United States Food and Drug Administration

Study of Oncology Indications in Direct-to-Consumer Television Advertising

OMB Control No. 0910-NEW

SUPPORTING STATEMENT

Part B. Statistical Methods

1. Respondent Universe and Sampling Methods

For all phases of this research, we will recruit a general population sample of adult volunteers 18 years of age or older. For additional screening materials, see the "Participants" section below.

For the cognitive interviews, participants will be recruited from a panel managed by Shugoll Research, a professional recruitment firm. The firm will utilize specialized staff and a telephone screener to recruit and screen individuals (Appendix E).
We plan to enroll participants who are diverse in sex, education, and race/ethnicity. We will exclude individuals who have participated in an interview or focus group at the Shugoll Research facility during the previous 6 months to minimize the threat of trained responses or social desirability bias.

For the pretests and main studies, we will recruit participants from an Internet panel managed by Toluna. The Toluna community provides access to nearly 6.4 million members in North America, recruited using various methods including web banners, website referrals, pay-per-click, natural search optimization, affiliate marketing, e-mail, and online public relations activities. Panel members will be invited to participate by receiving an e-mail invitation (Appendix F) and, if interested, can click on a hyperlink within the e-mail and gain access to the screener (see Appendix G). The sample will not be representative of the population, but soft quotas will be used to ensure recruitment of a low health literacy population as well as a demographically diverse set of participants.

2. Procedures for the Collection of Information

Design Overview

We will create two television ads for fictitious oncology prescription drugs to increase the generalizability of the results (one solid tumor indication and one hematology indication). For Study 1, the ads will include audio claims about overall survival, overall response rate with and without a disclosure, or progression-free survival with and without a disclosure (see Table 1 for the Study 1 design).

In Study 2 we will vary the presentation of the products' indication, such that material information related to the indication will appear in superimposed text only, in the audio only, in both superimposed text and audio, or in neither (the control condition; see Tables 2 and 3 for the Study 2 design).

Table 1.--Study 1 Design

Indication	Overall survival	Overall response rate	Overall response rate with disclosure	Progression-free survival	Progression-free survival with disclosure
Solid Tumor					
Hematology					
Note: The solid tumor condition will be non-small cell lung cancer. The hematology condition will be multiple myeloma. Claims and disclosures are TBD, based on focus group feedback. Overall survival and progression-free survival claims will be the same for both indications. Study 1 will use the control ad from Study 2.					

Table 2.--Study 2 Design: Solid Tumor

Indication presentation			
Material information in superimposed text only	Material information in audio only	Material information in superimposed text + audio	Material information not in superimposed text or audio (Control)
Audio: Drug X is for adults with advanced non-small cell lung cancer. Superimposed text: Drug X is for adults with advanced non-small cell lung cancer previously treated with platinum-based chemotherapy, who have a certain type of ALK gene.	Audio: Drug X is for adults with advanced non-small cell lung cancer previously treated with platinum-based chemotherapy, who have a certain type of ALK gene. Superimposed text: Drug X is for adults with advanced non-small cell lung cancer.	Audio: Drug X is for adults with advanced non-small cell lung cancer previously treated with platinum-based chemotherapy, who have a certain type of ALK gene. Superimposed text: Drug X is for adults with advanced non-small cell lung cancer previously treated with platinum-based chemotherapy, who have a certain type of ALK gene.	Audio: Drug X is for adults with advanced non-small cell lung cancer. Superimposed text: Drug X is for adults with advanced non-small cell lung cancer.
Note. Study 2 will use the overall survival ad from Study 1.			

Table 3.--Study 2 Design: Hematology

Indication presentation			
Material information in superimposed text only	Material information in audio only	Material information in superimposed text + audio	Material information not in superimposed text or audio (Control)
Audio: Drug Y is used to treat multiple myeloma. Superimposed text: Drug Y is used to treat multiple myeloma in combination with dexamethasone, in people who have received at least three prior medicines to treat multiple myeloma.	Audio: Drug Y is used to treat multiple myeloma in combination with dexamethasone, in people who have received at least three prior medicines to treat multiple myeloma. Superimposed text: Drug Y is used to treat multiple myeloma.	Audio: Drug Y is used to treat multiple myeloma in combination with dexamethasone, in people who have received at least three prior medicines to treat multiple myeloma. Superimposed text: Drug Y is used to treat multiple myeloma in combination with dexamethasone, in people who have received at least three prior medicines to treat multiple myeloma.	Audio: Drug Y is used to treat multiple myeloma. Superimposed text: Drug Y is used to treat multiple myeloma.
Note. Study 2 will use the overall survival ad from Study 1.			

Procedure

The pretests and main studies will be 20 minutes long and conducted using an Internet panel managed by Toluna. Participants will be randomly assigned to see one version of the study television ad. After viewing the television ad, participants will complete a questionnaire that assesses participants' interpretation and recall of the indication information and their perceptions of the drug's risks and benefits (Appendices C and D).

We will also measure covariates such as demographics, cancer history, and health literacy.

Participants

For all phases of our research, we will recruit a general population sample of adult volunteers 18 years of age or older (see Appendices E and G for the screening questions). We will exclude individuals who work for the Department of Health and Human Services or work in the health care, marketing, advertising, or pharmaceutical industries. We will use health literacy quotas to ensure that our sample includes participants with lower health literacy skills. For the pretests and main studies, internet panel members can only participate in one of the studies.

Hypotheses

Study 1: Without a disclosure, we hypothesize that participants will not differentiate between overall survival, overall response rate, and progression-free survival. We hypothesize that a disclosure will help participants understand the surrogate endpoints (i.e., overall response rate and progression-free survival) and thus will lead to greater understanding of the drug's efficacy compared with conditions without the disclosure. We will explore unintended effects of the disclosure, such as whether the disclosure lowers perceived efficacy compared with the overall survival condition.

Study 2: Following previous research on dual-modality presentations, we hypothesize that participants who view an ad with the material information in the audio and text will have greater retention of that information than participants in any other condition. We also hypothesize that participants who view an ad with the material information in the audio only will have greater retention of that information than participants in the superimposed text condition and the control condition.

Analysis Plan

We will conduct ANOVAs (for continuous variables) and logistic regressions (for dichotomous variables) with interaction terms and planned comparisons to test the hypotheses outline above.

Power

We conducted power analyses for each main study, taking into consideration the study's purpose, expected outcome measures, and potential key analyses.

In Study 1, we plan to conduct one-way analysis of variance (ANOVA) to test for significant differences in continuous or binary outcome variables among experimental groups. We anticipate conducting up to four key comparisons (each condition vs. OS) with a Bonferroni-adjusted alpha ($p = .0125$). Study 1 has been powered to detect small to moderate effects ($f = 0.24$) with a power of 0.90 and an alpha of 0.0125. Given these

assumptions, we will need approximately 70 participants per experimental group (for a total of $N = 350$ for each drug indication, solid tumor and hematology).

Study 2 has been powered to detect small to moderate effects with a power of 0.90 and an alpha of 0.05, assuming a fully-crossed 2 x 2 factorial design. Given these assumptions, we will need approximately 65 participants per experimental group (for a total of $N = 260$ for each drug indication). Assuming a power of 0.90 and an alpha of 0.05, our omnibus tests will be able to detect an effect size of $f = 0.20$ for the main effect of audio presence or main effect of superimposed text. If we find a significant interaction effect, we will also be able to conduct planned contrasts testing various combinations of group means with enough sensitivity to detect small to moderate effects ($f = 0.24$). We anticipate conducting up to four key comparisons (audio only vs. both; supers only vs. both; both vs. none [control]; audio only vs. super only) with a Bonferroni-adjusted alpha ($p = .0125$).

3. Methods to Maximize Response Rates and Deal with Non-response

The pretests and main studies will use an existing research panel to draw a sample. The panel comprises individuals who have signed up to participate in online studies. To help ensure that the participation rate is as high as possible, FDA will:

- Design an experimental protocol that minimizes burden (short in length, clearly written, and with appealing graphics);
- Administer the pretests and main studies over the Internet, allowing respondents to answer questions at a time and location of their choosing.

4. Test of Procedures or Methods to be Undertaken

For each main study, we will conduct nine hour-long qualitative interviews to cognitively test the study stimuli and materials. For each main study, we will conduct a pretest to test the experimental manipulations and pilot the main study procedures. Finally, we will run each main study as described elsewhere in this document.

5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

The contractor, RTI International, will collect the data on behalf of FDA as a task order under Contract HHSF223201510002B. Vanessa Boudewyns, 202-728-2092, is the contractor's Project Director for this project. Data analysis will be overseen by the Research Team, Office of Prescription Drug Promotion (OPDP), Office of Medical Policy, CDER, FDA, and coordinated by Helen W. Sullivan, Ph.D., MPH, 301-796-4188, and Amie C. O'Donoghue, Ph.D., 301-796-0574.