

Experience of multiple approaches to increase response rate in a mixed-mode implementation of a population-based health survey



Metro SHAPE 2014 is the latest implementation in a nationally-recognized series of surveys collecting information on the health of residents living in the seven-county area around Minneapolis and Saint Paul, Minnesota and the factors that affect their health across a broad range of topics.

Starting in mid-September 2014, SHAPE 2014 contacted approximately 58,000 of the 1,000,000+ households in six of the seven Twin Cities metro counties (Anoka County did a version of the survey in 2013). The households were sampled from 17 geographic areas within those counties. In each of the 17 primary sampling areas, households in some census tracts were sampled at a higher rate based on having a higher percentage of households with incomes at 200% or lower of the Federal Poverty Level or a higher percentage of non-White or Hispanic residents. Of the 617 census tracts in the six-county area, 263 of the tracts were over-sampled. The sampling rate varied from 2% to 30%

Metro SHAPE used a mixed-mode approach: first offering and encouraging people from the households in the sample to take the survey on-line and then sending the households which did not take the survey on-line a paper copy of the survey with a postage-paid return envelope.

Some additional background and methodology information about the project is available in the document “Survey of the Health of All the Population and the Environment”.

Having done an implementation of this project every four years since 1998, the Metro SHAPE 2014 planning team anticipated that getting a sufficient number of respondents – especially among populations of special interest to the government agencies involved – with the limited financial resources available would require creative approaches.

This presentation will talk about five aspects of the project.

Incentive

Much research has shown that including an incentive with the initial mailing to persons in the sample increases the probability that those persons will participate in the study. While the management at each of the eight health departments involved with Metro SHAPE 2014 agreed in principle with this statement, there was not a uniform response as to whether to and how to implement an incentive with the mailings in their jurisdictions.

In the end, five agencies decided not to include any incentive. The Hennepin County Public Health Department, Washington County Department of Public Health and Environment, and the Saint Paul - Ramsey County Public Health Department decided to include an incentive that was health-related. The Hennepin County incentive was a customized map showing hiking and biking trails on one side and the location of farmers’ markets on the other side. This map was included in the second contact to every household in the Hennepin County sample. Washington County’s incentive was a map of the area parks and bike trails.

Saint Paul – Ramsey County Public Health Department’s incentive was a previously-created Ramsey County Parks and Recreation map showing parks, trails, golf courses, and other amenities aimed at active living. Of the 6,247 households in Ramsey County in the sample, 5,222 received a map in the second contact and 1,025 did not.

The demographics of the populations in each of the six counties involved with Metro SHAPE 2014 are quite different, so a direct comparison of the impact of the inclusion of the incentive map for Hennepin, Washington, and Ramsey Counties compared to the other three counties is questionable at best. However, there was a random assignment stratified by Saint Paul/Suburban Ramsey County and regularly- and over-sampled census tracts for whether or not a household in Ramsey County got a map. So one can analyze the results for within Ramsey County.

The results for Ramsey County are shown in Table 1.

Table 1: Response rate for Ramsey County households by incentive and geography

	Got Incentive	Did Not Get Incentive
Saint Paul	480/2616 – 18.3%	102/518 – 19.7%
Suburban Ramsey County	526/2341 – 22.5%	86/460 – 18.7%

A t-test analysis of the response rates for Suburban Ramsey County gives a probability of .06 – not quite significant, but hints that something might be going on, especially if there were more households which had not received the incentive (i.e., the control group).

The Metro SHAPE 2014 planning team believes that any type of incentive works only if the person receiving the item gives value to it. The planning team anticipated that a map of hiking and biking trails might be less effective than a cash incentive since not everyone has an interest in hiking or biking or already know where the best trails are. But, based on the results, there may be a middle group where the map did have a slight effect.

There were five census tracts [422.02, 427.00, 414.00, 342.02, and 425.04] within Ramsey County, as shown in Table 2, which had:

- 1) At least 15 households in the sample that got the incentive map;
- 2) At least 15 households in the sample that did not get the incentive map; and
- 3) Had at least a 4% difference in the response rates between those that got the incentive and those that did not.

Table 2: Response Rate Results for Selected Ramsey County Census Tracts by Inclusion of Incentive

Census Tract	Response Rate Incentive (# of households)	Response Rate No Incentive (# of households)
422.02	32.4% (71)	12.0% (25)
427.00	20.3% (74)	5.0% (20)
414.00	23.9% (88)	12.5% (16)
342.02	27.1% (85)	21.1% (19)

These five tracts could be argued were the areas where the map was most effective as an incentive.

Expedited Mailings

Much research in the recent years have consistently shown that offering people options (e.g., on-line or by mail) concurrently of how they can complete a survey can result in a lower response rate than simply mailing them a paper survey. Since on-line surveys can have some substantial cost-saving and improved data-quality features, the approach of encouraging people to take the survey on-line before mentioning that there is a mail version has some merit. The Metro SHAPE 2014 planning team used this approach.

Mailing Two was the first mailing with detailed instructions on how to take the survey on-line. Since Metro SHAPE 2014 goes to a random set of household in the sampling area, people of all ages, income levels, education levels, and race and ethnicity groups were included. Some of the people in these households do not own or have access to a computer.

Within days of Mailing Two going out, many people called the Metro SHAPE 2014 information phone line either complaining that we had assumed that they had a computer or stating that they were very willing to participate, but could not since they did not have a computer.

The Metro SHAPE 2014 planning team knew that these households would eventually get a copy of a paper version of the survey weeks later, but decided that telling people who were willing to participate to wait weeks, did not make sense. Thus a process of sending “expedited mailings” was set up. People who contacted the information line and left their ID number or their address (from which their ID could be looked up) were mailed a paper copy of the survey early and were removed from the list of people who would get subsequent mailings referring to the on-line option.

A total of 130 expedited surveys were mailed out. Of these, 100 (77%) mail surveys were returned. The age range for persons completing the expedited surveys was from 54 to 95. 78% were females. The household income seemed to be bi-modal with 49% having an income of \$31,000 or less and 16% having a household income of \$79,000 or more.

Survey Mode Preference

While on-line surveys offer much potential savings for implementation costs, not everyone in the general public has or has access to a computer. Since Metro SHAPE 2014 wants to get information about the health of all adults in the region, having a way for all residents to provide that information is important.

After encouraging the people in the sample to complete the survey on-line over four mailings, Mailing Five included a paper copy of the survey.

There was not a significant difference between men and women as to the preferred mode, as shown in Table 3.

Table 3: Mode used to complete the Metro SHAPE 2014 survey by sex

Sex	Survey Completers Using Mail	Survey Completers Using On-Line
Male	2224/4598 – 48.4%	2374/4598 – 51.6%
Female	3796/8048 – 47.2%	4252/8048 – 52.8%

However, there were substantial differences when one looks at the age of the respondent and the household income as shown in Tables 4 and 5.

Table 4: Mode used to complete the Metro SHAPE 2014 survey by the age of the respondent

Age	Survey Completers Using Mail	Survey Completers Using On-Line
18-29	366/879 – 41.6%	513/879 – 58.4%
30-39	703/1767 – 39.8%	1064/1767 – 60.2%
40-49	683/1725 – 39.6%	1042/1725 – 60.4%
50-59	1138/2677 – 42.5%	1539/2677 – 57.5%
60-69	1307/2812 – 46.5%	1505/2812 – 53.5%
70-79	952/1645 – 57.9%	693/1645 – 42.1%
80-89	673/910 – 74.0%	237/910 – 26.0%
90 and older	138/171 – 80.7%	33/171 – 19.3%

Table 5: Mode used to complete the Metro SHAPE 2014 survey by the 2013 household income

2013 Household Income	Survey Completers Using Mail	Survey Completers Using On-Line
\$23,000 or less	990/1449 – 68.3%	459/1449 – 31.7%
\$23,001 - \$31,000	513/832 – 61.7%	319/832 - 38.3%
\$31,001 - \$39,000	448/814 – 55.0%	366/814 – 45.0%
\$39,001 - \$47,000	403/770 – 52.3%	367/770 – 47.7%
\$47,001 - \$55,000	442/961 – 46.0%	519/961 – 54.0%
\$55,001 - \$63,000	377/791 – 47.7%	414/791 – 52.3%
\$63,001 - \$71,000	297/699 – 42.5%	402/699 – 57.5%
\$71,001 - \$79,000	294/707 – 41.6%	413/707 – 58.4%
\$79,001 - \$100,000	646/1551 – 41.7%	905/1551 – 58.3%
\$100,001 or more	1289/3378 – 38.2%	2089/3378 – 61.8%

Response to Areas With Low Response Rates

Despite the cumulative impact of marketing through community partners, well-written materials with encouraging and motivating messages, incentives, and creatively-designed envelopes and postcards, the response rates in some of the geographic areas was less than hoped for. The low response rate areas were geographic areas that the Metro SHAPE 2014 planning team anticipated from the start would be a major challenge. The people living in those areas are those who historically respond at a much lower rate than the general public, i.e., people with low household income, people who speak languages other than English, people with a general distrust of or animosity towards government.

With each implementation of SHAPE since 1998, a “mid-course correction” has been done to address areas and populations with a low response rate.

For Metro SHAPE 2014, after Mailing Three reached households, the area in and around the community known as North Minneapolis was responding at a substantially lower rate than other areas.

The Metro SHAPE 2014 Marketing Work Group had early in the project developed posters, as shown in Figure 1, that were distributed to dozens of community members and posted in apartment complexes in which ten or more households in the sample lived. This poster helped with the general awareness among the population about the project. In addition, some people well-known in the community made testimonial videos about the project. These videos were highlighted in the project website.

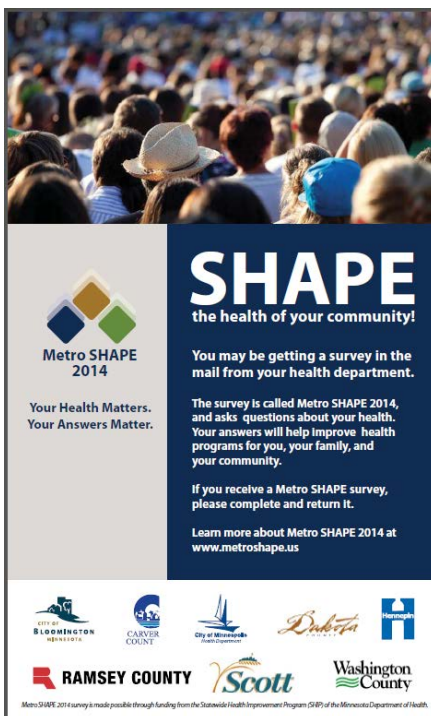
The members of the Metro SHAPE 2014 planning team from Hennepin County (in which North Minneapolis is located) decided that an additional more-targeted marketing effort was needed for the households in the low response-rate areas that had not completed the survey yet.

The team developed a postcard – larger than the postcards previously mailed to the households in the sample – that included the photo and testimonial text of Stella Whitney-West, the director of a popular community-based health center in the area. This postcard was mailed to 6,600 households that were in the sample and close in proximity to the health clinic.

The postcard was mailed a week after Mailing 5 – which was the first mailing where people were offered the chance to take the survey in a paper mail-back mode. The hope was that the postcard would reinforce the awareness of the project and give reassurance to the people in the households that the survey was important and that they should complete the survey.

The impact is hard to measure – especially since Mailing 5 happened shortly before the Thanksgiving holiday. Having said that, 158 paper surveys from the North Minneapolis region came in during the week before Thanksgiving and 143 paper surveys from that same region came in during the week after Thanksgiving. Given that there is normally a steep drop off in returns after the first few days once surveys reach households, the fact that the number of returns from these hard-to-reach households held steady for several weeks, gives some evidence that the postcard had a positive effect.

Figure 1: Metro SHAPE 2014 marketing poster



Postal Delivery Service

When doing a large random household survey, one is careful to think about all the details of the survey that could affect results: the design of the materials, the wording and layout of the questions, the number of contacts, the anticipated response rate, items that might be culturally insensitive to some in the population to name only a few. Unfortunately, sometimes factors that are totally out of your control become major items in how the survey ends up being implemented.

Metro SHAPE 2014's sample came from households in six counties in the Minneapolis-Saint Paul metropolitan area. The Metro SHAPE 2014 planning team worked with a local vendor that printed and stuffed the materials and delivered them to the regional U.S. Postal Service Regional Management Support Center in Eagan, Minnesota.

Mailings 1 and 3 were postcards sent first class to the selected households in the sample. Mailing 2 was a letter sent Presorted Standard mail with instructions on how to complete the survey. The schedule called for Mailing 3 to go out a week or so after Mailing 2.

The Metro SHAPE 2014 operations team monitored the returns on a daily basis. The team noticed quickly that there was a major regional effect on how soon the surveys were being completed as shown in Table 6.

Table 6: Date when first on-line survey was completed by selected Metro SHAPE 2014 reporting area

Reporting Area	Date	Days after initial return
Minneapolis areas	Sept 22, 2014	0
Bloomington	Sept 22, 2014	0
Carver County	Sept 24, 2014	2
Saint Paul – without incentive	Sept 25, 2014	3
NW Hennepin County Suburbs	Sept 27, 2014	5
Scott County	Sept 27, 2014	5
Dakota County	Sept 29, 2014	7
Saint Paul – with incentive	Oct 3, 2014	11
Washington County	Oct 4, 2014	12

Assuming that some people in each of the reporting areas would complete the survey soon after getting Mailing 2, we surmised that not all the households got Mailing 2 on the same day. Having timely operations reports prompted the planning team to postpone Mailing 3 – fearing that some households would get Mailing 3 (i.e., a reminder to complete the survey) before they got Mailing 2 (i.e., instructions on how to complete the survey).

Further Information

For more information about Metro SHAPE 2014, see www.MetroSHAPE.us or contact SHAPE@Hennepin.us.

Presenter

Urban Landreman
 Principal Planning Analyst
 Hennepin County Public Health Department
 525 Portland Avenue
 Minneapolis, MN 55415
 612-348-2283
Urban.Landreman@hennepin.us

