

# METHODOLOGY REPORT

## Delaware Contraceptive Access Now (DelCAN): Baseline Survey

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## Overview

The *Delaware Contraceptive Access Now* study (DelCAN) was conducted to assess women's awareness and utilization of contraceptive methods in the state of Delaware. The survey was conducted by NORC at the University of Chicago and funded by a foundation focused on education and health issues. NORC was responsible for all data collection, data processing, and weighting and imputation activities that are described in this report. The survey procedures and data collection protocol were reviewed and approved by the NORC Institutional Review Board (IRB).

The purpose of the study was to measure contraceptive use and understand reproductive health practices among women age 18-44 in the state of Delaware and in Maryland, which served as a comparison state. Households were selected randomly using address-based sampling methods (ABS) for this multi-mode study. Any woman age 18-44 living in the sampled household was eligible to participate. At the conclusion of the baseline survey, women could consent to future contacts to participate in three annual follow-up surveys.

This report summarizes the methods used for the baseline study. Data collection for the DelCAN baseline survey began in November 2016 and concluded in March 2017. In keeping with the standards set forth by the American Association for Public Opinion Research (AAPOR) Transparency Initiative, the report covers all 14 of the required measures for transparency<sup>1</sup>.

## Sample Design and Size

### Sample Design

The ABS sampling frame for DelCAN consisted of an extract of the United States Postal Service (USPS) computerized delivery sequence (CDS) file<sup>2</sup>, enhanced with age-targeted lists. This design allowed for the attainment of higher coverage rates for the relatively rare, generally low-SES populations each survey targeted than would be possible otherwise. NORC geocoded the CDS, which contained all households that received mail during June 2016. Once geocoded, demographic information from the American Community Survey (ACS) was appended to the address frame. NORC then de-duplicated this list against a sample of addresses identified by a vendor<sup>3</sup> as likely to contain an eligible woman in the targeted age

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<sup>1</sup> See <http://www.aapor.org/Standards-Ethics/Transparency-Initiative/>

<sup>2</sup> Licensed from the vendor Valassis. The CDS may, at times, be referred to as the Delivery Sequence File (DSF).

<sup>3</sup> The second vendor was Marketing Systems Group.

range of 18-44. This procedure allowed NORC to oversample women in the target age range while still maintaining the coverage of the CDS.

NORC used tract level data from the ACS to stratify Delaware and Maryland into “high” and “low” density areas for the variable of interest, which in this case was the percent minority population. Percent minority represents the proportion of the census tract that was non-white and allows for oversampling of diverse populations. The CDS sample was matched to the list sample so that each record could only appear as list or CDS sample, preventing frame overlap. Once the matching was complete, each state had four strata: CDS-Only Low Minority, CDS-Only High Minority, List Low Minority, and List High Minority. NORC then oversampled the “High” strata in each state by fielding a larger proportion of addresses relative to the “Low” strata. The implemented sample design provided more statistical efficiency than a straight sample of Delaware or Maryland addresses.

### Sample Size

The initial sample size was 13,800 households for Delaware and 13,300 households for Maryland with a target of 2,000 completes per state. As the end of data collection approached, an additional 575 addresses were released in each state to increase the number of completed interviews. This additional sample release is referred to as the supplemental sample release in the remainder of this report. Table 1 provides the released sample breakdown by state and sampling strata.

**Table 1.** DelCAN Baseline Sample Release Summary

STATE	TOTAL	DSF-Only, Low Density	DSF-Only, High Density	List, Low Density	List, High Density
DE BATCH 1	13,800	3,100	5,200	1,800	3,700
DE BATCH 2	575	129	217	75	154
MD BATCH 1	13,300	2,700	5,200	1,900	3,500
MD BATCH 2	575	117	225	82	151

## Questionnaire

### Overview of the Questionnaire

The DelCAN questionnaire explored respondents’ past and current use of contraceptives, including reasons for not using contraceptives, as well as their pregnancy history, health status, and opinions on abortion. The questionnaire was offered in English and Spanish languages for both Delaware and

Maryland households. Overall, the questionnaires for Delaware and Maryland were nearly identical. However, in response to the Delaware media campaign promoting contraception, additional items were added to the Delaware version of the survey, which asked respondents' whether they had visited any specific health care facilities in the state and through which media outlets they were most likely to obtain information about contraception (the Delaware and Maryland surveys can be found in Appendix B).

## Questionnaire Development and Testing

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In addition to a set of a newly developed questions designed to measure the effects of the DelCAN initiative, other items were drawn from several extant sources including the American Community Survey (ACS), the Behavioral Risk Factor Surveillance System (BRFSS), the National Survey of Family Growth (NSFG), the Pregnancy Risk Assessment Monitoring System (PRAMS), and the Delaware Household Survey (DHS). Questions were reformatted from interviewer administered (e.g., telephone or in-person) to self-administered (e.g., web and paper) as needed. There was significant input from, and collaboration between, the study sponsor, the University of Maryland, and NORC on questionnaire content, formatting, and overall layout throughout the development process.

### *Question Variation Abortion List Experiment*

Sections of the questionnaire collected information about women's experiences with, and attitudes toward, induced abortion. Based on the work of Moseson et al. (2015)<sup>4</sup>, a randomized list experiment was included within the survey design so that each respondent saw two lists of health topics, such as being diagnosed with breast cancer in the past 10 years, ever having a pap smear, or ever taking a prescription medication. One of the lists also contained the item "ever had an abortion (ended a pregnancy on purpose)". One-half of the sample saw the abortion item in the second list (Version A) and the other half saw the abortion item in the first list (Version B). Respondents were asked to report the number of items they have experienced for each list. Table 2 shows the verbatim question variations used.

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<sup>4</sup> Moseson, H., Massaquoi, M., Dehlendorf, C., Bawo, L., Dahn, B., Zolia, Y. & Gerdtts, C. (2015). Reducing under-reporting of stigmatized health events using the List Experiment: Results from a randomized, population-based study of abortion in Liberia. *International Journal of Epidemiology*, 44, 1951–1958. <http://doi.org/10.1093/ije/dyv174>

**Table 2.** Version Variable Question Text Response Options

Version	Variable	Question Text	Response Options
A	ABLIST_1A	On the following list of health experiences, how many of these have you personally experienced? You don't need to say which ones, just how many.	<ul style="list-style-type: none"> <li>▪ Ever used or taken medication for which a prescription is needed</li> <li>▪ Ever had a pap smear</li> <li>▪ Diagnosed with breast cancer in the past 10 years</li> </ul>
A	ABLIST_1B	On this next list of health experiences, how many of these have you personally experienced? You don't need to say which ones, just how many.	<ul style="list-style-type: none"> <li>▪ Ever used a birth control method (such as: pills, an IUD or implant, condoms, or the shot)</li> <li>▪ Ever had an abortion (ended a pregnancy on purpose)</li> <li>▪ Had a tubal or ectopic pregnancy in the past year</li> <li>▪ Ever had your blood pressure measured</li> </ul>
B	ABLIST_2A	On the following list of health experiences, how many of these have you personally experienced? You don't need to say which ones, just how many.	<ul style="list-style-type: none"> <li>▪ Ever used or taken medication for which a prescription is needed</li> <li>▪ Ever had a pap smear</li> <li>▪ Ever had an abortion (ended a pregnancy on purpose)</li> <li>▪ Diagnosed with breast cancer in the past 10 years</li> </ul>
B	ABLIST_2B	On this next list of health experiences, how many of these have you personally experienced? You don't need to say which ones, just how many.	<ul style="list-style-type: none"> <li>▪ Ever used a birth control method (such as: pills, an IUD or implant, condoms, or the shot)</li> <li>▪ Had a tubal or ectopic pregnancy in the past year</li> <li>▪ Ever had your blood pressure measured</li> </ul>

### Questionnaire Language

English and Spanish versions of the questionnaire were developed. NORC obtained initial Spanish translations from the study sponsor. Additional translations for revised or newly added questions were provided by a vendor and NORC native Spanish speakers. Finally, a representative from the University of Maryland’s team offered additional review and suggested revisions.

### Cognitive Interviews

With the first draft iteration of the questionnaire complete, NORC conducted 11 cognitive interviews (8 with English speakers and 3 with Spanish speakers) with women 18-44 years old using a paper-and-pencil self-administered instrument to identify potential issues with the questionnaire. Cognitive interviews utilized the “think-aloud” method, along with probing on predetermined items of interest and items that respondents indicated any kind of difficulty with during the interviews (e.g., difficulty with recalling information, comprehending the question, and selecting an answer to the question with the response options given). As a result of the cognitive interviews, NORC identified duplicative questions, corrected double-barreled questions by creating individual questions, added response options when appropriate, and inserted pictures of or definitions for birth control methods such as IUDs and implants that were unfamiliar to participants.

Upon sign-off on the questionnaire content, NORC Desktop Publishing Staff formatted the self-administered questionnaires (SAQs) that would be mailed to respondents while NORC IT staff programmed the web and computer-assisted telephone interviewing (CATI) versions of the survey into Voxco data collection software. Voxco is a commercial online case management system that is designed to manage telephone, web, and mixed-mode surveys. NORC conducted extensive systematic testing on the web and CATI surveys to verify the technological aspects of the survey functioned as intended. As part of normal testing procedures, staff checked question text, skip logic, case disposition assignment, and callback rules (callback rules are programmed for telephone dialing to determine when households will be called back based on previous case dispositions; for instance, received voicemail, respondent hung up during interview, or no answer).

The SAQs were formatted to be consistent with the web survey to the extent possible. For example, questions that were forced choice yes/no were maintained as such on the SAQ, and embedded follow-up questions such as the current birth control series of items (BC\_CURR) were presented as indented items with arrows directing respondents to the next appropriate question. The SAQ relied on written skip instructions whereas the web survey was programmed to automatically skip to the next appropriate question based on the respondent's previous answers. The SAQ cover (which varied by state) contained the study logo and four iconic pictures of Maryland or Delaware, as appropriate. These pictures and logo also appeared on the web survey landing page. The final instruments can be found in Appendix B.

## Survey Design

### Multi-Mode Process

Data collection involved a sequential multi-mode approach with a series of mailings and non-response follow-up activities. The data collection approach was based on prior NORC project experience and recommendations made by Dillman and colleagues (2009).<sup>5</sup> Respondents were first offered the web survey (N=27,150); respondents who did not complete the online version of the survey were subsequently mailed a SAQ. Finally, a sub-sample of non-responders were offered a telephone interview (N=2,000). When appropriate, email invitations were sent to those women rostered by the initial respondent from the household.<sup>6</sup>

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<sup>5</sup> Dillman, D., Smyth, J., & Christian, L. (2009). *Internet, mail, and mixed-mode surveys. The tailored design method*, 3rd edition. Wiley, Hoboken, New Jersey.

<sup>6</sup> See the section entitled "Household Rostering Procedures" for additional information about the rostering process and subsequent data collection contacts to rostered individuals.

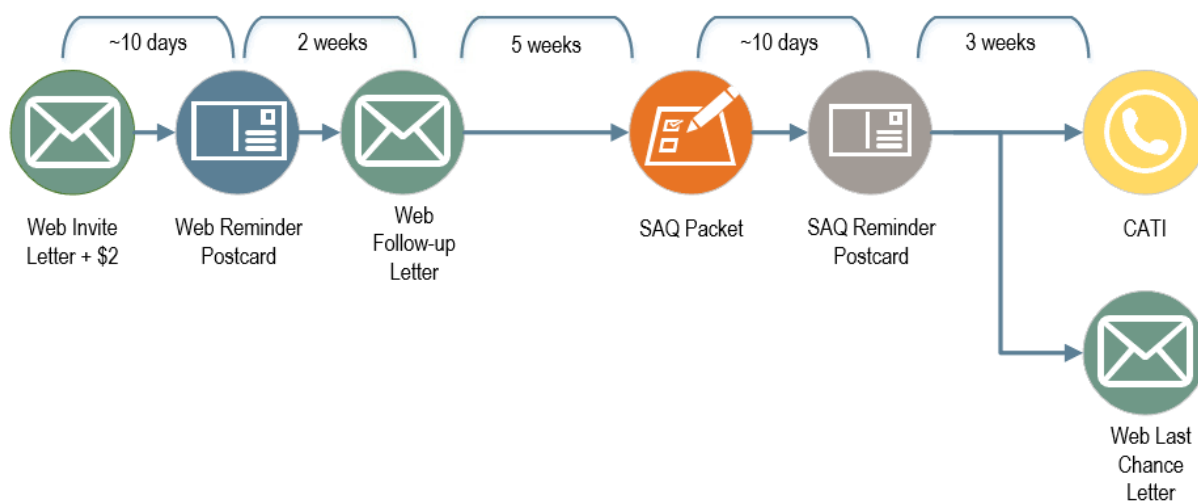


## Survey Case Flow

In total, up to seven survey requests were attempted with the initial sample (Figure 1) and one survey request attempted with the supplemental sample. Households in the initial sample release were first mailed an invitation to participate in the survey online and a reminder postcard. Households that did not complete the survey online were sent a web follow-up letter. If they still did not complete the online survey, they received a SAQ mailing with a cover letter and postage-paid business reply envelope. Then, another reminder postcard was mailed. At the end of the field period, a web “last chance” letter was mailed to non-responding households while a random subsample of 2,000 non-responding households (1,000 per state) whose addresses could be matched to a telephone number were called by telephone interviewers.

In an effort to reach the initial target sample size of 2,000 completed interviews per state, NORC released an additional supplemental sample 9 weeks into the data collection field period. This sample of 1,150 households (N=575 per state) received one survey request in the form of a SAQ booklet mailing. Mailing the supplemental sample a SAQ booklet afforded us the opportunity to obtain additional completed interviews from a more representative sample (i.e., only offering the web survey to the supplemental sample would have excluded those respondents who did not have access to the internet).

**Figure 1.** DelCAN Survey Case Flow (Initial Sample Release)



## Data Collection Methods

### Mailed Materials

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Prior to printing study materials, NORC identified four iconic pictures that represented each state. The selected pictures appeared on the landing page for the web survey and on the cover of the SAQ booklets for each state. A study logo was developed and featured on all mailed materials and the web survey pages.

Data collection began in November 2016. Each sampled address was randomly assigned to Question Variation List Experiment Version A or B, and this randomly assigned condition was applied to the online survey and the SAQ booklet mailings. In order to identify households to receive the English-only or Bilingual (English-Spanish) versions of materials, an outside vendor provided NORC with a list of households where Spanish was likely spoken.

Each mailing provided households with project-specific contact information should they have questions about the study. The mailings are outlined below including a brief description of the contents of each mailing and can be seen in Appendix A.

### Web Mailings

- **Web Invitation Letter.** Households were first mailed a letter via USPS first class service asking them to complete the survey online. In addition to the letter, households received an instructional insert explaining how to access the web survey and a \$2 bill. The letter specified that eligible respondents completing the survey would receive a \$10 Amazon gift code. The letter also outlined the purpose of the study and provided a web link and Personal Identification Number (PIN) to access the web survey. The project email address and toll-free telephone number were provided if the respondent had questions.
- **Web reminder postcard.** Approximately 10 days after sending the invitation letter, a reminder postcard was sent to households. The postcard explained the purpose of the study and asked households to complete the survey online if they had not done so already. It also provided an email and phone number in case the respondent misplaced their assigned PIN.
- **Web follow-up letter.** Approximately three weeks after the invitation letters were mailed, a follow-up letter was mailed to households. This letter reminded households that they could still complete the survey online and that a \$10 Amazon gift code would be awarded for eligible respondents who completed the survey. It also provided an email and phone number in case the respondent misplaced their assigned PIN.

- **Web last chance letter.** A final web letter was mailed after the SAQ mailings. This letter was sent to increase the number of completed interviews. The letter encouraged households to complete the survey online before the data collection period ended. This letter mentioned the \$10 Amazon gift code for eligible respondents who completed the survey.

### SAQ Mailings

- **SAQ Packet.** Households who did not complete the survey online were sent a letter asking them to complete a hardcopy of the self-administered questionnaire (SAQ). In addition to the letter, each SAQ mailing packet included a copy of the questionnaire and a postage-paid envelope in which households could return the completed questionnaire. The letter outlined the purpose of the study and provided an email address and phone number if household members had questions. The letter stated that the survey would take 15-20 minutes to complete and a reminder that eligible respondents would receive a \$10 Amazon gift code upon completion of the survey.
- **SAQ reminder postcard.** Approximately one week after sending the SAQ, a reminder postcard was sent to households. The postcard thanked those respondents who had already participated and encouraged those who had not yet participate to complete the survey. It also provided an email and phone number in case the respondent misplaced their assigned PIN should they choose to do the web version of the survey.

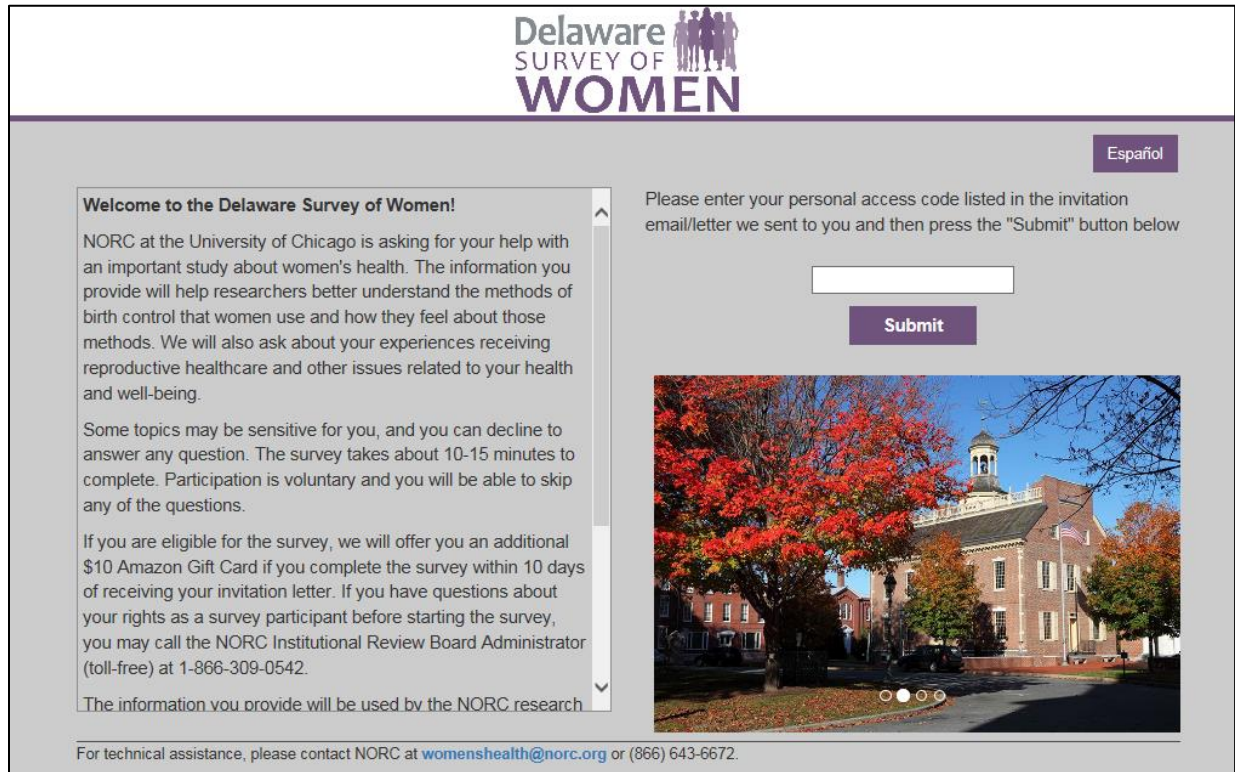
Prior to most mailings, households that had already completed the survey were removed from subsequent mailings – with two exceptions. With little time between the mailing of the initial web letter/SAQ packet and their associated reminder postcards, every household that received one of those mailings also received the reminder postcard.

### Web Survey Procedures

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The web invitation letter informed household members about the purpose of the study and how they were selected for participation. The letter asked for a female in the household (age 18-44) to complete the questionnaire. The web URL and PIN were provided. The letter informed potential respondents that participation was voluntary and they could elect not to answer any questions they did not wish to answer. A toll-free number was provided and email address if respondents had questions about the study. After respondents transferred the URL from the letter to their browser, they were taken to the landing page where they entered their PIN and were given information about the survey (Figure 2). It was here that respondents could first toggle between the English and Spanish versions of the survey and they could do so on every subsequent web page.

Figure 2. DelCAN Web Landing Page



Once respondents logged into the web survey, all respondents were asked for their gender and age. If respondents were ineligible, they were taken to the end of the survey which then asked if there were any eligible women between ages 18-44 in the household. A toll-free number and project email address were listed at the bottom of each screen if respondents had questions or needed technical help. The number for the NORC IRB Administrator was listed on the log in page. Respondents could exit the survey at any time by selecting the “Save and Exit” button. This button would save their responses so they could return to the last question answered upon logging back in (Figure 3).

**Figure 3.** DelCAN Save & Exit Button Displayed

The screenshot displays the 'Delaware SURVEY OF WOMEN' logo at the top center. In the top right corner, there is a purple button labeled 'Español' and a red button labeled 'SAVE AND EXIT'. The main content area contains the following text and options:

What method or methods did you stop because you were not satisfied? *Check all that apply.*

- Birth control pills
- Male condoms
- Natural family planning methods (also called calendar/rhythm method, cycle beads, basal body temperature)
- Barrier methods (diaphragm, sponge, cervical cap, female condom)
- n/a
- Prefer not to answer

At the bottom left, there is a purple button labeled 'NEXT', and at the bottom right, there is a purple button labeled 'BACK'. At the very bottom, a small line of text reads: 'For technical assistance, please contact NORC at [womenshealth@norc.org](mailto:womenshealth@norc.org) or (866) 643-6672'.

## Household Rostering Procedures

Respondents were asked at the end of the survey if there were other eligible women living in the household who may be interested in participating. The respondent could then list the names and emails of up to two other women in the household. These women were emailed an invitation with a unique PIN to participate in the online survey. Ineligible respondents who were male or out of the specified age range were also asked to report any women who may be eligible living in the household.

Based on the ACS, NORC assumed that there were approximately 1.1 women aged 18 to 44 per household in Delaware and Maryland. This rate meant that nearly 10% of households would have at least two women who could have been eligible for the study. As a result, NORC employed a technique known as rostering where women could roster other eligible women from their household for the study.

During data collection, rostering operated in the following way. First, NORC contacted women to participate in the survey (web or paper) through a contact letter. When a woman entered the web survey, she was screened for her eligibility. During this screening process, she was asked if there were any women between the ages of 18 and 44 in the household (besides herself, if she were eligible). If there were other eligible women in the household, the respondent was asked to provide their names and email addresses. The email address allowed NORC to send a link with a unique PIN to the rostered respondents. If NORC did not receive an email address, then a letter with the URL and PIN was mailed to the rostered individual. They were also awarded the same incentive, a \$10 Amazon gift code, upon completing the survey.

While all women who were rostered became part of the sample file, NORC flagged each of the rostered individuals for analysis. NORC used the variable Y\_FSPAWN to identify rostered cases. Ultimately, 238 eligible women were rostered culminating in 87 additional completed surveys.

### Self-Administered Questionnaire (SAQ) or Mailed Survey Procedures

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The SAQ was formatted as similar as possible to the web survey in order to reduce mode effects. In the cover letter accompanying the SAQ, respondents were informed about the purpose of the study and how they were selected for participation. Respondents were asked to complete the questionnaire and return it in the enclosed postage-paid return envelope. The questionnaire itself included the confidentiality statement on the second page. All respondents were required to answer the first two eligibility questions. Returned questionnaires indicating no females lived in the household between ages 18-44 were marked as ineligible. The back cover listed instructions for returning the questionnaire to NORC in addition to the toll-free number and email if they had questions.

Returned SAQs were processed by the Telephone Survey and Support Operations (TSSO) Department at NORC. Completed and partially completed SAQs were sent to Data Shop, Inc. (DSI) for data entry. Electronic data files were then posted for NORC each week using a secure file transfer protocol (SFTP) site. A questionnaire codebook was provided to DSI describing the variables and variable categories as well as numerical descriptions of these categories to be data entered. Final copies of the survey instruments are included as a PDF attachment to this report (Appendix B).

## Data Collection Results

### Consent to Follow-up Rate

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At the end of the survey, respondents were asked to indicate whether they consented to being recontacted for follow-up surveys. Overall, approximately 65% of respondents agreed to be recontacted for future studies. However, this rate varied by data collection mode. Among women completing the online version of the survey, 69% agreed to follow up. Among women who completed the mailed SAQ, 59% agreed to follow up.

## Timing Analysis

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NORC anticipated most respondents would complete the web survey in approximately 15 minutes.<sup>7</sup> To conduct a timing analysis among web respondents, NORC selected only respondents who completed the entire web questionnaire, which was defined as having reached the last survey item – an open-ended comments field asking respondents to share any additional information they wanted to provide. Respondents did not need to provide a response in the field; they need only reach the screen to be included in this timing analysis.

NORC examined the timing data that was available in the web questionnaire. NORC first assessed the data for any outliers, which was defined as three (3) standard deviations above the mean overall timing (the mean before excluding outliers was 20:33 mins, and the standard deviation was 9:56 mins). NORC identified 20 cases that were considered outliers (i.e., their mean interview timing was greater than 50:21 mins).

After excluding outliers, the mean interview timing for the 1,495 cases included in the analysis was 19:59 mins, with a standard deviation of 8:23 mins. The median interview time was 18:33 mins and the modal interview time was 14:08 mins.

## Web Breakoff Analysis

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Of the 1,872 survey participants who began the web survey, 95% completed it in its entirety. A total of 91 respondents who began the web questionnaire broke off or left the survey before reaching the final questionnaire item. Examining where respondents breakoff within the questionnaire can inform future questionnaire development and assist analysts with understanding where respondents decide to end their participation.<sup>8</sup>

A web survey variable captured the last survey question filled for each respondent. NORC used this variable to identify all respondents who left the web survey prior to completing the last applicable questionnaire item (i.e., only respondents who broke off on while completing the questionnaire items and not the administrative/recontact information that is collected at the end of the survey were selected). Table

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<sup>7</sup> Timing data is available only for the web survey responses, not for SAQ responses. SAQ respondents could be asked to record the date and time they started and completed the survey, but that would increase respondent burden. Furthermore, it would be prone to inaccuracies as SAQ respondents would likely approximate their start and stop times, and they can start and stop the SAQ multiple times and in a variety of places which would require them to record timing data multiple times. For these reasons, SAQ timing data is not recorded and the web timing data provides a suitable proxy for estimating time to complete the questionnaire.

<sup>8</sup> Breakoff information either is not available or is incomplete for SAQ respondents because SAQ respondents who decide to withdraw their participation or stop responding to the hardcopy questionnaire booklet simply do not return their partially completed SAQ. Consequently, the breakoff analysis is limited to participants who broke-off from the web survey and never returned to complete the questionnaire.



3 displays the number of breakoffs observed by questionnaire section as well as the variable(s) within the section where breakoffs occurred most often.

**Table 3.** Number of Breakoffs by Section

Questionnaire Section	N of Cases that were Breakoffs	Variable(s) within the Section with the Most Breakoffs (counts in parenthesis)
Screener	3	AGE (2)
General Health	3	HLTHCARE (3)
Past Birth Control Use	6	BIRTHCTL_LTOM (1), BIRTHCTL_G (1), BIRTHCTL_BTOE (1), BCTRBL_YN (1), BIRTHCTL_A (1), AFFORDBC (1)
Sources of Medical Care Information	12	HEARD_BC_3 (2), MEDCARE_YN (2), INFOLEARNED (2)
Public Policy Opinions	9	ABRT_REGRET (3)
Demographics	18	HOME_1YR (3), RELIG_DESC (3)
Reproductive Health	9	RECD_DR (4)
Current Birth Control Use	29	FEEL_CHILD (6)
Past Pregnancies	2	BABY_TRY (1), BABY_HUSBAND (1)
Prenatal Care	0	

Although there are many factors that contribute to breakoffs (e.g., respondent fatigue), questionnaire characteristics such as complexity, use of grid-format questions,<sup>9</sup> and survey length also may play a role.<sup>10</sup> Breakoffs tended to increase toward the end of the questionnaire, which may indicate that respondents quit due to the length of the survey. Other factors such as questionnaire complexity and formatting may help explain why RECD\_DR had 4 breakoffs by itself, and FEEL\_CHILD had 6. FEEL\_CHILD (“How do you feel about having a child now or sometime in the future?”) precedes a long series of grid questions and requires respondents to process their attitudes and motivations toward the prospect of having more children into fairly concrete plans for the future. RECD\_DR (“In the past 12 months, have you received from a doctor or other medical care provider:”) is a screen of grid-format recall questions that precedes another series of grid-format recall questions.

<sup>9</sup> Couper, M.P., Tourangeau, R., Conrad, F.G., & Zhang, C. (2013). The design of grids in web surveys. *Social Science Computer Review*, 31, 322–345.

<sup>10</sup> Peytchev, A. (2009). Survey breakoff. *Public Opinion Quarterly*, 73, 74–97.



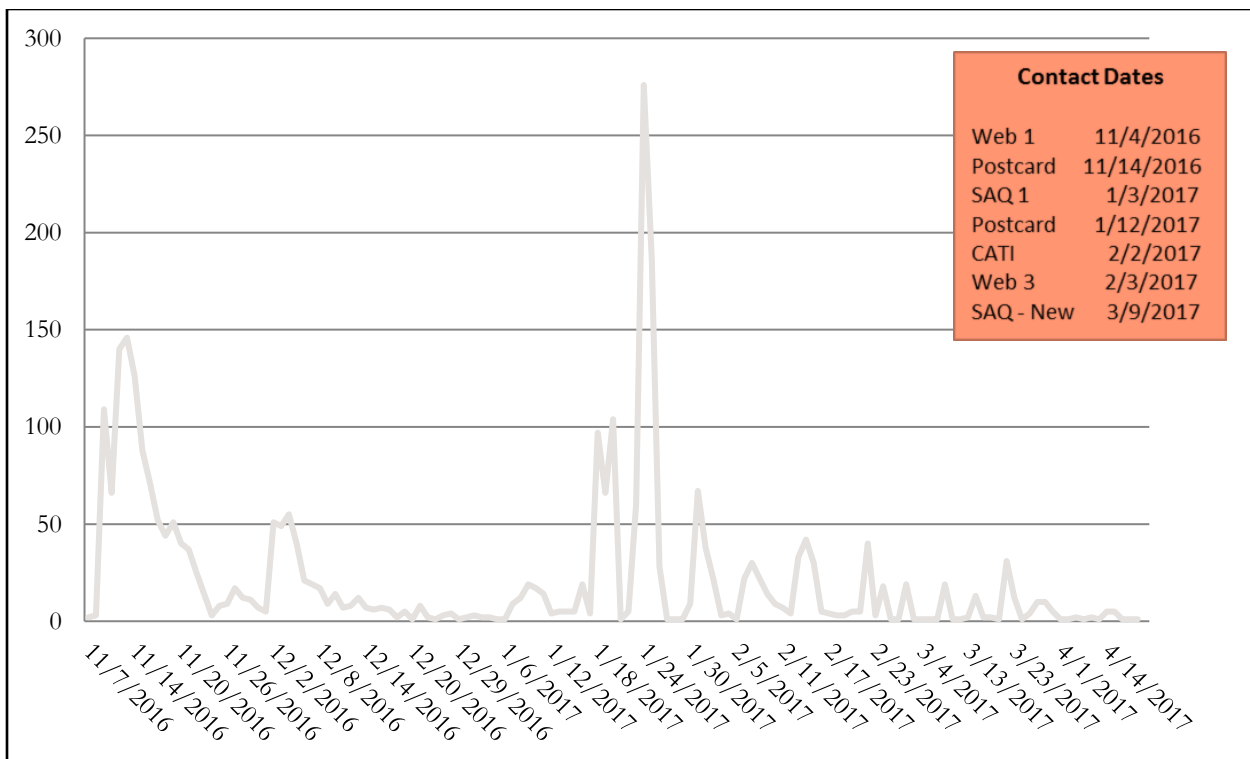
## Interview Completion by Data Collection Mode, Sampling Strata, and Interview Language

Table 4 displays the number of completed surveys by mode, strata, and language. In addition, Figure 4 shows when responses were received during the data collection period.

**Table 4.** Completes by Mode, Strata, and Language

State	Number of Completes						
	Mode			Strata		Language	
	Web	SAQ	Phone	High	Low	English	Spanish
<b>Delaware</b>	890	602	4	987	509	1,493	3
<b>Maryland</b>	899	547	5	862	589	1,448	3

**Figure 4.** Frequency of Returns by Date and Mode



## Sample Disposition and Response Rates

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NORC calculated the overall response rates using the American Association for Public Opinion Research (AAPOR) Response Rate 3 (RR3) with CASRO assumptions.<sup>11</sup> This response rate calculation is the product of the resolution rate, the screener rate, and the interview completion rate. The right most column in Table 5 indicates the components of each rate and the formula that is used to calculate a given rate. Table 5 shows the response rate by state.

It is important to note that the response rate is calculated using all released sampled addresses and combines results from all data collection modes. The overall response rate summarizes the highest or most advanced data collection status a sampled address achieved during the course of data collection. This is because cases, particularly those who advanced to receiving SAQ mailings, may have been worked in data collection modes and may have different disposition codes by mode (e.g., a case could be unresolved in the web mode if they never responded/logged in to the survey, but resolved as an eligible household and completed interview in the SAQ mode).

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<sup>11</sup> See The American Association for Public Opinion Research. 2015. Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 8<sup>th</sup> edition. [https://www.aapor.org/AAPOR\\_Main/media/MainSiteFiles/Standard-Definitions2015\\_8thEd.pdf](https://www.aapor.org/AAPOR_Main/media/MainSiteFiles/Standard-Definitions2015_8thEd.pdf)

**Table 5.** Response Rates by State

Measure	Both States	Delaware	Maryland	Definition
<b>Released Cases</b>				
Cases Attempted	28,250	14,375	13,875	Total released cases
<b>Current Status of All Released Cases</b>				
U2 - Assumed Household/No Contact	21,137 74.8%	10,686 74.3%	10,451 75.3%	Cases which have not logged into web or have been mailed to and no mail has been returned/no contact has been made
U0 - Confirmed address, known household, unscreened	309 1.1%	189 1.3%	120 0.9%	Known households, unscreened
NR - Non-residential	2,570 9.1%	1,274 8.9%	1,296 9.3%	Non-residential
MM - Mail Received – Complete Status TBD	0 0.0%	0 0.0%	0 0.0%	Complete Status TBD - Waiting for data entry
Screener Complete, Member Selected	15.0%	15.5%	14.5%	Known household, at least one eligible member in the household
J - Ineligible	1,317	737	580	
ER - Eligible Household, no Member Completes	60	34	26	Households that have not completed any member interviews (Partials)
<i>Parent</i>	57	32	25	
<i>Spawn</i>	4	3	1	
C - Complete	2,947	1,496	1,451	Members that have completed the interview
<i>Parent</i>	2,860	1,457	1,403	
<i>Spawn</i>	87	39	48	
Case Status Undetermined				Case needs review and category assigned
<b>Production Rates</b>				
Resolution Rate	25.2%	25.7%	24.7%	$(NR+U0+ER\ Parent+C\ Parent+J+MM) / \text{All Attempted Addresses}$ (All Resolved Addresses / All Attempted Addresses)
Residential Address Rate	63.9%	65.5%	62.1%	$(U0+ER\ Parent+C\ Parent+J+MM) / (NR+U0+ER\ Parent+C\ Parent+J+MM)$ (All Confirmed Households / All Resolved Addresses)
Screener Completion Rate	93.2%	92.2%	94.4%	$(ER\ Parent+C\ Parent+J) / (ER\ Parent+C\ Parent+U0+J)$ (Screened households / All Confirmed Households)
Interview Completion Rate	98.0%	97.8%	98.2%	Total C/ (Total C+Total ER) (Completed Interviews / All Eligible Screened Households)
AAPOR Response Rate 3 (CASRO Assumptions)	23.0%	23.1%	22.9%	Resolution Rate * Screener Completion Rate * Interview Completion Rate

## Data Preparation

### Data Editing and Cleaning

The web survey was programmed with internal skip logic so that respondents would be directed automatically to the correct questions based on previous responses. This process limits the amount of data cleaning required at the end of data collection.

A series of data editing and cleaning procedures were implemented in order to provide the most accurate and comprehensive data files. Throughout data collection, SAS programs were run to identify any errors that occurred in the web and CATI systems. This allowed NORC to reconcile inconsistencies in the data and fix system or questionnaire errors as they occurred, minimizing additional data cleaning that would be required at the end of data collection. For the SAQ, the data entry vendor was directed to enter responses as written without altering any information provided by respondents. Then, if necessary, the research team ran data cleaning steps based on the procedures established.

NORC did not implement extensive data cleaning steps for SAQ cases in which respondents entered values that were out of range. For example, a respondent entered a response greater than the maximum (3) for ABLIST\_1A (*“On the following list of health experiences, how many of these have you personally experienced? (Enter a number from 0-3)”*). This out-of-range value was not cleaned during data processing. Likewise, if a SAQ respondent selected more than one response to a question that required them to select one answer, the entry was not cleaned by NORC. It will appear in the data file in the format x,y (e.g., 1,2 if the respondent checked both response option 1 and 2). NORC delivered verbatim responses as provided (except in cases where personally identifiable information (PII) was redacted). In addition, data were not cleaned when respondents entered values inconsistent with the skip logic written on the SAQ. For example, a respondent selected that they did not experience difficulties getting health care in the past 12 months for HLTHCARE (*“In the past 12 months, was there any time when you needed health care for yourself, for any reason, but didn’t get it?”*), but then checked “I couldn’t afford it” for NOHLTHCARE when the respondent should have skipped NOHLTHCARE (*“Why didn’t you get health care for yourself?”*). It was decided, in consultation with the study sponsor, that data cleaning of this sort was best reserved for the organization conducting data analysis so they could adjust values to their preference and purpose of the analysis.

Several derived variables were created for the final datasets to provide additional descriptive information for each household. For example, derived variables were created to indicate if a respondent received each

individual contact — `web1_mail`, `saq_mail`, `email_sent`. SAS programs were written utilizing data from existing variables to create the derived variables.

The final dataset includes all sampled cases. The variable `DISP` identifies the final status for each case — complete, partial, ineligible, and unknown/not started.

**Data De-identification.** The delivered data files do not contain direct personal identifiers such as survey participant name (first or last names), mailing address, sampled address, telephone number, full date of birth, and/or email address. NORC also reviewed all verbatim responses to redact any personally identifying information (PII) contained within open-end responses. It should be noted, however, that NORC did not perform disclosure review and analysis on the dataset; such activities were outside the scope of the statement of work.

## Data Weighting

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For the purpose of weighting, a file was created that contained one record per sampled household, regardless of completion, in addition to all completed cases for secondary and tertiary women in the household. Because NORC did not know the *household* eligibility in cases where an ineligible respondent attempted to complete the survey, all ineligible households were treated the same as “never contacted” households.

The weighting scheme for DelCAN involved the following steps:

1. Base sampling weight ( $W_1$ );
2. Adjustment for unknown eligibility ( $W_2$ );
3. Adjustment for non-response to the questionnaire ( $W_3$ );
4. Adjustment for household size ( $W_{4a}$ );
5. Raking adjustment for demographic representativeness ( $W_4$ )

Each individual weighting step is discussed in detail below.

### *Step 1. Base sampling weight*

The base weight reflects the probability of a household being selected and is equal to the inverse of the probability of selection. There are eight (8) strata in DelCAN, and each stratum has a different base weight (Table 6). Because there was a near 100% match<sup>12</sup> of list sample addresses to addresses on the

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<sup>12</sup> 98.9% were successfully matched in Maryland and 97.7% were successfully matched in Delaware.

Delivery Sequence File (DSF), the base weight calculation makes the assumption that all unsampled lines on the list frame (for which the count is known, but not the specific addresses of unpurchased lines) are also on the DSF. Therefore, sample lines in the four list strata receive a base weight equal to the inverse of the sum of the list probability and the DSF probability for the corresponding strata.

Examples of the list strata vs. DSF strata base weight calculations are:

Stratum 1 (Delaware Low Density DSF)

$$W1 = 1 / \left( \frac{DE \text{ Low Density DSF Sample Count}}{DE \text{ Low Density DSF Frame Count}} \right)$$

Stratum 2 (Delaware Low Density List)

$$W1 = 1 / \left( \frac{DE \text{ Low Density DSF Sample Count}}{DE \text{ Low Density DSF Frame Count}} + \frac{DE \text{ Low Density List Sample Count}}{DE \text{ Low Density List Frame Count}} \right)$$

**Table 6.** Strata Definitions

Stratum	State	Minority Density	List or DSF	Number of Completes	Base weight	Step 2 adjustment for incompletes	Estimated Response Rate
1	Delaware	Low	DSF	229	21.40	.2747	23.78%
2	Delaware	Low	List	292	6.79	.4070	
3	Delaware	High	DSF	490	11.97	.2698	27.01%
4	Delaware	High	List	520	3.65	.4113	
5	Maryland	Low	DSF	287	144.78	.3292	25.90%
6	Maryland	Low	List	311	44.94	.5019	
7	Maryland	High	DSF	430	71.13	.3344	20.68%
8	Maryland	High	List	449	22.05	.5077	

**Step 2. Adjustment for unknown eligibility**

The first adjustment to the weights consists of an adjustment to account for those cases that were unable to be contacted, and thus have an unknown eligibility status. Because DelCAN specifically asks for “a female in the household age 18-44,” there is no screener built into the instrument for the review of project eligibility. Therefore, W2 uses the Census Public Use Microdata Sample (PUMS 2017 1 Year) data to estimate the household eligibility. The assumption is made that list sample is 50% more productive in obtaining women of the desired age group. Completed cases received  $W2_{adj} = 1$ , as we know they are eligible.

Incomplete cases received  $W2_{adj}$  according to the below calculations (these rates are shown in Table 6):

Stratum 1 (Delaware Low Density DSF)

*DE Low Density DSF Eligible Count*

$$= DE \text{ Low Density DSF Sample Count} * \frac{PUMS \text{ Eligible HHs in DE}}{PUMS \text{ HHs in DE}}$$

$$W2adj = \frac{DE \text{ Low Density DSF Eligible Count} - DE \text{ Low Density DSF Complete Count}}{DE \text{ Low Density DSF Sample Count} - DE \text{ Low Density DSF Complete Count}}$$

Stratum 2 (Delaware Low Density List)

*DE Low Density List Eligible Count*

$$= DE \text{ Low Density List Sample Count} * \left( \frac{PUMS \text{ Eligible HHs in DE}}{PUMS \text{ HHs in DE}} + .5 * \frac{PUMS \text{ Eligible HHs in DE}}{PUMS \text{ HHs in DE}} \right)$$

$$W2adj = \frac{DE \text{ Low Density List Eligible Count} - DE \text{ Low Density List Complete Count}}{DE \text{ Low Density List Sample Count} - DE \text{ Low Density List Complete Count}}$$

**Step 3. Adjustment for interview nonresponse**

The next adjustment compensates for differences in response across subgroups for those that are eligible for the survey. Adjustment cells for this weight are defined by state and high/low density. These variables were determined by running logistic regression models defining the dependent variable as survey completion and the independent variables as known variables for all cases in the sampling frame that could be associated with differential nonresponse. Models were run using state, vendor-returned Spanish flag, high/low density, and presence of vendor phone number. Only high/low density was deemed to have significant association with completion rates, and state was added to the adjustment for organization purposes.

$$W3 = W2 * W3adj, \text{ if respondent}$$

$$W3 = 0, \text{ if nonrespondent}$$

where *W3adj* is the final non-response adjustment factor (the inverse of the estimated response rate shown in Table 6), different for each combination of state and high/low density, and defined as:

DE Low Density *W3adj* Example

$$W3adj = \frac{\text{Sum of } W2 \text{ for DE Low Density Sample}}{\text{Sum of } W2 \text{ for DE Low Density Completes}}$$

**Step 4. Adjustment for household size**

The final adjustment is for within household eligibility. Although up to three (3) eligible females could reside in a given household, there is not consistent survey data for total number of eligible women in each

household. Therefore, we again used ACS PUMS data to estimate within household eligibility, this time doing so by race/ethnicity of the household. For households with one respondent, we assumed the household to have the same number of eligible women as the average PUMS household with one plus eligible women in the same state and race/ethnic group. For households with two respondents, we assumed the household to have the same number of eligible women as the average PUMS household with two plus eligible women in the same state and race/ethnic group. This pattern was continued for the households with three eligible respondents. Table 7 shows an example for the adjustments used in Delaware.

**Table 7.** Within Household PUMS Estimates for W4 Adjustment

Number of Eligible Survey Respondents	Household Race/Ethnicity	Source of PUMS Estimate	Delaware PUMS Estimate	Maryland PUMS Estimate
1	Unknown	Average # Eligible Women in DE HH with 1 plus Eligible Women	1.103	1.130
1	American Indian/Alaska Native non-Latino (AIAN NL)	Average # Eligible Women in DE AIAN NL HH with 1 plus Eligible Women	1.000	1.367
1	Asian non-Latino	Average # Eligible Women in DE Asian/Hawaiian Pacific Islander NL HH with 1 plus Eligible Women	1.134	1.084
1	Hawaiian/Pacific Islander non-Latino	Average # Eligible Women in DE Asian/Hawaiian Pacific Islander NL HH with 1 plus Eligible Women	1.155	1.068
1	African American non-Latino	Average # Eligible Women in DE African American NL HH with 1 plus Eligible Women	1.099	1.150
1	Latino	Average # Eligible Women in DE Latino HH with 1 plus Eligible Women	1.050	1.212
1	White non-Latino	Average # Eligible Women in DE White non-Latino HH with 1 plus Eligible Women	1.084	1.075
1	Multiple/Other non-Latino	Average # Eligible Women in DE Multiple/Other non-Latino HH with 1 plus Eligible Women	2.211	2.368
2	Unknown	Average # Eligible Women in DE HH with 2 plus Eligible Women	2.230	2.179



Number of Eligible Survey Respondents	Household Race/Ethnicity	Source of PUMS Estimate	Delaware PUMS Estimate	Maryland PUMS Estimate
2	Multiple Race/Ethnicity in Household	Average # Eligible Women in DE HH with 2 plus Eligible Women	2.211	2.368
2	American Indian/Alaska Native non-Latino (AIAN NL)	Average # Eligible Women in DE AIAN NL HH with 2 plus Eligible Women	n/a	n/a
2	Asian non-Latino	Average # Eligible Women in DE Asian/Hawaiian Pacific Islander NL HH with 2 plus Eligible Women	2.701	2.170
2	Hawaiian/Pacific Islander non-Latino	Average # Eligible Women in DE Asian/Hawaiian Pacific Islander NL HH with 2 plus Eligible Women	2.431	2.129
2	African American non-Latino	Average # Eligible Women in DE African American NL HH with 2 plus Eligible Women	2.042	2.156
2	Latino	Average # Eligible Women in DE Latino HH with 2 plus Eligible Women	2.000	2.183
2	White non-Latino	Average # Eligible Women in DE White non-Latino HH with 2 plus Eligible Women	2.339	2.126
2	Multiple/Other non-Latino	Average # Eligible Women in DE Multiple/Other non-Latino HH with 2 plus Eligible Women	2.211	2.368
3	Unknown	Average # Eligible Women in DE HH with 3 plus Eligible Women	3.367	3.176
3	Multiple Race/Ethnicity in Household	Average # Eligible Women in DE HH with 3 plus Eligible Women	4.000	3.424
3	American Indian/Alaska Native non-Latino (AIAN NL)	Average # Eligible Women in DE AIAN NL HH with 3 plus Eligible Women	n/a	n/a
3	Asian non-Latino	Average # Eligible Women in DE Asian/Hawaiian Pacific Islander NL HH with 3 plus Eligible Women	3.000	3.196
3	Hawaiian/Pacific Islander non-Latino	Average # Eligible Women in DE Asian/Hawaiian Pacific Islander NL HH with 3 plus Eligible Women	3.527	3.000

Number of Eligible Survey Respondents	Household Race/Ethnicity	Source of PUMS Estimate	Delaware PUMS Estimate	Maryland PUMS Estimate
3	African American non-Latino	Average # Eligible Women in DE African American NL HH with 3 plus Eligible Women	3.000	3.152
3	Latino	Average # Eligible Women in DE Latino HH with 3 plus Eligible Women	3.000	3.058
3	White non-Latino	Average # Eligible Women in DE White non-Latino HH with 3 plus Eligible Women	3.410	3.110
3	Multiple/Other non-Latino	Average # Eligible Women in DE Multiple/Other non-Latino HH with 3 plus Eligible Women	4.000	3.424

W4a was calculated as:

$$W4a = W3 * W4adj, \text{ if respondent}$$

$$W4a = 0, \text{ if nonrespondent}$$

$$\text{where } W4adj = \frac{\text{PUMS Within Household Eligibility}}{\text{Number of Completes in HH}}$$

We compare the total weights with the number of eligible women in each state based on the 2017 PUMS data. In order to have the weights total the estimated number of eligible women in each state, we multiply the household size adjusted weights by  $\frac{\text{Total PUMS target population}}{\text{Total weights}}$ .

These ratios were 2.42 in Delaware and 2.23 in Maryland.

**Table 8.** Summary of Weights Variables

Weights Variables	N	Min	Q1	Mean	Median	Q3	Max	Sum
<b>Wt1</b>	28,341	3.65	11.97	39.79	21.40	71.13	144.78	1,127,795
<b>Wt2</b>	28,341	1.50	3.23	16.51	11.19	23.78	144.78	467,826
<b>Wt3</b>	3,008	13.50	28.56	155.53	90.01	173.52	558.99	467,826
<b>Wt4a</b>	3,008	13.50	30.96	178.81	98.92	210.30	1,323.69	537,870
<b>Wt4</b>	3,008	32.73	75.07	402.46	239.83	468.36	2,947.93	1,210,605

**Table 9.** Oversample Summary of Delaware and Maryland

State	White non-Latino	African-American non-Latino	Latino	African-American Latino	Asian/Other non-Latino	<200% Poverty
<b>Delaware</b>						
<i>Oversample 2:1</i>	934	698	243	942	122	735
<i>Actual</i>	1,056	289	98	387	121	NA*
<b>Maryland</b>						
<i>Oversample 2:1</i>	545	1,082	230	1,313	141	590
<i>Actual</i>	853	365	95	460	191	NA*

\* In the questionnaire, NORC asked for the number of people living in the household and exact household income; however, if respondents were reluctant to provide the exact value for household income, they were given the option of choosing a category that represented a range. We will provide our estimates for < 200% National Poverty Levels in subsequent reports based on centering this data but for the purposes of this report, we have left this as “NA” here.

### Step 5. Post-Stratification

The implementation of post-stratification weights consists of a two-part process, first imputation and then raking. The imputation step prepares for the raking process by imputing values for all missing raking variables.

NORC used the hot-deck imputation method to impute the missing values for nine variables (see Table 10). Hot deck imputation is a cost-efficient imputation method that protects relationships between variables that are observed in the non-missing data. The method and program used have been used for many other studies conducted by NORC, including the Survey of Doctorate Recipients and the National Immunization Survey. The percentage of missing values imputed ranges from approximately 2% to approximately 18%, which is not atypical when imputing for several demographic variables. The amount of missing data is only over 10% for income, and if the research team was actually interested in imputing individual income values, would have considered multiple imputation. However, NORC is only imputing to income categories, so hot deck is appropriate despite the high missing rate.

**Table 10.** Summary of Imputed Data

Variable	Percent Imputed
Age	2.3%
Nativity	4.0%
Marital Status	5.0%
Education	5.6%
Employment	6.2%
Housing Tenure	7.4%
Children under 18 in household	8.0%
Race/Ethnicity	8.0%
Income	17.8%

Raking is performed on the post-imputation dataset in order to achieve representativeness of the target population across variables of interest, and to reduce bias in the survey estimates. NORC tested numerous designs, including the full design, which is defined as inclusion of all nine raking variables, each specified with the original and preferred number of categories. (i.e., two for most variables, but three for age, education, income, and race/ethnicity). The final raking design includes 8 variables as shown in Table 11. This set of variables represents the optimal design based on several criteria, including design effect, weight distribution, and impact of the raking on select outcome variables.

**Table 11.** Raking Variables

Variable	Categories
Age	18-25, 26-35, 36-44
Education * Income	Some college or less, <75k; Some college or less, 75k+; Bachelor’s degree+, <75k; Bachelor’s degree+, 75k+
Race/Ethnicity	African-American non-Latino, White non-Latino, All Other
Nativity	Born in US or Territories, Born Outside of US
Marital Status	Now Married, Not Currently Married
Children under 18 in household	One or More Children Under 18 in HH, No Children Under 18 in HH
Housing Tenure	Own, Rent/Other
Employment	Currently Employed, Not Currently Employed

While in the absence of any further objectives the full design would be preferred, it was necessary to consider other factors. In addition to the goal of controlling on as many important dimensions as possible, NORC identified the key objectives of limiting the design effect to approximately 2.0 or smaller, and maintaining a consistent design effect (and therefore consistent precision of estimates) across the two states in the study. Table 12 shows the final design effect for the Delaware and Maryland samples.

**Table 12.** Design Effect

DE	MD
2.07	1.90

The final weighting design adjusts for disagreement between the sample and population distributions for important demographic variables, while providing a consistent method across states and minimizing the design effect. Relative to the full design as a baseline, the proposed design achieves reduced variability, and maintains reasonable consistency across other metrics, striking an appropriate balance between bias reduction and variability. Table 13 shows the final descriptive statistics on wt5.

**Table 13.** Summary of Final Weight Variable

Delaware							
N	Min	Q1	Mean	Median	Q3	Max	Sum
1531	7.1	36.7	102.2	65.3	133.9	1,053.2	156,503
Maryland							
N	Min	Q1	Mean	Median	Q3	Max	Sum
1477	74.1	255.9	713.7	482.6	955.8	9,548.6	1,054,102

## Deliverables

The following data files and supporting documentation were delivered to the study sponsor.

- Data file in three formats with variable and value labels applied – SAS/SPSS/STATA
- Codebook
  - The Codebook provides a list of variables by order of appearance in the questionnaire as well as an alphabetical list of variable definitions.
  - The variable labels and value labels are provided along with unweighted frequency counts.
- Final Key Indicators (KI) Report

## Strengths and Limitations of the Study

### Strengths

The DelCAN Baseline Survey collected valuable information about birth control use among women residing in the states of Maryland and Delaware, including the types of birth control methods used, any problems experienced, access to health care services, and key demographic information.

Strengths of the study include the survey sampling design and the use of multiple data collection modes. The ABS sample design allowed for probability sampling at the household level as the probability of selection was known for each sampled address. Enhancing the CDS with age-targeted lists resulted in sampling and data collection efficiencies in that addresses that were thought to have a greater likelihood of housing an age-eligible woman could be sampled at a higher rate relative to addresses that were not flagged as such. Also, rostering households allowed for the recruitment of additional women to complete the survey while realizing operational and financial efficiencies.

ABS multi-mode design allows researchers to approach respondents in multiple ways and to offer them more than one option for completing the survey. Multi-mode surveys allow researchers to gather information from a wide range of respondents, reaching those that may be underrepresented in a single mode survey. DelCAN involved three sequential modes of data collection – web, mailed SAQ, and CATI. The web survey represents a relatively quick and efficient way to collect survey data from respondents who are connected to the internet. Moreover, the web survey allows for real-time data quality checks and automated skip logic which enhances data quality and reduces respondent burden. However, not all sampled households are willing or able to complete via the web. The ability to mail a hardcopy SAQ to web non-responders gives respondents who cannot or will not participate by web an avenue to complete the survey and it addresses concerns about non-response bias (should only web surveys be offered) and survey coverage.

Finally, the questionnaire was comprehensive and covered a range of issues that are relevant to women's reproductive health. Questionnaire items were drawn from existing surveys, where possible, and additional items were developed and refined prior to data collection launch. The use of cognitive interviewing and usability testing allowed the research team to refine the questionnaire based on direct feedback from members of the target population.

## Limitations

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*Change in target sample size.* Between December 2016 and January 2017, NORC and the study sponsor engaged in a series of discussions about the study's original goal of 2,000 completes per state and whether that was a realistic objective given external challenges. These challenges included a late launch of the initiative in Delaware, which postponed the survey launch date. The first letter was sent on November 11, 2016. Research consistently shows that response rates are depressed during the holiday season from November through late January.<sup>13</sup> In addition to the problems associated with time of year, 2016 was a

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<sup>13</sup> Stern, M.J., Bilgen, I., & Dillman, D.A. (2014). The state of survey methodology in the 2010s. *Field Methods*, 26, 284-301.

presidential election year and the number of mailings and telephone calls regarding the election likely meant that respondents received multiple survey or polling requests in addition to the DelICAN survey. As a result, response to the DelICAN survey was lower than expected. Extending data collection efforts without having accounted for these challenges meant that reducing the number of completes was an appropriate course of action. Having evaluated the power calculations, it was agreed that 1,500 completes per state was acceptable.

*Survey response.* Survey response after the first SAQ mailing was lower than expected. To maximize the number of completed interviews within the data collection field period, NORC implemented two strategies. First, NORC sent a third web letter to all non-respondents in an attempt to encourage them to complete the survey via the web. Second, NORC also planned the release of supplemental sample in March. This new sample received only one contact from NORC – an SAQ packet.

To combat the lower than expected participation rates, NORC has taken two steps for future surveys. First, the pre-paid incentive amount initially offered to baseline participants – a \$2 bill – may have been insufficient to garner interest in the survey and motivate women to respond. Consequently, NORC increased the pre-paid incentive amount to \$5 for the planned follow-up surveys, to increase response rates.<sup>14</sup> Second, subsequent surveys will not launch data collection during the end-of-year holiday periods and the data collection field period will be increased to at least six months to allow sufficient time for the multiple mailings that are incorporated into the data collection protocol to be received by respondents and returned to NORC.

*Consent to follow-up surveys.* At the end of the survey, respondents were asked to provide contact information so that they could participate in three annual follow-up surveys. For those respondents who completed the survey, 1,059 refused to be re-contacted, leaving a total of N=1,941 (n=983 in DE and n=958 in MD) women who will be contacted to participate in the first of three annual follow-up surveys. The lower than expected consent rate may hinder the research team's ability to conduct follow-up studies to measure changes in birth control/contraceptive use over time.

To increase consent to follow-up rates for future baseline studies, NORC and the study sponsor made two changes to the consent language. The original and revised consent language scripts shown below with the key components of the revised script appearing in bolded text.

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<sup>14</sup> Messer, B.L. & Dillman, D.A. (2011). Surveying the general public over the internet using addressed-based sampling and mail contact procedures. *Public Opinion Quarterly*, 75, 429-57.

- DelCAN Baseline Original Consent to Follow-up Script
  - *Thank you very much for participating in this survey. The information you provided will be used to help improve women’s health in your state. As part of an ongoing research study, you may be contacted in the future to participate in future studies, you will be compensated. However, you always have the right to refuse. For future contact purposes, please include your email and phone number below. If you do not want to be contacted, please check the box below.*
- Revised Baseline Consent to Follow-up Script
  - *Thank you very much for participating in this survey. The information you provided will be used to help improve women’s health in your state. **We would like to contact you again in approximately one year to learn more about your experiences. In order to email you a link to the next survey, please provide your contact information below. You will receive a \$20 gift card for participating in the next survey, which will be shorter than the one you just completed.** You always have the right to refuse to participate. If you do not want to be contacted, please check the box below.*

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## Appendix A: Survey Materials (attachment)

## Appendix B: Survey Instruments (attachment)