created by multiplying the 2013 weights by the inverse of the 2014 predicted propensity score. To evaluate the weights we examined a set of demographic characteristics (e.g., the distribution of sex, age, race, country of origin, marital status, education, employment status, Health Insurance Unit income, home ownership, and urbanicity) using the

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[3] As part of process of designing the 2014 survey, SHADAC created a survey item matrix of relevant items from all state and national surveys examining 2014 transitions in coverage and individuals' experiences seeking and enrolling in the coverage through state and federal Marketplaces. The tool, the Marketplace Enrollment Survey Item Matrix (MESIM), can be found at: http://www.shadac.org/content/marketplace-enrollee-survey-item-matrix-mesim.

original weighted 2013 sample (n=1,510) and the reduced 2014 sample (n=493) with these new weights and found no statistical difference in any of these variables.

Data Editing and Key Variable Construction

Health Insurance Coverage

Health insurance coverage was assessed by asking about a comprehensive list of possible types of coverage (this was the same method used to assess coverage in the 2013 MNHA survey). Although respondents were able to report multiple coverage sources, each target was coded to a single source using a hierarchy as described below. In line with the U.S. Census Bureau (2012), targets who reported only Indian Health Services (IHS) were coded as uninsured. To reflect the creation of Minnesota's new Health Insurance Marketplace, MNsure, and the new subsidized insurance offering, MN-HITS also asked whether the target purchased or enrolled in coverage through MNsure, paid a premium, and received a premium subsidy in order to monitor this pathway to health insurance coverage (Pascale, Rodean, Leeman, Cosenza, & Schoua-Glusber, 2013).

As in the MNHA survey, the MN-HITS allowed respondents to report all sources of health insurance coverage available to them, accurately reflecting the scenarios with primary and secondary coverage. For a range of analyses and publications, the primary source of health insurance coverage is reported, meaning individuals are assigned only one type of coverage (or lack of coverage). The following hierarchy was used for determining the primary source of coverage for people who report access to multiple sources:

1. Public: Includes all state and federal public coverage and military.
2. Employer: Includes employer-sponsored coverage for employees and their dependents.
3. Individual: Includes all direct purchased coverage for individuals and families.
4. Uninsured: Includes those without any coverage and those who only have sources such as Indian Health Service that are not considered health insurance coverage.

The order of the hierarchy is based on researchers' understanding of which coverage likely acts as the primary payer of health care services. This means that during the process of assigning coverage, lower ranked insurance (higher numbers) typically assumed to be secondary payers, are replaced by sources of coverage ranked higher. The different types of public coverage are not separated out in the hierarchy because respondents often experience difficulties in differentiating among the various state and federal programs. This potentially contributes to a phenomenon known as the Medicaid undercount, where individuals with Medicaid coverage incorrectly identify their source of coverage but rarely misreport a lack of insurance altogether (Call, Davidson, Davern, Brown, Kincehloe, & Nelson, 2008; Call, Davern, Klerman, & Lynch, 2012).

Imputations

Income

Consistent with other surveys, income has the highest item nonresponse (i.e., respondents choose not to answer the question) of any of the survey items. Income related measures are important to the MN-HITS because of their association with various dimensions of health and interest in estimating the proportion of the population that is uninsured but appears to be eligible for public health insurance or subsidies/tax credits available through MNsure.

For the 2014 MN-HITS, 80 percent answered the open-ended question about family income and another 13 percent

provided a response to a question providing a set of income ranges, leaving only 7 percent without any income informa-tion.[4] Because excluding these cases could introduce bias to our survey estimates (non-responders may share certain income characteristics), income was imputed for these respondents. A second advantage of imputation is that it allows all respondents to be included in calculations involving income such as uninsurance rates by poverty level, and eligibility for public programs among the uninsured.

Income was imputed using a statistical procedure known as hotdeck.[5] This procedure, which was used for imputing other missing information as well, searches for cases with complete income data (donors) based on whether they are demographically similar to cases with missing data (recipients); a donor is then selected randomly from the possible set of donors. Demographic variables used in this imputation include gender, age, race/ethnicity, insurance type, household size, geographic region, telephone interruption, educational achievement of target (or primary wage earner if target is a child) and use of government financial assistance programs, such as WIC, among those responding only to the categor-ical income question. The 2014 imputation also took advantage of 2013 income data as an input variable in the hotdeck procedure.

Age

While we had age data on respondents collected through the 2013 MNHA, age was re-asked in the 2014 MN-HITS. As in the 2013 MNHA, respondents who were not comfortable providing age data (1.4 percent of cases) were asked a cate-gorical age question, allowing the target to be identified as a member in one of four possible age groups: a 0-17 year old child, an 18-25 year old young adult, a 26-64 year old adult, or an adult 65 years or older. In all cases, MN-HITS respon-dents reported to either the direct or categorical age question.[6]

Data Analysis

All analyses were conducted with Stata 13 to account for the complex survey design (using svy) (StataCorp, 2013). T-tests were used to test for differences in means (e.g., contrasts by age and race/ethnicity) and over time (e.g., unin-surance estimates from 2014 compared to 2013). Consistent with U.S. Census Bureau and National Center for Health Statistics practices (Klein, Proctor, Boudreault, & Turczyn, 2002), we limited the presentation of results to those with a denominator of at least 50 cases, and we flagged results with a relative standard error (standard error divided by estimate) of more than 0.3.

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[4] For context, the response rates on the income questions were similar in the 2013 MNHA survey: 77 percent responded to the open ended question about family income, 15 percent responded to the question providing a set of income ranges and only 8 percent of respondents did not respond to the income items.

[5] The software module was designed by Adrian Mander and David Clayton at the MRC Biostatics Unit of the Institute of Public Health in the University of Cambridge, UK.

[6] For context, in the 2013 MNHA,1.9 percent of cases refused the continuous age question and therefore age was imputed using the categor-ical age question, sex, marriage status, and household relationships – specifically, if the target was listed as a parent or a child.

About SHADAC

The State Health Access Data Assistance Center is a multidisciplinary state health policy research center located at the University of Minnesota School of Public Health. For more information, please visit our website at www.shadac.org, or contact us at shadac@umn.edu or 612-624-4802.

Suggested Citation

Call, K.T., Spencer, D., Alarcon, G., Pintor, J.K., Lukanen, E., & Dutwin, D. 2015. "Methods Brief: Minnesota Health Insurance Transitions Study (MN-HITS)." SHADAC Brief #45. Minneapolis, MN: State Health Access Data Assistance Center.

For More Information

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APPENDIX 1. MN-HITS AND 2013 MNHA RESULTS

	Previously Uninsured		Previously Non-Group Insured	
	MNHA	MN-HITS	MNHA	MN-HITS
N (TOTAL RESPONDENTS)	**762**	**218**	**748**	**275**
Sex				
Male	56.1%	55.4%	48.1%	44.1%
Female	43.9%	44.6%	51.9%	55.9%
Age (2013)				
0-17	18.4%	18.7%	24.8%	26.8%
18-25	18.8%	11.9%	12.5%	10.8%
26-34	24.8%	22.8%	7.9%	7.3%
35-54	29.2%	30.8%	35.5%	36.4%
55-64	8.9%	15.8% *	19.3%	18.7%
Race and Ethnicity				
White	56.8%	62.4%	89.2%	91.4%
Black	8.5%	5.5%	1.2%	0.9%
Hispanic	21.4%	22.6%	1.3%	0.4%
Asian or Pacific Islander	7.6%	5.7%	6.0%	4.1%
American Indian	2.3%	1.3%	0.3%	0.4%
Other and two or more races	3.4%	2.5%	2.1%	2.9%
Country of Origin				
Born in the U.S.A.	73.2%	81.2%	93.3%	94.8%
Born abroad the U.S.A.	26.8%	18.8%	6.7%	5.2%
Marital Status (18+)				
Married or separated	38.3%	36.1%	56.2%	48.9%
Not married	61.7%	63.9%	43.8%	51.1%
Children in Household				
Yes	51.4%	43.2%	48.9%	49.9%
No	48.6%	56.8%	51.1%	50.2%
Education (or Primary Wage Earner's if under 18)				
Less than High School graduate	17.0%	14.8%	2.7%	3.0%
High School graduate	31.6%	30.6%	18.5%	23.9%
At least some college	33.5%	38.6%	41.9%	35.5%
College graduate (or postgraduate)	17.9%	16.0%	36.9%	37.7%
Employment Status (or Primary Wage Earner's if under 18)				
Employed	74.7%	80.6%	76.4%	72.7%
Not employed	25.3%	19.4%	23.6%	27.3%
Income				
< 138% FPG	48.5%	47.8%	21.8%	24.5%
138 to 400% FPG	44.1%	45.8%	40.6%	43.5%
> 400% FPG	7.4%	6.4%	37.6%	32.1%
Home Ownership				
Homeowner	40.9%	46.4%	87.1%	92.0% *
Not homeowner	59.1%	53.6%	12.9%	8.1% *

* Indicates that the comparison between the MNHA and MN-HITS groups differs significantly at p < 0.05.
Some variables used in the analysis have imputed values (see Imputation section for more details).

APPENDIX 1. MN-HITS AND 2013 MNHA RESULTS

	Previously Uninsured		Previously Non-Group Insured	
	MNHA	MN-HITS	MNHA	MN-HITS
Area of Residence				
Metro area	55.2%	48.7%	48.2%	52.3%
Greater Minnesota	44.8%	51.3%	51.8%	47.7%
Urbanicity				
Urban	70.3%	67.1%	65.5%	67.7%
Rural	29.7%	32.9%	34.5%	32.3%
Self-Reported Health Status				
Excellent/very good/good	81.2%	85.1%	94.2%	93.4%
Fair/poor	18.8%	14.9%	5.8%	6.6%
Usual Source of Care				
Yes	54.9%	51.3%	83.7%	87.4%
No	45.1%	48.7%	16.3%	12.6%
Doctor Visit in last 12 months				
Yes	47.8%	49.6%	76.8%	79.4%
No	52.2%	50.4%	23.2%	20.6%
Hospitalization in last 12 months				
Yes	6.4%	2.4% *	4.0%	3.4%
No	93.6%	97.6% *	96.1%	96.6%
Emergency Department Care in last 12 months				
Yes	18.3%	19.5%	11.9%	11.0%
No	81.7%	80.5%	88.1%	89.0%
Confidence in Getting Care When Needed				
Confident	57.5%	63.0%	89.4%	84.2%
Not confident	42.5%	37.0%	10.7%	15.8%
Delayed Care Due to Cost: Any Type of Care				
Yes	45.0%	46.9%	22.4%	31.5% *
No	55.0%	53.1%	77.6%	68.5% *
Delayed Care Due to Cost: Prescription				
Yes	18.0%	17.7%	8.7%	11.1%
No	82.0%	82.3%	91.4%	88.9%
Delayed Care Due to Cost: Dental Care				
Yes	32.4%	34.7%	15.0%	21.8%
No	67.6%	65.3%	85.0%	78.2%
Delayed Care Due to Cost: Routine Medical Care				
Yes	32.4%	29.8%	8.1%	12.6%
No	67.6%	70.3%	91.9%	87.4%
Delayed Care Due to Cost: Mental or Behavioral Care				
Yes	17.5%	18.1%	3.9%	6.7%
No	82.5%	81.9%	96.1%	93.3%

* Indicates that the comparison between the MNHA and MN-HITS groups differs significantly at $p < 0.05$.
Some variables used in the analysis have imputed values (see Imputation section for more details).

APPENDIX 1. MN-HITS AND 2013 MNHA RESULTS

	Previously Uninsured		Previously Non-Group Insured	
	MNHA	MN-HITS	MNHA	MN-HITS
Delayed Care Due to Cost: Specialist Care				
Yes	17.9%	16.3%	4.5%	6.5%
No	82.1%	83.7%	95.5%	93.5%
Financial Burden Due to Medical Expenses				
Yes	40.8%	40.5%	20.7%	22.5%
No	59.2%	59.6%	79.3%	77.5%
Familiarity with ACA Provisions: Medicaid Expansion				
Familiar	41.6%	37.9%	55.6%	55.7%
Unfamiliar	58.4%	62.1%	44.4%	44.3%
Familiarity with ACA Provisions: Marketplace/MNsure				
Familiar	41.0%	40.1%	60.7%	67.2%
Unfamiliar	59.0%	59.9%	39.3%	32.8%
Familiarity with ACA Provisions: Tax Credits				
Familiar	28.8%	32.2%	48.2%	57.3%*
Unfamiliar	71.2%	67.8%	51.8%	42.7%*
Familiarity with ACA Provisions: Pre-existing Conditions				
Familiar	53.0%	50.3%	80.0%	80.8%
Unfamiliar	47.0%	49.7%	20.0%	19.2%
Familiarity with ACA Provisions: Individual Mandate				
Familiar	58.8%	61.8%	78.3%	80.0%
Unfamiliar	41.2%	38.3%	21.7%	20.0%
Sample Type				
Landline only	4.7%	6.0%	3.6%	4.7%
Cell only	67.8%	61.9%	35.4%	28.3%
Dual	27.5%	32.1%	61.0%	67.1%
Have Billing Zip (for cell cases only)				
Yes	59.1%	54.6%	73.8%	71.5%
No	40.9%	45.4%	26.3%	28.5%
Unfamiliar	41.2%	38.3%	21.7%	20.0%

* Indicates that the comparison between the MNHA and MN-HITS groups differs significantly at p < 0.05.
Some variables used in the analysis have imputed values (see Imputation section for more details).