Since the earliest years of the movement, birth control advocates have used every medium available to broadcast information about contraception, from pamphlets to posters, radio to film (Tone, Parry). In the digital age they are also using websites, Twitter, and SMS messaging (Lim, “Young”). In fact, in the United States, digital strategies are rapidly overtaking television, which was until very recently lauded by health communication experts as an “almost ideal” medium for sex education, due to its “accessibility, frankness, and appealing nature” (Ward and Friedman 134). Despite significant progress integrating sexual health messaging into mainstream programming since the 1960s, the majority of sexual content on television today includes a narrow range of representations of gender roles and sexuality, and only rarely references effective contraceptive use.

Of course the Internet also includes a great deal of negative and stereotypical sexual content, although new media can present a broader diversity of identities and activities because it can reach “niche” audiences rather than relying on broad mainstream markets. “Moral panics” regarding the influence of sexualized media on young people have accompanied the introduction of every new format, from silent film to home video, and the ease of distributing illegal, abusive, or extreme content over the Internet has created concern among researchers, policy makers, and advocacy groups. Certainly digital tools allow people outside of the formal networks of media production to create and distribute material on sex and reproduction.

This diversified landscape includes large quantities of misinformation, particularly regarding contraception and abortion. While some misleading
material comes from organized sources with a long record of such activities (such as crisis pregnancy centers, who discourage abortion by linking it to negative health consequences on their websites, in the literature they distribute, and in clinic consultations), a large amount also appears to have been produced independently or by unknown individuals or groups, such as YouTube videos claiming to share personal experiences with particular types of contraception (Bryant et al.; Luttrel, Zite and Wallace). For some of those working in reproductive health, such developments create an urgent need for "expert" online information provided by medical professionals. They cite potential misuses of these newly accessible resources, such as unmonitored use of hormonal contraceptives despite personal risk factors, or even the attempted self-insertion of IUDs (Bryant-Comstock et al.). A wider group worries more simply about the accuracy of information online. Indeed, health communication professionals frequently cite misleading or missing information on the web as a core reason to move their own work there, especially given that 75 percent of Americans use the Internet to locate health-related information (Allen et al. 316). The Internet may be an especially important source of information for young people, particularly in regions where comprehensive sex education is not available in schools, such as Oklahoma and Alabama, with some of the highest rates of teen pregnancy in the United States and where sex education is not mandated in the curriculum (Strasburger and Brown El-E2). Despite federal measures to improve sex education countrywide, formal sex education declined between 2000 and 2014, with rural areas worst affected (Guttmacher Institute 2).

Despite the fears of some health professionals (and much to the chagrin of conservative opponents of comprehensive sex education), it is indeed possible to find accurate information and positive "testimonials" about the use of different types of contraception online (Paul, Duvet and Boraas 322; Allen et al. 316). To a large degree, however, health professionals no longer control such material or serve as the gatekeepers to information and services. In the transition from television to the tablet computer as well as laptops and smartphones, activists and advocacy groups have joined health professionals in creating and sharing messages about contraception and sexual health online. I focus here on three types of digital projects—informal, entrepreneurial, and institutional—that are reshaping the presentation of the pill. All offer opportunities to reframe the narratives and images used to promote contraception in the media, including representations of the pill.

From TV to PC

Health communication researchers have consistently encouraged campaigners to go where audiences are already gathered and to adapt to the forms of media that they enjoy. For American audiences in the last 30 years, this primarily meant entertainment television. Since their initial breakthrough projects in the 1960s and 1970s, family planning promoters have successfully integrated contraceptive messaging into a range of mainstream programming. This includes shows targeting young audiences directly, such as Moesha and Felicity, as well as those marketed to older viewers but with a large contingent of adolescent viewers, such as Friends and ER (Parry 132–34; Collins et al.; "The Impact of TV's Health Content"). The emergence of HIV/AIDS gave a new legitimacy to such work, but also increased the likelihood that if any contraceptive was represented, it was most likely to be a condom, a barrier method that could prevent the transmission of HIV as well as unplanned pregnancy (although the pill has also been featured in American television, as Schleich and Nesselhauf discuss in this volume).

The relationship between family planning and public health organizations, and their collaborators in the entertainment industry, is therefore fairly well-established, if a little rocky at times. In the 21st century, references to contraceptive use, especially when tied to young adult characters, are rare compared to depictions of sexual acts, and are still controversial among media producers as well as media critics. Some media producers have been happy to work with health professionals, but only in specific circumstances, and to a limited degree. While they might be willing to integrate health messages in a new program, for example, they tend to be less receptive as a program becomes increasingly popular. Although they may adopt aspects of a scenario proposed by their health communication colleagues (as a public service and in return for guidance on technical aspects of a particular storyline, for instance), they tend to opt for the most dramatic plot resolution rather than the most educational one. In some instances, this has even undermined intended messages (Collins et al.). Moreover, mounting evidence of the limits of such "entertainment-education" to promote sustained awareness or behavior change has undermined the use of TV as a core strategy for the promotion of contraceptive use, as has criticism of the "preachy" uses of drama to promote moral messages about sex for young audiences (Moyer-Guse; Buckingham and Bragg).

The relevance of television for family planning promotion was briefly revived by a shift from drama to so-called "reality" television with the launch of 16 and Pregnant, however. The series was developed by MTV and the National Campaign to Prevent Teen and Unplanned Pregnancy, and launched in 2009. Episodes profile young women (and more rarely, their partners) as they deal with unplanned pregnancies. It has spawned three spin-off Teen Mom series, and by 2010 had become the most highly-rated cable show among female viewers 12–34 years of age ("MTV Greenlights Season Two"). Initially, commentators embraced the producers’ claims that the show has a "contraceptive" power, given the depressing depictions of life as a young parent that
it presents (Dolgen; The National Campaign to Prevent Teen and Unplanned Pregnancy; Dinh). While occasionally criticized for "glamourizing" teen pregnancy by making minor celebrities out of the participants, overall, media critics agreed that the young men and women featured are often in quite desperate and difficult circumstances (Henson; Grossberg; Montalvan). Yet most public health researchers are less convinced of the claims made for the impact of the series. Certainly, teen pregnancy rates, on the decline in America since the 1990s (but still significantly higher than in comparably wealthy nations), have decreased more sharply since 2008 (CDC; Kearney and Levine 3598). While this coincides with the period that 16 and Pregnant has been shown on MTV, it also maps onto the economic downturn, and must surely reflect multiple factors that go beyond the persuasive power of a single television series. Moreover, while studies of Google Trends and Twitter suggest that airings of the show coincide with increased web traffic regarding contraceptive use and abortion (Kearney and Levine 3597), any long-term impact on sexual behavior and contraceptive use has been harder to prove (Brewer; The National Campaign to Prevent Teen and Unplanned Pregnancy; Wright, Randall and Arroyo).

Recent research has even concluded that as a result of watching the show, young women, whether they identify with those featured or not, are likely to underestimate their own risk for unintended pregnancy (Martins and Jensen). The more the viewers identified with the teen moms on the show, "the more they accepted myths about teen pregnancy, the less they believed themselves to be at risk for teen pregnancy, the more they perceived the benefits of teen pregnancy to outweigh the risks of teen pregnancy, and the more favorable their attitudes about teen pregnancy." Researchers concluded that while the reality-style format might be more popular with young viewers than traditionally scripted television, the approach nevertheless undermined the efficacy of any intended health message due to inconsistencies in the casts' statements: "the stories are told through the perspective of the young girls who have contradictory things to say about teen pregnancy, who might under-sell the value of prevention and contraception, and who might convey the notion that teen pregnancy is a way to garner attention from others, if not the people in their lives who are featured on the episodes, then at least from MTV who put them on TV" (Aubrey, Behm-Morawitz and Kim 1156–57). As a result, the television series cannot be celebrated as an unequivocal success.

Informal Sex Ed

Yet 16 and Pregnant is nonetheless a good example of the potential of the Internet to transform the way information about sex and contraception are developed for, with, and by young people themselves. Online platforms offer the opportunity to "talk back" to the messages of the show, either via organized social media campaigns or by following individuals who publicly share their own responses. As well as an MTV website to accompany the series, the show has inspired parody videos, produced primarily by teenage girls (with a smaller number made by boys), with between a few thousand to more than 100,000 views on YouTube (Cunningham). As well as offering insights on the reception of the original television show among members of the target audience, these videos and the online comments posted by those who watch them also reveal themes—such as misunderstandings about the use and efficacy of contraceptive methods—that could then become the focus of targeted education efforts via links and comments posted to the discussion thread. Fan forums (online communities where enthusiasts of particular books, shows, or films share comments and debate plotlines), are similarly being studied as a source of "peer-to-peer education," where young people are educating one another, with or without the input of "experts" sanctioned by public health professionals (Masanet and Buckingham). While such networks of informal sex education depend on their members' access to, and understanding of, reliable information, the same is true of the similar networks of exchange that preceded the Internet, from conversations in the school playground to discussions huddled around a library book. In fact, some new media theorists would argue that the scaling up of the groups involved in such activities, as made possible by the Internet, increases the likelihood of misinformation being discredited and accurate information being validated via the so-called "wisdom of crowds."

I define this kind of "informal" sex education as self-produced by an independent individual, often in response to more formally-produced media, as a celebration or critique of the messages contained therein. As an alternative to traditional sources of sex education such as school curricula, parents, and the mass media, as well as the narrow visions of appropriate sexuality they often provide, young men and women can thus choose their preferred sources of information from a wide array of material online. A large amount of informal sex education resources has been crafted by amateurs and activists, just as much health information produced by the women's movement was created by feminists without formal medical or public health training. Such diversification means that a far greater range of ideas about contraceptive use can now be found online, where researchers can filter information to safely locate material that "aligns with their values on sex and sexuality" (Edwards 273). Blogs commenting on representations of sexuality in the media, on reproductive health politics, and on personal experiences provide commentary and informal community-building around homosexuality, transgender issues, sexual expression, and sexual politics,
Entrepreneurial Sex Ed

Another influential form of online information, and one that is less vulnerable to online intimidation tactics, I characterize as "entrepreneurial," as this is developed by an individual or small team, with a specific educational goal, and usually financed from a mix of public funding and commercial profits. Popular examples of this sort of project include the website Scarleteen, as well as its successor from the 1990s, gurl.com, and the university-hosted sexual health site Go Ask Alice (1993). As the website names suggest, the majority of this material is clearly aimed primarily at young women, mirroring the emphasis on female responsibility for preventing pregnancy common to sexual education campaigns since the 19th century. However, the tone has shifted from that traditional message of burden and responsibility, to instead emphasize female empowerment, particularly in the Scarleteen project. Moreover, the websites are undoubtedly read by young men, and indeed young men's questions and perspectives are often included.

Scarleteen was founded by activist and teacher Heather Corinna, who relates her interest in sexual health education to her own experiences as a young person who identified as bisexual from a young age and who has experienced sexual assault and abuse (McNeilly, "Scarleteen's Heather Corinna on the Future of Sex Education"). Corinna's sex-positive, often explicitly feminist, approach to "inclusive" and "comprehensive" information arises from the three main problems she identifies today—a highly sexualized media culture with unrealistic representations of sexuality, the legacy of abstinence-only education on sexual knowledge, and the negative fear or shame-based tone of much existing education (McNeilly, "Getting to Know Heather Corinna"). At the time of writing, the main articles previewed on the homepage included "D.I.Y. Sex Toys: Self-Love Edition," "When Sex 'Just Happened' and How to Make It Happen Instead," and "Driver's Ed for the Sexual Highway: Navigating Consent" (Scarleteen/Corinna). Throughout the tone is casual, often comedic, but with a recurring emphasis on consent, boundaries, and the wide range of preferences possible among readers. Speaking in 2014 about the future of sex education in an interview for the online magazine Sex, etc. (run by a foundation from Rutgers University and with teenage writers on staff, and using the tagline "By teens, for teens"), Corinna emphasized the importance of being an "ally," a term commonly associated with straight support for gay rights, saying that peer educators should be as supportive of all choices among friends, whether they do not want to have sex or are interested in doing so (McNeilly, "Scarleteen's Heather Corinna on the Future of Sex Education").

She concluded the interview with a call for young people to empower themselves to educate their peers. Noting that young people often get their messages from one another, regardless of the range of information and misinformation now circulating, she encouraged readers to "learn about sexuality from accurate sources and with a very open mind, so that when friends have questions, you have good answers. Get connected with all your local resources for sexuality and sexual health, and be the friend who everyone knows is the one to ask when they need help accessing resources—like a clinic" (McNeilly, "Scarleteen's Heather Corinna on the Future of Sex Education"). The reference to the clinic is an interesting one in the context of this collection's focus on the contraceptive pill and reproductive rights. It reveals the continued relevance of clinic services in the provision of contraception for young people, no doubt because the pill, the IUD, and other long-acting contraceptives remain important female-controlled options for young women still learning how to navigate condom use with perhaps unwilling partners.

In the website's "Birth Control Bingo," a 25-page guide to different contraceptive methods, the pill is presented as "one of the most popular methods of birth control" and "one of the most thoroughly researched and studied medications in history" (Scarleteen/Corinna). A lengthy textual overview includes references to positive and negative side effects, efficacy rates based on perfect or ideal versus typical use, and reasons why the pill might not be suitable or might be ineffective. The tone overall is fairly enthusiastic, with even limitations being framed in a positive way, as in "When Good Birth Control Does Bad Things," the title of a section on reasons the pill might fail. There is one section early on in the page that draws attention to the potential difficulties associated with teenagers using the pill reliably, saying,

Some adolescent-specific studies on the pill have shown that it is less effective for adolescents in typical use than it is for adults. One study found that teens' ability to
use the pill properly was as low as only 45% with the first three months of use, and only 33% with one year of use. So, if you're going to use the pill, as with other methods, be sure you study up on what proper use means and make it a goal to stick to it as best you can. If you're not sure you can take it correctly every single day, you can always back up with condoms: that gives you nearly 100% effectiveness and STI protection the pill does not provide.

Words in italics are hyperlinked to additional information on the terms used or the issues described. It is notable here that the reader is encouraged to try their best, to "study up" on what that would mean, and encouraged to use condoms as a back-up method, rather than directed to choose an alternative method such as the IUD or implant. The implicit assumption is that young people can reliably evaluate their own capacity to follow the regimen and decide when they need to use a back-up or alternative method.

This website resists two of the most common assumptions of online communication to teenagers about sexual health—that it must be multimedia rather than text-heavy, and that it should avoid overloading young people with too much information that is too complicated. Firstly, this section, like most of the site, is decidedly text-heavy, relying on extensive explanations with catchy sub-titles. Although the tone is friendly, medical language and technical terms are frequently used, rather than simplified. Secondly, the site references and links to additional information such as the original reports by reproductive health agencies, rather than summarizing relevant information and excluding extensive additional resources (especially those written for medical professionals rather than the intended youth audience). The sense overall is that young people can understand detailed information and they should be given access to multiple sources to evaluate its credibility and applicability for themselves. Reviewing a sample of posts to the message boards, it appears that some of the site's users are older than the teenage audience implied in the name Scarleteen, as some identify themselves as college age or older. The myths and misinformation among many people posting on the message boards does suggest an active community of younger users too, although it is possible that some are using the message boards precisely because they find the information on the site difficult to follow. Of course no one solution would serve all visitors, and the blend of expert and peer-to-peer education that this project accomplishes is better integrated than in other projects, and surely a large part of its popularity.

**Institutional Sex Ed**

In 2011, the National Campaign to Prevent Teen and Unplanned Pregnancy launched a new initiative, this time entirely online. This "institutional" project (meaning one developed by a large, established organization, developed with major health organization and media partnerships, and secured by long-term funding) is a not-for-profit website and community called Bedside. The site, developed with international design company IDEO, is branded as a "free birth control support network" on the home page and in promotional material (Swiader). The project focuses on adults aged 18–29 rather than adolescents, an emphasis chosen because seven out of ten pregnancies among women in their twenties are unplanned. The website includes information about birth control methods and tools for locating services and providers, options to sign-up for email or text message reminders to use contraception or attend appointments, videos of women in the same age group discussing their experiences with contraception, short animations tackling myths about different kinds of birth control, and blog-type articles with comments from readers.

The approach was intended to be accessible (meaning less densely medical than other resources on the topic) and trustworthy (with a professional tone), and includes humor. Launching the campaign in 2011, CEO Sarah Brown stated, "we need to rebrand contraception as something that promotes self-determination, education and achievement" (Sessions Stepp). In contrast to much previous public health and sex education material, it is also deliberately sex-positive, emphasizing enjoyment rather than risk, and recognizing the role of emotion and "heat-of-the-moment" decision-making (Antonishak, Kaye and Swiader 3). The entrepreneurial efforts of projects like Scarleteen have thus clearly demonstrated the appeal and efficacy of such strategies, which were previously underutilized in "institutional" efforts.

The pill is one of 17 methods discussed on the site, including implants and IUDs as well as the withdrawal method and charting fertility over the menstrual cycle. The representation of the pill emphasizes its long history ("it's been around for 50 years") and positive as well as negative potential side effects (control over periods versus nausea and vomiting, for example). The text repeatedly emphasizes the importance of taking the pill every day, around the same time, as well as the gap between ideal use and actual usage and the resulting impact on failure rates: "You may have seen information about 'perfect use' stating that the pill is 99.7% effective, but the reality is that with typical use it's 91% effective. (That means that of 11 women taking the pill for a year, one will become pregnant)" (Jackson). In a comparison chart with each option graded great, decent, pretty good, or not at all in categories including effectiveness, mistake-proof, and effort, it ranks lower than the IUD and contraceptive implants. In fact, even though the site is purportedly aimed at an older audience, the implicit message is very similar to that traditionally proposed for younger women or others deemed "unreliable" or "non-compliant" in the recent history of family planning promotion in the
United States and around the world: that it is unlikely that they will be “perfect” users and should thus choose a professionally-inserted method that they cannot undermine through their own behavior. Under the heading “It Takes Discipline,” the text emphasizes again, “you’ve got to remember to take your pill at the same time every day. Even on weekends. Even on vacation. So, ask yourself: how good are you with stuff like that?” The one innovation added to this traditionally paternalistic stance is the use of hyperlinks to connect the reader to a comprehensive explanation of what to do if they have missed a pill (depending on the type of pill and the stage in the cycle), and to sign up for email or text message reminders. The site also uses “Provider Perspectives” to cast expert opinions in a more individualistic light, presenting women working in reproductive health with social media-style identities including their name and an informal illustrated portrait. I have yet to find any male providers featured on the site, and although there may be some used occasionally, the overwhelmingly female presence reinforces the framing of this as a women’s resource—by women, for women, as in the style of the women’s health movement or other pro-women (even if not explicitly feminist) media.

The site reflects some recent trends in discussing contraceptive options with users, by emphasizing that non-hormonal options do exist and can be effective, for example. This includes the re-evaluation of the benefits of the withdrawal method—more usually represented in sex education materials as highly risky, but receiving more positive attention by family planning experts and their audiences since a 2014 study declared careful use “as effective as condoms at preventing pregnancy” (Shane).

There are also “Guy’s Guide” videos where a male character named “Guy Nottadadi” describes how he remains not-a-daddy, by explaining contraceptive techniques. The videos appear to be tailored for a male viewership who are framed as largely ignorant and unconcerned, suggesting that the resource is designed for women using the website to share with their partners. In “Introduction,” Guy begins by saying, “Most guys don’t know jack squat about how birth control works,” and “78% of guys admit that they don’t know anything about the pill” (“Guy’s Guide”). In a series of short videos (one to two-and-a-half minutes), Nottadadi argues men should know how birth control methods work, for their own benefit, for the women they have sex with, and in one instance, despite having been “written off” by “a million women who think that birth control information is best left in the hands of women and women alone” (“Guy’s Guide: The Implant”). It is especially interesting that in this video, male lack of knowledge is blamed on women excluding them— not the health professionals who have targeted women as holding primary responsibility for preventing pregnancy for decades.

The videos revel in male stereotypes such as inclusion of frequent shots of women in swimwear or underwear and references to football and voracious appetite (for food and sex). Each is set in a masculine location, sometimes with links to the subject matter—the condom video in a barbershop, the IUD explanation in a garage (where viewers can learn the “mechanics” as Nottadadi rebuilds a car engine), and over the barbecue and in the kitchen where the chemistry of the pill is laid out. Some of the claims contradict information elsewhere on the site, as in the video on withdrawal, which is far less positive about its efficacy than the text on the site. Although the videos present a more traditional view of masculinity than the site does of femininity overall, there are occasional exceptions. The concluding comments of the video on the pill, for example, focus on the idea that until there is a male version, “offering to help her with the costs or remembering when to take it could be very beneficial to your non-parental status” (“Guy’s Guide: The Implant”).

The project as a whole has been well received by media and health professionals. In 2011 it was selected by the Ad Council for nationwide promotion to media outlets, and in 2013 the Ad Council partnered with the National Campaign to Prevent Teen Pregnancy and the BET Networks to develop a second series of materials specifically targeting African American women aged 18 to 29 (Vega). The same year they launched “Thanks, Birth Control” day on November 12, a project which has generated submissions of testimonials and self-produced media from contraceptive users who send in their stories to Bedsider, and on Twitter with the hashtag #ThxBirthControl which won a Webby Award in 2015 (Duberman; Lucas).

After a 2015 evaluation the Bedsider project reported a fairly small but demonstrable impact, the National Campaign to Prevent Teen and Unplanned Pregnancy declared the website “the first digital intervention in reproductive health in the U.S.—with adults as an audience—that has shown to prevent unplanned pregnancy” (Swiader; Sonalkar et al.). Other studies have concluded more tentatively that the website may be useful, especially in conjunction with the advice of a health professional (Jamshidi, Robinson and Burke).

Interestingly, one study found that clinic staff had very different reactions to the site than their clients. While clinic users were “very receptive” and described the website as “trustworthy, accessible and empowering,” staff “had concerns regarding the website’s legitimacy, accessibility, ability to empower patients and applicability” (Gressel et al. 588). Specifically, staff doubted that their community of users could understand terminology used, and thought that some of the representations of sex were “trashy,” “smutty” or pornographic, and unsuitable for young people or promoted an unhealthy message about female sexual availability (Gressel et al. 592, 591). The concerns of the clinic staff limited their willingness to recommend the tool to their patients. The authors of the study ended by asking whether Bedsider “should
be modified to make it more acceptable to providers or, instead, whether we should seek to broaden providers' openness to tools that young women find applicable and empowering" (Gressel et al. 593). The study's juxtaposition of the two disparate interpretations of the site, as trustworthy versus trashy, underlines the core issue at the center of debates over the pill in the digital age—namely who has the authority to inform and prescribe.

Conclusion

As the case studies here confirm, the low cost of producing and disseminating digital media, combined with the reach of the Internet and the power to search and filter results, have transformed the scale of contraceptive information available online (as well as giving broader access to contraceptive technologies). This model of communication and exchange differs significantly from the standard mode developed for the promotion of family planning since the pill was approved for use in the United States, which was based on a model of one-way diffusion, from medical expert to patient. Like public health campaigning more broadly, institutionally-produced material relies on the "diffusion of innovations" technique of delivering messages and services to various individuals or groups, usually with health professionals still serving as gatekeepers. Health communication experts have noted the limits of this model in the new media landscape, noting that "public health has embraced both mass media and interpersonal communication, but the field has not fully recognized the growing benefit of hybrid communication forms like YouTube that add fresh dimensions to interventions and appeal to a growing segment of the population" (Lillie 267). Some of the "interventions" implied here include a complete upheaval of expert-audience diffusion, to instead acknowledge audience input, co-creation, or even critique.

Public health professionals increasingly emphasize the need to meet health information "consumers" where they are already online, on social media sites such as Facebook and content platforms where health professionals are underrepresented, such as YouTube, although the use of the language of consumption reveals a limited understanding of this shift. Emerging public health uses of social media have also drawn on surveillance strategies like YouTube that add fresh dimensions to interventions and appeal to a significantly from the standard mode developed for the promotion of family planning, combining with the reach of the Internet and the power of monitoring behavior." At least one project has used publicly available information to warn teenagers that the behaviors they describe online may well undermine their appeal to those already suspicious of digital media sites such as Facebook and content platforms where health professionals serve as gatekeepers. Health communication experts have noted the limits of this model in the new media landscape, noting that "public health has embraced both mass media and interpersonal communication, but the field has not fully recognized the growing benefit of hybrid communication forms like YouTube that add fresh dimensions to interventions and appeal to a growing segment of the population" (Lillie 267). Some of the "interventions" implied here include a complete upheaval of expert-audience diffusion, to instead acknowledge audience input, co-creation, or even critique.

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Moreover, appealing to audiences increasingly means incorporating their input. Digital users are reframing or completely remaking the media that targets them, rejecting the hierarchy of expert and audience, and reaching out to underserved groups with messaging that respects a growing array of gender identities and sexual behaviors. Furthermore, institutional resources are well-utilized by individuals and entrepreneurs, as Scarletteen's hyperlinks to published research and state and federal information demonstrates. The credibility of those drawing on these "official" resources comes precisely from their location outside of official institutional realms, and from their apparently authentic and spontaneous engagement with their peers (as opposed to a contrived and organized response). So far, entrepreneurial and individual efforts appear to have more quickly adapted to the expectations of the digital age, and most likely will drive changes in institutional approaches. Yet it may be a mistake for those in institutional projects to try to mimic the techniques of their competitors. In this diversified digital age, such competition may in fact prove entirely complementary.

Notes

1. For more on digital strategies for sex education and the promotion of contraception see Albury, Allison, Bull, Gawron, both Jones entries, King, Kofinas, Madathil, Selkie, Simon, and Talukdar.
2. Teen pregnancy rates are from 2014, the latest comprehensive figures available at the time of submission. Strasburger and Brown also note that "many sexually experienced teens (46% of males and 33% of females) report that they had not received any instruction about contraception before they began having sex" (E1).
3. Allen et al. also note the inclusion of negative comments about pain and side effects as part of the generally reliable information provided in 2012, apparently an improvement on research findings four years earlier (316).
4. See, for example, comments by the producer of Modern Family in 2012, regarding sending a female character off to college with a box of condoms (Rose).
5. The authors, both economists, overlook the entire field of health communications research on media for family planning, and unsurprisingly conclude that their findings regarding web traffic also demonstrate the impact of the show on actual practices. Health communication literature is much more cautious in acknowledging a significant gap between knowledge, attitudes, and practice (KAP, in the terminology of the field).
6. The show's cast had also tended to underestimate the risk—one study of four years of episodes of 16 and Pregnant and Teen Mom noted that while none of the participants reported that they were trying to get pregnant, only five of 47 mentioned trying to avoid a pregnancy, but failing, while three-quarters (36 of 47) acknowledged not using any form of contraception at the time they got pregnant, and 36 of 47 reported that they did not think that they would have sex or become pregnant (Kearney and Levine 3602).
7. On "gendertrolling," see Mantilla.
8. See, for example, McNeilly "Scarletteen's Heather Corinna on the Future." In this interview, entrepreneurial sex educator Heather Corinna notes that she no longer receives this kind of harassment as she did when first working in the field—presumably by becoming more well-known and better established within professionally-endorsed networks of sex education.
9. Gurl.com still exists today but had been sold by its founders and has taken on a far more commercial and mainstream perspective than in its early years, when it presented an explicitly feminist take on popular culture for young readers (Symonds).
Part 1. Contraceptives in the Media

10. Unintended pregnancies in this age group have not declined, unlike rates of teenage pregnancy which have been in decline since the 1990s (Antonishak, Kaye and Swiader 1).

11. In the video on withdrawal, for example, the character emphasizes the importance of skill and states that perhaps the level of skill required explains why one in five couples using this method for a year will become pregnant.

12. Planned Parenthood launched a similar effort to gather public stories titled “Birth Control Helped Me” on Twitter as #BirthControlHelpedMe in June 2015 (Castillo).

13. Public health researchers have matched increased online traffic on key topics to geographical clusters of seasonal allergies and flu outbreaks, as well as symptoms and self-medication (off-label uses of Benadryl for insomnia, for example). While results can be collected faster than by traditional methods of public health monitoring, so far the data collected conforms to the knowledge already gathered by more traditional means, although enthusiasts emphasize the “expressiveness” of tweets as well as the “public display” of information, especially behavior and opinions, that individuals are reluctant to discuss with healthcare workers as potential areas of interest (Dredze 82-83).

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