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Gynecologic Cancer Information on YouTube: Will Women Watch Advertisements to Learn More?

Crystale Purvis Cooper¹, Cynthia A. Gelb², and Jennifer Chu³

Crystale Purvis Cooper: crystale_cooper@comcast.net; Cynthia A. Gelb: cgelb@cdc.gov

¹Soltera Center for Cancer Prevention and Control, 9566 N. Placita Roca de Bronce, Tucson, AZ 85704, USA

²Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Highway, NE, MS F-76, Atlanta, GA 30341, USA

³Ogilvy Washington, Washington, DC, USA

Abstract

The quality and accuracy of health content posted on YouTube varies widely. To increase dissemination of evidence-based gynecologic cancer information to US YouTube users, the Centers for Disease Control and Prevention (CDC) sponsored two types of advertisements: (1) pre-roll videos that users had to watch for at least 5 s before seeing a video they selected and (2) keyword-targeted listings that appeared in search results when users entered terms related to gynecologic cancer. From July 2012 to November 2013, pre-roll videos were shown 9.2 million times, viewed (watched longer than the mandatory 5 s) 1.6 million times (17.6%), and cost \$0.09 per view. Keyword-targeted listings were displayed 15.3 million times, viewed (activated by users) 59,766 times (0.4%), and cost \$0.31 per view. CDC videos in advertisements played completely in 17.0% of pre-roll video views and 44.4% of keyword-targeted listing views. Advertisements on YouTube can disseminate evidence-based cancer information broadly with minimal cost.

Keywords

Advertisements; Gynecologic cancer; YouTube; Internet

Introduction

YouTube, a video-sharing Web site, is the third most visited Internet property in the world, after Google and Facebook [1]. Videos posted on YouTube are uploaded by users with little to no curation. Thus, the quality and accuracy of YouTube health content varies widely [2–13].

To increase dissemination of evidence-based gynecologic cancer information to US YouTube users, the Centers for Disease Control and Prevention (CDC) sponsored a 17-

month advertising initiative. The present study evaluated the performance and cost of advertisements.

Methods

From July 2012 to November 2013, CDC sponsored two types of advertisements to disseminate videos developed by its *Inside Knowledge: Get the Facts About Gynecologic Cancer* campaign [14]:

- Pre-roll videos—CDC videos played automatically before videos selected by users. YouTube videos which prompted pre-roll videos were those most often watched by women (determined by YouTube through analyses of user data). Users were able to stop pre-roll videos 5 s after they began, which is standard for this kind of YouTube advertisement.
- Keyword-targeted listings—advertisements that included CDC videos appeared in search results when users entered terms related to gynecologic cancer, such as “uterine cancer symptoms” or “cancers in women.” Users had to click on the video in keyword-targeted listings to initiate play, and they could stop the video at any time.

Exposure to advertisements was limited to users with US Internet protocol (IP) addresses. The CDC videos featured in advertisements included 30-s versions of “I Had,” “My Story,” “ and “Be Brave,” which can be seen at www.cdc.gov/cancer/knowledge/psa.htm. YouTube algorithms automatically adjusted the mix of videos displayed to maximize performance and minimize cost. Key metrics provided by YouTube included the following:

- Impressions
 - Number of times that pre-roll videos played automatically, or
 - Number of times that keyword-targeted listings appeared
- Views
 - Number of times pre-roll videos were viewed for longer than the mandatory 5 s, or
 - Number of times that users initiated playing videos in keyword-targeted listings
- View-through rate—number of views divided by number of impressions
- Cost-per-view—sponsorship cost divided by number of views
- Portion of video viewed—percentage of the video shown before users halted play

Results

Pre-roll videos were shown 9.2 million times and viewed (watched longer than the mandatory 5 s) 1.6 million times (view-through rate=17.6%), which constituted 96.4% of all

views during the initiative (Table 1 includes results and variable definitions). The cost was \$0.09 per view. Pre-roll videos were watched completely 275,458 times (17.0% of views).

Keyword-targeted listings were shown 15.3 million times, which represented 62.4% of total impressions, and viewed (activated by users) 59,766 times (view-through rate=0.4%), at a cost of \$0.31 per view. The videos featured in keyword-targeted listings were watched completely 26,536 times (44.4% of views).

Discussion

Video advertisements can disseminate evidence-based cancer information to large numbers of YouTube users at minimal cost. In the initiative described here, pre-roll videos and keyword-targeted listings were used as complementary strategies to reach different audiences. Pre-roll videos were meant to appeal to the general population of female YouTube users, while keyword-targeted listings were intended to reach users actively searching for gynecologic cancer content.

This fundamental difference in audience engagement seems to be reflected in the observed video completion rates—CDC videos played completely in 17.0% of pre-roll video views, when exposure was automated; however completion rates more than doubled to 44.4% for keyword-targeted listing views, when users initiated exposure. In both cases, viewing rates surpassed industry averages. Users watched the pre-roll CDC videos longer than the mandatory 5 s 17.6% of the time, exceeding the 15% average view-through rate for YouTube pre-roll videos (Ogilvy Public Relations, New York, NY, unpublished data). Similarly, users activated the CDC videos in keyword-targeted listings 0.4% of the time, which is four times the average view-through rate for YouTube keyword-targeted listings (0.1%) (Ogilvy Public Relations, New York, NY, unpublished data). Thus, the difference in view-through rates by advertisement type in the present study is typical and resulted in pre-roll videos producing the vast majority of views during the initiative (96.4%). Conversely, keyword-targeted listings generated the majority of impressions during the initiative (62.4%), which demonstrates the high volume of YouTube searches for gynecologic cancer content and underscores the need for reputable gynecologic cancer information on YouTube.

The applicability of the current findings to Internet sites other than YouTube is not clear. In addition, the CDC videos promoted in the current initiative were extensively tested with the target audience (women aged 35–65 years) and were produced using the highest technical standards [15]. Lower-quality videos may not achieve view-through and completion rates as high as those in the current study. At the same time, promotion of health information relevant to both genders may achieve even more impressive results than the gynecologic cancer awareness initiative described here. It is important to note that the scope of the present study was limited to process evaluation, and the effect of video exposure on knowledge and behaviour was not assessed. Further, the demographic characteristics of users exposed to videos are not known.

Many health organizations and agencies, including the CDC (www.youtube.com/user/CDCStreamingHealth), maintain dedicated channels on YouTube. Still, YouTube's video

inventory is vast, and users may not always find credible information. Video advertisements can guide YouTube users to evidence-based content, whether they are deliberately searching for it or stumble upon it while investigating other topics. One advantage of Internet advertising is the opportunity to provide users who want more information with immediate access to it via the sponsor's Web site. Further, the interactive, digital nature of the online environment produces real-time data, which can guide immediate adjustments to advertisements, in order to improve performance and minimize cost.

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Table 1

Performance and cost by type of YouTube advertisement, Centers for Disease Control and Prevention's *Inside Knowledge: Get the Facts About Gynecologic Cancer* campaign, July 2012–November 2013

Advertisement type	Impressions ^a	Views ^b	View-through rate ^c (%)	Cost per view ^d (\$)	Video completion rate ^e (%)
Pre-roll videos	9,216,056	1,620,341	17.6	0.09	17.0
Keyword-targeted listings	15,322,437	59,766	0.4	0.31	44.4
Total	24,538,493	1,680,107	6.8	0.10	18.0

^aImpressions refers to the number of times that pre-roll videos played automatically or the number of times that keyword-targeted listings appeared

^bViews refers to the number of times pre-roll videos were viewed for longer than the mandatory 5 s or the number of times that users initiated playing videos in keyword-targeted listings

^cView-through rate refers to the number of views divided by the number of impressions

^dCost-per-view refers to sponsorship cost divided by number of views

^eVideo completion rate refers to the number of views in which the video played completely divided by the total number of views