



27 June 2011

Division of Dockets Management (HFA-305)
Food and Drug Administration
5630 Fishers Lane
Room 1061
Rockville, MD 20852

Re: Docket No. 2011-N-0230

Written Comments: Examination of Online Direct-to-Consumer Prescription Drug Promotion

I. Introduction

The Center for Digital Democracy (CDD) believes that it is critical for patients and health information consumers to be able to make informed decisions when presented with risk-and-benefit information on direct-to-consumer (DTC) prescription drug websites. We are concerned, however, that the FDA's three-pronged approach to this issue, focusing exclusively on risk-and-benefit information, fails to take into account the structure and practices of contemporary online pharmaceutical marketing, and will thus fall short of meeting the needs of healthcare consumers. CDD urges the FDA to revise its study design to take advantage of scholars and other researchers who can help it objectively obtain the evidence it requires for further analysis on the need for social media health marketing and consumer protection safeguards. Anything less will fail to provide the due diligence that ensures American health consumers and patients will receive the protection they require from the FDA.

The three studies, as presently proposed, do not effectively capture for analysis the many ways that digital pharmaceutical marketing influences consumer decision-making. Search, for example, is inter-connected to a wide range of techniques and applications designed to influence consumer decision-making at all points of the purchasing cycle.¹ The research design should take into consideration pharma marketing's *overall* approach, covering such items as the tracking and managing of the "patient journey" online; the use of immersive multimedia content; the role of neuromarketing, eye tracking, multi-variate testing, and other Web page optimization techniques to influence perception and behavior, including through non-conscious means; and the use of social media analytics and related viral marketing. The FDA, in other words, is gravely mistaken if it believes it can assess

the full impact of digital drug marketing if the agency looks at the process solely in a linear, piecemeal way.

Achieving Fair Balance (i.e., drug risk and benefit information) in the digital environment is essential for protecting the public health and ensuring that pharmaceutical and other health marketers treat consumers responsibly. But the FDA needs to revise the dimensions of its current analysis in order to achieve this goal. The agency, in short, needs to re-conceptualize and update its understanding of digital DTC pharmaceutical marketing, as evidenced by its rather antiquated view of the online marketing environment. “Increasingly,” the FDA naïvely observes in its *Federal Register* announcement of the current inquiry, “prescription products are promoted to consumers online in such formats as banner ads, Web sites, and videos. The interactive nature of the Internet allows for features not possible with traditional media (i.e., print, radio, and television), such as scrolling information, pop up windows, linking to more information, and embedding videos.”² But the FDA should be aware by now that digital marketing today is much more extensive, a 360-degree juggernaut that features a wide range of techniques far beyond the scrolling text and banner ads that the agency seems to regard as state of the art. As the examples presented below will make clear, the online marketing environment has evolved rapidly over the past several years, and its impact on consumers must be assessed accordingly.

The FDA needs to examine, for example, how pharmaceutical and health sites and services are designed and deployed by marketers to optimize their impact on users (and how certain “landing pages” might change after an initial visit by a user) by identifying the Web design techniques used (such as eye tracking, to determine where information is more prominent or marginalized), and analyzing the interactive features designed to ensure a user “converts” (i.e., engages in behavior desired by the marketer). Second, the FDA should expose and assess the data collection and social media marketing techniques (including neuromarketing) that have already raised concerns by health professionals in other areas of Internet commerce.³

The FDA studies collectively fall far short of offering a comprehensive assessment of either the current state of online pharmaceutical marketing or, equally important, of the new directions such marketing is taking. The FDA must be cognizant, then, of the sheer complexity of DTC pharma marketing, which involves a broad mix of traditional (print/broadcast) and digital (Internet/search/mobile) venues, and which can be difficult to assess by isolating these several components. A recent Google-sponsored study, for example, identifies the “amplifier” role played by search engine marketing, which has both direct and indirect influences on prescription sales.⁴

We will briefly address some of the key areas the new study design must incorporate, including social media marketing, data mining, unbranded sites, 360-degree marketing, mobile marketing, rich media, search engine marketing,

neuromarketing, and personalization/optimization techniques—that clearly need to be a part of the FDA’s inquiry.

II. The Party

The Center for Digital Democracy (CDD) is a not-for-profit organization based in Washington, D.C, working to protect the interests of both consumers and citizens in the online marketplace. CDD has played a leading role in encouraging the protection of consumer privacy, especially in relation to digital marketing and advertising. Its work at the Federal Trade Commission has contributed to that agency’s recent efforts to address digital marketing and data collection practices.⁵

III. The FDA’s Research on Digital and Social Media Requires Revision and Should Address the Following Areas:

Data Mining: “You watch what they do.... You learn all you can”

Fundamental to any FDA research design to assess the impact of digital and social media marketing and messages on health consumers is a thorough understand of the role of data collection for personalized user profiling, tracking and targeting. Surely the FDA is well aware of the proposals by the Obama Administration, the FTC and the Congress to address the privacy issues related to digital advertising.⁶ Ongoing tracking and targeting of health users across the digital marketing system is a major concern not only for patient privacy, but also because such data is used to better hone campaigns designed to influence consumers in a myriad of ways. Health marketers strive to harness the data collection and analysis capabilities of online advertising in order to foster greater demand for prescription drugs. Unfortunately, little information is currently provided on what is being collected from users of health-related sites and how such data are used. But pharmaceutical marketers know full well the powerful role data profiling plays in promoting the desired consumer behaviors. For example, Digitas Health’s 2008 report, “How to Create Massive Demand for Your Drug,” describes the new opportunities that pharmaceutical companies have to reach people who are seeking health information on a wide variety of conditions and diseases: “You can now deliver information exactly when they need it most. Better yet, you can also see what they use and what they ask about. Which means you can anticipate what they’ll need next, and provide it **before they ask....** You start by listening to these people and their doctors. You watch what they do. You see what they’re looking for. You learn all you can.”⁷

CDD has already provided both the FDA and the FTC with many examples of data collection in the health consumer and patient marketplace.⁸ For example, health consumers are being targeted via “profiling systems” that serve to enable online “lead generation” for the pharma marketplace. QH Connect conducts “continuous

profiling” to help health marketers target and acquire the “most qualified consumers” using data involving:

- Diseases, conditions, and symptoms.
- Current treatments (Rx down to the brand level).
- Level of disease severity.
- Demographics.
- Geographic location.
- Lifestyle choices.⁹

Examples of health and pharmaceutical data mining abound:

- The Alli website includes a registration requirement and Personal Assessment quiz, both of which involve the collection of considerable amounts of personal data.¹⁰
- CML Earth, “a global, interactive social network dedicated to connecting the CML [Chronic Myeloid Leukemia] community from around the world,” has sections for “patients, caregivers, healthcare professionals, and patient groups,” and asks for and makes publicly available detailed personal profiles on each user.¹¹ “... [I]f you choose to establish a profile and submit a story to Novartis,” the site acknowledges, “certain personal information including your screen name, city, country, photograph, and any medical information revealed in your story will be publicly available on this site and accessed by individuals in any country throughout the world.... Novartis has contracted with third party web hosting firms and creative agencies to administer this site. Your personal information, including any sensitive medical information that you disclose, will be processed and available to those third parties as well as employees of Novartis and the Novartis group of companies. These individuals are located in countries that may not offer the same level of privacy protection as your country of origin.”¹²
- QualityHealth’s “proprietary profiling technology” claims that “Over 20 million consumers have opted-in and registered with us to access healthcare content, messaging, tools and offers.” Few consumers likely realize, however, that they have consented to become the subjects of a “proprietary profiling technology” that “captures... valuable information across over 100 individual data points,” including “consumers’ conditions and preferred treatments”; “doctor relationships and plans to visit the doctor”; and “insurance and formulary coverage.”¹³
- Interactive ad firm Techlightenment—whose clients include GlaxoSmithKline—embeds data collection technologies into social media sites, with a social polling platform that allows companies such as GSK “to do high volume polls and surveys, giving you more data and insight than is available anywhere else.... Leveraging the data that social networks can give

you, we are able to add greater insight and colour to traditional polls and surveys. We can deliver tens of thousands of respondents in days, not months....

Embed your poll on Facebook, across the web or on mobile. Our platform is flexible enough to be embedded anywhere, but still gain the benefits of high respondent acquisition. This means we not only drive respondents to your poll, but equally you can place this on your fan page or website to gain a deeper understanding of your own audience....

Change every element of the poll or survey. Add your branding, change the way the welcome and thank you pages look, even add lead capture or like buttons to the thank you page. Our polls and surveys can be customized in nearly every way you can imagine.¹⁴

- Early in 2011, Health Union, an online health information and social media company started by a former GSK marketing executive, launched Migraine.com, a site designed to foster “interactions about health conditions between and among patients, caregivers, professionals and providers.... The site also features tools for migraine sufferers, such as a migraine journal, symptom quiz, and a number of prescription drug coupons, such as \$35 off AstraZeneca's Zomig, and a discount on Ortho-McNeil's Axert prescriptions.”¹⁵ Aggregating the comments of registered users, physicians, and paid bloggers, the site is not always completely forthcoming in identifying sponsored commentary.¹⁶ Migraine.com, moreover, engages in areas related to the health of youth, an issue that the FDA should be proactively addressing.¹⁷
- Offline databases are increasingly incorporated into digital health marketing strategies, enabling companies to amass greater amounts of detailed information about individual consumers than they would be able to generate from online sources alone. AOL Advertising, for example, uses outside data sources for its targeting efforts on behalf of an over-the-counter pharmaceutical company: “Existing brand consumers and key competitor brand users were identified and targeted using household-level purchase data from IRI, plus AOL Advertising’s demographic and psychographic targeting solutions.”¹⁸ Digital pharmaceutical and medical marketers use a variety of techniques to collect personal information and data from consumers, including via so-called “free” giveaways of products tied to user registration, the distribution of online discount coupons, as well as via cookies, IP addresses, and other tracking techniques.
- NetBase Solutions, whose clients include HCD Research, features automated social media monitoring technology called ConsumerBase.¹⁹ According to NetBase, “ConsumerBase... is the only solution that can extract actual consumer preferences from terabytes of public and private information:

social media feeds, websites, and years' worth of internal information such as survey data, call center transcripts, and other documents.... ConsumerBase mines billions of sources of information to surface new insights.... Every day, you know what your consumers are thinking and feeling, and how they're behaving.... Unlike other semantic technologies, NetBase processes over 100 billion sentences a month, enabling marketers to tap into vast sources of public and private content."²⁰ HCD Research has documented the use of data collection to assist in the digital marketing of birth control products and cardiovascular medications.²¹

- Online surveillance of consumer health information extends even to the monitoring and analysis of users' cut-and-paste actions as they seek health information.²²

Alliance Health Networks, whose social network holdings include DiabeticConnect, SleepConnect, ChronicPainConnect, HeartConnect, and DepressionConnect, offers pharmaceutical companies an opportunity to develop relationships with individual consumers using sophisticated data-mining tools.²³ Alliance allows its clients to zero in on specific medical conditions thru digital marketing, including data collection. "As a healthcare marketer," the company tells its clients, "you deserve to take full advantage of the capabilities of the Internet to engage new customers and build one-to-one relationships.... Our proprietary properties and powerful cross-selling network are built specifically for the unique needs of healthcare marketing, including our proprietary PersonaMatch co-morbidity ranking algorithm that helps place your message in front of the right customers based on the prevalence of related medical conditions."²⁴ "PersonaMatch ... allows us to exploit the prevalence of related medical conditions and to use predictive modeling to place correlated healthcare advertising in front of the right consumers. For the first time, healthcare advertising can be served up and driven by medical probabilities rather than simple economic models. The effect is greater relevance to the consumer and greater exposure for targeted products and services."²⁵

Ad exchanges and demand-side platforms are being used for the real-time auctioning of the right to target consumers based on their health and medical information and concerns. An individual's consumer's health and medical behavior is being auctioned in real time for targeted ad delivery. Increasingly, the targeting is accompanied by what is known as "data optimization," i.e., the use of various information resources to build up a more complete profile of a user, which allows for more fine-grained targeting.²⁶ A consumer has no knowledge that their health and medical information is part of a nontransparent and unaccountable process selling them to the highest ad bidder. For example, Google/DoubleClick's Ad Exchange Health Focus has 36 categories, from Arthritis and Diabetes to Respiratory Conditions and Sleep Disorders."²⁷ Another advertising exchange, CONTEXTWEB, offers dozens of health-related targeting categories, including A.D.D., HIV/Aids, Arthritis, Lung Cancer, Bipolar Disorder, Brain Tumor and Alzheimer's Disease.²⁸ Yahoo's Right Media Exchange also targets via a health category.²⁹ The Rubicon

Project and Rocket Fuel offer health targeting and data optimization services, as well.³⁰ Data brokers supply behavioral health-related data for targeting as well, including eXelate and BlueKai.³¹

Advances in data collection designed to take advantage of the growth of cross-platform and multi-application digital marketing strategies, such as mobile phones, even incorporate how consumers use online maps. For example, the Juvederm cosmetic surgery website, created by Rosetta, uses location information and Google maps to track consumers:

Powered by a strong functional design, the website highlights the benefits of use in various facial areas through rich interactive tools. The Morphing Tool allows the visitor to create a simulation of herself “before” and explore what she might look like “after” treatment. The Clinic Locator encourages target audience members to visit a clinic and ask for Juvederm® ULTRA by name.³²

Techniques of Personalization for Targeted Digital Pharma and Health Marketing

In their quest for increased market share, pharmaceutical companies have come to recognize the importance of personalized websites that reflect the needs and concerns of individual health consumers. As Rosetta consulting services and healthcare executive Hari Mahadevan has observed, “Personalization is important because that’s what the customer demands. Customer expectations have changed. When you go to Amazon.com, you expect Amazon to know what you’ve purchased and to offer you useful recommendations. The latest Google search personalization is another great example. As soon as you begin typing in the search box, it starts offering results. The mandate is to meet user information demands more easily and faster. This both stems from customer expectations and creates new expectations until it ultimately becomes a price of entry.”³³

Personalized marketing techniques may lead to increased sales, but U.S. health consumers should be advised of how their interactions with pharmaceutical and medical sites have been designed to often stealthily take advantage of their behaviors. The FDA’s research into digital marketing should include an assessment of the various tools designed to secure a “conversion” of a user through a range of optimization strategies. Many sites, for example, use the Adobe Online Marketing Suite, promising as it does “a comprehensive portfolio of optimization applications for Visitor Acquisition, Conversion, Online Analytics and Channel Analytics.... This platform integrates data from multiple sources including web, mobile and social media interactions as well as CRM, call center and point-of-sale systems. As a result, marketers are empowered to automate highly personalized and relevant customer interactions across multiple touch points, increase the efficiency of marketing processes and spend marketing dollars more efficiently for maximum ROI.”³⁴ In the healthcare arena, we believe, the “maximum ROI” of health marketers should

certainly give way to maximum confidence on the part of consumers that the advice and services they are receiving online are the result of fair and accurate information, with the candid disclosures and consumer controls assured.

Website trial-and-error testing techniques used to obtain the desired consumer conversion (such as a purchase, the filling out of online form, the playing of a video), similarly, may have their place in the promotion of consumer packaged goods, where the choice of one detergent over another, or one's preference for chewing gum, may be considered relatively benign. But the notion of such an approach in medical decisions, as suggested by Adobe's Test&Target 1:1 application, must be addressed by the FDA.³⁵ "Adobe Test&Target," the company explains, "empowers online marketers to personalize the presentation of content and offers that a visitor may find most relevant and compelling—increasing the likelihood of engagement and conversion. With Test&Target 1:1, marketers can automatically target individual site visitors rather than pre-defined visitor segments.

With large volumes of anonymous online traffic, marketers find it difficult to determine which content or offers are relevant to individuals. Instead, marketers rely on broader segments or personas, losing out on the opportunity to match offers to individual preferences. In addition, progressing individuals through the conversion funnel requires marketers to present relevant content across multiple online interactions. Personalizing content and offers specifically to individuals helps accomplish this goal and, in turn, increases returns on visitor acquisition spend by improving conversion....

Adobe Test&Target 1:1 is the innovative leader in personalized targeting and solves these challenges by providing the following benefits:

- Measurable increase in revenue to businesses by targeting and personalizing content to individual online visitors
- Self-learning algorithms that minimize the investment required to target individuals with personalized content and offers
- Facilitation of visitor progress into the conversion process by better engaging them early on with relevant content
- Fully-automated targeting that allows marketers to focus on creating compelling content and offers rather than on segmentation and targeting
- Customizable content serving can be optimized to any of several key performance indicators, including revenue, conversion and click-through rate.³⁶

CPM Marketing Group uses digital marketing techniques to target health consumers through such "one-to-one" strategies:

ICRM [Instant Customer Relationship Marketing] is behavioral targeting technology that enables you to tailor call center and Internet communication to your current and prospective patients based on individuals' past and present

medical indications or their risk for developing future conditions... Using sophisticated data-mining algorithms for behavior identification, our system can predict health outcomes and trends in behavior by analyzing healthcare variables and co-morbidities associated with disease states. Cluster segmentation methods don't work for targeting, because they can't provide meaningful profiles on patients or members. Our predictive modeling techniques address this information gap by accurately predicting health needs for the next 12 to 18 months—of both patients and non-patients alike—based on the most complete, individualized data available.³⁷

On a number of occasions, pharmaceutical marketers have made clear their intention to sway consumers when they are perhaps most vulnerable—at the precise moment, that is, when they are about to make a purchase. Thus Everyday Health, for example, stresses the need to “Influence Buying Behavior at Point of Purchase. Connect your brand with consumers as they are making their purchasing decisions with Drugstore.com, the leading online provider of over 45,000 health, beauty, vision and pharmacy products including prescriptions and refills.”³⁸ Healthline, similarly, promises that “Advertisements presented in context when a consumer is ready to act will generate considerably higher conversion rates than those found at general-purpose search engines or health information sites.”³⁹ Summarizing the aspirations of an entire industry, QualityHealth claims to “...break down barriers to conversion by delivering targeted messaging that is informed by our profiling insights and designed to drive desired actions for your brand. For example, we can reach consumers just before their next doctor visit, as well as follow up with reminders and relevant information, for maximum impact.”⁴⁰

Social Media Marketing: “The deeper the engagement the richer the insights”

Pharmaceutical and other health companies increasingly strive to shape online discussions by identifying and influencing “key opinion leaders” (KOLs). The Cadient Group, a “leading provider of digital marketing services and technology-enabled solutions for the healthcare industry” offers the “OneVoice Advocate”—“an agile Web content management system (CMS) and portal framework powered by advanced user management and content authoring tools, that enables rapid deployment of peer communities, knowledge management, and collaborative solutions.”⁴¹ And Cadient, following the prevailing interactive advertising standards, is equally adept at conversation monitoring and Web analytics, as its REVEAL Insights and Analytics package attests.⁴²

As an example of pharmaceutical marketing's exploitative approach to social media, a recent MicroMass Communications study “looked into the reasons people use social media and found that most people fall into one of four segments with their own keys to the kinds of messages they would find relevant and resonant.” One group, dubbed “Power Socialites,” the report tells marketers, “can be your strongest advocates, telling everyone about the wonders of your brand, or they can be your

most vocal enemy. They use social media as a megaphone. Get them on your side early and you have a friend for life. Marketers should look for ways to help Power Socialites amplify their perceived influence through web sites with Twitter and Facebook feeds.” The way to reach another segment, “Sincere Influentials,” according to the report, “is to help them gather and share peer advice. They use social media to be better friends and parents and respond positively to cause-related initiatives and programs that tap into mom-bloggers and other empathetic influencers.”⁴³

Equally revealing, a recent entry in the MicroMass blog offers pharmaceutical marketers a crash course in evading existing advertising regulations:

In pharma, chances are setting up a Facebook page or a YouTube channel is just an extension of the same content you have on your site. Comments will be turned off, and there won't be any two way communication. But why? How many of us have actual asked our regulatory teams why this is the case, and how we can get around it?

If you ask, you'll most likely learn about the term “Learned Intermediary.” This term is a legal doctrine that states a pharmaceutical or medical company is not liable if they have provided proper education to a learned intermediary who then interacts with customers or patients on the Brand's behalf. The industry has been using this as a platform for years on the professional side, supporting everything from Key Opinion Leaders (KOLs) to Speakers Bureaus. Despite this, pharma has been slow to adopt the same methodologies with consumers.

The same practices we use to identify KOLs can be leveraged to identify consumer advocates, and educating them to deliver a message will fall under the learned intermediary doctrine. These consumer advocates, and many times the entire disease communities they belong to, can have far reaching impacts. And these impacts aren't limited to online interactions. This advocate centered model is about social marketing, not just social media. It focuses on influencing behavior in all aspects of treatment, from online research to the discussions in the waiting room. **Consider this example: Which is more likely to influence? A branded Facebook page, or a group of consumers recommending your brand on Facebook in response to someone visiting their physician?**⁴⁴

Blue Diesel, similarly, works across an array of platforms and media to engage consumers, a marketing approach it calls “fusionary,” and which is made possible “by developing a seamless, consistent, and engaging brand experience across all relevant channels. It's a highly evolved form of marketing.”⁴⁵ And once again, the emphasis is on managing the dialog between brands and consumers, a conversation that the FDA must monitor and assess if it is fully to understand the new interactive marketing paradigm as it applies to pharmaceuticals and healthcare. “Through our integrated blend of creative thinking, insightful strategy, and marketing know-how,”

Blue Diesel explains, “we make sure that your audiences listen to what your brand says. They respond. And most importantly, your brand answers back.”⁴⁶

As Ann Friedman Ryan, senior vice president and director of CRM and interactive at CommonHealth’s consumer group EvoLogue, has observed, “Online social networking and user-generated content is an important part of the new media landscape. It allows us to go where our customers are, and to integrate into their lives, as well as to benefit from a halo of credibility just by the nature of the medium,” she says, citing “friends” in a social network or relevant content in a contextual placement. “By using those kinds of channels, we’re able to keep our finger on the real-time pulse of what’s going on with our target audience....”⁴⁷

Such rhetoric, common in the digital marketing field, should raise concerns at the FDA. Equally troubling is the claim that health marketers are now able to identify a consumer’s “digital footprint,” as Razorfish Health Analytics explains, illustrating the growth of social media data mining in the pharma sector. “... [E]veryone leaves a digital footprint,” the company declares. “A footprint that is ever growing as more and more devices and data streams enter the market. But factor in all the Web users out there, and the numbers get a bit dizzying. Precisely why we apply rigorous methods and custom tools to measure and identify patterns. Icing on the mathematical cake: Our Edge tool provides you a dashboard to easily (we promise) track it all in real time....”⁴⁸ Armed with such knowledge, marketers can then shape consumer-buying decisions: “We can see people’s likes and dislikes, how they behave alone and in groups and we see it all on a grand scale of millions,” Razorfish continues. “That’s a pretty nice focus group.... And, we don’t simply react to choices users make—through our digital knowledge, advanced consumer research and deep analytics, we can create awareness, anticipate needs and drive decision.”⁴⁹ Rarely have the manipulative intentions of pharmaceutical marketing been expressed so clearly.

New surveillance tools, moreover, have been developed to monitor conversations among social network users to identify what is being said about a particular issue or product. Marketers then work to insert brand-related messages into the social dialogue, often by identifying and targeting individuals considered brand “loyalists” or “influencers,” and encouraging them to generate buzz through their networks of friends. Increasingly, advertisers are using Facebook’s marketing apparatus—which is largely invisible to its users—to develop a brand presence on its pages so it can strongly connect to the social communications of a very large pool of consumers.⁵⁰ “I AM NURSE,” for example, “where RNs, LVNs and related professionals exchange what’s on their minds,” is a product of i2we, which promises to help its clients “leverage the webographic algorithms that match your campaigns with the people you want to reach.”⁵¹ Ultimately, much of social marketing is a form of viral advertising that is designed to trigger peer-to-peer support for a brand or product.⁵² When used to promote pharmaceutical and health-related products, the practice raises particularly serious issues. While drug companies may argue that they use social networks in order “listen” to their consumers, social media marketing is a key

advertising technique designed to *influence* perception and *shape information* about a brand, without a clear understanding by the public of the techniques and targeting used.⁵³

Special attention must be paid to the ways that pharmaceutical marketers attempt to influence the various online conversations about particular brands and products. Companies such as GlaxoSmithKline are using digital ad strategies focused on “engagement” to deepen the marketing connection with their targeted consumers.⁵⁴ IMC2, an interactive advertising agency, boasts that it “fosters engagement to build sustainable relationships between brands and people.”⁵⁵ The FDA needs to evaluate the design and use of “engagement” strategies online designed to dramatically shape how consumers respond to pharmaceutical and health marketing messages.

The FDA’s research design must assess the role of purposeful pharma-generated online “buzz marketing” strategies designed to favorably shape a health consumer’s attitude. For example,

- Heartbeat Ideas’ promises pharma marketers that it can help them “influence behavior” via the triggering of “viral media” and “eCRM” programs. It claims that its “viral marketing” campaigns provide “content that sticks to its audience” on behalf of its clients (which have included Lilly, Johnson & Johnson, and Merck). The company’s “e-Landscape” application “deploys proprietary software “spiders” to “crawl” the Web and “dig out vital datapoints....” The company’s Buzzscape product is another example of social media surveillance used to hone pharmaceutical campaigns, enabling marketers to “extract the most relevant conversations from among the millions of blogs and media outlets buzzing around the Internet....”⁵⁶
- Among its “Solutions for Pharma-Health Marketers,” Nielsen Online offers “BuzzMetrics services, supported by our expertise in measuring and analyzing online buzz and word-of-mouth, deliver insights to proactively manage online exposure:
 - How patients and caregivers feel about your brand, product or service—in their words
 - Specific issues that are being discussed around your brand, products or organization
 - Events, trends and issues influencing the buzz around your brand
 - Insights into the doctor-patient relationship and analysis of doctor/healthcare professional discussions relevant to your brand
 - Guidance to proactively manage, minimize or avoid potential issues surrounding your reputation
 - Tools to leverage CGM to drive brand credibility and ultimately sales.⁵⁷
- The social network PatientsLikeMe (PLM), similarly, offers a new service exclusively to its industry partners, called PatientsLikeMeListen. In addition

to giving pharmaceutical companies “unprecedented insight on how your brand is perceived,” the monitoring service also provides its partners with startling amounts of personal data from the online conversations, including participants’ gender, age, time on treatment, time since diagnosis, disease progression, disease type, symptoms, longitudinal variation, and supporting therapies.⁵⁸

Any FDA research into consumer understanding of digital health marketing communications should also assess how data gathered from these new forms of patient-oriented focus groups have been used in the campaign.

In seeking information and advice from seemingly independent health bloggers, patients and other consumers rely on what they believe to be genuine, unsolicited testimonials. But often these statements are the products of arrangements with spokespersons who are compensated for their comments. Sanofi-aventis U.S., for example, maintains a formal program called A1C Champions, “a patient-led approach to diabetes education” involving “people with diabetes who share diabetes self-management and lifestyle strategies based on extensive training and their personal experience.” These participants are also paid spokespersons for Sanofi-aventis, who “receive a speaker fee for each presentation” they make.⁵⁹ Such is also the case with the Facebook site, ADHDMoms, which, while acknowledging the fact that the physicians participating in the program are paid consultants, obscures the fact that several of the “moms” involved in the site are also paid by McNeil Pediatrics, a Division of Ortho-McNeil-Janssen Pharmaceuticals, Inc.⁶⁰ The failure to disclose such sponsorship arrangements may, in fact, violate the FTC’s recently revised Endorsement guidelines, which the FTC extended to the Internet.

Search Engine Marketing: “Search marketers spend billions each year to acquire new customers”

In its effort to understand the role of search in the pharma marketing process, the FDA must incorporate industry research on promoting visibility and purchase of branded drugs. From 2007 to 2010, search engine marketing (SEM) investments by the pharmaceutical industry grew a staggering 351 percent.⁶¹ As Google’s health industry marketing director recently wrote, “[O]nline health information is driving users to take action...,” citing a survey Google conducted showing that 52 percent of consumers who used search services to address health issues “made a self-diagnosis; 49% started an over-the-counter treatment; [and] 46% told a doctor about a symptom I/someone else had.” While Google claims that such data illustrate how “patients are using the information they gather to make better, more informed health care conditions,” the digital health marketing system poses risks in terms of misinformation and the encouragement of consumers to seek out drugs and treatment whether they actually need them or not.⁶²

A recent academic study reveals the potentially significant role that SEM can play in pharmaceutical sales (and, given the dominant place it has in search traffic, the correspondingly important role that Google plays in the pharmaceutical marketplace):

Using Google Trends and Google Insights for Search data, the search terms Lipitor (atorvastatin calcium; Pfizer, Ann Arbor, MI) and simvastatin were evaluated for change over time and for association with Lipitor revenues. The relationship between query data and community-based resource use per Medicare beneficiary was assessed for 35 US metropolitan areas.

...Google queries for Lipitor significantly decreased from January 2004 through June 2009 and queries for simvastatin significantly increased ($P < .001$ for both), particularly after Lipitor came off patent ($P < .001$ for change in slope). The mean number of Google queries for Lipitor correlated ($r = 0.98$) with the percentage change in Lipitor global revenues from 2004 to 2008 ($P < .001$). Query preference for Lipitor over simvastatin was positively associated ($r = 0.40$) with a community's use of Medicare services. For every 1% increase in utilization of Medicare services in a community, there was a 0.2-unit increase in the ratio of Lipitor queries to simvastatin queries in that community ($P = .02$).

...Specific search engine queries for medical information correlate with pharmaceutical revenue and with overall healthcare utilization in a community. This suggests that search query data can track community-wide characteristics in healthcare utilization and have the potential for informing payers and policy makers regarding trends in utilization.⁶³

Consumers using leading search engines are unaware of how their information is collected, analyzed, and used for online ad targeting and data sales. Search marketing for health conditions has evolved into a highly sophisticated practice that can target information seekers through a variety of techniques, including the sale of related keywords, so-called organic search marketing, and reaching consumers through what is called "top of the search funnel." Microsoft has numerous guides for BING advertisers to target seekers of health information, including those concerned about diseases and drugs.⁶⁴

Consumers should find their way to a given health-related site according to the perceived merit and relevance of a site, and not simply as a result optimization technologies designed to drive traffic rather than to deliver accurate information. And the FDA must ensure that health consumers online are not subject to manipulative search engine marketing (SEM) schemes designed to infer needs from consumer search behavior and shape the results accordingly. The FDA's research design should assess, for example, the role of applications such as Adobe's visitor-acquisition technology. "Search marketers spend billions each year to acquire new customers," Adobe explains, "across an expanding group of channels—search, display, email, mobile, video—yet lack a systematic way to determine how to

optimize their investment in visitor acquisition. Adobe SearchCenter+, powered by Omniture, empowers marketers to optimize SEO [search engine optimization] and SEM acquisition strategies that maximize the return on online ad spend:

- Enable experimentation on the site with A/B and multi-variate testing
- Increase search marketing lift with advanced automated bid rules
- Reduce customer acquisition costs by optimizing ad spend allocation
- Increase cross- channel lift by measuring SEO and paid campaigns
- Apply lessons learned from bidding for search keywords to other channels.⁶⁵

As it revises its research design to incorporate contemporary digital marketing practices for search, the FDA should draw upon the resources provided to marketers from such leading marketers as Google, Yahoo, and Microsoft.⁶⁶

Rich Media and Video Advertising: “tracking everything from interaction with the ad ... to how much time a consumer spent on the ad and ultimately conversion”

As in other areas of online commerce, pharmaceutical companies are increasingly turning to rich-media applications to promote their products. Adobe/Omniture are among the leading proponents of multimedia advertising, which they refer to as Rich Internet Applications (RIAs), and which, because of their engaging (and sometimes immersive) nature, raise their own set of concerns in the pharmaceutical marketplace. Omniture explains, for example, that

In the Web 2.0 world, Rich Internet Applications (RIAs) are becoming the new standards for enhancing customer experience. But with the promise of a better user experience, companies must also consider whether or not the investment in RIA is leading to desired business results. This can only be done through measurement and optimization.... RIA Optimization, a feature of the Omniture SiteCatalyst® platform, takes the guesswork and inaccuracies out of RIA measurement. Instrumenting and measuring each type of RIA environment, in its native development language, significantly increases accuracy. This means more reliable information for crafting optimization strategies and ultimately a better user experience.⁶⁷

Adobe’s description of its video analytics technology illustrates why the FDA needs to address the role of rich media and video in promoting such effects as “virality” in medical and health campaigns:

... [T]he new challenge and goal of marketers publishing video is gaining insight into the effectiveness and performance of online video and associated campaigns. With that comes challenges in measuring video content, its potential virality across video- sharing sites, and understanding the potential for consumer acquisition and conversion.

Adobe SiteCatalyst software allows marketers to measure and optimize video by:

- Providing insights for video performance such as viewer interaction and conversion
- Identifying the most viewed video milestones to find the sweet spot for ad placement for maximum return on investment (ROI)
- Measuring how viral video campaigns perform and their potential impact on customer acquisition and conversion
- Improving monetization of video advertising across the most popular video-sharing sites such as YouTube.⁶⁸

The use of online videos to influence consumer decision-making can have a much greater impact than traditional TV advertising.⁶⁹ According to Yahoo, its new Enhanced Interactive Video Ads maximized engagement for an unnamed “pharmaceutical giant” over the course of a 10-week campaign that “repurposed an existing cardiovascular drug commercial to play on the Yahoo! Enhanced Interactive Video Ad and used the advanced features of the ad format to augment the commercial asset....

The format’s first brand element was a five-second introductory ad that resolved into a banner above the video player, providing immediate and persistent brand exposure for the cardiovascular drug during the video content’s entire run. This feature also resulted in a click-through rate that was two to three times higher than traditional video ads.

A click on the banner launched a rich media canvas that was completely integrated into the video player experience. It featured the video ad, for which the company repurposed an existing television commercial. As the video ad ran, the pharmaceutical company’s product information scrolled automatically in a special disclosure field below the video window of the unified ad canvas. After the auto-play, consumers could replay the video ad and scroll through or download the additional product information as many times as desired. Additional ad elements allowed the pharmaceutical company to provide a click-through to their promotional and informational website and a downloadable pdf, including a discussion guide for the consumer to print and share with his or her doctor.

In addition to being highly engaging, the Yahoo! Enhanced Interactive Video Ad campaign was also very efficient. The pharmaceutical company used Yahoo!’s targeting capabilities to reach consumers who may have been specifically interested in its cardiovascular drug product.⁷⁰

The measured results of the video ad are even more revealing, in that “More than 40 percent of those users who saw the interactive ad canvas stayed for the entire 60-second video..., 58.8 percent interacted with the supplemental content rollover,”

while only “8.3 percent interacted with the scrollable disclosures module.” Thus however effective video ads may be as marketing tools, they come up far short as a conduit for risk-and-benefit information, which, according to the Yahoo case study, over 90 percent of the viewers ignored.

Describing its “rich media” advertising products, PointRoll explains that

Rich media is digital banner advertising that drives response with interactive elements such as video, data collection, couponing, polling and much more. A rich media ad can be as full featured as a mini-website and just as measurable, tracking everything from interaction with the ad itself and the various elements within to how much time a consumer spent on the ad and ultimately conversion.

Additionally, rich media advertising—unlike standard banners—offers brand managers the tracking functionality of a traditional web site, including how much time a consumer spends interacting with an ad and how they interacted. Within rich media ads, online users can interact with pharmaceutical brands by watching video and TV spots, downloading coupons or free trial offers, participating in patient surveys/polls, and even setting medication reminders in their personal email or calendar programs.⁷¹

A number of pharmaceutical companies, moreover, have established YouTube channels for marketing purposes, including Abbott, AstraZeneca, Bayer, Boehringer Ingelheim, Excedrin, GlaxoSmithKline, Alergan’s Lap-Band System, Janssen-Cilag’s Living with ADHD Channel, Lilly, Lunesta, Novartis, Pfizer, Sanofi Pasteur, and TevaNeuroHealth.⁷² The FDA’s new research proposal should take advantage of the growing number of reports on how to deploy and measure digital video services.⁷³

Mobile Marketing: “Being mobile is relevant like never before”

Many of the same consumer data collection, profiling, and behavioral targeting techniques that have raised concerns in the more “traditional” online world have now been brought into the mobile phone marketplace, where U.S. consumers increasingly rely on their wireless devices for a wide range of services, including sensitive transactions related to health.⁷⁴ According to McKinsey & Co. research, the mobile health market currently represents a \$20 billion “opportunity” in the U.S. alone, and \$50 billion worldwide.⁷⁵ “Mobile’s ability to provide superior targeting beyond age and gender,” notes Peter Nalen on the Compass Healthcare Communications blog, “to include location, time of day and day of week, and to facilitate two way communication between advertisers and consumers, makes it one of the main reasons that mobile is now. Not only does Mobile have a ubiquitous presence—with us 24/7—it can also reach more people, more efficiently, and with greater targetability. By building relationships via timely, relevant and valuable interactive conversations, Mobile can form the basis for strong long term relationships.”⁷⁶

Major drug store chains, such as CVS and Rite Aid, have turned to mobile applications to drive traffic to their stores. Rite Aid, for example, recently introduced an SMS service that alerts customers when their prescriptions are ready to be refilled or picked up. In order to participate in the program, however, consumers must divulge considerable amounts of personal information, in the course of signing up for a MyRiteAid.com account and completing the required MyPharmacy online profile.⁷⁷ CVS, similarly, has released a pair of iPhone applications, one “to let plan members manage and pay for their prescriptions using their mobile devices,” and another “that encourages shopping through the use of sales and offers.”⁷⁸ Again, the privacy implications of these “convenience” applications must be examined.⁷⁹

The FDA’s investigation must examine a variety of applications on a variety of platforms at various stages along the research-to-marketing continuum, including such novel approaches as marketing via mobile devices, smart-phone apps, and “QR codes” (mobile barcodes). As a recent report from Edelman Digital explains,

QR (quick response) codes have been getting a lot of attention lately. In fact, according to the startup Jumpscan, QR code scanning increased by 1,200 percent from July to December 2010 and a February survey (PDF) of U.S. smartphone users found that 65 percent of users have seen a QR code and 32 percent of smartphone users have scanned one....

QR codes have an immediate benefit to marketers and advertisers by providing individuals with a one-step way to find more information about a product or interact with a brand.... So how can QR codes be implemented within the health space? Currently, these codes are being used for everything from patient education to medication adherence. Food and drink packages can now link to interactive calorie trackers and personal information about a patient’s diet plan. Additionally, codes attached to medication labels link to prescription information and drug interactions as well as physician and pharmacy contact numbers.

QR codes are not a new technology but are making a surge especially within the health industry.⁸⁰

Edelman has also described the new role of health-related apps within the expanding mobile marketing environment:

Apps are dominating the health industry with currently more than 8,000 health related apps available on iTunes. In fact, in 2011, 14 percent of adult Americans will use a mobile health app and estimates are that by 2015 there will be 500 million mobile health applications. Mobile is lowering the activation energy required for individuals to engage in their health allowing more consumers the opportunity to take an active role in managing their personal wellness. However, according to BJ Fogg, we are still in the Friendster stage of mobile health

technology. As companies begin to move further into the mHealth space, they need to think about how to trigger the right sequence of baby steps for effective behavior change.⁸¹

Mobile phones, rapidly approaching ubiquitous status in American society, have also become a new consumer research platform. “Being mobile is relevant like never before,” explains a recent Knowledge Networks newsletter, “and that can help you learn things about society, products and brands that were never before possible.” Knowledge Networks’ new product, Quant, “uses smartphones not only for traditional information gathering, but also ‘on-the-go’ and ‘in the moment’ research that meets the unmet needs of almost every researcher and every industry.

Quant^M engages participants in research in a whole new way, and makes use of research-based smartphone apps to make information requests of participants – be they surveys or other ‘tell-me’ requests.

The key constructs of the Quant^M’s Mobile Solution Suite are:

1. Eliminate recall
2. Gather information at point of: decision/experience/consumption
3. Enrich the data: associate information with photos and GPS
4. Understand consumers over time (diaries or ethnographies)
5. Recognize that engaging with people in the way they want to be engaged is a means to getting closer to their behaviors and attitudes—and mobile is the place of choice for many Americans....

As a result, examples of what Quant^M can provide are:

- Shopper Experience/Insights to understand when, where, and why people buy
- Ad/Media Exposure by reminding people at a predetermined frequency to record all ads they've seen and how it made them feel
- Product Experience with IHUT and usage feedback requests
- Health Care Insights – collecting data for clinical trials on the latest over-the-counter product, so that they can accurately claim that the 'new formula suppresses your cough for 12 hours'
- Exploratory/Ideation/Diaries to understand consumption patterns or habits
- Social/Public Policy by capturing in-the-moment behaviors and attitudes
- MD-detail@ – whereby we interview 100 PCPs within 24hrs of being detailed by pharmaceutical sales rep for Product X.
- MD-diary@ – delivering a prospective oncology chart audit to assess current treatment trends in Breast Cancer using a sample of oncologists from our Physicians Consulting Network.⁸²

Mobile marketers have also turned their attention to physicians and healthcare professionals. Noting the common uses for smartphones among health care providers—“Checking Email (85%) Jotting down notes and memos (72%)

Prescription drug reference (50%)”—Augme Mobile Health enables “instant communication for patients and health care providers to receive product information, samples, or educational materials through any mobile device. Plus, our exclusive behavioral tracking, analytics, and database targeting capabilities are designed to work seamlessly with pharma brands’ physician and patient databases.”⁸³ Noting that 81 percent of physicians will have smartphones by 2012, HCplexus targets doctors with “personalized products... designed to make physicians’ lives easier, so they can focus on healing patients.” In the process, HCplexus focuses on delivering targeted ads, with its Brand Launch Program (“Advertising can drive qualified physicians to the brand contact center, drive eSample fulfillment and access to branded and unbranded websites”) and through its Physician Relationship-Building program.⁸⁴

The impact of location and mobile advertising for health and medical products requires an examination by the FDA. How various mobile “apps” are promoted—such as through “calls to action” on very small screens—needs careful evaluation. For example, as part of its “Get Ready for Bed” campaign, Johnson & Johnson subsidiary McNeil Consumer Healthcare launched an iPhone app on behalf of its Tylenol product. “The Tylenol PM Sleep Tracker iPhone application lets users track their sleep hours and moods, see their sleep history over time, add notes and customize their icons and get tips to help them sleep better.... Tylenol PM Sleep Tracker ads across [mobile ad network] AdMob’s network issued a call-to-action urging consumers to click through to the App Store to immediately download the application.” The “ad campaign that ran across iPhone sites and applications drove close to 3,000 downloads and increased Tylenol’s ranking in the App Store from No. 120 to 14, which in turn drove additional organic viral spread of the application.”⁸⁵

Stealth Sponsorship: “Unbranded experiences ... reduce regulatory risk since your brand isn’t mentioned”

While branded pharmaceutical websites appear to be the most effective online marketing tool, a number of companies have also resorted to more covert means, including unbranded or “lightly branded” sites, to raise awareness of particular conditions and diseases—for which, not coincidentally—the company happens to have a treatment.⁸⁶

There are a number of unbranded online patient communities whose activities warrant FDA scrutiny, including the following examples:

- CFvoice.com: “An online community for people of all ages living with cystic fibrosis. A place for motivation, inspiration and connection to the CF community.” Only at the very bottom of the home page, in small grey letters, is there any mention of possible site ownership, in the form of a copyright notice: “©2011 Novartis Pharmaceuticals Corporation.”⁸⁷

- How I Fight MS: “Five People. One Goal: to live victoriously with MS.” The site lacks a full, clear disclosure of the company behind the site: EMD Serno.⁸⁸
- About Heavy Periods: The site was developed by Grey Healthcare Group, which specializes in social media advertising, although there is no mention of this fact on the site itself.⁸⁹
- Voices in PAH (“Share your Thoughts. We’re listening”), a site devoted to those living with pulmonary arterial hypertension, collects information from its users and shares that data with others (“through Twitter, Facebook, and right here on Voices in PAH”), while keeping disclosure of its corporate sponsor (Gilead) to a minimum.⁹⁰
- “New Way RA” is a condition-specific online talk show directed at those suffering from rheumatoid arthritis that fails to adequately disclose its sponsor relationship with Centocor Ortho Biotech, Inc. Such unbranded sites are designed to minimize appropriate sponsorship information, while simultaneously fostering data collection.⁹¹
- StarttheTalk.com is an unbranded Genital Herpes site created by One to One Interactive for GlaxoSmithKline.⁹²
- Other unbranded condition-specific sites include Novartis’ 1in3people.com hypertension information site, and Voices of Meningitis. “To promote awareness of meningitis, a bacterial infection that is potentially life threatening, Publicis Modem created an unbranded Web site featuring video testimonials of families that were somehow affected by the disease. The idea was to inspire parents to take action and have their children vaccinated. To drive traffic to the site, the campaign included Flash banners on key mom sites, while rich media banners showcased the testimonials. Pre-roll ads were placed on online TV services, and custom in-banner video solutions brought a mini version of the site to the user. The campaign also had its own Facebook page.”⁹³
- The Facebook page Sounds of Pertussis is the creation of Sanofi Pasteur and Publicis Modem, although this fact is not evident on the Facebook page itself.⁹⁴

Any FDA study of digital marketing should also include an analysis of the role and impact of unbranded (or covertly branded) YouTube channels that a number of pharmaceutical companies have introduced:

- InBedStory is Bayer Schering Pharma’s effort to use animated comic strips to explore erectile dysfunction, with links to a similarly unbranded website, InBed.⁹⁵

- My Treatment Decision, a channel devoted to breast cancer, is actually designed to promote Genomic Health’s Oncotype DX Recurrence Score test.⁹⁶
- FluFlix Video Contest, launched in 2007, is Novartis’ effort to attract user-generated content on behalf of its various influenza remedies.⁹⁷
- Growth Hormone Therapy is Genentech’s channel in support of its Nutropin prescription drug.⁹⁸
- Parkinson’s Matters is Boehringer Ingelheim’s effort to raise awareness and understanding of Parkinson’s Disease.⁹⁹
- Stroke Prevention, similarly, is another Boehringer Ingelheim production.¹⁰⁰
- Stay Smart Stay Healthy is a “new-media venture designed to deliver guidance, and to support awareness and understanding of the healthcare industry,” produced by Humana.¹⁰¹
- UC Success is an unbranded site promoting Asacol as a treatment for ulcerative colitis.¹⁰²

Unbranded sites, focused on a specific disease or health condition but sponsored—behind the scenes—by a pharmaceutical company that markets a treatment for the disease or condition are at best a deceptive practice. This is especially true of those sites that purport to be user-driven communities, but that depend on paid consultants for much of their content. Dose of Digital’s Jonathan Richman describes the benefits—to pharmaceutical companies—of unbranded sites: “Unbranded experiences ... reduce regulatory risk since your brand isn’t mentioned, people can have ‘off label’ discussions where they talk about indications where your drug isn’t approved. It allows them to have the type of interaction they expect (i.e., one that isn’t constantly censored by a company worried about regulatory risks).”¹⁰³

Minority Marketing: “More and more marketers are recognizing the importance of advertising to this market”

African-American, Hispanic, and other multicultural groups are being targeted for health products and medical services based on information collected concerning their ethnicity or race. While some sites claim that they have received opt-in permission to target by ethnicity, the use of online racial profiling in digital health marketing without meaningful disclosure and consumer control poses potential new concerns about discrimination.

It is incumbent upon the FDA to monitor non-English-language pharmaceutical marketing as well, to determine whether forms of racial and ethnic profiling and data collection are being used, as well as whether a site fairly provides Spanish-language consumers with accurate information.¹⁰⁴

As Hispanic marketing specialist Terra points out, “...7,601,000 unique visitors, or 40.2% of the US Hispanic online audience has visited content in the health category, of which 29.4% have visited content within the health-information subcategory, and 6.7% have visited content within the pharmacy subcategory....” Terra also singles

out the Stop & Shop chain, which “has announced that all of its Pharmacies now offer Spanish language prescription labels and information.”¹⁰⁵

Youth Marketing: “What is the first thing a parent will likely do upon learning their child is inflicted with this ailment?”

Targeting the parents of children has also become a basic marketing strategy in the medical and healthcare industry, especially for those companies involved in social media marketing. The FDA should especially conduct research into how digital and social media marketing are being used to promote psychiatric drugs to young people.

... [C]onsider the behavior of your patient. Thinking first about the behavior of your patient will guide you to the right platforms. For example, if you are dealing with an ailment that generally impacts children, what is the first thing a parent will likely do upon learning their child is inflicted with this ailment? Most parents search for answers and will head to Google to find them. The trick is to ask yourself, what type of information are they looking for in this search? If they are searching for insight on treatment options, severity and past experiences, you can gear your social media efforts to reflect that. You should also survey what online sources of information already exist. Have you considered Google Health as a source of information for patients? Better still, have you tracked down the sources of information that feed into Google Health and ensured its accuracy? If you are not proactively addressing these questions you are leaving your online presence to chance. What about a platform such as Yahoo! Answers? Have you scanned the discussion taking place there to get a sense for the sentiment about either your brand or the common concerns of dealing with a particular ailment?¹⁰⁶

Online Health marketers are working to promote the adoption of powerful pharmaceuticals for the “pediatric and teen depression market,” taking advantage of vulnerable parents and caregivers. Through online surveys and analysis, information regarding “fears or concerns” about the use of drugs to treat depression and “specific medications used” is gathered. Pharmaceutical companies have adopted digital marketing strategies, including online “sequential messaging” to parents, to spur sales of specific drugs. Everyday Health, for example, is engaged in research designed to promote the use of “pediatric and teen depression” branded pharmaceuticals.¹⁰⁷ PKU.com, similarly, a site devoted to phenylketonuria, has a section that specifically targets teens.¹⁰⁸ Such marketing practices involving youth health concerns require special safeguards and immediate attention from the FDA.

Neuromarketing: “Shopping centers in the brain”

Neuromarketing is increasingly employed to research, design, and implement online advertising campaigns—including those for health and medical products.¹⁰⁹ Google and YouTube, for example, have commissioned eye-tracking studies to refine their digital marketing messages. The FDA needs to ensure its investigation reflects such work. According to a recent *MediaPost* report, “MRC International has worked with Google in Sweden to test banner ads on YouTube through the company’s eye-tracking technology.... [T]he platform known as EyeTrackShop, an online ad-tracking platform developed by MRC, gives marketers insight into how ads or Web sites are perceived by consumers who opt in to the study. Data is gathered, and results are available within 48 hours. The platform relies on computer Web cameras to determine what people look at on the Web page, and then collects the data.”¹¹⁰ As MRC International explains, “Eye tracking tests can improve your ROI, because they tell you where your customers look and how they do it.” The company offers “Post-testing of your advertising campaign,” it explains to prospective clients, “where we compare the results of different media placements, for example how effectively the placements of Ads works in different formats and channels such as newspapers or on different websites.”¹¹¹

NeuroFocus, a firm that specializes in the application of brainwave research to advertising, programming, and messaging, uses “neurological testing [that] delves down to the subconscious mind,” far below such “corrupting factors” as education, language, and cultural variances.¹¹² Measuring as many as 64-128 sectors of the brain at 2,000 times per second, NeuroFocus promises results that are “unambiguous, accurate, and actionable.” In the words of NeuroFocus CEO A.K. Pradeep, because each response is “subconscious” and delivered in one-third of a second, the result is “a scientific measurement without biases and pitfalls.”¹¹³ In 2008, the Nielsen Company made a “strategic investment” in NeuroFocus.¹¹⁴

Pradeep has described the research in support of his company’s approach to neuromarketing:

...[W]e have identified 67 specific ‘best practices’ that should be implemented when words and images are presented on a screen (any screen, from a TV or PC to a mobile phone or movie theater). They are the result of advanced neurological research into various brain functions, and especially research that has delved into the mysteries of diseases like Alzheimer’s, and brain conditions like ADD/ADHD, obsessive/compulsive behavior, and bipolar disorder.¹¹⁵

Among the pharmaceutical companies that have turned to NeuroFocus for assistance is Alcon, which sought help with a 30-second DTC TV spot for Pataday, a new prescription eye drop. “They wanted precise neuroscientific measurements of exactly how allergy sufferers responded to this new DTC ad.”¹¹⁶

The use of “subconscious-response” neurological metrics, such as “Evoked Response Potential” and other measures focused on “attention, emotion, memory, [and] engagement,” analyzing how consumers react to particular ads in order to create

new ads that appeal directly to consumers' subconscious raises questions about fairness and deception in marketing. Instead of a rational discussion of the potential advantages and risks associated with a particular drug, pharmaceutical neuromarketing can be used to deliberately bypass the rational decision-making process.¹¹⁷

Other companies have turned to similar techniques, including functional magnetic resonance imaging (fMRI) and eye-tracking studies, in an effort to assess the effectiveness of various advertising campaigns. Google, Microsoft and Yahoo and others have all conducted research involving neuromarketing.¹¹⁸ The ad firm Draftfcb, whose pharmaceutical clients include Lilly, Merck, and Pfizer, is increasingly focusing on neuromarketing, through its new "Institute of Decision Making."¹¹⁹ And researchers in the User Experience department at Digitas Health have created psychological profiles to "recognize and capitalize on the needs and values of health information seekers:

In recent research conducted with 21 participants explicitly interested in specific health-related topics, we mapped their behaviors to three distinct personas and formulated a strategy for each.... In persona-driven design, research-based profiles are used to find and illuminate the path to success, rather than to define it. While defining a campaign objective based upon a demographic profile establishes measurable goals, referring to personas throughout the design process allows the creative and media teams the opportunity to evaluate or test content, interaction, creative, and placement before the campaign goes live...."¹²⁰

According to Olson Zaltman Associates, a leading firm focused on promoting subconscious connections for marketers, whose pharmaceutical clients include AstraZeneca, GlaxoSmithKline, Immunex, Johnson & Johnson, McNeil, Merck, Oticon, and Pfizer, "Only 5% of thought occurs consciously. It's the other 95%—the 'hidden knowledge'—that we uncover and understand to shed light on the challenges organizations face today. Olson Zaltman Associates combines patented scientific processes with sharp business acumen. Using these resources, we delve into the hidden meanings that drive human behavior and affect people's decisions about the actions they take, the views they hold, and the products they buy."¹²¹

Marketers are particularly interested in research that addresses how "specific patterns of brain activation predict purchasing," the potential "shopping centers in the brain," and the neurological basis of purchasing.¹²² Such practices, particularly alarming in the health and pharmaceutical context, should be included in the FDA's current investigation.

We are dismayed that the FDA appears still to be struggling with understanding the state of digital marketing at this crucial period—when more US consumers (and prescription-writing health professionals) rely on online and mobile services. The three studies proposed by the FDA are inadequate. We urge the commission to bring

in independent experts in digital marketing, as well as consumer and professional health organizations, to help it design a set of studies that can provide a more reliable analysis into how online health consumers understand and can address contemporary digital pharmaceutical and medical marketing practices. CDD stands ready to assist the agency.

Respectfully submitted,



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² Food and Drug Administration, “Agency Information Collection Activities; Proposed Collection; Comment Request; Examination of Online Direct-to-Consumer Prescription Drug Promotion.”

³ Institute on Medicine, “Panel on Marketing Approaches,” <http://www.iom.edu/Activities/Nutrition/ObesityPrevProgress/2011-JAN-13/Panel/Wartella-Discussion.aspx>; Federal Trade Commission, “# 326; FTC File No. P094511; Study of Food Marketing To Children and Adolescents: Request For Public Comments On Proposed Information Requests To Approximately 45 Major Food, Beverage, and Quick Service Restaurant Companies,” <http://www.ftc.gov/os/comments/foodmktgkids-2/index.shtm> (all viewed 25 June 2011).

⁴ Google, “The Optimal Media Mix to Drive Scripts (Rx): Google MarketShare Partners White-labeled Pharmaceutical Ad Effectiveness Study,” 2009, http://www.gstatic.com/ads/research/en/2009_TheOptimalMediaMixtoDriveScripts.pdf (viewed 16 May 2011).

⁵ CDD’s filings with the FTC include the following documents: Center for Digital Democracy and U.S. PIRG, “Complaint and Request for Inquiry and Injunctive Relief Concerning Unfair and Deceptive Online Marketing Practices,” Federal Trade Commission Filing, 1 Nov. 2006, <http://www.democraticmedia.org/files/pdf/FTCadprivacy.pdf>; Center for Digital

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⁶ Grant Gross, "U.S. Dept. of Commerce: New Online Privacy Rules Needed," *CIO*, 16 Dec. 2010, http://www.cio.com/article/647189/U.S._Dept._of_Commerce_New_Online_Privacy_Rules_Needed; "FTC Staff Issues Privacy Report, Offers Framework for Consumers, Businesses, and Policymakers," 1 Dec. 2010, <http://www.ftc.gov/opa/2010/12/privacyreport.shtm>; Cameron Kerry and Christopher Schroeder, "White House Council Launches Interagency Subcommittee on Privacy & Internet Policy," Office of Science and Technology Policy, 24 Oct. 2010, <http://www.whitehouse.gov/blog/2010/10/24/white-house-council-launches-interagency-subcommittee-privacy-internet-policy>; Steven Gray, "The White House Gets Behind New Internet Privacy Efforts," 16 Mar. 2011, <http://www.time.com/time/politics/article/0,8599,2059442,00.html> (all viewed 25 June 2011).

⁷ Digitas Health, "How to Create Massive Demand for Your Drug," 2008, personal copy, emphasis in the original.

⁸ See, for example, Center for Digital Democracy, U.S. PIRG, Consumer Watchdog, and World Privacy Forum, "In the Matter of Online Health and Pharmaceutical Marketing that Threatens Consumer Privacy and Engages in Unfair and Deceptive Practices. Complaint, Request for Investigation, Public Disclosure, Injunction, and Other Relief: Google, Microsoft, QualityHealth, WebMD, Yahoo, AOL, HealthCentral, Healthline, Everyday Health, and Others Named Below," Federal Trade Commission Filing, 23 November 2010, <http://www.democraticmedia.org/sites/default/files/2010-11-19-FTC-Pharma-Filing.pdf> (viewed 15 May 2011); Center for Digital Democracy, "Written Comments: Promotion of Food and Drug Administration-Regulated Medical Products Using the Internet and Social Media Tools," Food and Drug Administration filing Re: Docket No. FDA-2009-N-0441, 28 Feb. 2010, <http://www.democraticmedia.org/files/u1/2010-02-28-FDAcomments.pdf>. See also Center for Digital Democracy, "CDD Tells FDA to Work with FTC on Digital Pharma Ads," 10 May 2010, <http://www.democraticmedia.org/digital-pharma-ads>; Center for Digital Democracy, "CDD Asks FDA to Investigate Digital Marketing of Drugs and Health Products." 1 Mar. 2010, <http://www.democraticmedia.org/press-release-drugs-and-health-marketing> (all viewed 7 Nov. 2010).

⁹ "Using Healthographics, a proprietary algorithm of more than 250 individual demographic and health data points, each consumer is meticulously profiled on an ongoing basis, which gives our clients access to valuable data and insights that enrich their advertising efforts." QH Connect also offers "High-Volume, Multichannel Solutions:

Our unique multichannel approach allows brands to connect with the Web's largest pool of health-conscious consumers. Our growing reach includes:

- 9 million existing, prequalified members.

-
- 1 million new leads every month.
 - 4 million page views per week.
 - The industry's highest index of 45+ visitors.

QH Connect, http://www.mtscorp.com/qh_connect.html. See also Marketing Technology Solutions' case study of a major pharmaceutical company's use of QH Connect for lead generation, http://www.mtscorp.com/cs_gerd.html (both viewed 4 Oct. 2010).

¹⁰ Alli, <http://www.myalli.com/Default.aspx> (viewed 16 May 2011). According to the GlaxoSmithKline Internet Privacy Statement, "GSK, your employer, healthcare plan or program sponsor and the companies affiliated with or hired by GSK or your employer, healthcare plan or program sponsor will use this information to comply with your requests for information, services and products; to contact you and to better serve you. We will refer to your information to better understand your needs and how we can improve our products and services. We will not sell or otherwise transfer the personally identifiable information you provide at this website to any third party except as set forth in this Privacy Statement.... GSK will provide aggregated information received from users to third parties. GSK takes commercially reasonable precautions to prevent the aggregated information provided to third parties from including significant personally identifiable information." GlaxoSmithKline, "GlaxoSmithKline Internet Privacy Statement," May 2007, <http://consumer.gsk-chus.com/legal/privacy.aspx> (viewed 16 May 2011).

¹¹ CML Earth, <http://www.cmlearth.com/index.jsp> (viewed 16 May 2011).

¹² Novartis, "CML Earth Privacy Notice and Consent," <http://www.cmlearth.com/index.jsp> (viewed 16 May 2011).

¹³ "As a result, QualityHealth has developed the largest, most comprehensive set of actionable health consumer profiles. QualityHealth enables you to target the right potential patients at the right time in their health continuum with the right programs and most effective messaging." QualityHealth, "Profiling," <http://www.qhperform.com/profiling.html>. See also, QualityHealth, "Privacy Policy," http://www.qhperform.com/privacy_policy.html (both viewed 14 Oct. 2010).

¹⁴ Techlightenment, "Social Research Platform," <http://www.techlightenment.com/products/social-research-platform/> (viewed 16 May 2011).

¹⁵ Ben Comer, "Ex-GSK Marketer Unveils Migraine Consumer Site,"

¹⁶ Migraine.com, <http://migraine.com/>. See, for example, Migraine.com, "Migraine Patient Advocate: Ellen Schnakenberg," <http://migraine.com/ellen/>. Such advocates are often affiliated with Wego Health, which claims to empower "health activists to help others." Wego Health, "Sponsor Our Community," <http://about.wegohealth.com/about/sponsor-our-community/> (all viewed 16 May 2011).

¹⁷ Migraine.com, "Migraines in Children & Teens," <http://migraine.com/migraines-in-children-and-teens/>; Migraine.com, "Migraine Journal," <http://migraine.com/migraines-in-children-and-teens/migraine-tools/migraine-journal/> (both viewed 16 May 2011).

¹⁸ "By partnering with Nielsen's HomeScan panel and using our Target 2 Measure product, AOL's research team was able to link online ad exposure to offline sales impact, thus demonstrating ROI." AOL Advertising, "Case Study: OTC Pharma Leader Drives Offline Sales

with AOL's Online Targeting," <http://advertising.aol.com/sites/default/files/OTC-targeting.pdf> (viewed 16 Feb. 2010).

¹⁹ "HCD Research recently used ConsumerBase to develop a case study about a birth control product titled '[Exploring the Social Aspects of Marketing Research Methods as We Move Toward the Attention Age](#)' that was presented at a [PBIRG](#) (Pharmaceutical Business Intelligence Research Organization) conference." "Early Customers Love NetBase— Responses to Limited Release Show Speed, Ease of Use and Actionable Insight Are Key Factors," 22 June 2010, http://netbase.com/news_events/pr-062210.php (viewed 20 Oct. 2010).

²⁰ Netbase, "ConsumerBase: Build a Game-Changing Consumer Insight Strategy," http://www.netbase.com/solutions/ConsumerBase_Brochure.pdf (viewed 16 June 2010).

²¹ HCD Research, "Exploring the Social Aspects of Marketing Research Methods as We Move Toward the Attention Age," 18 May 2010, <http://www.pdfstoc.com/posts/download/1916> (viewed 25 June 2011).

²² As the new collaboration of Tynt Multimedia and Good Health Media explains,

... if a visitor to a Good Health Media site copies a term such as 'fibromyalgia,' the ConditionSearch service will instantly display context-relevant links and a display ad that are directly related to the copied term. Users benefit from receiving links to useful information they are searching for, and health advertisers have a better way of reaching their target audiences.... Tynt Insight's patent-pending technology detects copy/paste actions of website visitors, enabling online content owners to understand, with pinpoint accuracy, exactly which content their visitors find most engaging, and to immediately act on that information to improve site performance.

"Tynt and Good Health Media Partner to Enhance Delivery of Targeted Information and Advertising on Top Online Health Sites," 10 Aug. 2010, <http://www.tynt.com/tynt-and-good-health-media-partner-to-enhance-delivery-of-targeted-information-and-advertising-on-top-online-health-sites/> (viewed 30 Sept. 2010).

²³ Alliance Health Networks, "Overview," <http://news.alliancehealthnetworks.com/companyoverview.php> (viewed 25 June 2010).

²⁴ Alliance Health Networks, "Marketing Executives," <http://www.alliancehealthnetworks.com/client-solutions/marketing-executives> (viewed 25 June 2010).

²⁵ Alliance Health Networks, "Unique Approach," <http://www.alliancehealthnetworks.com/unique-approach> (viewed 25 June 2010). Alliance Health's flagship network in this regard, DiabetesConnect, has grown rapidly in recent months. "It took two years for DiabetesConnect to reach 100,000 registered users," according to *Digiday:Daily*.

It only took the first four months of 2010 to add 100,000 more. Part of the growth has come from a proprietary algorithm that cleans up the comment section for all the sites. Unlike some special interest sites, the comments on DiabetesConnect all seem to be relevant, free of the sometimes bizarre posts that plague all UGC, and free of bad language. That's no accident. The algorithm pushes the most relevant comments to the top of the comments and also moderates the specific words.... [A] welcome side-effect of the moderated content has been huge uptick in advertisers. Bayer is a huge presence on

DiabetesConnect, partially because they get thousands of leads each month from the network, but mostly because the company feels safe with the Alliance content approach. Many more pharmaceutical companies are on the network with microsites or banners, and others are in discussion to be there.

John Gaffney, "Alliance Health: Social Networks With A Cause," *Digiday:Daily*, 11 June 2010, <http://www.digidaydaily.com/stories/alliance-health-social-networks-with-a-cause/> (viewed 25 June 2010).

²⁶ Vizu Corporation has undertaken such optimization techniques on behalf of Caring.com, using its Ad Catalyst technology: "Caring.com found that in one client's case, a particular ad worked better for brand awareness while another ad slot prompted more clickthroughs. Caring.com leveraged this information to make optimization recommendations for the client, as well as leverage the information to build best practices for future campaigns across Caring.com's entire advertiser roster." Vizu, "Ad Catalyst Case Study," <http://brandlift.vizu.com/knowledge-resources/case-studies/pdf/Vizu%20Case%20Study%20-%20Caring's%20Ad%20Sales%20Weapon.pdf> (viewed 20 June 2011).

²⁷ DoubleClick, "Category Targeting Codes," <http://www.google.com/support/adxbuyer/bin/answer.py?answer=156178&cbid=kh0ngv3l6e4w&src=cb&lev=answer>; DoubleClick, "DoubleClick Ad Exchange 2.0," <http://www.doubleclick.com/products/advertisingexchange/index.aspx> (both viewed 16 Feb. 2010).

²⁸ CONTEXTWEB, "Targeted Traffic: ADSDAQ Categories," <http://www.contextweb.com/buyingdesk/categories>; CONTEXTWEB, "Finding Audience," http://www.contextweb.com/find_your_audience (both viewed 25 Oct. 2010). Ad exchanges allow advertisers to "hook into large ad exchanges and set a price they're willing to pay for a particular audience. When a user arrives at a Web page, the exchange makes a decision based on the data available on the user and the bid submitted to find the best-matching ad. The matching is done in real time, banner by banner.... 'It's no longer about sections and pages, it's about people and actions,' said Eric Porres, CMO at Lotame, a marketing tech company with an audience data platform." Thus Gannett has implemented technology from CONTEXTWEB "to allow advertisers to reach specific audiences, although still tied to content. In the past, Gannett could only sell broad category deals in 'health.' Now, with ContextWeb mapping each piece of content to more specific categories, it can sell cholesterol and diabetes content. 'It's another way for them to segment the inventory to provide better value to the advertiser and better value to Gannett,' said Jay Sears, gm of ContextWeb Ad Exchange." Brian Morrissey, "Audience: New King of the Hill?" *Adweek*, 24 Oct. 2010, http://www.adweek.com/aw/content_display/news/digital/e3i1c1499752deb3a60c1be96894a47c458 (viewed 31 Oct. 2010). Additionally, "CONTEXTWEB studied in detail the profile of users interested in pharma advertising during Q4 2010.

This included combining leading third-party audience data with proprietary system data to analyze action patterns. The output of this process is referred to as a Smart Target. The action pattern used for this analysis was clicks on pharma ads. Pharma advertisers are interested in click-through because it serves as an indication of interest and is widely used for display campaign measurement and optimization, especially in the absence of online purchase metrics. Based on its research, CONTEXTWEB created a

Smart Target of the typical person interested in a display pharma ad, creating for the first time a profile of the ideal digital pharma prospect. It turns out the “pharma desirable” is an early retirement boomer, age 56 and up, living in a city and having older children who are grown or entering college.... These consumers are college educated with mid- to high-level incomes but are not big spenders, most likely because of the burden of college expenses and the higher cost of city living. Savvy investors, they often research and are in-market for financial products. They are family-oriented with a broad range of interests, including travel and fitness. Given their age they are interested in health topics, but ... they also consume a wide range of content. And, importantly for advertisers, they readily respond to a richer display media experience.... The research also found that using Hotspot targeting which includes non-health-related content is extremely effective in driving higher CTRs. In fact, CONTEXTWEB found that Hotspot targeting can have higher CTRs than targeting health content alone and is more cost effective in terms of cost per click (CPC).

CONTEXTWEB, “Pharmaceutical Digital Marketing: Go Beyond Traditional Targeting,” http://www.iab.net/media/file/CONTEXTWEBpharmastudyposting_6-1-1_final.pdf (viewed 20 June 2011).

²⁹ Right Media Exchange, “Advertiser Offer Types: Trends Review-H2 2009,” http://l.yimg.com/a/i/us/ayc/pdf/advertiser_offer_types2.pdf (viewed 25 Oct. 2010).

³⁰ Rubicon Project, “REVV Overview,” <http://www.rubiconproject.com/REVV>; Rocket Fuel, “Rocket Fuel Audience Booster,” http://www.rocketfuelinc.com/solutions/audience_booster.html (both viewed 25 Oct. 2010).

³¹ eXelate, “Buyers: Targeting Segments,” <http://www.exelate.com/new/buyers-targetingsegments.html>; BlueKai, “Intent Data,” <http://www.bluekai.com/intentdata.php> (both viewed 25 Oct. 2010).

³² Rosetta, “Partner with Our Interactive Marketing Agency Today,” <http://www.rosetta.com/Pages/default.aspx> (viewed 11 May 2011).

³³ Jon Brulloths, “Up Close with Hari Mahadevan, Executive Officer, Consulting Services and Healthcare, for Rosetta,” PM360, Dec. 2010, http://www.pm360online.com/f5_1210 (viewed 11 May 2011).

³⁴ Adobe, “The Adobe Online Marketing Suite, Powered by Omniture,” http://www.omniture.com/en/products/online_marketing_suite (viewed 15 May 2011).

³⁵ Adobe, “Adobe Online Marketing Suite Success Story: Life Technologies,” <http://www.visualsciences.com/offer/1089> (registration required). See also Omniture, “LifeMed Media Streamlines Search Marketing with Omniture SearchCenter,” <http://www.omniture.com/offer/112> (registration required).

³⁶ Adobe, “Test&Target—Increase Content Relevance,” <http://www.omniture.com/en/products/conversion/testandtarget11> (viewed 15 May 2011).

³⁷ CPM Marketing Group, “Technology: Healthcare CRM to Enhance Healthcare Marketing,” https://www.cpm.com/index.cfm/about/our-technology/#perceptual_profiles. “This approach is the key to delivering targeted healthcare marketing messages on behalf of your health system.... ICRM helps you maximize the value of every customer contact by providing

up-selling and cross-selling opportunities that are relevant to individual patients. Whether the customized communication is prompted by a direct mail promotion or by their health history, patients will get an online or phone experience that truly suits their personal needs....” CPM Marketing Group, “ICRM for Medical Call Center & Web Hospital Marketing,” <https://www.cpm.com/index.cfm/solutions/products-services/instant-crm/>. “CPM’s New Movers program leverages our proprietary Perceptual Profiles™ psychographic profiling system to help your hospital determine the most appropriate communication style for each targeted individual....” CPM Marketing Group, “Hospital Marketing: Recruit Patients via New City Residents Outreach,” <https://www.cpm.com/index.cfm/solutions/products-services/new-movers/> (all viewed 29 June 2010).

³⁸ Everyday Health, “Ad Solutions,” <http://www.everydayhealth.com/advertise/ad-solutions/> (viewed 14 June 2010).

³⁹ Healthline Networks, “Advertise on Healthline,” http://www.healthline.com/advertise.jsp#_jmp0_ (viewed 29 June 2010).

⁴⁰ QualityHealth, “Conversion,” <http://www.qhperform.com/conversion.html> (viewed 14 June 2010). Yahoo’s recent report on health marketing to women over 40 raises similar questions about potentially manipulative practices:

Women in their 40s and 50s are a critical audience for advertisers today based on their tremendous spending power. For marketers in the health sector, this segment is especially critical since roughly 3 out of 4 women in this age range have at least one health condition....

Implications for Marketers

- **BE HONEST & STRONG.** Messaging around women’s health should focus and celebrate her confidence during this life stage, but be humorously realistic about the stresses of life.
- **BE EVERYWHERE SHE IS.** To engage her effectively, broaden how you think about how she engages with health information — think beyond narrow definitions of conventional online sources to “health-o-tainment,” like *The Biggest Loser* or *Dr. Oz*. Know more about where she goes online so you can reach her more effectively.
- **BE IN THE CONTENT SHE CARES ABOUT.** Women manage their health through medication, fortification and information. There’s ample opportunity to partner with publishers to create places of education, so brands should expand their focus beyond side effects of medication to become a resource on topics such as vitality, food and exercise.
- **BE PRESENT EMOTIONALLY.** Women are not just looking for functional and prescriptive information around her health but also information that delivers emotional support and confidence in decision-making. Tailor your messages to provide that emotional support or create safe places for women to share their experiences anonymously.
- **BE SPECIFIC TO THE HEALTH STYLES.** Health styles tell us a lot about where women go online and how they manage their life and health. To help her make better decisions and improve your ROI, develop campaigns, content and messaging that speak to the health styles that will work best for your brand.

Yahoo and Digital Health, "Health Styles of the 40-Everything Woman," June 2011, <http://advertising.yahoo.com/industry-knowledge/health-styles-snapshot.html> (viewed 20 June 2011).

⁴¹ Cadient Group, "Agile Portal Solutions," http://www.cadient.com/agile_portal_solutions.aspx (viewed 15 May 2011).

⁴² Cadient Group, "REVEAL Insights and Analytics," <http://www.cadient.com/reveal.aspx> (viewed 15 May 2011).

⁴³ Alyson Connor, "Tapping the Potential of Social Media: The Question is How. The Answer is Why," MicroMass Communications, 2010, http://www.micromass.com/downloads/documents/2010_MMC_WhitePaper_SocialMedia.pdf (viewed 16 May 2011).

⁴⁴ Ben Curtis, "Top 5 Mistakes: Social, Mobile and the Pharmaceutical Industry," MMC Blog, 29 Mar. 2011, emphasis in the original, <http://blog.micromass.com/wordpress/index.php/20110329/top-5-mistakes-social-mobile-and-the-pharmaceutical-industry> (viewed 16 May 2011).

⁴⁵ Blue Diesel, "Fusionary Work," <http://www.bluediesel.com/index.html#work> (viewed 12 May 2011).

⁴⁶ Blue Diesel, "Fusionary Work."

⁴⁷ Quoted in Ben Comer, "The Age of Engagement," *Medical Marketing and Media*, Oct. 2008, <http://www.mmm-online.com/the-age-of-engagement/article/118531/>. Unfortunately, thanks to deceptive marketing practices that exploit the intimacy of social media, that "halo of credibility" has been severely tarnished. Especially with the revelations of questionable privacy practices on Facebook, Google, and elsewhere, many U.S. consumers are justifiably concerned—about both the security of the personal information they share online, as well as the reliability of information they receive from others. A recent study by Digitas Health suggests that this uncertainty is particularly apparent in the online health care arena: "Sixty-seven percent of European consumers say they trust the information they find in social-media venues versus only 45% of American consumers. Fifty-two percent of European physicians believe that healthcare professionals should participate in discussions in patient forums and social networks, compared to only 41% of US physicians. Similarly, 41% of European physicians believe that social media will play an increasingly important role in shaping their patient management and treatment, versus only 23% of US physicians." Digitas Health, "Europeans More Likely to Trust Social Media with Their Health, Study Finds," 25 Mar. 2010, http://www.digitashealth.com/pdf/Digitas_Health_Kantar_Health_Survey_Release.pdf (both viewed 16 June 2010).

⁴⁸ Razorfish, "Health Analytics," <http://www.razorfishhealth.com/#/our-practice/analytics> (viewed 30 Sept. 2010).

⁴⁹ Razorfish, "Health Analytics."

⁵⁰ That certain social media applications are simply unsuitable for the depth and breadth of information that existing pharmaceutical advertising regulations require is evident in the recent FDA ruling concerning Novartis' Facebook widget for Tassigna leukemia drug. That product, the FDA declared, "is associated with a number of serious risks, as detailed in the Boxed Warnings, Contraindications, Warnings and Precautions, and Adverse Reactions

sections of the PI” (product labeling). But the Tassigna website, the FDA explained, which “contains a ‘Facebook Share’ social media widget that generates Novartis-created information for Tassigna that can be shared with Facebook users (i.e., ‘shared content/),” does not adequately disclose those risks:

The shared content is misleading because it makes representations about the efficacy of Tassigna but fails to communicate any risk information associated with the use of this drug. In addition, the shared content inadequately communicates Tassigna’s FDA-approved indication and implies superiority over other products. Thus, the shared content for Tassigna misbrands the drug in violation of the Federal Food, Drug, and Cosmetic Act (the Act) and FDA implementing regulations....

We note that the shared content contains a hyperlink to various Tassigna product websites, which do contain risk information. However, the inclusion of such a hyperlink is insufficient to mitigate the misleading omission of risk information from these promotional materials. For promotional materials to be truthful and non-misleading, they must contain risk information in each part as necessary to qualify any claims made about the drug. Karen R. Rulli, Acting Group Leader Division of Drug Marketing, Advertising, and Communications, Food and Drug Administration, letter to Lisa Drucker, Director, Regulatory Affairs—Oncology Novartis Pharmaceuticals Corporation, 29 July 2010, <http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/EnforcementActivitiesbyFDA/WarningLettersandNoticeofViolationLetterstoPharmaceuticalCompanies/UCM221325.pdf> (viewed 30 Sept. 2010).

⁵¹ I2we, “Our Services,” <http://www.i2we.com/corp/services.php> (viewed 30 Sept. 2010).

⁵² One enterprising 13-year-old Facebook user, acting on behalf of his grandfather, who was suffering from cancer, managed to attract 16,000 “fans” in 96 hours. As the All Facebook blog explains, he did this by targeting cancer survivors:

Odd that the Facebook ad system shows interest targeting as XX,XXX people “like” cancer, but that is Facebook’s generic way of showing how many people have identified with a cause. To have the word “like” broadly mean that you are a fan of a page, “like” to eat chocolate ice cream, and “like” cancer is perhaps too broad a use of this term. But as we’ve demonstrated earlier, Facebook’s terminology switch from fans to likes increases engagement rates dramatically.

The cancer survivors who responded to the ads were primarily female. And by running geo-targeted variations, Logan noticed a difference in language from cancer survivors from the Bible Belt versus California— in the former, the message of faith in God was a stronger theme than one of “fighting” against all odds. He then realized that messaging by geography mattered, so he adjusted his ad copy.

Married people with cancer were more likely to respond, so Logan created more variations, using the Facebook Responder Profile and Demographic reports to give guidance on how to segment further.

Nick O’Neil, “How A 13 Year Old Gained 16,000 Fans In 96 Hours,” All Facebook, 10 Aug. 2010, <http://www.allfacebook.com/how-gained-fans-2010-08> (viewed 31 Oct. 2010).

⁵³ For an overview of the field, see the Pharma and Healthcare Social Media Wiki, <http://www.doseofdigital.com/healthcare-pharma-social-media-wiki-2/>. See also Envision Solutions, “Achieving Openness: The Art of Listening, Learning, & Communicating with

People Using Social Networks for Health & Wellness,” 2009, <http://formersite.enspektos.com/healthsocnetworks.html> (both viewed 16 Feb. 2010).

⁵⁴ “GSK Consumer Healthcare partnered with Communispace spanning 2+ years to create five private online communities that became the center of gravity for the entire multifaceted market launch of alli.” Communispace, “GlaxoSmithKline Consumer Healthcare: Making Customers the Center of Gravity to Develop a Blockbuster Drug Launch,” <http://www.communispace.com/clients/stories/?story=42> (viewed 16 Feb. 2010).

⁵⁵ IMC2, “Health & Wellness,” <http://www.imc2healthandwellness.com/>. See also IMC2, “Winning in the Relationship Era,” http://www.imc2.com/Default.aspx#meandyou_5waystowin (both viewed 11 May 2011).

⁵⁶ Heartbeat Ideas, <http://www.heartbeatideas.com/> (viewed 25 June 2011).

⁵⁷ Nielsen Online, “Solutions for Pharma-Health Marketers,” http://en-us.nielsen.com/etc/medialib/nielsen_dotcom/en_us/documents/pdf/fact_sheets.Par.62370.File.dat/PharmaHealth_US.pdf (viewed 16 Feb. 2010).

⁵⁸ PatientsLikeMe, “PatientsLikeMeListen,” <http://partners.patientslikeme.com/data-sheets/PatientsLikeMeListen.pdf> (viewed 16 Feb. 2010). On the one hand, then, PLM protects its users from the prying eyes of social media monitoring firms, as John Mack explained in a recent *Pharma Marketing News* article concerning automated programs that “scrape” data from online forums: “A major issue for PLM is that the media monitoring company—probably employed by an unnamed pharmaceutical company—was not an authentic patient and violated PLM’s User Agreement, which states ‘You may not use any robot, spider, scraper, or other automated means to access the Site or content or services provided on the Site for any purposes.’” John Mack, “Data Mining in the Deep, Dark Social Networks of Patients,” *Pharma Marketing News*, May 2010, <http://www.news.pharmamkting.com/pmn95-article03.htm> (subscription required). At the same time, Mack adds, “Since PLM is using its own ‘scraper’ software to troll its closed communities to create reports for pharma clients..., it has a vested interest in preventing rouge [sic] pharma companies from hiring ‘scraper’ agents to mine the PLM site for the same data it is selling its own pharma clients.” PLM, in other words, actively mines its own user-generated content for marketable data. As the site’s FAQ acknowledges, “We take the information patients share about their experience with the disease, and sell it in a de-identified, aggregated and individual format to our partners (i.e., companies that are developing or selling products to patients).... By selling this data and engaging our partners in conversations about patient needs, we’re helping them better understand the real world medical value of their products so they can improve them.” PatientsLikeMe, “FAQ,” <http://www.patientslikeme.com/help/faq/Corporate> (viewed 16 June 2010).

⁵⁹ A1C Champions, “Frequently Asked Questions,” <http://www.a1cchampions.com/faq.aspx> (viewed 30 Sept. 2010). Sanofi-aventis used paid spokespersons on its now-defunct GoInsulin.com, as well as on that site’s replacement, WhyInsulin.com, <http://www.whyinsulin.com/insulin-success-stories/default.aspx> (viewed 25 June 2011).

⁶⁰ ADHDMoms, <http://www.facebook.com/ADHDMoms>. The disclosure that the site’s featured “Moms” are also paid consultants is found only on the Advice page. ADHDMoms, “Advice,” http://www.facebook.com/ADHDMoms?v=app_10442206389 (both viewed 11 May 2011).

⁶¹ Jens Monsees, "Health Care in a World of Dynamic Change: Driving Innovation as a Commitment of Each Employee," PowerPoint presentation, Mar. 2011.

⁶² Mary Ann Belliveau, "Health Info Online: The Stakes are Higher," *The Chart*, 4 Oct. 2010, <http://pagingdrgupta.blogs.cnn.com/2010/10/04/health-info-online-the-stakes-are-higher/>. For Ms. Belliveau's pitch to health and pharma advertisers, claiming that they need to create "compelling content" to help make their "Web marketing strategy" "attract engaged viewers," see Mary Ann Belliveau, "Taking Pharmaceutical Marketing Online: Making Relevant Connections," *DTC Perspectives*, Mar. 2008, <http://www.dtcperspectives.com/content/editor/files/PharmaMarketingOnline.pdf> (both viewed 18 Oct. 2010).

⁶³ "Using Search Engine Query Data to Track Pharmaceutical Utilization: A Study of Statins," PubMed.gov, <http://www.ncbi.nlm.nih.gov/pubmed/20690788> (viewed 16 May 2011).

⁶⁴ Kyle Getz, "Optimize Your Microsoft adCenter Campaigns for Improved Health Results on Bing," *adCenter Blog*, 8 Feb. 2010, <http://community.microsoftadvertising.com/blogs/advertiser/archive/2010/02/08/optimizing-for-improved-health-results-pages.aspx#Optimize>; Tina Kelleher, "Bing on 2010: Health, Fitness and What They Mean for Microsoft adCenter Advertisers," *adCenter Blog*, 18 Jan. 2010, <http://community.microsoftadvertising.com/blogs/advertiser/archive/2010/01/18/bing-on-2010-health-fitness-and-what-they-mean-for-microsoft-adcenter-advertisers.aspx>; Alain Rappaport, "Bringing Knowledge into Health Search," *Bing Community*, 12 Jan. 2010, <http://www.bing.com/community/blogs/search/archive/2010/01/12/bringing-knowledge-into-health-search.aspx>; Kyle Getz, "Health and Fitness Advertisers: Preparing Your adCenter Campaigns for Peak Seasonality," *adCenter Blog*, 7 Dec. 2009, <http://community.microsoftadvertising.com/blogs/advertiser/archive/2009/12/07/health-amp-fitness-advertisers-how-to-prepare-for-peak-seasonality.aspx>; Microsoft Advertising, "Prescription for Healthcare Manufacturers and Retailers," 5 Oct. 2009, <http://advertising.microsoft.com/research/healthcare-industry-transformation> (all viewed 26 Oct. 2010).

⁶⁵ Adobe, "Visitor Acquisition: Search Engine Marketing," http://www.omniture.com/en/products/visitor_acquisition (viewed 15 May 2011).

⁶⁶ Google, "Google for Advertisers: Insights," <http://services.google.com/advertisers/us/insights>; Yahoo, "Search," *Yahoo Advertising Blog*, <http://www.yadvertisingblog.com/blog/category/products/search/>; Kyle Getz, "Optimizing Your Microsoft adCenter Campaigns for Improved Health Results on Bing," *adCenter Blog*, 8 Feb. 2010, <http://community.microsoftadvertising.com/blogs/advertiser/archive/2010/02/08/optimizing-for-improved-health-results-pages.aspx> (all viewed 25 June 2011).

⁶⁷ Omniture, "RIA Optimization: Does RIA = ROI?" <http://www.scribd.com/doc/7699897/06featuresheetriaoptimization> (viewed 16 May 2011).

⁶⁸ Adobe, "Adobe SiteCatalyst—Video Analytics," 2010.

⁶⁹ In December 2009, for example, Tremor Media launched "Rx In-Stream, the first in-stream advertising solution created to address the unique needs of the pharmaceutical industry." Among those unique needs is the FDA's fair balance requirements, which "...

require that the benefits and risks of prescription drugs are displayed equally.” Tremor Media’s technology appears to allow pharmaceutical to meet the minimum requirements of the fair balance law, while ensuring that the focus of the video messages remains squarely on the brand and its purported benefits: “With Rx In-Stream, Tremor Media provides the only solution in the market that gives pharmaceutical advertisers the means to satisfy these requirements in online video advertising without having to rely upon long-form video ads to communicate Important Safety Information (ISI). Rx In-Stream allows advertisers to create shorter-form, pre-roll advertising because they can utilize the companion banner for ISI while using the video to focus on product messaging and branding.” “Tremor Media Launches Rx In-Stream to Help Pharmaceutical Advertisers Meet FDA Guidelines,” 9 Dec. 2009, <http://www.tremormedia.com/about-us/news-room/press-releases/december-9th-2009/> (viewed 30 Sept. 2010).

⁷⁰ Yahoo, “Reframing Online Video,” http://l.yimg.com/a/i/us/ayc/pdf/eiva_case_study.pdf (viewed 16 May 2011).

⁷¹ PointRoll, “The Online Advertising Prescription: PointRoll Rich Media,” <http://www.iirusa.com/upload/wysiwyg/2010-P-Div/P1506/PointRoll.pdf> (viewed 18 Nov. 2010). For a discussion of “day-parting,” “snack-sized” content, and targeting “moms” with video advertising, see Jessica Hogue, “Online Video: Consumption Habits of the Power Mom,” PowerPoint presentation, iMoms, 2011, <http://s3.amazonaws.com/SummitPPTs/2011-05-iMoms-MasterClassBOnlineVideo.ppt> (viewed 18 Nov. 2010).

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⁷³ See, for example, Mark Riseley, “Unlocking the Power of Online Video,” presentation at IAB Interact 2011, Barcelona, http://www.iabeurope.eu/media/53124/day1_research_stream_1615_unlocking_the_power_of_online_video_google.pdf (viewed 25 June 2011).

⁷⁴ For a review of the state of mobile marketing, behavioral targeting, and related concerns, see Center for Digital Democracy and U.S. PIRG, “Complaint and Request for Inquiry and Injunctive Relief Concerning Unfair and Deceptive Mobile Marketing Practices,” Federal Trade Commission Filing, 13 Jan. 2009, http://www.democraticmedia.org/current_projects/privacy/analysis/mobile_marketing (viewed 15 June 2009). As part of a national ad campaign in England for its Breathe Right anti-congestion product, GlaxoSmithKline received 25,000 responses to a text call-to-action

that ran in the last five seconds of a 20-second TV ad, exhausting the supply of product samples half-way through the month-long campaign. Once the participants received their samples, they then received periodic SMS reminders to use the product. "We were overwhelmed by the scale of response to this campaign," declared Lee Beale, brand manager for Breathe Right at GlaxoSmithKline. "It proves the power of mobile in connecting with our customers, and provides valuable customer data capture for ongoing marketing activity with these customers." Incentivated, Ltd., "Mobile Response to TV Campaign Shifts 25,000 Samples for GlaxoSmithKline in 2 Weeks," 26 Mar. 2009, <http://econsultancy.com/us/press-releases/4173-mobile-response-to-tv-campaign-shifts-25-000-samples-for-glaxosmithkline-in-2-weeks> (viewed 30 Sept. 2010). Not surprisingly, social media monitoring now extends to the mobile platform as well. WebMD, whose social networking platform, WebMD Health Exchange, "builds on the hundreds of health communities that previously existed on our site and that now more closely integrate the social health experience throughout each of our core content areas," has moved aggressively into the mobile arena. As the company recently reported, "Our penetration into the mobile health information market has also continued to expand this quarter. WebMD mobile for consumers was nearly 1.6 million downloads since launch, provides consumer with a vital interactive health tools to check the personal symptoms, find drug, treatment, even emergency first aid information, all on the same mobile health applications." "WebMD Health Corp. Q1 2010 Earnings Call Transcript," 4 May 2010, <http://seekingalpha.com/article/202961-webmd-health-corp-q1-2010-earnings-call-transcript> (viewed 16 June 2010).

⁷⁵ Brian Dolan, "Current Global mHealth Opportunity is \$50B," *mobihealthnews*, 24 Feb. 2010, <http://mobihealthnews.com/6684/current-global-mhealth-opportunity-is-50b/> (viewed 10 Nov. 2010).

⁷⁶ Peter Nalen, "Mobile Marketing for Pharma: An Innovation Lab Whitepaper," *Compass Healthcare Communications*, 1 Nov. 2009, <http://www.compasshc.com/blog/mobile-marketing-for-pharma-an-innovation-lab-whitepaper/01/11/2009/> (viewed 16 Feb. 2010). One candidate for FTC review for mobile privacy concerns is, for example, the new iPhone application introduced recently by Bayer on behalf of its multiple sclerosis treatment, Betaseron. According to a company press release, "myBETAapp is the newest offering in Bayer's comprehensive patient support program, BETAPLUS®. The application provides patients with injection reminders, injection site rotation assistance and injection history.... With active phone service, patients enrolled in the BETAPLUS program can dial directly to speak to BETA Nurses, who are specially trained in MS...." "Bayer HealthCare Launches First iPhone Application with Personalized Tools to Assist People on Betaseron® (interferon beta-1b) in Managing Their Multiple Sclerosis Treatment," <http://finance.yahoo.com/news/Bayer-HealthCare-Launches-prnews-2762087426.html?x=0&.v=1> (viewed 10 July 2010).

"myBETAapp lets you:

- See today's injection plan at a glance
- Know when and where your next injection is scheduled
- Track and record injections
- Get autoalerts when it's time for your next injection
- Customize your injection site rotation plan
- E-mail your injection history to yourself and your healthcare team.

Bayer HealthCare, “myBETAapp,” http://betaseron.com/patients/betaplus/services_support/my_beta_app.jsp (viewed 10 July 2010).

⁷⁷ Rimma Kats, “Rite Aid Drives Consumers In-store via SMS Service,” *Mobile Commerce Daily*, 23 Sept. 2010, <http://www.mobilecommercedaily.com/rite-aid-drives-consumers-in-store-via-sms-service/> (viewed 19 Oct. 2010).

⁷⁸ Dan Butcher, “CVS Enables In-app Payments for Prescriptions,” *Mobile Commerce Daily*, 28 July 2010, <http://www.mobilecommercedaily.com/cvs-lets-users-pay-for-prescriptions-find-nearest-pharmacy-via-mobile/>; Rimma Kats, “CVS Pushes Weekly Sales in App to Encourage Purchases,” *Mobile Commerce Daily*, 19 Oct. 2010, <http://www.mobilecommercedaily.com/cvs-pushes-weekly-sales-in-app-to-encourage-purchases/> (both viewed 19 Oct. 2010).

⁷⁹ As the recent agreement between the FCC and the FDA concerning wireless medical technology makes clear, the mobile arena looms large in the future of healthcare in the U.S. In July, “FCC Chairman Julius Genachowski and FDA Commissioner Margaret Hamburg signed a memorandum of understanding and released a joint statement of principles at the beginning of a two-day conference on wireless medical technology. Calling the partnership “unprecedented,” Genachowski said that “all Americans stand to benefit from wireless-enabled health solutions. The FCC’s National Broadband Plan, released in March, called on the government to streamline processes to promote wireless medical technology.” Sara Jerome, “FCC, FDA Unveil Partnership to Promote Wireless Medical Technology,” *Hillicon Valley*, 26 July 2010, <http://thehill.com/blogs/hillicon-valley/technology/110845-fcc-fda-unveil-partnership-to-promote-wireless-medical-technology> (viewed 30 Sept. 2010).

⁸⁰ David Barton, “Health Digital Check-Up: What’s a QR Code Anyway?” *Edelman Digital*, 5 Apr. 2011, <http://www.edelmandigital.com/category/viewpoints/health-digital-check-up/> (viewed 11 May 2011).

⁸¹ David Barton, “Health Digital Check-Up: Social Health is King at SXSW,” *Edelman Health*, 22 Mar. 2011, <http://www.edelmandigital.com/category/viewpoints/health-digital-check-up/> (viewed 11 May 2011).

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⁸⁴ HCPlexus, <http://hcplexus.com/mobile-solutions/TLBB-Mobile>; HCPlexus, “Brand Launch Program,” <http://hcplexus.com/Multi-Platform-Solutions/Brand-Launch-Program>; HCPlexus, “Physician Relationship-Building,” <http://hcplexus.com/Multi-Platform-Solutions/Physician-Relationship-Building> (all viewed 9 Nov. 2010).

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Advertising, "BBDO And Microsoft Advertising Study Finds People Carry 'Lovers' in Their Pocket," 20 June 2011, <http://www.microsoft.com/Presspass/press/2011/jun11/06-20msbbdopr.msp> (both viewed 25 June 2011).

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⁸⁷ CFvoice.com, http://www.cfvoice.com/index.jsp?usertrack.filter_applied=true&NovaId=2935376878975870295 (viewed 16 May 2011).

⁸⁸ How I Fight MS, <http://www.howifightms.com/> (viewed 16 May 2011).

⁸⁹ About Heavy Periods, <http://www.aboutheavyperiods.com/>; Grey Healthcare Group, "Our Work," http://www.ghgroup.com/ghg_our-work_interactive.aspx (both viewed 11 May 2011).

⁹⁰ Voices in PAH, <http://www.voicesinpah.com/> (viewed 16 May 2011).

⁹¹ "New Way RA Online Talk Show Kicks Off Second Season with New Experts, Insights, Tools & Tips for Living with Rheumatoid Arthritis (RA)," 17 May 2010, <http://multivu.prnewswire.com/mnr/newwayra/43761/> (viewed 30 Sept. 2010).

⁹² StarttheTalk.com, <http://www.startthetalk.com>. One to One Interactive, "Interactive Portfolio: GlaxoSmithKline: Start the Talk Unbranded Genital Herpes Campaign," <http://www.onetooneinteractive.com/otoinsights/portfolio/?cat=136&post=250>. The "maker and marketer of Valtrex, an expensive brand name drug for the treatment of herpes symptoms (not a cure)," GSK also ran a related campaign, "Say Yes to Knowing," directed specifically at black audiences (who have "greater than twice the rate of infection by herpes than whites [48% vs. 21%]"). John Mack, "GSK's Race-based Herpes Awareness Campaign," Pharma Marketing Blog, 27 July 2007, <http://pharmamkting.blogspot.com/2007/07/gsk-race-based-herpes-awareness.html>. According to the *Washington Post*, "Glaxo has previously targeted blacks for messages about diseases especially prevalent among them. It promoted the diabetes drug Avandia by direct mail, hired basketball star Magic Johnson for advertisements about AIDS treatment and engaged football player Jerome Bettis for an 'asthma awareness' project." David Brown, "Herpes Awareness Project Divides Health Officials," *Washington Post*, 24 July 2007, <http://www.washingtonpost.com/wp-dyn/content/article/2007/07/23/AR2007072301583.html> (all viewed 30 Sept. 2010).

⁹³ 1in3people.com, <http://www.1in3people.com/index.html>; Voices of Meningitis, <http://www.voicesofmeningitis.com/> (viewed 15 May 2011). "Integrated Online Campaign:

Health/ Pharmaceutical: Publicis Modem; Sanofi Pasteur, "Voices of Meningitis," *OMMA Magazine*, 1 Sept. 2010, http://www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=135127 (viewed 30 Sept. 2010). "Pharmaceutical companies have begun creating a presence on Facebook characterized by control and caution," explains Sara Inés Calderón on the Inside Facebook website. "Why? Despite unclear regulations in the U.S. governing their presence online, they may still be penalized for marketing materials on the Internet. The result is, in terms of their Facebook marketing content, a mixed bag of sometimes disingenuous Pages and Groups, fluffy applications and tightly-controlled discussions.... Some companies also offer a Page or Group around a cause related to a drug. This is an especially gray area. Some examples we looked at clearly disclosed their sponsor relationship while others didn't—either way, it appears that companies can be liable in some circumstances.... Epilepsy Advocate, with 4,300 fans describes its Page as, 'a community of people living well with epilepsy, their family members, and their caregivers. Epilepsy Advocates are people just like you who have shown the courage to share their stories and provide support to others.' Nowhere on the page, however, does it note that Epilepsy Advocate is a program sponsored by the pharmaceutical company UCB, which makes drugs for the treatment epilepsy. Although there are no strict laws governing pharma on social media, is it legal to promote an organization sponsored by a drug company without saying so?" Sara Inés Calderón, "Big Pharmaceutical Companies Making Cautious Plays for Facebook Users," *Inside Facebook*, 8 Feb. 2010, <http://www.insidefacebook.com/2010/02/08/big-pharmaceutical-companies-making-cautious-plays-for-facebook-users/> (viewed 29 June 2010).

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⁹⁵ InBedStory Channel, <http://www.youtube.com/user/inbedstory>. The In Bed website is no longer active, and its erstwhile URL (<http://www.in-bed.info/>) is now re-directed to the Levitra "Erectile Dysfunction Treatment" website, <http://www.levitra.com> (both viewed 25 June 2011).

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⁹⁷ FluFix Video Contest, http://www.youtube.com/watch?v=fVefMW_Z4pQ (viewed 25 June 2011).

⁹⁸ Growth Hormone Therapy Channel, <http://www.youtube.com/user/GrowthHormoneTherapy> (viewed 25 June 2011).

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¹⁰² UC Success Channel, <http://www.youtube.com/user/UCSuccess> (viewed 25 June 2011).

¹⁰³ Jonathan Richman, "Healthcare & Social Media: The Rules of the Game," personal copy. Sanofi-Aventis and Intouch Solutions created GoInsulin.com, "an unbranded Web site supporting a national campaign designed to empower people with type 2 diabetes to take control of their disease. The Web site encourages well-informed decisions about diabetes and insulin and ways to overcome doubts and fears associated with taking insulin." The producer of two insulin products, Apidra and Lantus, Sanofi-Aventis also created a YouTube channel celebrating "Insulin Success Videos." YouTube, goinsulin's Channel, <http://www.youtube.com/user/goinsulin>. The U.S. branch of Boehringer Ingelheim, a pharmaceutical company based in Germany, set up a Twitter channel, boehringerus, to make product announcements and provide links to other health-related campaigns, such as the company's unbranded Drive4COPD effort, "a national public health campaign that aims to find the 'missing millions' of people who may have Chronic Obstructive Pulmonary Disease (COPD)," which also includes Facebook and YouTube components. boehringerus Twitter channel, <http://twitter.com/boehringerus>; Drive4COPD, http://www.drive4copd.com/#_jmp0_; Jaimy Lee, "Social Media, Celebrities Factor into COPD Campaign," *PRWeek*, 8 Feb. 2010, <http://www.prweekus.com/pages/login.aspx?returl=/social-media-celebrities-factor-into-copd-campaign/article/163372/&pagetypeid=28&articleid=163372&accesslevel=2&expiredays=0&accessAndPrice=0> (all viewed 16 Feb. 2010).

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¹¹⁰ Laurie Sullivan, "Google Taps Eye-Tracking Research For YouTube Ads," *MediaPost*, 18 May 2011, http://www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=150525 (viewed 19 May 2011).

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¹¹² Jack Bush and A.K. Padreep, “Maximizing Message Impact for Alcon Laboratories,” presentation at the 2009 annual national conference of the PMRG, 8-10 Mar. 2009.

¹¹³ James Chase, “Alcon Labs Uses Brains to Test Ad Effectiveness,” *Medical Marketing & Media*, 15 Mar. 2009, <http://www.mmm-online.com/alcon-labs-uses-brains-to-test-ad-effectiveness/article/129850/>.

¹¹⁴ “Nielsen Makes Strategic Investment in NeuroFocus, An Innovative Leader in Neuromarketing Research,” 7 Feb. 2008, http://www.nielsen.com/media/2008/pr_080207.html (viewed 24 Sept. 2008). See also NeuroFocus, <http://www.neurofocus.com/> (viewed 16 Feb. 2010).

¹¹⁵ A.K. Pradeep, “Absorption: How Messages Morph into Meaning and Value in the Mind,” Sept. 2008, http://www.neurofocus.com/pdfs/NeuroFocusWhitePaper_Absorption.pdf (viewed 16 Feb. 2010). More generally, NeuroFocus’s Padreep has spoken of his company’s Social Operating System: “Until now, the focus has been on hardware (three screens) and media distribution channels, but that perspective misses the larger phenomenon that is altering marketing on a worldwide and permanent basis,” said Dr. A. K. Pradeep, Chief Executive Officer of NeuroFocus. “Companies would be wise to stop dwelling on these silos and shift their attention to this new ‘Social Operating System’. It is remaking marketing, and through brainwave measurements and analysis we are quantifying the effects on consumers’ subconscious responses across multiple platforms. The medium is no longer the message; instead, it’s context that influences how consumers conceive of your brand.”

“The brainwave-based research revealed the power of social media as a marketing communications platform. Topline findings are:

- Highest overall effectiveness for the ad, especially with women: Facebook
- Purchase intent generated by the ad: highest on both Facebook and TV
- Messaging carried by the ad strongest on: Internet platform, with Facebook stronger than website
- Highest attention-getter: Internet.

“Neurofocus Defines New ‘Social Operating System’ as Critical Component of 21st Century Marketing,” 6 Apr. 2010, <http://www.prnewswire.com/news-releases/neurofocus-defines-new-social-operating-system-as-critical-component-of-21st-century-marketing-89984287.html> (viewed 4 Oct. 2010).

¹¹⁶ Specifically, Alcon asked NeuroFocus to use its proprietary methodology to answer:

- What are the most influential and most distracting components of this DTC ad?
- Which demographic is impacted most strongly? Least? Why?
- Did the audience act—did they make doctors appointments to obtain a prescription? Why or why not?
- What is the longevity of its influence/motivation?

Subconscious Resonance testing revealed how strongly or weakly the spot communicated client-determined attributes (such as “relief” and “fast-acting”). These unconscious attributes are revealed neurologically at a pre-verbal level and would have been impossible to obtain using traditional verbal self-reporting measures. Gender differences revealed in the brainwave response also gave Alcon critical information about its consumers’ deepest responses to their product. Recommendations were made

to emphasize some attributes in subsequent print and online spots, and to de-emphasize others, in accordance with Alcon's campaign goals.

Chase, "Alcon Labs Uses Brains to Test Ad Effectiveness." Swiss pharmaceutical giant Novartis is currently in the process of acquiring Alcon. Katie Ried, "Novartis to Push Ahead with Disputed Alcon Buyout," Reuters, 26 Aug. 2010 (viewed 8 Sept. 2010).

¹¹⁷ Jack Bush and A.K. Padreep, "Maximizing Message Impact for Alcon Laboratories," presentation at the 2009 annual national conference of the PMRG, 8-10 Mar. 2009.

¹¹⁸ See, for example, "Microsoft and Mediabrands Unveil Groundbreaking Research," PRNewswire, 9 Dec. 2009, <http://www.prnewswire.com/news-releases/microsoft-and-mediabrands-unveil-groundbreaking-research-78874342.html>; "New MTV Networks Study Reveals The "Game Plan" For Casual Gaming Advertising," 10 June 2009, <http://www.casualconnect.org/newscontent/06-2009/casualmtv.html>; Laurie Sullivan, "In-Game Ads In The Ad Game," *Online Media Daily*, 16 June 2009, http://www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=108089; Laurie Burkett, "Neuromarketing: Companies Use Neuroscience for Consumer Insights," *Forbes*, 29 Oct. 2009, <http://www.forbes.com/forbes/2009/1116/marketing-hyundai-neurofocus-brain-waves-battle-for-the-brain.html>; Mike Shields, "Google, MediaVest Gauge InVideo Responses," *AdWeek*, 23 Oct. 2008, http://www.adweek.com/aw/content_display/news/digital/e3i47a4eaa11fb7b68ac541297ba68a5860; Mark Walsh, "Google: This is Your Brain on Advertising," *Online Media Daily*, 23 Oct. 2008, http://www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=93319. In "Google Video Advertising Solutions for Advertisers," the company explains how online video is more powerful ad medium than TV, <http://www.youtube.com/watch?v=jn05M2WdDlq> (all viewed 16 Feb. 2010). Elsewhere, Google claims that "New ad formats call for new measurement":

- Directly measure brain response using EEG (measures brain activity in milliseconds, before conscious "deliberation")
- Eye-tracking, pupil dilation, and GSR (or skin response) further tracks attention and emotional reactions
- Diagnostic-level measurements show precise identification of participants' attention, memory, retention, and emotional engagement

Google and MediaVest, "Research in Biometric Engagement with InVideo Overlay Ads," WebEx event, n.d.

¹¹⁹ "Draftfcb Launches Institute of Decision Making," 30 June 2010, <http://www.draftfcb.com/press-release.aspx?press=265> (viewed 30 Sept. 2010).

¹²⁰ "Subjects were first asked to just 'surf the Web' to establish their eye-tracking patterns (and rapport with the facilitator). Once the device (an SMI iView X RED) was calibrated, the unit remained unnoticed by the participants and enabled the recognition of scanning and reading behavior for each participant.... Analyzing the entire population, we distilled three distinct personas ['Allen,' 'Christina,' and 'Vivian'] with similar needs but significantly different values that inform the content, design, and placement of ads.... The best strategy to reach Allen is through a sponsored partnership.... The best strategy for engaging with Christina is the use of quizzes, polls, and the promise of interactive content that will allow her to express.... The best strategy for Vivian is to appeal to her empathy with the promise of

personally relevant content on a topic of personal interest....” Dante Murphy and Georgia Spangenberg, “e-Marketing: Awareness and Engagement in Online Health Advertising,” *Med Ad News*, Oct. 2009, <http://pharmalive.com/magazines/medad/?issueid=154> (subscription required).

¹²¹ “How Can You See into the Mind of a Consumer?” <http://www.olsonzaltman.com/> (viewed 30 Sept. 2010).

¹²² Brian Knutson, Scott Rick, G. Eliot Wimmer, Drazen Prelec, and George Loewenstein, “Neural Predictors of Purchases,” *Neuron* 53: 147-156; Alain Dagher, “Shopping Centers in the Brain,” *Neuron* 53: 7-8.