

WHAT ARE CANCER CENTERS ADVERTISING TO THE PUBLIC?
A RAPID REVIEW OF THE LITERATURE

by

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B.S., University of Notre Dame, 2010

Submitted to the Graduate Faculty of
the Graduate School of Public Health in partial fulfillment
of the requirements for the degree of
Master of Public Health

University of Pittsburgh

2013

UNIVERSITY OF PITTSBURGH

Graduate School of Public Health

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ABSTRACT

Facilities that provide cancer care are increasingly promoting their services directly to the public through advertisements. In the past few years, cancer center advertising has received criticism for making unsupported claims about survival, omitting risk information, and using emotional language. Although there is a large body of evidence regarding the content, impact, and regulation of pharmaceutical advertising, there is little known about that of cancer centers. This study aimed to assess the evidence regarding advertising by facilities that provide cancer care. The author conducted a rapid review of publications that analyzed the content of cancer center advertising published before February 15, 2013. Only two peer-reviewed studies were selected for inclusion from 353 publications identified by the review. Both were cross-sectional studies and reported the use of emotional appeal and patient testimonials as advertising strategies. While the number of studies found was too small and their methods and quality too variable to allow for any confident conclusions to be made, this study identified a considerable gap in the literature. Descriptive studies of the content of cancer center advertising are needed to move the debate forward and inform studies measuring the impact on the public. Understanding the messages conveyed through cancer center advertisements and their effect on the population are of high public health importance, as such messages have the potential to affect health costs, patient preferences and expectations about treatment, and the provider-patient relationship.

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1.0 INTRODUCTION

Communication of health-related messages through the media has captured the attention of health professionals due to its power to influence human behavior (C. F. Parvanta, 2011). In public health, much funding is allocated to social marketing, the application of marketing techniques to increase the acceptability of an idea, practice, or product to enhance health (S. A. Parvanta & Parvanta, 2011). By informing and persuading the public when health practices and products have proven health benefits and scientific consensus, public-health efforts have advanced (C. F. Parvanta, 2011).

While social-marketing messages offer clear public-health benefit, the value of other health-product promotional efforts—such as the marketing of health care services—is less certain. Proponents argue that such advertising educates the public about health services and treatment options and empowers consumers to take an active role in their medical decision-making (Kravitz & Bell, 2007). In contrast, opponents argue that persuasion is the only aim of such ads; in fact, they have found the educational value of such advertisements questionable, and have noted that ads can negatively affect the patient-provider relationship. (Abel et al., 2012; Frosch, Grande, Tarn, & Kravitz, 2010; Kravitz, 2000).

Companies that promote health products and services utilize various marketing models (Abel et al., 2012). One that has received considerable attention is direct-to-consumer advertising (DTCA). This marketing effort delivers unsolicited information about medication or services to the public in popular media (Wilkes, Bell, & Kravitz, 2000). In the DTCA model, access to a product or service requires permission by a health care provider, whereas in other

models these goods can be purchased directly by consumers without approval from a gatekeeper (S. W. Gray & Abel, 2012). DTCA includes broadcast (television and radio) and print (newspaper and magazine) advertisements, billboards, and direct mailings (Wilkes et al., 2000). This form of advertising does not include solicited information, such as information requested about a pharmaceutical drug (Abel et al., 2006).

Within the realm of cancer, advertisements for oncology-related pharmaceutical medications, genetic testing for cancer mutations, and imaging services for cancer screening are clear examples of direct-to-consumer advertising (Abel et al., 2012). It is also important to recognize that with increased competition for healthcare expenditures, facilities that provide cancer care—such as hospitals, clinics, and cancer centers—advertise heavily to increase revenue (S. W. Gray & Abel, 2012). U.S. hospitals spend billions of dollars in advertising each year, and spending continues to rise (Newman Andrew Adam, 2011).

Advertisements from both non-profit and for-profit cancer centers have raised concerns among health professionals due to the unsubstantiated claims about survival, the use of emotional language, the promotion of innovative therapies, and the use of testimonials from atypical patients (Abel et al., 2006; Kravitz & Bell, 2007; Oxman, January, 2007). Critics have noted that patients who view such ads may come away with unrealistic expectations about treatment benefit, which may influence their treatment decisions (Weeks et al., 1998). Additionally, claims about survival have raised concerns that ads may prompt patients to travel across the country for treatment that is likely available closer to home, which may increase total costs for care (Singer, December 18, 2009). Lastly, some believe that the use of emotional language may be inappropriate for cancer patients already experiencing fear, uncertainty, and anxiety (Singer, December 18, 2009).

1.1 RESEARCH QUESTION AND OBJECTIVES

Despite these concerns, there has been little examination of the content of cancer center ads, and to date no review has been conducted to examine or synthesize such analyses. As such, this study aimed to rapidly review the literature for content analyses characterizing direct-to-consumer advertisements by cancer centers that included information about the types of services and treatments advertised the balance of language about benefits and risks of treatments, and the use of language about emotion, survival, and innovation. The major questions were: 1) What evidence exists in the peer-reviewed literature about the content of direct-to-consumer advertising by cancer centers? 2) What is the level of evidence, as measured by the number of studies and research design? and 3) Where are the gaps in evidence, and what future work is needed?

The second chapter of this paper will discuss the rise in direct-to-consumer advertising and discuss reasons for this increase, including the evolution of patient decision-making preferences, technology innovations and widespread access to information, and changes in regulations at the federal level. The author will discuss what is known about the content and impact of different forms of cancer-related DTCA, including pharmaceutical, genetic testing, and cancer screening services. The second chapter will also present what is known about cancer center advertising, and why a review is necessary.

The third chapter describes the selection criteria, search strategy, and data extraction process of the rapid review. In the fourth chapter, the author presents the results of the review, giving particular attention to the study selection, the characteristics and outcomes of the studies selected, and the quality of studies. The fifth chapter provides a synthesis and critique of the results and critique the studies, including the commonalties and differences between study design

and outcomes, integrate relevant theories, and provide recommendations for future research. The sixth chapter presents the limitations of this paper and offers final remarks.

2.0 BACKGROUND

2.1 RECENT TRENDS IN DIRECT-TO-CONSUMER ADVERTISING

Real spending on health-related DTCA has increased dramatically over the last decade and a half, with a rise of 330% between 1996 and 2007 (J. M. Donohue, Cevasco, & Rosenthal, 2007). In 1990, \$47 million was spent on print and broadcast advertising. By 2000, this amount had grown to more than \$2.5 billion (Fintor, 2002), and in 2005 increased to over \$4 billion (J. M. Donohue et al., 2007). Multiple factors have influenced this rising trend, including an evolution of patient decision-making preferences and information seeking behaviors (Frosch & Kaplan, 1999), technology innovations and widespread access to cancer information through television, the Internet, and mobile devices (Viswanath, 2005), and changes in advertising regulations at the federal level, making it more cost-effective for companies to advertise medications and services in lay media (Fintor, 2002; Kravitz, 2000).

2.1.1 Evolution of Patient Decision-Making Preferences

Today, more so than ever, patients are encouraged to take an active role in making decisions about their medical care (Frosch et al., 2010). In the past few decades, there has been a paradigm shift from a paternalistic model of care, in which the health care provider makes the decisions

and the patient has a low-level of involvement, to a shared model of care where patients are actively engaged in their medical decisions (Frosch & Kaplan, 1999; Kaplan & Frosch, 2005).

Numerous studies have shown that cancer patients actively seek information about their diagnosis and treatment options from the Internet, newspapers, and magazines (Butow, Maclean, Dunn, Tattersall, & Boyer, 1997; Kelly et al., 2010; Nagler et al., 2010). This information sought by patients is associated with patient behaviors and influences their preferences for treatment, including the use of targeted therapies (S. W. Gray, Armstrong, Demichele, Schwartz, & Hornik, 2009; C. J. Lee, Gray, & Lewis, 2010). Direct-to-consumer advertising has increased as patients seek information on medical choices, and advertisements provide patients with new information about medications and services, as well as their indications, benefits, and risks. Proponents of DTCA have claimed that advertisements educate and empower patients with new information, creating a more informed and assertive population (Bonaccorso & Sturchio, 2002; Kravitz & Bell, 2007). Research has shown that advertising increases consumers' awareness of the product promoted and also influences their preferences for such treatment (Fintor, 2002).

2.1.2 Technology Innovations and Access to Information

The evolution of patient preferences for decision making and information-seeking behaviors have been possible due to technology innovations that make information widely accessible and instantaneous, namely through computers and mobile devices (Basch, Thaler, Shi, Yakren, & Schrag, 2004; Viswanath, 2005). The amount of information on cancer on the Internet continues to proliferate, with millions of hits generated from a single search on cancer (Viswanath, 2005). This increase in access to information allows for the easy and rapid delivery of cancer information to the public, including information on disease prevention, management and

treatment and coping strategies and support. With this increase in information availability has come an increase in advertising; companies can promote their services through online banner ads on cancer educational websites, create websites for rapid dispersal of information, , and produce television commercials that air on popular networks or online. This digitization of information has created unlimited opportunities for health-related advertising.

2.1.3 Federal Regulations

Changes in health-care advertising regulations at the federal level have influenced the rapid growth of health-services advertising in the United States (Bell, Kravitz, & Wilkes, 2000). Two governmental agencies regulate advertising at the federal level in the United States: the U.S. Food and Drug Administration (FDA) and the U.S. Federal Trade Commission (FTC). With the passage of the Food Drug, and Cosmetic Act in 1938, the FDA was given authority to control labeling for both over-the-counter and prescription drugs, but regulation of advertising remained with the FTC (Kravitz, 2000). The Kefauver-Harris amendments of 1962, with goals of increasing patient safety and protection, gave the FDA full jurisdiction over prescription drugs and medical devices advertising. Regulations required ads to provide information about side effects, drug indications and effectiveness, as well as “fair balance,” or a summary of risks and benefits of the medication or device. Guidelines also required that text size and ease of comprehension of risk information be equal to that of benefit information (Food and Drug Administration, 2009).

With preferences for medical decision-making throughout the 60s and 70s being paternalistic in nature, manufacturers promoted their pharmaceutical drugs and medical devices to health care providers. The idea of marketing directly to consumers was “inconceivable”

(Kravitz, 2000). However, the evolution in patient decision-making preferences shifted the pharmaceutical industry's perspective on advertising to the public in 1981. The industry argued (in its proposal to the FDA) that the educational benefit of direct-to-consumer advertising would empower the public to be active, informed participants in medical decision making (Kravitz, 2000). The FDA studied the proposal and approved it in 1985, allowing pharmaceutical companies to advertise directly to the public, provided they abide by existing standards. The industry was not satisfied, however, and argued that the mandate to provide a brief summary (of side effects, effectiveness, and contraindications) was burdensome and provided no additional value to consumers (Kontos & Viswanath, 2011).

In 1997 the FDA created new guidelines for broadcast advertising and no longer required the disclosure of all risks and side effects to be presented in the advertisement (Kontos & Viswanath, 2011), provided the manufacturer issued an inclusive statement about risks available from another source, such as a toll-free telephone number, concurrent print ad, physician or Internet address (Kravitz, 2000). This regulatory change made it easier to advertise through broadcast media and brought forth an eruption of television and radio advertisements in 1997 (Fintor, 2002). Although DTCA campaigns were (and are) advertised through several media outlets, including magazines, newspapers, television, and radio, this regulation change shifted the majority of DTCA spending from print to broadcast media (J. Donohue, 2006; J. M. Donohue et al., 2007; Fintor, 2002).

2.2 CURRENT LITERATURE ON CANCER-RELATED DTCA

2.2.1 Pharmaceutical DTCA

Much of the increase in DTCA is due to the promotion of pharmaceutical drugs (Fintor, 2002). Most advertisements for pharmaceutical medications are product-specific, i.e. mention a drug by name and describe its indication for use, safety, and effectiveness (Kravitz, 2000). Cancer-related medications have been advertised to consumers since the liberalization of FDA regulations in 1997, mainly through magazines and television (Kontos & Viswanath, 2011). Figure 1 highlights two examples of DTCA of cancer-related prescription drugs that appeared in consumer magazines. A considerable amount of research has examined the content of these types of product-specific ads, which has informed the policy debate (Abel, Lee, & Weeks, 2007; S. W. Gray & Abel, 2012; Kontos & Viswanath, 2011).

2.2.1.1 Content of Pharmaceutical DTCA

Multiple content analyses have examined pharmaceutical DTCA, showing that although the FDA requires a “fair balance” of risk and benefit language, companies often overemphasize benefit information (Abel et al., 2007; Bell, Kravitz, et al., 2000; Bell, Wilkes, & Kravitz, 2000). One study examined the content of product-specific DTC pharmaceutical ads in popular magazines, and found that forty percent of ads mentioned risks last (Bell, Kravitz, et al., 2000). The study reported the dramatic rise of new brand appearances: in 1989 there were fewer than five, and by 1998 this increased to eighteen. The most common conditions targeted were allergies (46 ads), obstetrical/gynecological (45 ads), dermatological (37 ads), and cardiovascular (36 ads). Cancer was the condition targeted the least, with only two drugs advertised, Eulexin and Nolvadex.

Another concerning finding about DTCA of pharmaceutical medications is the difficulty of the public to fully comprehend the information. While social marketers are experts at tailoring communication messages so that the public can easily understand, this does occur with DTCA. Early research on DTCA for pharmaceuticals showed that consumers did not have the clinical or pharmaceutical background to fully understand and evaluate pharmacological advertisements (Cohen, 1988). Subsequent analyses have supported this conclusion, suggesting this information is difficult to read and requires a higher level of literacy than most consumers have (Kaphingst, Rudd, DeJong, & Daltroy, 2004, 2005).

The content analyses of cancer-related pharmaceutical DTCA have shown that, although the information is difficult to understand, the risks and benefits information presented equally, and cancer patients usually find advertisement information helpful (Abel, Burstein, Hevelone, & Weeks, 2009; Abel et al., 2007; Abel et al., 2006). A content analysis conducted during a three and a half year period examined 284 unique advertisements from 49 different campaigns and found that ads frequently promoted medication effectiveness and made references to clinical data (Abel et al., 2007). Most ads gave equal amount of text to risks and benefits information, but texts were usually difficult to read (i.e., were at a college reading level), as indicated by a standard measure of text readability.

2.2.1.2 Patient and Provider Perspectives and Impact On Behavior

While the content of DTCA is important for understanding what is being promoted, it is equally important to understand how this type of advertising influences consumer behavior and the patient-provider relationship. To understand opinions of DTCA for pharmaceutical medication, the FDA conducted a survey in 1999 of 1,081 consumers and found that 52% of respondents reported they “like” seeing advertisements (Aiken K, Swassy J, & Braman A, 2002). The same

survey was repeated in 2002 among 960 consumers and 500 physicians (Aiken K et al., 2002). The number of participants who said they “like” seeing ads had declined to 32% in 2002. In 1999, only 18% of respondents turned to the Internet for more information, whereas in 2002, 38% did so. Forty percent of physicians thought DTCA was positive, 32% thought it was negative, and 28% thought it had no overall effect. This survey is often cited as evidence that health providers do not feel that DTCA should be eliminated, despite the findings of other studies (Abel et al., 2006).

Other surveys have reported both negative and positive attitudes toward DTCA (Murray, Lo, Pollack, Donelan, & Lee, 2004; Robinson et al., 2004). A large survey of 3,000 respondents found that 86% of adult consumers were aware of DTCA, and among those, 36% discussed the advertised medication with their physician (Weissman et al., 2003a). A separate national survey found that, among 643 physicians, 70% felt that DTCA helped to educate patients (Weissman et al., 2003b). Physicians reported prescribing a medication approximately 39% of the time it was requested.

One survey found that patients with cancer were highly aware of cancer-related DTCA, but that there were minimal changes in providers’ choice of prescription medication (Abel et al., 2009). Of 348 respondents, 86.2% reported being aware of cancer-related direct-to-consumer advertising. Patients were more frequently aware of DTCA on television (77.7%) and in magazines (66.7%). Among those aware of DTCA, a majority (62%) reported that the advertisements made them more aware of treatments they did not know about, and 57% reported it helped them have better discussions with their physicians. Only 17% reported talking to their provider about a specific advertised medication, and less than one-fifth of those patients received a prescription for the medication. The investigators discovered that these positive aspects of

DTCA came at a price: 11% of patients reported that DTCA made them less confident in their providers' judgment, a "potentially devastating effect for the patient-provider relationship" (S. W. Gray & Abel, 2012).

Studies to assess providers' attitudes towards oncology-related pharmaceutical advertising are less common, but are available. In one such study, investigators surveyed 221 oncology nurse practitioners (Viale & Sanchez Yamamoto, 2004). Results showed that discussion about pharmaceutical advertisements were common in provider-patient discussions. Ninety-four percent of providers had received a patient request for a medication due to an advertisement, and 40% received one to five medication requests each week. Seventy-four percent of providers reported that patients ask for inappropriate medications, and 43% sometimes felt pressured to prescribe the medication requested.

Interestingly, primary care physicians view DTCA more negatively than specialists (Aiken K et al., 2002), and they are less receptive to questions and medication requests when they arise from DTC advertisements (Zachry, Dalen, & Jackson, 2003). General providers in particular face increasing pressure to see more patients in less time, with the average clinical visit being around fifteen minutes (Fiscella & Epstein, 2008). Discussing information a patient learned from an advertisement takes valuable time, especially if the ad was misleading and did not provide enough information about indications, risks, or alternate treatments (Lipsky & Taylor, 1997). While communication is essential to the patient-provider relationship, and providers should take time to communicate medication risks and benefits, dialogue resulting from advertisements should not impede the delivery of other essential information in the clinical encounter. In addition, providers must deliver the bad news that ads often omit, such as

insurance coverage information; this in turn may decrease patient satisfaction with their providers (Abel et al., 2006).

2.2.1.3 Cost-Effectiveness and Appropriateness of Prescription

While oncology-specific studies are rare, a recent study on the cost-effectiveness of general pharmaceutical DTCA reported that such advertising leads to an increased demand for medications, but that it may also lead to inappropriate prescriptions (Atherly & Rubin, 2009). Whereas drugs that are proven to be cost-effective are used frequently and do not require promotion, the drugs “on the margins of evidence-based medicine” are prescribed more frequently when advertised (Abel 2006). This conclusion has been supported by previous studies; in a randomized clinical trial using patient actors, Kravitz and colleagues found that DTCA is more influential when drugs are of questionable use (Kravitz et al., 2005). In the study, patients who presented with depression (where an antidepressant is a reasonable choice), general requests were more effective than brand-specific requests. Patients who presented with an adjustment disorder (where use of antidepressants is more questionable), brand-specific patient requests were more effective. Another study found that physicians were more likely to prescribe a Cox-2 inhibitor if the patient had requested it after seeing the advertisement, even though a different drug (non-steroidal anti-inflammatory medication) is the more appropriate choice according to the current evidence (Spence, Teleki, Cheetham, Schweitzer, & Millares, 2005).

2.2.2 DTCA of Cancer Prevention Services

While pharmaceutical advertising is the most studied form of DTCA, advancements in the field of genetics in the past decade have created new products, and as such, new opportunities for

cancer-related DTCA. Many of these products are aimed at cancer detection and secondary prevention, which allows for marketing to a much broader target population (Kontos & Viswanath, 2011). Promotion of cancer prevention products includes such services as genetic testing, whole-body imaging, and cancer screening and surveillance tests (Abel et al., 2012).

2.2.3 Genetic Testing

With the sequencing of the human genome, opportunities for investigating genetic-related cancer became possible. Direct-to-consumer marketing for genomic testing is rapidly increasing, with more than 30 websites currently marketing these at-home tests (Genetics & Public Policy Center, 2010). In the past few decades, genetic tests have been developed to test for mutations that increase susceptibility to cancer, such as the *BRCA1* and *BRCA2* mutations for breast cancer. Other tests include those for single nucleotide polymorphisms that relate to cancer risk, as well as for genetic testing of metabolism of pharmaceutical medications (Abel et al., 2012).

One DTCA campaign was piloted by Myriad Genetics in 2002 in Denver, Colorado and Atlanta, Georgia, and then a larger campaign ran in 2007 throughout the Northeastern United States (Ray, 2007). The company currently holds the patent for the *BRCA1* and *BRCA2* mutation test, and holds all genetic testing and advertising privileges. The genetic test advertised by the company, called BRACAnalysis[®], was promoted through television commercials featuring women of various ages and races, attesting the same message:

“Breast cancer runs in my family. My mother, my grandmother, my dad’s sisters. I wondered if it would be inevitable. I found out it didn’t have to be. I found out my risk through BRACAnalysis[®]... a blood test that has helped thousands of women

find out their risk for hereditary breast and ovarian cancer. After BRACAnalysis[®], I realized I can choose to do something now, to help reduce my cancer risk now, with effective medical options.”

The ad reported that one in ten women have a *BRCA1* or *BRCA2* mutation, but critics argue this number is misleading, and that a woman in the general population has a one in 400 chance (Genetics & Public Policy Center, 2007). The media effects of the larger campaign (in terms of the number of women purchasing tests and undergoing testing) have not yet been published, but the Centers for Disease Control and Prevention conducted a survey of 1,635 women and 1,054 providers to examine the effects of the pilot (Centers for Disease Control and Prevention, 2004). The study compared outcomes in the two cities with the Myriad Genetics campaign (Denver and Atlanta) with two cities without the campaign (Raleigh-Durham and Seattle) and found that women were twice as likely to have heard about genetic testing if they lived in a city with prevalent advertisements ($p < 0.05$). In addition, health providers in cities with DTCA for genetic tests were twice as likely to report an increase of requests for the genetic tests within the past six months ($p < 0.05$).

The topic of DTCA for genetic testing has become controversial (S. Gray & Olopade, 2003). Public health agencies and physicians have criticized DTCA for cancer-related genetic tests (Lowery, Byers, Axell, Ku, & Jacobellis, 2008; Mouchawar, Hensley-Alford, et al., 2005; Mouchawar, Laurion, et al., 2005). Even though genetic testing may be beneficial for high risk groups, there is debate as to whether advertising of such services is the appropriate method to disseminate such information to the public (Kontos & Viswanath, 2011). One of the major issues of DTCA for genetic testing is that it influences members of the population that are not at high

risk for developing cancer and increases the need for genetic counseling services among low risk groups (Lowery et al., 2008; Mouchawar, Hensley-Alford, et al., 2005; Tracy, 2008). Other concerns include potential patient misunderstanding of test results and the confidentiality of genetic information (S. Gray & Olopade, 2003; Lowery et al., 2008; Mouchawar, Hensley-Alford, et al., 2005; Mouchawar, Laurion, et al., 2005; Tracy, 2008).

Multiple studies examined the impact of the BRCAanalysis campaign by Myriad Genetics and reported that managed care organizations had significant increases in low-risk patients getting tested and needing genetic counseling services (Lowery et al., 2008; Mouchawar, Hensley-Alford, et al., 2005; Tracy, 2008). This has raised concerns about unnecessary psychological stress on patients who have false positive results and increased health care costs for follow-up and counseling services (Hamilton, Lobel, & Moyer, 2009). There is also a concern about at-home genetic tests that do not require interaction with a health care provider (United States Federal Trade Commission, 2006). A content analysis of these websites found that messages about risks of testing are often omitted, and patients may misunderstand the information presented (Lachance, Erby, Ford, Allen, & Kaphingst, 2010). The FDA has recently banned such website distribution of genetic tests, stating that they are medical devices in need of more regulation (Abel et al., 2012).

2.2.4 Cancer Screening Services

Just as genetic testing services are advertised to the public, services for cancer screening are also highly promoted in the media (Abel et al., 2012). For over a century, health professionals and public health organizations have viewed cancer screening as an effective way to save lives (Lerner, 2001). For decades, cancer-screening ads have utilized persuasion techniques to evoke

fear and guilt to promote screening, but even ads with proven benefit have recently received scrutiny for failing to mention risks of screening or likelihood of false positive results (Woloshin, Schwartz, Black, & Kramer, 2012).

Many screening services that are not evidenced-based are also promoted through media channels. Radiological screening tests, such as whole-body positron emission tomography or computed tomography (CT) are marketed by non-academic facilities (Fenton & Deyo, 2003; T. H. Lee & Brennan, 2002). This type of screening test is low in sensitivity and specificity, meaning patients' chances for false positive and false negative results are increased (Illes et al., 2004; T. H. Lee & Brennan, 2002). An analysis of advertisements for imaging services found that they make unsubstantiated claims, omit risk information, and include financial incentives (Illes et al., 2004). Critics believe that these tests are expensive, unnecessary, and may require invasive or costly follow-up tests (Illes et al., 2004; Manning & Schneiderman, 1996). Screening services for cancer-related biomarkers are also advertised to the public; this practice has been criticized recently because tests are not evidenced-based and results are difficult to interpret, even by experienced oncologists (Viswanath, 2005).

2.3 ADVERTISING BY CANCER CENTERS

Advertisements for pharmaceutical medications, genetic testing, and imaging services are clearly examples of direct-to-consumer marketing of cancer-related services, and these types of advertising have been analyzed to varying degrees. However, it is also important to recognize that facilities that provide cancer care—such as hospitals, clinics, and cancer centers—promote their services to patients in order to attract new customers and increase revenue (S. W. Gray &

Abel, 2012). Marketing of health care services and treatments is very competitive, especially in larger cities (Rosenthal, 2010). Despite the recession, hospitals were still placing ads in 2008; the total advertising spending by U.S. hospitals increased slightly from \$1.2 billion in 2007 to \$1.23 billion a year later, according to TNS Media Intelligence (Newman Andrew Adam, 2009). From January to July 2011, advertising by American hospitals, clinics, and medical centers rose 20.4 percent, from \$595.5 million to \$717.2 million during the six-month period, as compared with the same period in 2010 (Newman Andrew Adam, 2011). Hospital and cancer center advertising has recently received some attention by the media (Newman Andrew Adam, 2011; Oxman, January, 2007; Singer, December 18, 2009), but has yet to receive much evaluation by academic researchers in the academy.

A major concern about advertising by non-profit hospitals and clinics in particular is its comparatively lenient regulation. For-profit centers ads are regulated by the FTC, and must meet certain criteria about accuracy of claims; however, the FTC does not regulate ads placed by non-profit centers. While hospitals have received some criticism, it seems as though cancer centers advertising in particular has raised more serious concerns. According to a recent article in the New York Times entitled, "Cancer Center Ads Use Emotion More Than Facts," federal agencies cannot limit the claims made by non-profit cancer centers about their success in curing cancer, even though these statements are often anecdotal and unsubstantiated (Singer, December 18, 2009). According to the article, even cancer center ads that promote specific services, such as a new radiation therapy, do not have to demonstrate effectiveness. However, the FDA would require evidence for such a claim if the device manufacturer had run the advertisement. The FDA has strict requirements for risk, benefit, and indication language in pharmaceutical and medical device advertisements.

The FDA has strict requirements for advertising pharmaceutical and medical-device products. Such companies must submit their promotional materials to the FDA at the same time (or before) they appear in the lay media. FDA staff members review the ads, and if violations occur may send one of two types of letters: 1) an “untitled letter” that requests the company remove the ad, or 2) a “warning letter” that requires the company to pull the ad and run a corrective campaign (Abel et al., 2007). The majority of regulatory letters sent by the FDA from 1997 to 2006 cited ads for minimizing risks, exaggerating the effectiveness of a medication or device, or both (J. M. Donohue et al., 2007). Although the number of FDA reviewers is severely limited (there were only four in 2006), despite the increasing number of ads submitted each year (J. M. Donohue et al., 2007), all advertisements from pharmaceutical and medical device companies are being examined for compliance.

A 2010 article in the *Oncology Times* reports that there is no regulation of non-profit hospital (or cancer center) advertising by a federal agency for claims of accuracy (Rosenthal, 2010). Lisa M. Schwartz, MD, MS, of Dartmouth Medical School, and co-author of study examining advertising by academic medical centers (Larson, Schwartz, Woloshin, & Welch, 2005) commented, “People are often surprised that this is unregulated advertising, and it can generate false hope and unrealistic expectations about treatment. They may assume it falls under the FTC but it doesn’t.” Dr. Schwartz noted that some oversight for non-profit center ads may come from the each state’s attorney general’s office, but said she was not aware of any corrective actions that had taken place. For-profit cancer centers have received citations from the FTC for making false claims about cure, but this oversight does not apply to non-profit cancer centers (Federal Trade Commission, 2011; Singer, December 18, 2009).

In addition to receiving criticism for lenient regulation, non-profit and for-profit cancer center advertising has raised concerns among health professionals and academic investigators for the persuasion techniques utilized. Critics note that these ads often make unsupported claims about patient survival, highlight atypical patients, omit statistical information about risks and benefits, use emotional language, and promote innovative therapies without much scientific consensus on the effectiveness of such treatment (Newman Andrew Adam, 2011; Oxman, January, 2007; Singer, December 18, 2009). Figure 2 highlights four examples of advertisements placed by cancer centers in popular U.S. magazines, obtained from Kantar Media, a media monitoring organization (see Appendix for permission to use).

Critics are also concerned that ads may generate false hope and unrealistic expectations about treatment success. While encouraging optimism among patients may produce positive outcomes (Federal Trade Commission, 1996; Felder, 2004; Jansen, 2011), high expectations may cause distress when a treatment is unaffordable or when its results are disappointing (Tomlinson & Wright, 2004). Unrealistic expectations about treatment benefit may influence patients to choose treatment options that do not match their true preferences or values (Temel et al., 2011; The, Hak, Koeter, & van Der Wal, 2000; Weeks et al., 1998). For example, a patient who understands and accepts she has a minimal chance of survival from aggressive anti-cancer treatments may choose supportive therapies and an improved quality of life in order to enjoy hobbies or spend time with friends and families. Patients with misconceived notions about the effectiveness of anti-cancer therapies may be left with regret about their treatment choice after they haven't received the results they expected (The, Hak, Koeter, & van Der Wal, 2000).

"Eddie said, 'It's **ONLY** a bad sore throat.'
A little over **ONE** week later, he's facing leukemia.
I had to find the best place for him. Turns out, it was in Houston."



EDDIE SADDLER
~~leukemia~~

THERE'S ONLY ONE YOU. AND ONLY ONE MD ANDERSON.
Working in a hospital, Pearlle Saddler knew the right people to ask when it came to treating her husband Eddie's leukemia. That's why the Saddlers traveled from South Carolina to MD Anderson. Our experienced cancer specialists have the options they need to customize an individual treatment plan. That kind of customized care saved Eddie Saddler's life 15 years ago. If you're facing cancer, call us directly at 1-877-MDA-6789, or visit us at MakingCancerHistory.com.



Scan QR code to discover the truth behind common cancer myths.

THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center
Making Cancer History®



Ranked number one in the nation for cancer care by U.S. News & World Report.



Get back to life faster.

At Cancer Treatment Centers of America®, we can combine surgery and radiation into one procedure—so treatment time could be a lot shorter.

When fighting cancer, every minute counts.

That's why, in late fall, we will offer the Novac™7 Intraoperative Radiation Therapy (IORT) for breast cancer. With IORT, one precise, powerful dose of radiation is delivered to the tumor during surgery. Now one procedure could replace weeks of radiation treatments for some patients.

One procedure. One time. And you'll only find it at one place: Cancer Treatment Centers of America.

If you or a loved one is fighting breast cancer, you owe it to yourself to find out more.

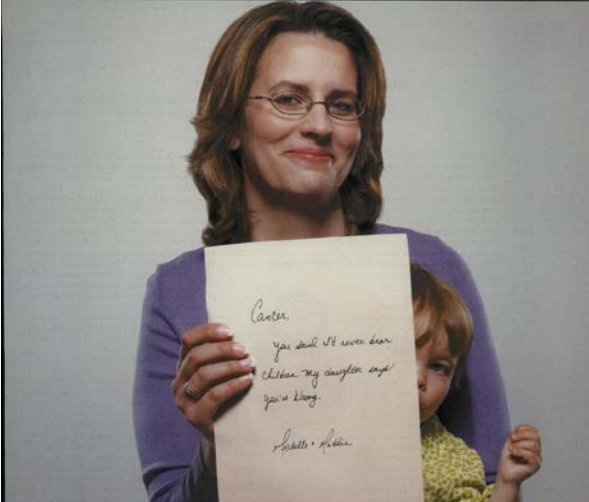


Winning the fight against cancer, every day.®

Care that never quits™


Contact us today
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cancercenter.com

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CANCER. WHERE YOU'RE TREATED FIRST CAN MAKE ALL THE DIFFERENCE.


When Michelle was diagnosed with cervical cancer at 32, a hysterectomy was the only option her local doctor could offer. Instead, Michelle chose Memorial Sloan-Kettering Cancer Center, where patients often have better outcomes than those treated at other hospitals. Her cancer was removed by a surgeon with world-renowned expertise in a rare fertility-sparing treatment for patients with early stage cervical cancer. Soon after, Michelle became pregnant and gave birth to her lovely daughter, Maddie.



Memorial Sloan-Kettering Cancer Center
The Best Cancer Care. Anywhere.

If you or a loved one is diagnosed with cancer, call Memorial Sloan-Kettering first at 800.525.2225

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I CAN LIVE MY LIFE.

STANFORD WOMEN'S CANCER CENTER
OPENED JUNE 2011

Bringing Hope and Healing to Women with Cancer

The Stanford Women's Cancer Center is dedicated to providing comprehensive cancer services to women with breast and gynecologic cancers. The new facility offers Stanford's unparalleled outpatient cancer services—from diagnosis to treatment to supportive care—offering hope and healing to women with cancer. For more info, call 650.498.6004 or visit <http://cancer.stanford.edu/womens>



STANFORD
CANCER CENTERS
Stanford University Medical Center
A National Cancer Institute Designated Cancer Center

Figure 1. Examples of Advertisements Placed By Cancer Centers in 2012, Obtained from Kantar Media
MD Anderson Cancer Center (top left), Cancer Treatment Centers of America (top right), Memorial Sloan-Kettering Cancer Center (bottom left), Stanford Women's Cancer Center (bottom right), obtained from Kantar Media.

Other health professionals have expressed concern that ads may cause unnecessary burden on cancer patients by convincing them to spend time and money to travel across the country for care that often is available closer to home (Singer, December 18, 2009). Lastly, some have expressed concern about ads increasing health care costs by promoting innovative, and sometimes unproven, treatments. Not only does this promote the idea that new treatments are always better, it may lead to unnecessary procedures that put patients at risk for additional appointments and corrective procedures (Rosenthal, 2010; Singer, December 18, 2009).

The unregulated (or minimally regulated) nature of both for-profit and non-profit cancer center advertising, coupled with the often-unsubstantiated claims present in advertisements have created debate as to whether this type of advertising should be more regulated. A large body of evidence regarding the content, impact, and regulation of pharmaceutical advertising has been reviewed, with regular updates (Abel et al., 2006; Frosch & Grande, 2010; Kontos & Viswanath, 2011; Wilkes et al., 2000). However, to our knowledge, there has not been a rapid review of the research examining the content of DTCA by cancer centers. Characterizing the content of messages conveyed through cancer center advertisements is the first step to understanding if and how these messages affect patients. As evidence suggests that pharmaceutical, genetic testing, and cancer screening advertisements affect health care costs, patient preferences and expectations about benefits of treatments, and the provider-patient relationship, it is of high public health importance to assess the effect of other health-services advertisements, especially those receiving criticism for advertising campaigns. To inform the debate, this study aims to review current evidence regarding cancer center advertising.

3.0 METHODS

3.1 SELECTION CRITERIA

Studies were included in the review if they examined any form of promotional advertisements placed by cancer centers in popular media outlets (broadcast, print, or online). Exclusion criteria were created a priori and helped guide whether studies identified by the literature review were appropriate for inclusion. Publications were excluded from the review if they met any of the following conditions: were not published in a peer-reviewed journal, provided a case study of an advertising company or mentioned an ad company winning a marketing campaign, assessed advertisements placed by hospitals, clinics, or medical centers that did not advertise cancer treatments or services, provided only an opinion or comment on other articles about cancer center advertising, or were published in a language other than English.

3.2 SEARCH STRATEGY

The rapid search was conducted using three databases that archive publications in medicine and health, psychology, and business: MEDLINE (from 1950), PsychInfo (from 1950), and Business Source Complete (from 1950). The subject scope of MEDLINE is biomedicine and health, and includes publications on topics such as pharmaceutical and health services advertising, health

communication, and the impact of advertising on providers and patients. This database was chosen due to its broad coverage of oncology-related and health communication journals. Psych Info contains information in the field of psychology, and includes publications on marketing communications, particularly social marketing interventions. This database was searched due to its broad coverage of health communication publications. Business Source Complete includes publications from business and peer-reviewed journals, as well as non-journal content such as industry reports, case studies, market research reports, and company profiles. This database was chosen for its broad coverage of marketing campaigns in all fields.

The databases were searched for all relevant literature (i.e. publications in peer-reviewed journals, books, case studies, and reports) published up to February 9, 2013. The search included Medical Subject Headings (MeSH) relating to oncology clinical services, advertising, and marketing practices of oncology-related health facilities. The MeSH terms “marketing,” “marketing of health services,” and “advertising as topic” were combined with terms used for facilities that provide cancer care, such as “oncology service, hospital,” “cancer care facilities,” “outpatient clinics, hospital,” “academic medical centers,” and “ambulatory care facilities.” The terms “cancer center or cancer centers” and “cancer clinics or cancer clinic” were also used as related words describing facilities that provide cancer care.

One researcher conducted the literature search and scanned the title and abstract of the studies identified during the preliminary review. At the point of abstract review, a decision was made whether the study fit inclusion criteria. Full-text copies of potentially eligible studies were retrieved for full evaluation if the title and abstract met the inclusion criteria.

3.3 DATA EXTRACTION

Data collected from eligible studies included information on study design and study outcomes. Information extracted on study design included distinct units of analysis (i.e. print or television advertisements or websites), total number of unique units of analysis, time period studied, number of reviewers, and inter-rater reliability between reviewers. The outcome measures included information on the services advertised, the balance of risks and benefits language and the quality of study design (as measured by standardized coding, number of reviewers, sampling strategy, and unit of analysis representativeness). The type or themes of promotional claims (in terms of language and persuasion techniques used) were also collected from the publications.

4.0 RESULTS

4.1 STUDY SELECTION

Two studies were selected from 353 publications identified by the rapid review (Figure 2). After removal of duplicates, 346 remained. Preliminary title and abstract review led to the exclusion of 336 studies. Most of the publications that did not fulfill the inclusion criteria were social marketing articles, with the majority falling into one of the following categories: effects of tobacco advertising or the impact of tobacco cessation campaigns, advertising of family planning prevention campaigns (e.g. oral and skin), or advertising to recruit participants into research or intervention studies. Of the articles discussing direct-to-consumer advertising, the majority discussed the content of or attitudes toward pharmaceutical advertising. Among the articles related to advertising by cancer care facilities, very few characterized the content or analyzed the impact of cancer services advertising. Twenty-nine were reports of the specific marketing campaigns of single cancers or advertising agencies contracted with cancer centers published in non-peer-reviewed journals or newspapers. The majority of these reports were found in the publications *Profiles of Healthcare Marketing*, *Modern Healthcare*, or *Profile of Health Communication*. These articles were not included, as they were not published in peer-reviewed publications.

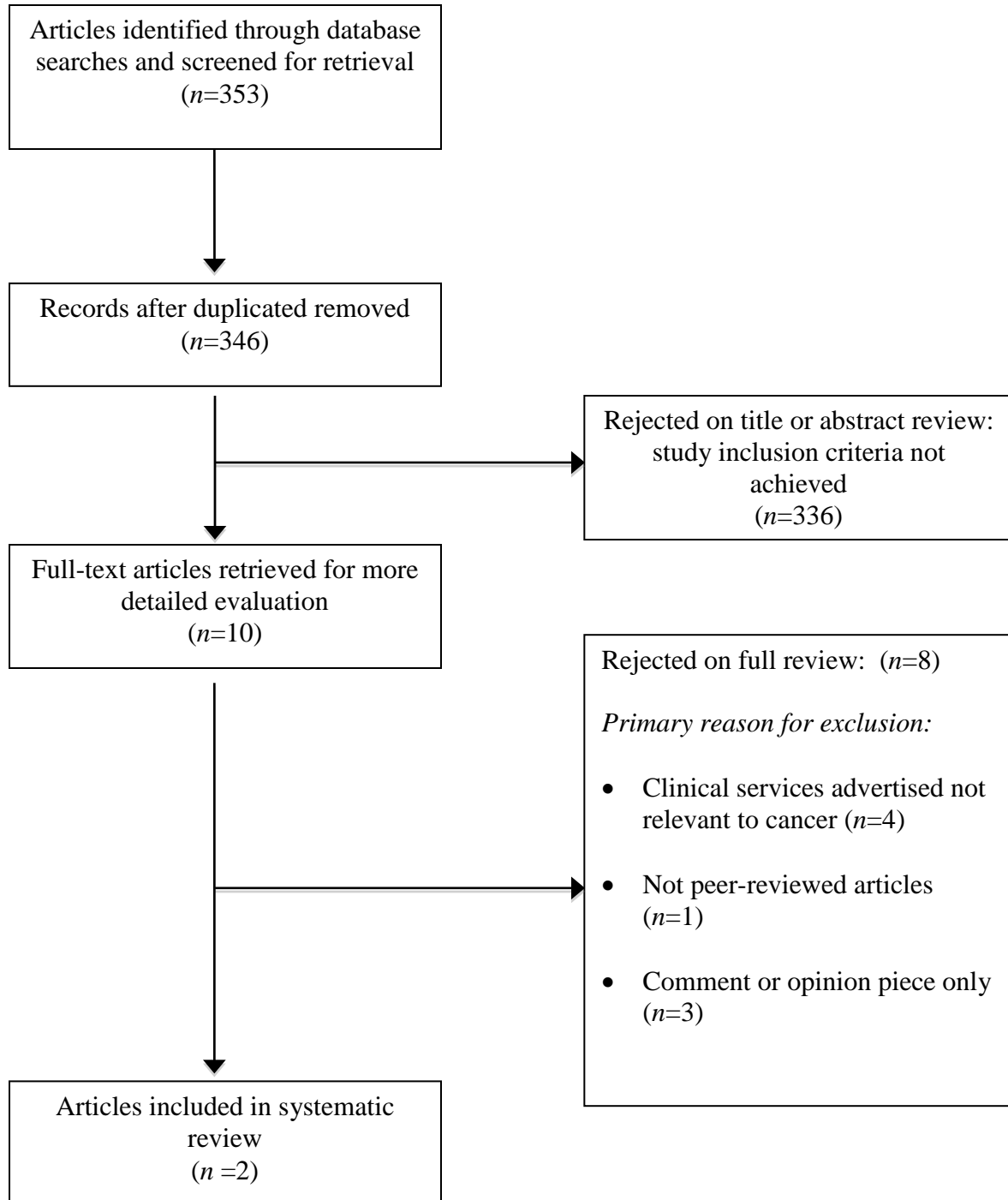


Figure 2. Literature Search and Article Selection

Of the eight articles rejected on full review, four (50%) examined advertising of non-cancer related services, including 1) stem cell therapies promoted online and the clinical

evidence to support effectiveness of such treatment (Lau et al., 2008), 2) Korean preferences for western or eastern medicine through advertising (Shin et al., 2011), 3) online promotion of robotic prostatectomy (Mirkin et al., 2012), and 4) a discussion between a senior oncologist, a cancer survivor, an ethicist, and an oncology fellow about pharmaceutical-related direct-to-consumer advertising (Abel et al., 2006). Three other articles rejected on full review were opinion pieces about cancer center advertising (English, Klein, Niehaus, & Ross, 2005; Hunter-Snow, 2006; Romano, 2005). As these articles did not systematically analyze advertising content or impact, they were not included. One study reported the effectiveness of a single hospital campaign (Menon, Goodnight, & Wayne, 2006). This study was submitted by members of the marketing team of the respective hospital and was not published in a peer-reviewed journal.

4.2 CHARACTERISTICS OF STUDIES INCLUDED

Only two studies were identified that represented evaluations of advertising by facilities that provided cancer care (Table 1). Both were cross-sectional studies conducted in the United States. The Larson, Schwartz, Woloshin, and Welch article entitled, “Advertising by Academic Medical Centers” was published in 2005 in the *Archives of Internal Medicine*. Investigators conducted a content analysis of newspaper advertisements placed by “America’s Best Hospitals” (as awarded by *U.S. News & World Report*) in 2002. Authors also conducted semi-structured interviews with the marketing departments of the 17 medical centers.

Table 1. Characteristics and Main Findings of Studies that Fulfilled Search Criteria

Author (date)	Publication	Period studied	Study Design	Distinct Units of analysis	Main Findings
Jayanti (2010)	<i>Journal of Advertising Research</i>	Not reported	Cross-sectional content analysis of cancer center websites and netnographic exploration of online patient conversations	40 NCI-designated comprehensive cancer center websites	NCI-designated cancer centers advertise in three main ways: 1) Highlighting institutional prestige and awards 2) Focusing on research and experience 3) Emphasizing delivery of compassionate care
Larson, Schwartz, Woloshin, & Welch (2005)	<i>Archives of Internal Medicine</i>	January 1, 2002 to December 31, 2002	Cross sectional content analysis of newspaper ads	122 Newspaper advertisements placed by academic medical centers	The majority of ads placed by academic medical centers 1) evoked emotion, 2) highlighted prestige of the center, and 3) promoted special offers. More than half discussed benefits and only one mentioned potential risk of services.

“A Netnographic Exploration, Listening to Online Consumer Conversations,” published in the *Journal of Advertising Research* in 2010 by Rama Jayanti, explored the content of 40 NCI-designated cancer-center websites and explored consumer conversations on health-related electronic bulletin boards. The purpose of this study was to inform hospital communication strategies by examining if patient needs and desires were accounted for in current marketing campaigns. The author describes netnography as “adapting ethnographic techniques to the online world,” and it involves observing online culture just as an anthropologist would study a community (Jayanti, 2010). Using this approach, the author participated in an online consumer conversation through a disease-specific electronic bulletin board, immersing herself in conversations for over two years. Through stratified sampling, five different threads were selected for detailed analysis.

For the Larson *et al.* study, the distinct units of analysis were print advertisements placed by the academic medical centers in the top five most widely circulating newspapers in the centers' metropolitan area. In 2002, investigators identified 122 unique newspaper ads for examination. The units of analysis for the Jayanti study were National Cancer Institute-designated comprehensive cancer center websites. Forty were examined for promotional content.

Both studies had two investigators review units of analysis and both assessed reliability. The Larson *et al.* article calculated reliability using a Kappa measure. Only items with a κ value of 0.70 or higher were included in the analyses. The Jayanti article reports inter-coder agreement as 90 percent for marketing themes found on NCI-designated websites, but does not mention how this value was determined.

4.3 STUDY OUTCOMES

Several types of outcome measures were examined, and the main results are shown in Table 1. The Larson article found that of the 127 advertisements reviewed, 65 promoted groups of services for a specific condition, among which cancer was the second most common condition targeted, after cardiovascular disease. Twenty-one ads promoted specific treatments or tests, with the majority (19/21, 90%) promoting procedures considered cosmetic, e.g. botulinum toxin type A (Botox), or experimental, e.g. a total body computed tomographic scan. The majority of these ads used persuasion principles that evoked feelings such as hope or fear, and about one-third highlighted innovative technology or therapies. The University of Chicago Hospitals, for example, advertised an offer for a \$25 heart screening under the headline, "Early detection is key

to surviving heart disease." Among these discrete services advertised, more than three-quarters highlighted potential benefits, but none quantified the claims. Only one ad mentioned any potential risks of the procedures, and this ad did not describe the risks but only mentioned that risks exist.

Of the 17 interviews with the marketing departments of each respective medical center, 16 reported using advertising to attract patients. None of the medical centers had the advertisements reviewed by an ethics committee, such as the Institutional Review Board, although most (66.7%) knew that research ads were required to undergo this type of review. About half (8/17) reported that individual departments could create and place their own ads (Larson et al., 2005).

Overall, authors concluded that ads focusing on innovative technology might foster the perception that medical care is better than it actually is, leading to false hope and unrealistic expectations among patients, and increasing costs for healthcare. In addition, authors mentioned that services promoting unproven procedures may expose patients to unnecessary risks. They suggested a need for fair balance of benefits and risks and minimization of the promotion of services with unclear value.

The Jayanti study, in which the author participated in an online consumer conversations for over two years, identified four themes from the netnographic exploration of patient conversations: 1) *Provider-consumer partnership*, defined as shared decision-making between a patient and the provider, with respect for provider clinical expertise and patient preferences for treatment, 2) *Social vulnerability*, or embarrassing changes in a patient's physical appearance caused by the disease, 3) *Disease management*, defined as patient self-management of disease symptoms that providers fail to recognize and treat, and 4) *Getting back to normalcy*, or patient

goal-setting to return to levels of health experienced before the onset of disease. The author then explored the content of cancer-center websites to see if similar themes emerged and better inform hospital marketing strategies.

The content analysis of the 40 NCI-designated comprehensive cancer-center websites found that the centers advertise in one of three ways:

1. By promoting institutional prestige by means of highlighting awards, accolades, and reputational strength. For example (as quoted in Jayanti), “Jonsson Comprehensive Cancer Center has established an international reputation in a number of areas, such as developing new cancer therapies, providing the best in experimental and traditional treatments, and expertly guiding and training the next generation of medical researchers.”
2. By highlighting expertise and research conducted at the center, e.g., “...home to outstanding, internationally recognized physicians and scientists. These individuals collaborate across the full spectrum of cancer research from basic biology to treatment.”
3. By emphasizing the delivery of compassionate care. For example, “As it grows to fulfill its mission, the Cancer Center will continue to be distinguished by its compassionate and effective patient care.”

The author discovered a disconnect between the conversations of patients and the marketing messages promoted by cancer centers. These recommendations from both the netnographic and content analyses were delivered to hospital communication managers so that more relevant, powerful, and believable messages could be given to consumers.

4.4 STUDY QUALITY

Both studies provided data on the number and consistency of assessors, but only the Larson *et al.* article used a calculated kappa measure. The Jayanti article did not report how inter-coder reliability was conducted. Another limitation of the Jayanti study is the sample timeframe: it reflected the state of the NCI-designated websites at a particular point in time and the time period was not reported in the article. Neither study examined the ease of readability of promotional material. A standard measure of readability, such as the Flesch-Kincaid Grade Level formula that calculates the reading level required for understanding of the material, would have been a useful addition to better understand the content of the promotional materials.

5.0 DISCUSSION

This report summarizes the review examining DTCA by cancer centers. Given the discussion that has taken place in the lay media (Rosenthal, 2010; Singer, December 18, 2009), it is surprising that the content of cancer center advertisements has not been subjected to more rigorous evaluation. This review found only two studies in the peer-reviewed literature that explored the topic. Overall, the results of these studies did not provide enough information to make any conclusive statements about the content of cancer center advertising, including the services advertised, language usage, or presentation of risks and benefits.

5.1 SYTHESIS AND LIMITATIONS OF RESULTS

The Larson *et al.* article systematically explores the content of advertisements placed by academic medical centers, but not cancer centers specifically. Although cancer centers are often branches of hospital and medical centers, it is impossible to deduce if these ads are similar to those advertised by cancer centers. This study found that of 65 advertisements for grouped services, only ten targeted cancer. Since the majority of advertisements promoted non-cancer-related services and treatments, it is unlikely that the findings of the study can be generalized to advertising by cancer centers. Furthermore, the Larson *et al.* article examined advertisements from the top 17 academic medical centers, as measured by *U.S. News & World Report*. The

content of advertisements placed by other, lower-rated centers cannot be determined from this study. In addition, the study only examined newspaper ads. Other forms of advertising, such as magazine, radio, or television, may differ in content. Lastly, the time period studied was January to December of 2002, and it is likely that the content of ads of persuasion techniques used has changed over the last ten years.

While the Larson *et al.* study looked at advertising by academic centers, the Jayanti article specifically examined the content of cancer center websites. However, the author examined NCI-designated comprehensive cancer center websites only. As the NCI designation is awarded to the nation's top cancer centers, the promotional website content of the nation's less-prestigious cancer centers cannot be deduced from this study.

Another limitation to the Jayanti article is that only website content was analyzed, not direct-to-consumer advertising practices by these centers. The methods are also vague and would be difficult to reproduce. The author does not mention a standardized codebook for systematic examination of the websites, nor a process of how and which webpages were examined (e.g. the home page, mission statement, vision, treatment option, or treatment result sections). There is mention of 90 percent inter-coder agreement, but there is no discussion as to how this value was achieved. Lastly, there was no systematic examination of persuasion techniques or balance of risk and benefit information.

5.2 COMMONALITIES BETWEEN STUDIES

Despite the limitations of study design and study relevance, there were some commonalities between the two articles. Both found that promotional materials (websites and newspaper

advertisements) mentioned the center's prestige, used emotional language, and provided patient testimonials.

5.2.1 Institutional Prestige

Both studies found that the majority of medical (or cancer) centers promote their image by highlighting institutional expertise and awards. The Larson *et al.* study found that 60.7% of all ads highlighted institutional prestige, defined as, “uses claims of institutional prestige or status (‘world renowned,’ ‘top rated,’ ‘expertise,'); cites awards (e.g. *US News & World Report* rating)” (2005). The Jayanti study reported that 100% of NCI-designated cancer center websites had themes of institutional self-promotion (“self-presentation of reputation, awards, and accolades,”) and expertise/experience/research (“providing information in numeric form with regard to size, number of expert physicians, and budgets”) (2010).

As these studies both examined promotional material from the top medial centers in the U.S., (as determined by the NCI-designation or *U.S. News & World Report* honor roll mention), it is no surprise that these centers highlight their status. It would be interesting to see how other, less rated, cancer centers advertise their services.

5.2.2 Emotional Appeal

Promotion of institutional prestige is not a concerning finding, especially if the claim is warranted. However, both studies mentioned the use of emotional language in promotional material. Larson *et al.* found that the majority of ads (61.5%) had “emotional appeal,” defined as, “evokes feelings such as hope, fear, anxiety, or sympathy; alludes to important relationships;

focuses on health risk, disability, or death” (2005). The Jayanti article, while not including this persuasion technique as a theme, used examples containing emotional language when describing other themes, revealing that these persuasion principles are being used, to some degree, by NCI-designated comprehensive cancer centers (2010).

The use of emotional language in oncology-related health services advertising has raised concerns among many investigators of DTCA (Abel et al., 2006; Kontos & Viswanath, 2011; Kravitz & Bell, 2007; Oxman, January, 2007). Cancer patients and their families, having received a cancer diagnosis, are likely afraid, desperate, and vulnerable (Oxman, January, 2007). Patients making decisions about medical services may have severe emotional and/or physical stress, and they may be especially vulnerable to marketing manipulation (Abel et al., 2006; Kontos & Viswanath, 2011). This vulnerable position should encourage avoidance of marketing techniques that use of emotion language (i.e., evoked feelings of hope, fear, happiness, anxiety, or sympathy), however, some have observed that the opposite seems to be true (Larson et al., 2005; Latham, 2004). Despite the concerns, to our knowledge there has been no examination of the use of emotional language specifically in cancer center advertisements.

5.2.3 Patient Testimonials

The third commonality found among studies was the use of testimonials. Larson *et al.* found that about six percent of ads promoted services with endorsements by a celebrity, patient, or health care provider (2005). While the Jayanti article did not directly report testimonials as a theme, many of the exemplars from hospital websites came from patient stories (2010). For example, the patient theme, “getting back to normalcy” was found in a television commercial highlighting

a patient who had undergone surgery and was cured. In the commercial the patient said, “today I live a completely normal life.”

Although both studies suggest that testimonials are used to advertise, neither article mentioned the use of disclaimers. Testimonials are often used to promote consumer products, and the FTC requires the use of disclaimers. In October 2009, the FTC revised disclaimer requirements, mandating not only a disclaimer for testimonial advertisements, but also a description of the typical results a consumer might expect (Federal Trade Commission, 2011). The FTC found that disclaimers alone (e.g. a statement reading “results not typical”) did little to lessen consumers’ expectation of benefit, even when using explicit disclaimers such as, “These testimonials are based on the experiences of a few people and you are not likely to have similar results” (Federal Trade Commission, 2009). While the two studies included in the review mention the use of disclaimers, it is unknown if hospital advertisements using patient testimonials include disclaimers, and if so, comply with the new FTC requirements.

The use of patient testimonials has raised concerns among health professionals because they often highlight miraculous survival stories, which may mislead patients into thinking their chances for survival are better than they actually are. Unrealistic expectations about cure may influence patients to make decisions about treatments that do not reflect their true preferences and lead to regret (Temel et al., 2011; The et al., 2000; Weeks et al., 1998). In addition, high expectations may cause distress when a treatment is unaffordable or when the outcome is disappointing (and in the case of cancer, possibly devastating). For example, a qualitative study of men who used a drug for erectile dysfunction found that expectations raised by advertising embellishment had an adverse effect on the morale of those for whom it was ineffective (Tomlinson & Wright, 2004).

5.3 COMMUNICATION THEORIES

Mass media communication of health-related topics has attracted the attention of numerous health professionals due to its perceived power and influence in shaping human behavior (Finnegan & Viswanath, 2008). The first media-effect research study examined the impact of World War II propaganda on soldiers and citizens; more recent studies have examined the impact of movies, television, video games, and the Internet on the well-being of children (Finnegan & Viswanath, 2008). Such studies have outlined mechanisms of how media content affects viewer behavior. Three general groups of theories have influenced this work: 1) theories that explain the mechanisms that shape behavior, such as Expectancy-Value theories, 2) theories of information processing (e.g. deliberately and consciously vs. peripherally), and 3) message-effect theories (e.g. using techniques such as framing or narratives) (Finnegan & Viswanath, 2008).

5.3.1 Expectancy-Value Theories

Expectancy-value and message-effect theories are the most relevant to the examination of cancer center advertising. These theories have been applied extensively in psychology in many areas, including learning theories, attitude theories, and decision-making theories (Edwards, 1954; Rosenberg, 1956; Rotter, 1954). The fundamental assumption of Expectancy-Value theories is that people's behavioral choices are driven by the beliefs or expectancies they have about outcomes of their choices, as well as the value they place on those outcomes. New information from advertising messages may either modify patients' beliefs or reinforce their existing beliefs. Health center advertising campaigns, as is evident from the Larson and Javanti article, use persuasion techniques that shape a patients' belief about expectation, such as patient survival

testimonials, use of language about survival, and institutional reputation about curing disease. As evidenced from expectancy-value theories, a person's expectation of a particular outcome (in this case successful cancer treatment or cure), strongly affects behavior. This may be particularly worrisome if advertisements promote false or misleading claims about survival or cure, as a patient is making a decision based on his or her expectation of benefits (which, in this case, may be inaccurate).

5.3.2 Media-Effect Theories

Media or message effect theories assume that the format and delivery of messages interact with the audience members' attitudes and beliefs (Capella & Rimer, 2006). Multiple elements comprise media effect theories (e.g., framing, exemplification, and sensation seeking), but the element of exemplification is particularly relevant to health-services advertising.

Exemplars in health communication messages are descriptive individual cases that are "less valid but more vivid" (Brosius, 1994). Testimonials fall into the category of exemplars, as they provide an illustrative example of a general class of events. For example, an advertisement about a woman who has successfully undergone a new type of treatment for breast cancer would serve as an exemplar for others who are considering the treatment. Some research has shown that exemplars are more effective when they use emotional language (Zillmann, 2006). The Larson article found that the majority of ads used emotional language (evoked feelings of hope, fear, happiness, anxiety, or sympathy). This indicates that this persuasion technique, if coupled with exemplars, is likely effective. In addition, research has shown that audience members who identify and empathize with the character will become more susceptible to the persuasive message (Finnegan & Viswanath, 2008).

5.4 RESEARCH PRIORITIES

This review has noted several gaps in research that have not been adequately investigated. Firstly, only one study has examined the advertising content of medical centers, and this content analysis was not specific to cancer center advertising (Larson et al., 2005). One study examined cancer center websites, but not any form of DTC advertisements (Jayanti, 2010). Descriptive studies examining the content of print and broadcast advertising of cancer centers should be prioritized, given the increase of hospital advertising and the concern expressed in the lay media (Oxman, January, 2007; Rosenthal, 2010; Singer, December 18, 2009). A recent study that synthesized updates in direct-to-consumer marketing (DTCM) in oncology supported this notion, suggesting that, “rigorous health services research methods must be used to explore the content of DTCM,” (Abel et al., 2012).

Descriptive studies should systematically describe the content of cancer center advertisements with particular attention to the types of services advertised (and the clinical evidence supporting such therapies), the balance of information about risks and benefits (and use of statistics), and the frequency of testimonial disclaimers that comply with FTC requirements. The use of persuasion techniques should also be explored, with attention to language that evokes hope, fear, or anxiety, suggests survival or medical miracles, focuses on innovation or treatment advances, mentions institutional prestige or experience, or uses patient survival testimonials. Since research on DTCA for pharmaceutical medications has shown that the information presented is often difficult to read and requires a high level of literacy and numeracy (Kaphingst et al., 2004, 2005), research on the ease of readability of cancer center ads would provide useful information and could be achieved by using a standard measure of readability, such as the Flesch-Kincaid Grade Level formula.

These studies would provide a foundation for research on the implications of cancer center advertising on patient preferences for and expectations about benefit from certain treatments and therapies. Studies assessing if and how such ads affect patients emotionally could be conducted, as well as those measuring the effect of advertising on the patient-provider relationship. Studies could also measure how advertisements influence patterns of patient travel and expenditure on cancer care and treatment. Such impact studies would then inform policy debate on the issue and allow for decisions to be made in the best interest of the public.

6.0 CONCLUSION

6.1 STUDY LIMITATIONS

This review has several limitations. First, this study was a rapid review conducted over a two-month period. Whereas a traditional systematic review can take 12 months or more to conduct, rapid reviews synthesize evidence over a shortened timeframe. It is possible that studies meeting the inclusion criteria were not retrieved through the search strategy, as only three databases were searched. As only one person conducted the review, it is also possible that studies meeting criteria were mistakenly excluded during preliminary reviews. Publication bias may also be present due to the shortened timeframe for searching and article retrieval. However, comparison with other literature in the field, such as a review of oncology-related DTCM (Abel et al., 2012), indicates that this study has not failed to identify relevant articles. Furthermore, analysis of the references of studies included did not identify any additional articles meeting inclusion criteria.

Second, the number of studies is too small and their methods and quality too variable to allow for confident conclusions about the content of cancer center advertising. The units of analysis examined (cancer center websites and academic medical center newspaper ads) are not representative of all cancer centers or all forms of DTCA. As a result, the findings of this review cannot be generalized to all cancer center advertisements.

Third, this review was limited to articles that were published in English. Excluding studies written in other languages may have led to the exclusion of publications that analyzed the content of cancer center advertising in other countries. However, it is unlikely this study missed content analyses in other languages, as the U.S. and New Zealand (both English-speaking countries) are the only nations that permit DTCA for health-related products (Kravitz & Bell, 2007).

6.2 PUBLIC HEALTH RELEVANCE

Describing the content of advertising messages conveyed through cancer center advertisements is the first step to understanding if and how these communications affect the population. It is evident that communication of health-related messages through the media influences human behavior (C. F. Parvanta, 2011); social marketing techniques have been used successfully to inform and persuade the public when health practices and products have proven health benefits and scientific consensus (C. F. Parvanta, 2011). However, other forms of health-related messages, such as DTCA promoted by companies selling their products and services, have less benefit to the public, yet still influence behavior. In fact, evidence suggests that pharmaceutical advertising has no clear public health benefit (i.e., has not shown improved health outcomes or improved communication), and yet has the potential to adversely affect health care costs, patient expectations about benefits of treatments, and the relationship between doctors and patients (Kontos & Viswanath, 2011). As such, it is of high public health importance to assess the effects of other health-services advertisements, including those placed by cancer centers, as these ads target a segment of the population that may be particularly vulnerable to marketing manipulation.

6.3 FINAL REMARKS

The liberalization of federal regulatory efforts, increase in information availability through technological innovation, and a movement towards a participatory patient involvement in medical decision-making has increased DTCA of health-related products. With economic pressures and competition growing, cancer centers will continue to advertise their facilities as a means to increase revenue, and the value of DTCA will continue to be debated. This review found only two studies that explored the topic, and both had considerable limitations. While the number of studies found was too small and their methods and quality too variable to allow for any confident conclusions to be made, this study identified a considerable gap in the literature.

More research on the content of cancer center advertising needs to be conducted to inform the debate, and more light needs to be shed on the effects of the millions of dollars advertisers spend annually. Descriptive studies of the content of cancer center advertising are needed to move the debate forward and inform studies measuring the impact on the public. Understanding the messages conveyed through cancer center advertisements and their effect on the population are of high public health importance, as such messages likely influence the public's expectancies of benefits from cancer treatment. Some advertising of cancer services may indeed be necessary, but it should not threaten informed patient decision-making or cause undue emotional or financial distress among cancer patients.

APPENDIX A

KANTAR LICENSE AGREEMENT

(Signed on January 17, 2013 by Kantar Media representative Ryan Feeney and University of Pittsburgh Center for Research on Health Care Representative Mary Vey).

This license agreement (this “Agreement”) is between Competitive Media Reporting, LLC, d/b/a Kantar Media | Intelligence (“KANTAR”), and UNIVERSITY OF PITTSBURGH (“LICENSEE”).

1. LICENSE OF PRODUCTS. KANTAR hereby grants to LICENSEE, and LICENSEE hereby accepts from KANTAR, a limited, personal, nontransferable and nonexclusive license (the “License”) to receive and use the data, reports, software, databases, cartridges, services and/or manuals described in Exhibit A to this Agreement (collectively, the “Products”), which Exhibit is made a part of and incorporated into this Agreement, during the term of this Agreement. Exhibit A also sets forth, among other things, the pricing for the Products. The parties may by mutual written agreement from time to time amend or augment Exhibit A, in which case Exhibit A will continue to be a part of and governed by the terms of this Agreement, even if such amended or augmented Exhibit A is not attached to this Agreement. In the event of any conflict or inconsistency, the provisions contained in the main body of this Agreement

will take precedence over the provisions of any exhibit or other attachment to this Agreement unless otherwise expressly stated in that exhibit or attachment.

2. FEES AND PAYMENT. KANTAR's fees as set forth on Exhibit A will be due and payable within 30 days after the date of each KANTAR invoice. Any payment not received when due and payable shall be subject to a late charge at the rate of 1.5% per month, and LICENSEE shall pay KANTAR any cost of collection (including attorneys' fees) it incurs with respect to this Agreement. LICENSEE'S obligation to pay KANTAR timely is not dependent upon LICENSEE receiving payment from any of its clients or customers. In addition to, and together with, the stated fees, LICENSEE will pay to KANTAR any sales or use tax imposed upon or required to be collected by KANTAR by any authorities having jurisdiction over LICENSEE'S acquisition or use of the Products.

3. OWNERSHIP AND COPYRIGHT. The Products and the contents contained therein are owned by or licensed to KANTAR; the individual copies of the Products and/or access rights are being licensed and not sold to LICENSEE; and thus, other than the License, LICENSEE shall not receive any right, title or interest in the Products (including the contents thereof) or any copies, regardless of the form or media in or on which the original and other copies may exist, by virtue of this Agreement. Except as permitted in Exhibit A and Section 4 below, copying, selling, sublicensing, transferring or distributing the Products or any elements or pages thereof (including without limitation electronic copying) without the express permission of KANTAR and the identification of KANTAR's copyright is prohibited. KANTAR's business names and logos are also trademarks of KANTAR, and LICENSEE may not copy or use the same without KANTAR's prior consent. LICENSEE acknowledges that any breach or attempted breach by LICENSEE of the provisions of Sections 3 and 4 hereof may cause KANTAR irreparable injury, for which KANTAR may seek and obtain, in addition to any and all other remedies available to KANTAR, (a)

temporary and permanent injunctive relief and/or (b) liquidated damages (but not a penalty) in an amount equal to twice the aggregate fees charged for the Products hereunder.

4. USE RESTRICTIONS. The Web Applications, PC Applications and individual copies of or access to the Products provided hereunder and any elements or pages thereof may only be given or made available to its LICENSEE's Authorized Users (as defined below) solely for federally sponsored research and internal academic use. LICENSEE may publish the results of this research in a scientific journal article or in publicly available reports provided to the federal sponsor and free to the public, under the condition that KANTAR be identified as the source of said results. Affiliates of LICENSEE are not licensed by this Agreement. For purposes of this Agreement, "Authorized Users" shall mean enrolled students, staff, faculty and instructors of LICENSEE. In no event shall any Products, Web Applications or PC Applications be used, distributed, published (except as otherwise provided for herein) and/or otherwise disseminated by LICENSEE or its Authorized Users for any external purpose, including but not limited to commercial or consultative purposes.

7. LIMITED WARRANTY; LIMITED LIABILITY. KANTAR warrants that the Products do not and will not infringe any third party intellectual property; and KANTAR will indemnify LICENSEE and hold LICENSEE harmless from and against any third party claim resulting from a breach of that warranty. KANTAR will also take reasonable measures to cause any Products consisting of software or PC Applications to be virus-free. EXCEPT AS STATED ABOVE, THE PRODUCTS ARE PROVIDED "AS IS" AND WITHOUT WARRANTY OF ANY KIND. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, KANTAR DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF THE PRODUCTS IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, CURRENTNESS OR OTHERWISE. KANTAR MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR

PURPOSE, AND LICENSEE SHALL INDEMNIFY KANTAR FROM AND AGAINST ANY LOSS OR DAMAGES KANTAR SUFFERS AS A RESULT OF LICENSEE'S USE OF THE PRODUCTS. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY KANTAR OR ANY OF ITS EMPLOYEES WILL CREATE A WARRANTY, AND LICENSEE MAY NOT LEGALLY RELY ON ANY SUCH INFORMATION OR ADVICE. EXCEPT AS PROVIDED IN THE FIRST SENTENCE OF THIS PARAGRAPH, KANTAR WILL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL, PUNITIVE OR EXEMPLARY DAMAGES (INCLUDING DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION AND THE LIKE) IN CONNECTION WITH LICENSEE'S USE OF THE PRODUCTS, EVEN IF KANTAR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. KANTAR'S ENTIRE LIABILITY AND LICENSEE'S EXCLUSIVE REMEDIES FOR ANY DEFECTIVE PERFORMANCE BY KANTAR HEREUNDER WILL BE FOR KANTAR TO CORRECT THE DEFECTIVE PERFORMANCE OR FOR LICENSEE TO RECOVER ITS ACTUAL DAMAGES RESULTING FROM SUCH BREACH, NOT TO EXCEED \$1,000.

8. DEFAULT AND TERMINATION. KANTAR may terminate this Agreement upon any delinquency in LICENSEE'S payments in excess of 30 days beyond the due date. Either party may terminate this Agreement upon 30 days' written notice to the other in the event the other party breaches any material provision of this Agreement and fails to cure such breach within such 30 day period; provided that no notice and cure will be required in the event of any willful violation of Sections 5 or 6 by LICENSEE. The provisions of Sections 4 through 9 hereof will survive any termination of this Agreement.

9. MISCELLANEOUS. This Agreement will be deemed to be as between merchants This Agreement, together with the Exhibit(s) attached hereto, contains the entire agreement between the parties relating to the subject matter of this Agreement and all prior proposals, discussions and writings by and

between the parties relating to the subject matter of this Agreement are superseded by this writing. This Agreement may not be modified or waived in whole or in part in any manner other than by a writing duly signed by both parties. LICENSEE may not assign this Agreement or any rights under it without KANTAR's prior written consent. Any attempt to assign without that consent will be void. This Agreement has been negotiated by the parties and will be interpreted in accordance with its terms without any strict construction against either party. Ambiguity will not be interpreted against the drafting party. This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original of this Agreement and all of which, when taken together, will be deemed to constitute one and the same Agreement. A facsimile of a signed copy of this Agreement may be relied upon as an original. Each signatory hereto represents that he or she is a duly authorized officer or representative of the party on whose behalf he or she purports to enter into this Agreement.

IN WITNESS WHEREOF, KANTAR and LICENSEE have executed this Agreement as of the date of KANTAR's counter-signature of this Agreement, below.

EXHIBIT A

(Capitalized terms not otherwise defined below shall bear the same meaning as given to them in the Agreement)

Licensee: University of Pittsburgh

Licensed Deliverable(s): TV & Magazine Creatives for all Cancer Centers
(January2012-December2012)

Media:

Network TV

Spanish Language Network TV

Spot TV

Cable TV

Syndication

Magazines

Sunday Magazines

Hispanic Magazines

Local Magazines

Markets:

All National and all 210 local (according to syndicated media coverage)

Data Fields:

Flat file data structure containing the following fields.

Media

Parent

Advertiser

Product

Creative Name

Creative ID

Dollars

Deliverable File Types:

Data Files= CSV

Creative files for the specified media shall contain the creative ID in the filename.

TV File Type= AVI

Print File type= JPG

Delivery Mechanism:

Kantar Media's FTP or a portable hard drive, to be determined by Kantar.

If a USB Hard Drive is necessary, it will be mailed, and must be returned to Kantar within 1 week.

Product(s): Custom Data – provided via CSV spreadsheet & creative file formats

Quantity: (i.e., number of copies of reports, users, logins, passwords, etc...)

Training: n/a

Term: January-December 2012 Data

License Fee:

Basic Fee: \$4,500

Additional Fee: (extra copies of reports, additional users, logins, passwords, etc...) --

Payment Schedule: OTO

APPENDIX B

EMAIL CORRESPONDENCE WITH KANTAR MEDIA REPRESENTATIVE

Hi Laura,

That is ok. Make sure to also source Kantar Media.

Thanks

From: Laura Borgenheimer [mailto:l.borgenheimer@gmail.com] **Sent:** Thursday, April 11, 2013 10:07 AM **To:** Feeney, Ryan (KMNYC)

Subject: Requesting Permission to Use Examples of Cancer Center Ads for Thesis

Dear Ryan,

As I write my Master's thesis (on cancer center advertising), I would like to show a few examples in the paper. I would like to use 6 examples from the print ads you have provided to us, and will give credit to the respective center for its work.

The thesis will be published at the University of Pittsburgh Library and will be for educational purposes only.

Thank you for your help with this matter.

Sincerely,
Laura

-- Laura Borgenheimer
University of Pittsburgh Graduate School of Public Health
MPH Candidate 2013

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