

HOW HEALTHY IS PRIME TIME?

An Analysis of Health Content in Popular Prime Time Television Programs

SEPTEMBER 2008



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A REPORT BY

The Kaiser Family Foundation

AND

**The USC Annenberg
Norman Lear Center's
*Hollywood, Health & Society***

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INTRODUCTION

Every evening millions of Americans turn on their televisions and curl up on their couches, waiting to be entertained. But research suggests that television provides more than just a pleasant pastime. For many Americans television provides an important, often primary, source of health information (Beck, 2004; Brodie, Foehr, Rideout, Baer, Miller, Flournoy & Altman, 2001; Kaiser Family Foundation, 2002; Murphy & Cody, 2003). According to one survey, 26% of the public cited entertainment television as being among their top three sources of health information, and half (52%) said they consider the health information contained in these programs to be accurate (Beck, 2004; Beck & Pollard, 2001).

Despite the proliferation of new forms of media, television continues to be the dominant medium in most people's lives. According to Nielsen Media Research the television is on more than eight hours a day in the average American household (Nielsen, 2007). Even Internet-savvy teenagers spend more than twice as much time watching TV as they do online (Kaiser, 2005). And while the Internet may be where people go when they have a specific health issue they want to research, TV is often where they become aware of that health issue in the first place.

In the vast majority of cases, the health content on television is there simply as a by-product of the normal creative process, rather than being placed there as part of a coordinated campaign to influence Hollywood's messages. Occasionally, however, the health content is in fact part of an organized effort to raise awareness about crucial health issues in a way that simultaneously entertains and educates. Regardless of whether the inclusion of a specific health issue was intentional or unintentional, the health content in entertainment television has the potential to influence the public's knowledge, attitudes and behavior—for good or for bad.

In fact, entertainment television may be a uniquely powerful health communication tool. There are two main reasons for television's unique role. First, because TV—in particular, prime time programs on the major networks—continues to have such an enormous reach. Despite the proliferation of cable channels and the competition from other media, prime time shows on the major broadcast networks continue to attract huge audiences, unmatched in any other medium. For instance, for the week of October 22, 2007, the top 10 shows attracted between 15 and 21 million viewers each (Nielsen, 2007). Being able to reach audiences of this magnitude makes popular TV shows one of the most influential communication vehicles available.

Second, health information delivered through engaging storytelling—often involving characters the viewer already “knows” and cares about—is more likely to be attended to than traditional health information sources (Singhal, Cody, Rogers & Sabido, 2004; Singhal &

Rogers, 1999; Slater & Rouner, 2002). In recent years Americans have become increasingly intolerant of commercial interruptions in their entertainment. As a result commercial sponsors often turn to "product placement" where products and appeals are directly embedded into popular programs. Groups seeking to communicate health information are now doing the same—a practice often called "entertainment-education" (Sabido, 2004; Sherry, 2002; Singhal, Cody, Rogers, Sabido, M, 2004; Singhal & Rogers, 1999).

It has been argued that such embedded messages are more effective than traditional PSAs because they are less "obvious" and, as a result, viewers may be less resistant to their content (Brown & Walsh-Childers, 2002; Singhal & Rogers, 1999; Slater, 1997; Slater, 2002; Slater & Rouner, 2002). In fact, several studies in the United States have documented the effectiveness of entertainment television in raising viewer awareness of health issues, and in self-reported behavior change (Brodie et al., 2001; Keller & Brown, 2002; Sharf & Freimuth, 1993; Sharf, Freimuth, Greenspon, & Plotnick, 1996; Whittier, Kennedy, O'Leary, Beck, Pollard, and Simpson, 2005). For example, exposure to brief depictions on the issues of human papilloma virus (HPV) and emergency contraception on the prime time medical drama *ER* substantially increased knowledge of these topics. Awareness of HPV tripled after a storyline on that topic aired (from 9% of regular *ER* viewers to 28%), as did the percent of viewers who were aware of the link between HPV and cervical cancer (from 19% to 60% of those who had heard of HPV). Moreover, one in four regular *ER* viewers said they had gone to another source to look up additional information on a topic because of something they'd seen on the show, and one in three reported that they learned health-related information from the show that helped them make decisions about their own or their family's health care.

Television may be especially effective as a tool for communicating with those who are difficult to reach through more traditional health campaigns that rely on PSAs, clinic brochures, or websites (Beck, 2004; Brodie et al., 2001; Green, 2006; Salmon, 2001). The heaviest consumers of television—low socioeconomic status African American and Hispanic women—are at disproportionately higher risk for life threatening ailments such as certain cancers, diabetes and heart disease (Brown & Walsh-Childers, 2002; Centers for Disease Control and Prevention, 2006). Moreover, evidence suggests that minority viewers are also the most likely to act on information they learned on television (Beck, Huang, Pollard & Johnson, 2003). Consequently, prime time television may have an almost unparalleled ability to reach those segments of the population who are most at risk for chronic health problems.

It is for these reasons that groups such as the Kaiser Family Foundation, the Centers for Disease Control and Prevention, and others have chosen to work with television programs to reach viewers. But while various organizations have attempted to work with Hollywood to put their issues front and center on the small screen,

to date there has been no published research documenting what the overall "health landscape" of prime time television looks like. It is the purpose of this report to help fill that gap.

Because television storylines can influence viewers' knowledge, attitudes and behaviors, it is important to know what sort of health information is being conveyed—whether it is part of a conscious effort at health communication or not. In general, television's influence is cumulative, a result of repeated exposure to specific types of content. Indeed, recent research indicates that the impact of two unrelated breast cancer storylines that aired on two different prime time TV shows—*ER* and *Grey's Anatomy*—was strongest among viewers who watched *both* storylines as opposed to either one individually, suggesting an additive effect across storylines and series (Hether, Huang, Beck, Murphy, & Valente, in press).

This report assesses the frequency and type of health content that enters our lives and living rooms each evening. Prior studies have documented television portrayals on specific health-related topics such as the amount of sexual content (see Farrar, Kunkel, Biely, Eyal, Fandrich & Donnerstein, 2003), violence (Gerbner & Gross, 1976; The National Television Violence Study, 1998), substance abuse (Gruber, Thau, Hill, Fisher, & Grube, 2004), food consumption (Harrison & Marske, 2005; Henderson & Kelly, 2005; Story & Faulkner, 1990; Tirodkar & Jain, 2003) and policy-related health topics (Turow & Gans, 2002), just to name a few. In contrast, this report presents a broad overview of the health-related messages to which viewers of prime time television have been exposed, focusing primarily on the following questions:

- How frequently do the top-rated TV shows portray health issues?
- Which health topics are being addressed, and which are not?
- What is the educational quality of the health content?
- Does the type and frequency of health content differ among the most popular shows watched by Nielsen's General, African American, and Hispanic audiences?
- How often are issues concerning alcohol or drug abuse raised on TV?
- Which foods are consumed most often on TV?
- How common is tobacco use in the top shows?
- And, going beyond the issue of personal health, how often are issues concerning the health care system, such as the quality of and access to care, addressed on TV?

Understanding the dimensions of prime time television's "health landscape" will help give health providers and public health organizations a better sense of the kinds of information the viewing public is receiving from TV. In some cases, they may want to leverage that information; in others they may feel they need to counteract it. Ultimately, knowledge of the current landscape is key to informing the efforts of those health organizations that choose to work with the media industry on depictions of health issues.

OVERVIEW OF METHODOLOGY

To assess the frequency and type of health content found on TV, every episode of the top 10 prime time scripted TV shows among 18–49 year-olds for Nielsen’s General Audience (which includes all ethnicities in the same proportion they are represented in the general population) from the Spring seasons of 2004, 2005 and 2006 were recorded and content analyzed. In order to explore potential differences in shows viewed by different audiences, the top 10 shows for African American and Hispanic audiences (English-language programming only) were also recorded and analyzed. As shown on page 4, there was some overlap in top 10 shows for each of these audiences. For example, in 2006 *Desperate Housewives* was popular among all three audiences. Moreover, some long-lasting series were on the top 10 list all three years—such as *CSI*. Others were on the list for just one year, or were popular just among one ethnic group (for example, in 2006 *Everybody Hates Chris* was popular only among African Americans whereas *The George Lopez Show* was popular primarily among Hispanics, in 2005 and 2006). To avoid confusion, unless otherwise noted, all findings concern the shows in the General Audience sample; findings for top-rated shows among African Americans and Hispanics are analyzed independently.

In the end, a total of 723 hours of television content were analyzed for the study, including 947 episodes across 33 different series. Findings are presented separately for the top 10 programs across the country as a whole (Nielsen’s General Audience ratings), for African American viewers, and for Hispanic viewers. Unless otherwise noted, all findings refer to the average across all three years of the study (2004, 2005 and 2006).

All programming was reviewed by trained coders and all health-related content was coded. For the purpose of this project, a health issue was defined as any reference to something dealing with “disease, injury or disability.” Commonly occurring health conditions that were not seen as a “problem” were not coded. For instance, while a fertility problem or an unwanted pregnancy would be coded, a healthy, wanted pregnancy would not. Episodes often contained overlapping, related health issues. For example, a person may have heart disease due to high cholesterol. In such cases, both “high cholesterol” and “heart disease” would be entered as separate health issues.

The study also captured the presence of violent content, including rape, homicide, and fighting. In this research violence was *not* included as a health issue, and all violence-related findings are presented separately in this report. In addition to health issues and violence, each show was also coded for the presence or consumption of food and beverages, and these findings are reported separately as well.

Each health issue was coded for its prominence within the program. The prominence categories were:

- **Visual Cue:** A brief action or sign, without related dialogue (e.g., a poster on childhood immunization seen on an office wall, or someone smoking a cigarette).
- **Brief Mention:** A passing mention with no further information or comments.
- **Dialogue:** A depiction that entailed more conversation than a brief mention (at least three lines of text), yet did not rise to the level of a minor storyline.
- **Minor Storyline:** A secondary plotline, often carried throughout the entire episode, but not as central to the episode as the major storyline.
- **Major Storyline:** A primary focus of the episode.

Except where otherwise noted, this report focuses on those health issues that rose to at least the level of dialogue. In the text, a “health storyline” means a health topic that was discussed for at least three lines of dialogue, or was featured as a minor or major storyline in the episode. Each health issue that rose to that level received additional coding. Variables that were coded include:

- The educational content of the storyline (none, weak, moderate or strong);
- The type of health-related information conveyed (prevention, risk factors, symptoms, diagnosis, treatment, complications, prognosis);
- Whether issues concerning access to care were addressed (health insurance, institutional, immigration, confidentiality, stigma and lack of information);
- The primary setting of the storyline (home, work, school, health care setting, outdoors, mixed, other);
- The health outcome for the character (death, decline, unchanged, improved, unresolved/unclear or other);
- The quality of care received (no care given, low quality, adequate, high quality);
- The quality of the health care interaction (no care given, unsatisfactory, satisfactory, mixed);
- The presence and type of violence portrayed;
- The presence or consumption of food or beverages;
- Depictions of exercise, nutrition and obesity;
- Depictions of alcohol, tobacco, or drugs.

LIST OF TOP 10 SCRIPTED PRIME TIME TV SHOWS INCLUDED IN THE STUDY

2004	Ranking	General Audience	African American	Hispanic
	1	<i>Friends</i>	<i>Girlfriends</i>	<i>Friends</i>
	2	<i>CSI</i>	<i>Half and Half</i>	<i>Will & Grace</i>
	3	<i>ER</i>	<i>Eve</i>	<i>The Simpsons</i>
	4	<i>Will & Grace</i>	<i>All of Us</i>	<i>ER</i>
	5	<i>CSI: Miami</i>	<i>The Parkers</i>	<i>CSI</i>
	6	<i>Without a Trace</i>	<i>My Wife and Kids</i>	<i>That 70s Show</i>
	7	<i>Everybody Loves Raymond</i>	<i>CSI</i>	<i>The OC</i>
	8	<i>That 70s Show</i>	<i>One on One</i>	<i>Law & Order: SVU</i>
	9	<i>Law & Order: CI</i>	<i>ER</i>	<i>CSI: Miami</i>
	10	<i>Law & Order</i>	<i>Without a Trace</i>	<i>Las Vegas</i>

2005	Ranking	General Audience	African American	Hispanic
	1	<i>Desperate Housewives</i>	<i>The Simpsons</i>	<i>The Simpsons</i>
	2	<i>CSI</i>	<i>Girlfriends</i>	<i>Desperate Housewives</i>
	3	<i>ER</i>	<i>Half and Half</i>	<i>CSI</i>
	4	<i>Lost</i>	<i>CSI</i>	<i>Medium</i>
	5	<i>The Simpsons</i>	<i>House</i>	<i>Las Vegas</i>
	6	<i>Without a Trace</i>	<i>One on One</i>	<i>Lost</i>
	7	<i>CSI: Miami</i>	<i>Desperate Housewives</i>	<i>Without a Trace</i>
	8	<i>House</i>	<i>Without a Trace</i>	<i>George Lopez</i>
	9	<i>Medium</i>	<i>Bernie Mac</i>	<i>ER</i>
	10	<i>24</i>	<i>Eve</i>	<i>CSI: Miami</i>

2006	Ranking	General Audience	African American	Hispanic
	1	<i>Grey's Anatomy</i>	<i>Grey's Anatomy</i>	<i>Grey's Anatomy</i>
	2	<i>Desperate Housewives</i>	<i>House</i>	<i>Desperate Housewives</i>
	3	<i>House</i>	<i>Girlfriends</i>	<i>House</i>
	4	<i>CSI</i>	<i>Half and Half</i>	<i>CSI</i>
	5	<i>ER</i>	<i>All of Us</i>	<i>Freddie</i>
	6	<i>24</i>	<i>Desperate Housewives</i>	<i>George Lopez</i>
	7	<i>Law & Order: SVU</i>	<i>One on One</i>	<i>Law & Order: SVU</i>
	8	<i>CSI: Miami</i>	<i>CSI</i>	<i>The Simpsons</i>
	9	<i>Without a Trace</i>	<i>Everybody Hates Chris</i>	<i>ER</i>
	10	<i>My Name is Earl</i>	<i>Without a Trace</i>	<i>Bones</i>

FINDINGS

FREQUENCY OF HEALTH MESSAGES

During the period of the study (2004–2006) six out of every 10 (59%) episodes of the top-rated scripted shows on TV had at least one health-related storyline (see Table 1). The proportion of episodes that had health-related storylines increased from about half (51%) in 2004, to two-thirds (66%) in 2006. Looking at episodes of the top 10 shows for Hispanic viewers over the three years of the study, 59% featured a health storyline, while for top 10 shows among African American viewers, just under half of all episodes (48%) had at least one health storyline.

On average, there were about one and a half health storylines per episode of the top-rated shows (see Table 1). The frequency of health storylines was slightly lower in the top Hispanic audience shows (1.44), and significantly lower in shows popular with African American viewers (1.14 storylines per episode, on average).

If a viewer had watched every episode of the top 10 most popular shows for Nielsen’s General Audience, they would have been exposed to a total of 792 health storylines in the Spring seasons of the three years

in the study (see Table 1). Hispanic viewers would have seen a total of 698 such storylines during the same period, while African American viewers would have seen far fewer (564 health storylines). This may be due, in part, to the fact that more of the top 10 shows among African Americans were comedies, and to the fact that the medical drama *ER* was not on African Americans’ top 10 list for two of the three years of the study. In fact, over the three years of the study, the most popular shows across the population as a whole (Nielsen’s General Audience) included six medical series, the top shows among Hispanic viewers included five medical series, and the top shows among African American viewers included four medical series.

Table 1: Among All Top-Rated Episodes, Number and Proportion with Health Storylines

	General Audience		African American		Hispanic	
	Number	Percent of All Episodes	Number	Percent of All Episodes	Number	Percent of All Episodes
Total number of episodes in sample	N=515		N=493		N=486	
Total number of health storylines	792 ^c		564 ^a		698 ^b	
Average number of health storylines per episode (across all episodes)	1.54 ^c		1.14 ^a		1.44 ^b	
Episodes with Health Storylines	Number	Percent of All Episodes	Number	Percent of All Episodes	Number	Percent of All Episodes
2004	85	51	77	45	91	57
2005	107 ^b	61	78 ^a	48	93 ^{ab}	55
2006	110 ^b	66	81 ^a	51	102 ^{ab}	65
TOTAL	302 ^b	59	236 ^a	48	286 ^b	59

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least $p < .05$.

SNAPSHOT #1

George Lopez, “The Kidney Stays in the Picture” February 2006 (ABC)

HEALTH ISSUE: Kidney Disease

In this sitcom, George’s 14-year-old son, Max, is wetting the bed. George initially dismisses Max’s bedwetting as a minor inconvenience, telling Max to “suck it up.” Later in the show, Max’s grandfather, after learning that Max also has a fever and stomach cramps, suggests that Max may have a urinary tract infection. George’s father-in-law also suggests that Max’s infection might be caused by sexual activity. Concerned, Max’s parents take him to the pediatrician where the doctor diagnoses Max with a urinary tract infection. The doctor describes—and illustrates using a medical model—how Max’s infection was caused by the tubes leading from his kidney being too narrow, resulting in his urine backing up and the infection, which ultimately led to Max’s bedwetting. The doctor’s prognosis is that Max will be fine, although he will need surgery to treat the issue. The doctor stresses that had the infection not been caught early, Max could have developed kidney disease and may ultimately have needed a transplant. Finally, near the end of the episode, George berates himself for not being more responsive to his son’s bedwetting problem, especially when he recognizes that his own father died from kidney disease.

MOST COMMON HEALTH TOPICS

The most common health storyline concerned characters being afflicted with an unusual illness or disease, while more typical health problems that are much more prevalent in real life were shown significantly less often (see Table 2). For example, unusual illnesses or diseases appeared more than four times as often (26% of all health storylines) as heart disease (6%), five times as often as cancer (5%) and more than 20 times as often as diabetes (1%). This is most likely due to the fact that most health content is included in TV shows for entertainment rather than educational purposes—and unusual conditions tend to make for more dramatic stories.

educational content, “weak” if the health storyline included a vague, brief or incomplete portrayal of the issue and “none” if the average viewer could learn nothing about the health issue as depicted in the health storyline.

Table 2: Among All Health Storylines, Which Topics Occurred Most Frequently, 2004–2006

	General Audience (n=792)			African American (n=564)			Hispanic (n=698)		
	Rank	Frequency	Percent	Rank	Frequency	Percent	Rank	Frequency	Percent
Unusual illness/disease	1	202 ^c	26	1	137 ^a	24	1	170 ^b	24
Unintentional injury	2	88 ^b	11	2	52 ^a	9	2	84 ^b	12
Motor-vehicle related	3	55 ^b	7	9	24 ^a	4	4	51 ^b	7
Pregnancy & childbirth issues	4	52 ^{ab}	7	3	39 ^a	7	3	57 ^b	8
Mental health	5	47	6	4	38	7	6	38	5
Heart disease	6	46	6	5	34	6	5	41	6
Illegal substance abuse	7	45	6	6	31	6	7	37	5
Cancer	8	40	5	7	29	5	8	34	5
Alcohol abuse	9	29	4	8	24	4	9	27	4
Prescription medication abuse	10	29 ^b	4	10	23 ^{ab}	4	12	16 ^a	2
Toxic substance exposure	11	28 ^b	4	11	17 ^a	3	11	20 ^{ab}	3
Lung diseases	12	15	2	14	11	2	14	11	2
Organ donation	13	13	2	13	12	2	13	12	2
Diabetes	14	9	1	20	5	1	19	6	1
Animal attack	15	8	1	25	4	1	14	8	1

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.10.

TYPE OF HEALTH INFORMATION PROVIDED

As TV shows tell stories that involve health issues, they may touch on those issues from a variety of different perspectives, whether it’s exploring symptoms, treatment options, prevention, or some other aspect of the health issue.

Most commonly, storylines focused on the symptoms (65%), treatment (59%) and diagnosis (50%) of health conditions (see Table 3). Relatively few health depictions contained prevention messages (10%). As shown in Table 3, health storylines in shows popular among African American and Hispanic audiences had a similar proportional breakdown.

Table 3: Type of Health Information Depicted in Health Storylines, 2004–2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Symptoms	515 ^d	65	377 ^a	67	429 ^a	62
Treatment	465 ^c	59	317 ^a	56	386 ^b	55
Diagnosis	394 ^b	50	276 ^a	49	304 ^a	44
Risk Factors	248 ^b	31	186 ^a	33	207 ^{ab}	30
Complications	185 ^b	23	130 ^a	23	164 ^b	24
Prognosis	137 ^b	17	102 ^a	18	121 ^{ab}	17
Prevention	78	10	61	11	78	11

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

EDUCATIONAL CONTENT OF HEALTH STORYLINES

The manner in which TV shows address health issues varies widely, from show to show and from episode to episode. Some storylines offer a great deal of information to viewers while others may touch on a health topic briefly without providing much detail. Accordingly, the study analyzed the level of educational content in health storylines, to provide a clearer picture of how frequently viewers are likely to encounter substantial health information in the prime time shows they watch.

Storylines were judged to have “strong” educational content if they contained a very clear and accurate portrayal of a health issue and clearly addressed a key message about the topic; “moderate” if they were less comprehensive than the storylines with strong

For example, there was strong educational content regarding bacterial meningitis presented in an episode of *House* called “Kids” (May 2005). When a judge at a swim meet was diagnosed with bacterial meningitis everyone attending the event was quarantined at local hospitals for assessment and treatment. The symptoms of this highly contagious infection were described as a sore neck, fever, and a rash. Individuals who were directly exposed to the judge were given drugs to prevent the onset of infection. People who had the symptoms of bacterial meningitis were treated with more aggressive antibiotics. The show also described how the antibiotics that treat this infection can produce a curious side effect: they can turn a patient’s tears red.

In contrast, a typical instance of “weak” educational content would be when a health issue is addressed incidentally in a comedy show, such as an episode of *The Simpsons* called “Midnight Rx” (January 2005), when a character’s thyroid swelled, and the information provided was that he needed prescription medication to treat this condition, or it could become fatal. This particular episode is a good example of a health topic popping up in an unexpected place—when Mr. Burns eliminates prescription drug coverage for his employees, Smithers’ thyroid problem becomes acute and Homer goes to Canada to buy the needed drugs. Entertaining for sure, and possibly educational as well.

Nearly two-thirds (61%) of all health storylines did, in fact, provide either a moderate (29%) or a strong (32%) level of educational content (see Table 4). A similar proportion of the health storylines in the top shows among African American and Hispanic viewers provided moderate or strong educational content (64% for African American viewers, 57% for Hispanics). However, because the shows most popular among African American and Hispanic audiences had fewer health storylines to begin with, those viewers were being exposed to a substantially smaller number of health storylines with strong educational content than were viewers as a whole (197 for Hispanics and 198 for African Americans, compared to 254 for Nielsen’s General Audience viewers among the episodes in this study).

ACCESS TO CARE

Given that fictional TV characters are forced to grapple with a variety of health concerns, it is not surprising that many of them also have to deal with the health care system itself. In some cases, this means stories about characters who don’t have access to care in the first place, or who experience barriers when seeking health care. Access to care may be impeded by a lack of insurance, inadequate availability of services, or concerns about a patient’s immigration status. For example, in an episode of *Desperate Housewives*, “Silly People” (February 2006), Susan needed an operation for her spleen,

Table 4: Level of Educational Content of Health Storylines, 2004–2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
None	147 ^b	19	97 ^a	17	137 ^b	20
Weak	148 ^b	19	94 ^a	17	150 ^b	22
Moderate	232 ^b	29	164 ^a	29	203 ^b	29
Strong	254 ^b	32	198 ^a	35	197 ^a	28

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least $p < .05$.

Table 5: Among All Top-Rated Episodes, Number and Proportion with Storylines About Access to Care, 2004-2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Access issues	53 ^b	10	28 ^a	6	57 ^b	12

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least $p < .05$.

yet she didn’t have health insurance. She resolved the issue by marrying someone solely to access his health insurance. In an episode of *ER*, “Out on a Limb” (March 2006), institutional access issues were depicted with the brief mention of a statewide blood shortage and the suggestion that doctors should be frugal in their use of blood. Finally, in an episode of *Law & Order: SVU*, “Rockabye” (April 2006), stigma issues were presented as a barrier to care when a teenage girl was afraid to tell anyone about her pregnancy because her father was vehemently opposed to premarital sex, and she was afraid of his reaction. How such issues are portrayed on TV (and whether they are portrayed at all) could be an important factor in shaping public awareness about barriers to care.

On average, one in ten episodes of the top-rated shows included a depiction of some type of barrier to care (10%, or 53 episodes over the course of the study; see Table 5). African American audiences were exposed to the fewest episodes on these topics (6%, or 28 episodes in the study), while Hispanics were exposed to the most (12%, or 57 episodes).

SNAPSHOT #2

House, “Heavy” March 2005 (Fox)

HEALTH ISSUE: Cushing’s Disease

In this episode, doctors investigate why a 10-year-old girl, Jessica, had a heart attack. Although Jessica is morbidly obese, the doctors suggest that this would be insufficient to cause a heart attack in someone so young. As the doctors investigate, the episode addresses the social stigma that is associated with being overweight. Through the doctors’ research, viewers learn that Jessica was taking diet pills, which can cause heart attacks, blood clots and insomnia. However, Jessica develops other symptoms including skin necrosis (bleeding skin sores) that can not be accounted for by the diet pills. Jessica’s list of symptoms includes obesity, stunted growth (she is short relative to her parents), high blood pressure, and blood clots. The doctors administer an MRI that confirms Jessica is actually suffering from Cushing’s disease, which is caused by a tumor on Jessica’s pituitary gland. The doctors explain that Cushing’s disease upsets hormone production, and hormones control weight and growth. Therefore, Jessica’s obesity is actually a symptom of her underlying illness. The doctors treat Jessica by surgically removing the tumor.

When access to care issues were depicted, the majority portrayed health insurance or institutional issues associated with the health care provider (e.g. cutbacks, inadequate resources or staff, long waits; see Table 6).

SETTING OF HEALTH STORYLINES

Where a health care storyline takes place is important because health storylines in medical settings may provide more comprehensive examples or modeling for viewers. Consequently, when viewers are exposed to storylines in medical settings, it may further their understanding of how clinics and hospitals operate, and how they, as patients, need to operate inside these systems to obtain optimal care.

One out of every two health storylines in this study took place in a health care setting (see Table 7). This is largely due to the popularity of medical dramas such as *ER*, *Grey's Anatomy* and *House*. But, as discussed earlier, medical dramas were not equally popular among different audiences, resulting in African American and Hispanic audiences being exposed to far fewer stories set in hospitals and clinics, at least in their top 10 shows.

HEALTH OUTCOMES

Across the three years of the study, health storylines were equally likely to end with the patient's health improving (33%), declining or ending in death (12% and 16%, respectively), or remaining the same (27%; see Table 8). The proportion of storylines in each of these categories was similar for African American and Hispanic audiences.

QUALITY OF THE CARE RECEIVED

Another important aspect of how TV depicts health issues is the quality of care patients are shown receiving (this measure was applied to shows from the 2006 season only). In many cases, no treatment of the condition is depicted in the episode (31% of all storylines). For example, *House* has numerous episodes where the doctors discuss various potential diagnoses of a patient, but then, through discussion, eliminate all but one as the cause of the patient's condition; the actual treatment is not shown. In 2006, most health storylines (61%) depicted satisfactory care, and just 1% depicted unsatisfactory care (see Table 9).

For example, satisfactory care was depicted in an episode of *Grey's Anatomy* called "What Have I Done to Deserve This?" (February 2006). In this episode, a patient is admitted to the hospital with severe chest pains. After an exploratory angiogram, he is diagnosed with a coronary artery aneurism. Surgery is recommended; however, it is a high-risk surgery that could result in the aneurism rupturing during the operation. The patient elected to have the surgery and is shown recovering from the operation. In contrast, unsatisfactory care was

Table 6: Among All Episodes with Storylines About Access to Care, Proportion Depicting Each Specific Topic, 2004-2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Health insurance	24	45	18	64	26	46
Institutional resources	15 ^b	28	4 ^a	14	16 ^b	28
Immigration	2	4	1	4	3	5
Confidentiality	–	–	–	–	–	–
Stigma	3	6	2	7	3	5
Lack of information	2	4	1	4	2	4
International issues	5	9	2	7	5	9
Other	6	11	2	7	4	7

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Table 7: The Primary Setting of Health Care Storylines, 2004–2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Health care setting	431 ^c	54	289 ^a	52	339 ^b	49
Other/mixed	163	21	135	24	154	22
Work/school	69 ^b	9	41 ^a	7	60 ^{ab}	9
Home	65	8	75	13	84	12
Street/outdoors	54 ^b	7	18 ^a	3	51 ^b	7

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Table 8: Health Outcome by Storyline, 2004–2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Death	129 ^b	16	83 ^a	15	120 ^b	17
Decline	96 ^b	12	70 ^a	12	87 ^{ab}	13
Unchanged	216 ^b	27	149 ^a	26	224 ^b	32
Improved	263 ^b	33	192 ^a	34	200 ^a	29
Unresolved/unclear	70 ^b	9	51 ^{ab}	9	48 ^a	7
Other	16	2	16	3	16	2

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Table 9: Among All Health Storylines, Quality of Care Received, 2006

	General Audience (N=285)		African American (N=184)		Hispanic (N=277)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
No care depicted	88	31	65	35	78	28
Unsatisfactory	2	1	0	0	3	1
Mixed	20	7	11	6	20	7
Satisfactory	175 ^b	61	108 ^a	59	176 ^b	64

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

depicted in an episode of *Bones*, when the FBI investigated a situation where patients had received bone grafts from a donor who had terminal cancer (mesothelioma), which resulted in many of the recipients becoming sick themselves.

QUALITY OF THE HEALTH CARE INTERACTION

In addition to coding for the overall quality of care received by the patient, this study also noted the quality of the health care *interaction* between the patient or family members and the health care provider. A positive interaction was depicted when the exchange between the patient or family members and the health care providers was helpful and productive. An unsatisfactory interaction indicated that the dialogue was strained or unproductive.

For example, a positive health care interaction was depicted in an episode of *ER* called “Man With No Name” (March 2006). In this episode, Abby, an ER doctor who was treating a woman at risk for breast cancer, encouraged her to seek a second opinion from an oncologist on her options for preventing cancer. The ER doctor personally brought her up to the oncology department and tried to provide her with emotional support and encouragement. The doctor also followed up with the patient after her oncology appointment. A negative health care interaction was depicted in an episode of *Desperate Housewives*, “Remember” (May 2006), when a character, Bree Van de Camp, voluntarily checked herself into a psychiatric hospital for “some rest.” She told the doctor that she was really hoping to receive medication rather than be treated through psychotherapy counseling sessions, but the doctor would not prescribe more medication. When Bree wanted to leave the hospital, her physician would not let her, and ultimately she escaped from the institution.

Half of all health storylines depicted a positive health care interaction (see Table 10) and negative depictions were extremely rare (1%). Once again, the relative frequency of positive depictions was constant across all three audiences.

VIOLENCE

In addition to coding traditional health topics such as cancer and diabetes, the study also coded for the presence of violence, including fights, domestic abuse,

child abuse, rape, suicide, and homicide. While there are some who would argue that violence is a public health issue, storylines on these topics were not counted as health storylines in this study. However, because they are of interest to the health community, they are reported separately here.

For the purpose of this study, “violence” included actual depictions of violence, as well as threats of violence and dialogue about violence. When multiple instances of violence occurred and were perpetrated by the same person (for example, a serial rapist), this was coded as one violent storyline, regardless of how many incidents of rape took place. However, if there were two different instances of rape with completely different characters involved, this would be coded as two separate storylines.

Half (51%) of all episodes in the study’s sample of top-rated scripted prime time shows included violent storylines (see Table 11). The proportion was similar for top shows among Hispanic audiences

Table 10: Quality of the Health Care Interaction by Storyline, 2006

	General Audience (N=285)		African American (N=184)		Hispanic (N=277)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
No interaction	102 ^b	36	69 ^a	38	91 ^{ab}	33
Unsatisfactory	3	1	1	<1	3	1
Mixed	34 ^b	12	19 ^a	10	35 ^b	13
Positive	146 ^b	51	93 ^a	51	148 ^b	53

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least $p < .05$.

Table 11: Number and Proportion of Episodes with Violent Storylines, 2004–2006

	General Audience		African American		Hispanic	
	Number	Percent of All Episodes	Number	Percent of All Episodes	Number	Percent of All Episodes
Total number of episodes in sample	N=515		N=493		N=486	
Total number of violent storylines	499 ^c		224 ^a		439 ^b	
Average number of violent storylines per episode (across all episodes)	.97		.45		.90	
Episodes with Violent Storylines	Number	Percent of All Episodes	Number	Percent of All Episodes	Number	Percent of All Episodes
2004	87 ^b	52	45 ^a	26	77 ^b	48
2005	86 ^b	49	37 ^a	23	86 ^b	51
2006	89 ^b	51	38 ^a	24	67 ^b	43
TOTAL	262 ^b	51	120 ^a	24	230 ^b	47

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least $p < .05$.

SNAPSHOT #3

Law & Order: SVU, “Fat” May 2006 (NBC)

HEALTH ISSUE: Diabetes

In this episode, a character named Rudi, an extremely obese young man, is beaten up. Rudi ends up killing his tormentor in retribution. This storyline presents information on the risk factors of diabetes, obesity and unhealthy eating, as well as the consequences of diabetes. For example, one line in the script read “Forty-one hundred people are diagnosed with diabetes every day – 55 go blind, 120 have kidney failure, 230 get a limb amputated – every single day.” In fact, during the storyline the character Rudi is rushed to the hospital in kidney failure and has to have his foot amputated.

(47%), but it was far lower for top shows among African American audiences (24%). As a result, General Audience viewers would have seen a total of 499 violent storylines, Hispanics a total of 439, and African Americans just 224 violent storylines. In short, African Americans audiences during this period were exposed to significantly less violence—roughly half—across the board (probably due to the fact that African Americans watched more comedies during this period than other audiences).

Across all episodes, there was an average of .97 or nearly one violent storyline per episode for the General Audience shows. The rate was slightly lower among episodes of shows popular with Hispanics (.90). For popular African American shows the average number of violent storylines per episode (.45) was less than half that of the General Audience shows.

Homicides were by far the most frequent act of violence contained in our sample of prime time television. Indeed, as detailed in Table 12, three out of every four violent storylines featured a homicide. The relative frequency of all types of violence was fairly constant across shows popular with the nation as a whole and shows popular with African American and Hispanic audiences.

FOOD AND BEVERAGES

Because it has been argued that depictions of foods and beverages on television may have an influence on the attitudes and behaviors of viewers, the study also coded the types of foods and beverages that were shown.

Nine out of ten (90%) episodes of the top-rated shows included food or beverages (see Table 13). In shows popular with African American and Hispanic audiences, the ratio was even higher (96% and 94%, respectively).

Among all episodes that contained food or beverages, nonalcoholic beverages such as coffee, tea, water and juice, were shown most often, followed by alcoholic beverages (see Table 14). Two-thirds (68%) of episodes showed nonalcoholic beverages, while 51% showed alcoholic beverages.

Table 12: Violent Storylines in Prime Time, 2004–2006

	General Audience (N=499)			African American (N=224)			Hispanic (N=439)		
	Rank	Frequency	Percent	Rank	Frequency	Percent	Rank	Frequency	Percent
All homicides	1	382 ^c	77	1	164 ^a	73	1	326 ^b	74
Rape	2	35 ^b	7	3	15 ^a	7	2	33 ^b	8
Suicide	3	29	6	2	17	8	3	27	6
Child abuse	4	21 ^b	4	6	7 ^a	3	4	24 ^b	5
Domestic/dating violence	5	16	3	5	10	4	5	13	3
Other violence/fighting	6	13	2	4	11	5	6	13	3
Gang violence	7	3	1	–	–	–	7	3	1
TOTAL		499 ^c	100%		224 ^a	100%		439 ^b	100%

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Table 13: Presence of Food and Beverages (Either Shown or Consumed) in Episodes, 2004–2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
No food or beverages in episode	47 ^b	9	14 ^a	3	23 ^a	5
Any foods or beverages	463	90	474	96	457	94
Food only	17	3	17	4	12	3
Beverages only	83 ^c	16	31 ^a	6	58 ^b	12
Both	363 ^a	71	426 ^b	86	387 ^{ab}	80

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Table 14: Episodes That Had at Least One Item of Food or Beverage (Either Shown or Consumed) Per Category, 2004–2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Nonalcoholic beverages	352	68	388	79	357	74
Total alcoholic beverages	263 ^a	51	287 ^{ab}	58	309 ^b	64
Beer/wine	213	41	231	47	253	52
Hard liquor	126 ^a	25	160 ^b	33	168 ^b	35
Sit-down meals	172	33	209	42	208	43
Fruits/veggies	136 ^a	26	181 ^b	37	167 ^{ab}	34
Desserts/sweets	125 ^a	24	182 ^b	37	140 ^a	29
Breads/cereals	102 ^a	20	132 ^b	27	122 ^{ab}	25
Non-sweet snack	92 ^a	18	144 ^b	29	104 ^a	21
Fast food	90	18	94	19	90	19
Dairy	72 ^a	14	102 ^b	21	85 ^{ab}	18

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Of the food categories, sit-down meals were shown most often, followed by fruits and vegetables. Sit-down meals were shown in approximately 33% of all episodes, followed by fruits and vegetables (26%) and desserts and sweets (24%). Fast food was shown in 18% of all episodes.

In examining the differences among audiences, shows popular among African American and Hispanic audiences were more likely to contain almost every type of food or beverage, including hard liquor (33% of episodes in the top 10 list among African Americans and 35% for Hispanic viewers, compared to 25% for the country as a whole), beer or wine (47% and 52% vs. 41%), sit-down meals (42% and 43% vs. 33%), fruits and vegetables (37% and 34% vs. 26%), and desserts or sweets (37% and 29% vs. 24%). There was no statistically significant difference in the proportion of episodes with depictions of fast food across audiences.

One of the most well-documented findings in social science is the impact of modeling on subsequent behavior (Bandura, 1977; 1997; 2001; 2004). Consequently, a depiction that actually showed an apple being consumed should have a greater influence on audience members than a bowl of fruit adorning a table.

Overall, 72% of all episodes of the top-rated shows included at least one depiction of food and/or beverages being consumed (see Table 15).

Not surprisingly, the most commonly *shown* food and beverages were typically also the most often *consumed*. The three most consumed items were: (1) nonalcoholic beverages; (2) alcoholic beverages; and (3) sit-down meals. Nonalcoholic beverages were consumed, on average, in 42% of all episodes, while beer and wine were consumed in 24%, and hard liquor in 15%. The type of food consumed with the greatest frequency was a sit-down meal. Sit-down meals included pasta, sandwiches, poultry, fish, etc., and were distinguished from fast food such as pizza, hamburgers, and hot dogs. Overall, sit-down meals were consumed in twice as many episodes as fast food (21% vs. 10% of episodes, respectively).

Table 15: Episodes That Had at Least One Item of Food Per Category Consumed, 2004–2006

	General Audience		African American		Hispanic	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Any food or beverage	369	72	413	84	377	78
Any food	234 ^a	45	310 ^b	63	251 ^a	52
Sit-down meals	106	21	135	27	119	25
Sweets or snacks	103	20	173	35	113	23
Desserts/sweets	63 ^a	12	100 ^b	20	71 ^a	15
Nonsweet snack	49 ^a	10	87 ^b	18	55 ^a	11
Fast food	51	10	54	11	52	11
Fruits/vegetables	36	7	52	11	50	10
Breads/cereals	30	6	44	9	37	8
Dairy	23	5	28	6	28	6
Nonalcoholic beverages	216	42	238	48	218	45
Alcoholic beverages	171	33	186	38	205	42
Beer/wine	123	24	131	27	146	30
Hard liquor	78 ^a	15	91 ^{ab}	19	105 ^b	22

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least $p < .05$.

Sweets and/or snacks were consumed in almost three times as many episodes as were fruits and vegetables (20% vs. 7%).

As for differences between the three audiences in our sample, characters on the shows most popular among African Americans were more frequently shown consuming desserts/sweets, and non-sweet snacks. For example, 20% of the African American episodes showed desserts or sweets being eaten, compared to 12% of the General Audience and 15% of the Hispanic audience shows. There were no significant differences, however, across audiences in the consumption of healthier foods such as fruits and vegetables, which were eaten relatively infrequently in our sample of shows.

Shows popular among both Hispanic and African American audiences were more likely to depict the consumption of alcoholic beverages than shows preferred by Nielsen's General Audience, which represents viewing preferences of the country as a whole. Twenty-two percent of the top-rated shows among Hispanics included consumption of hard liquor, as did 19% of top shows among African Americans and 15% of top-rated General Audience shows.

SNAPSHOT #4

One on One, "No More Wire Hangers" May 2004 (UPN)

HEALTH ISSUE: Alcoholism

In this sitcom, which focuses on a single father, Flex, and his daughter, Brianna, Brianna's friend, Arnez, is having trouble dealing with his mother's alcoholism. Arnez's friends advocate counseling to help him get through this difficult time. In addition, Flex also conducts an intervention with Arnez's mom, Sheryl, so that she can understand what her drinking is doing to her son. The episode concludes with Arnez attending an Alateen meeting, a group counseling session for kids living with family members who have problems with alcohol. Sheryl also attends this meeting as an effort to reach out to Arnez and begin the process of recovery by acknowledging that she does have a drinking problem.

DEPICTIONS OF EXERCISE, NUTRITION, AND OBESITY

While there was a plethora of food and beverages shown and consumed in the episodes in our sample, there were few health storylines about exercise, nutrition or obesity (Table 16). Of these three issues, there were significantly more exercise storylines on shows popular among African Americans than on the top-rated General Audience shows, although the numbers were extremely small (9 vs. 2 storylines across all three seasons in our sample).

ALCOHOL, TOBACCO, AND DRUGS

A viewer who watched all General Audience episodes in the study would have been exposed to 45 storylines (8% of all health storylines) involving illegal substance abuse (e.g., drug abuse), at the level of dialogue or above (see Table 17). The incidence of illegal substance abuse increased dramatically when we included brief mentions and visual cues. Three out of every ten (29%) episodes of the top-rated shows included a mention, visual cue, or storyline about illegal substance use. There were a total of 251 such depictions in the sample (see Table 18).

There were just four storylines about tobacco use (less than 1% of all health storylines). While smoking was infrequently the focus of a storyline, it was often depicted as either a visual cue or brief mention. When we include these categories there were 113 depictions of smoking, in 16% of all episodes (see Table 18).

Table 16: Related Health Depictions of Exercise, Nutrition and Obesity Among All Health Storylines (Dialogue and Above Only), 2004–2006

	General Audience			African American			Hispanic		
	Number of Depictions	Number of Episodes	Percent of All Episodes	Number of Depictions	Number of Episodes	Percent of All Episodes	Number of Depictions	Number of Episodes	Percent of All Episodes
Exercise	2 ^a	2	<1	9 ^b	9	2	7 ^{ab}	6	1
Nutrition	6	6	1	6	6	1	4	4	1
Obesity	5	5	1	5	5	1	5	5	1

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Table 17: Depictions of Alcohol, Tobacco, and Drug Abuse Among All Health Storylines (Dialogue and Above Only), 2004–2006

	General Audience			African American			Hispanic		
	Number of Depictions	Number of Episodes	Percent of All Episodes	Number of Depictions	Number of Episodes	Percent of All Episodes	Number of Depictions	Number of Episodes	Percent of All Episodes
Alcohol abuse	29	29	6	24	23	5	27	26	5
Tobacco use	4	4	1	4	4	1	6	6	1
Prescription med abuse	29	28	5	23	22	4	16	16	3
Illegal substance abuse	45	40	8	31	26	5	37	33	7

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

Table 18: Frequency of All Depictions of Alcohol, Tobacco, and Drug Abuse (Includes Brief Mentions and Visual Cues Up to Major Storylines), 2004–2006

	General Audience			African American			Hispanic		
	Number of Depictions	Number of Episodes	Percent of All Episodes	Number of Depictions	Number of Episodes	Percent of All Episodes	Number of Depictions	Number of Episodes	Percent of All Episodes
Tobacco use	113	80	16	86	63	13	100	71	15
Alcohol abuse	205 ^{ab}	128	25	176 ^a	109	22	217 ^b	138	28
Prescription med abuse	148 ^b	88	17	121 ^b	67	14	83 ^a	59	12
Illegal substance abuse	251 ^b	151	29	165 ^a	92	19	217 ^b	137	28

Numbers in the same row with different letter superscripts are significantly different from one another at the level of at least p<.05.

As for differences among the three audiences, top episodes among African Americans typically depicted fewer substance abuse storylines (alcohol, prescription medication and illegal substance abuse) (78) than episodes most popular among either General Audience (103) or Hispanic (80) viewers, as shown in Table 17. Further, top-rated African American episodes depicted the fewest instances of tobacco use, alcohol and illegal substance abuse (including brief mentions and visual cues). Hispanic audience shows, which had exhibited higher alcohol consumption, also contained significantly more depictions involving alcohol abuse than shows most popular among African Americans (217 vs. 176 episodes), while the top General Audience shows fell in the middle, with 205 depictions involving alcohol abuse (see Table 18).

CONCLUSION

Viewers who tuned in to the top-rated entertainment shows on TV over the past several years were treated to a wealth of storylines concerning health and health care—an average of one and a half health-related storylines per episode. Most included at least a moderate amount of educational content on the health topic (61%), and many included strong educational content (32%). Although many of these storylines focused on rare or unusual conditions (26%), the majority did not, featuring a variety of important topics from heart disease to cancer to mental illness.

The fact that one in four health storylines is about a rare or unusual condition may be somewhat frustrating to health advocates hoping to educate the public on more widespread health conditions. While prime time television's fascination with obscure medical conditions may make for riveting drama, these storylines are not particularly relevant to the average American viewer. Viewers may come away with the mistaken impression that these rare conditions are more prevalent than they actually are. This may divert the viewing public's attention from more mundane but far more commonplace medical conditions such as heart disease, cancer, or diabetes. Moreover, the relatively low incidence of storylines about these more common ailments represents a lost opportunity to alert millions of viewers to the symptoms, treatment and prevention of the illnesses they are most likely to face.

In addition to addressing specific health issues, stories about characters grappling with barriers to health care were also featured, although these topics were less frequent (only 1 in every 10 episodes). Typically, these shows included a storyline about individuals with inadequate or non-existent health insurance, or medical facilities without sufficient resources to provide optimal care.

Prime time viewers were also exposed to a large number of portrayals of the health care system. Half of all health storylines took place in a medical establishment; most of the time the health care received was satisfactory (61%), and most featured a positive portrayal of patient-provider interactions (51%). Purely negative depictions of providers were extremely rare: only 1% of health storylines showed unsatisfactory care, and only 1% showed unsatisfactory interactions between patients and providers (the rest were either mixed portrayals, or didn't feature patient-provider interactions or actual delivery of care).

The content of the health information in our sample of shows seemed to focus largely on symptoms and treatment (both of which were included in roughly 3 out of every 5 health storylines), and diagnosis (included in roughly half of all storylines). In contrast, relatively few health depictions contained prevention messages, which appeared in only 1 out of every 10 depictions. The compara-

tively high incidence of symptoms, diagnosis and treatment and comparatively low incidence of prevention information makes sense from a dramatic perspective. Drama often requires suspense and life-threatening situations to capture and hold audience attention. Prevention information can seem pallid in comparison.

Violent storylines were also common—about half of all episodes featured at least one such storyline, not surprising given the percentage of top 10 shows in our sample based in either police (33%) or hospital settings (17%). Most violent storylines depicted homicides, due primarily to the popularity of crime dramas such as *Law & Order*, *CSI*, *Medium*, and *Without a Trace*.

According to the Centers for Disease Control and Prevention, over the past 30 years the prevalence of overweight and obese individuals in the United States has increased twofold for adults (from 15% to 33%) and threefold for adolescents (from 5% to 17%; Ogden, Carroll, Curtin, McDowell, Tabak & Flegal, 2006). Considering the major role the media could play in addressing obesity, it is interesting to note that food or beverages were consumed in the majority of popular prime time episodes (72%). Nutrition advocates will be pleased to learn that sit-down meals were frequently depicted (21% of all episodes), although they will be less happy to learn that 20% of shows included depictions of characters eating sweets or snacks and 10% featured fast food. In contrast, only 7% of episodes showed characters eating fruits or vegetables. Moreover, very few episodes featured storylines that explicitly focused on obesity, exercise or nutrition (1% or less for each of these topics).

Health advocates have also long been concerned about depictions of tobacco, drugs, and alcohol in the media. Across the three years of the study, there were only four storylines on tobacco use (containing at least three lines of dialogue), while 16% of all episodes included brief mentions or visual depictions of smoking. Drug use was featured almost twice as often as tobacco use (in 29% of episodes). Alcohol consumption, however, was the most prevalent. One in three episodes (33%) showed beer, wine, or hard liquor being consumed whereas only 6% of all episodes featured storylines about alcohol abuse.

Because African Americans tend to watch a different mix of shows than either General or Hispanic audiences—more comedies, and fewer crime or hospital dramas—viewers of the top-rated African American shows were exposed to significantly less health content. But even given this reduced incidence, African American audiences still saw an average of more than one health storyline per episode. As a result of their viewing preferences, African American audiences were also exposed to far fewer violent storylines (24% of episodes of shows popular with African Americans versus 51% of episodes for General Audience shows and 47% for Hispanic audience shows). Beyond that, the distribution of topics covered and the manner in which they were covered was largely similar across the General Audience, African American, and Hispanic shows in our sample.

What was not evenly distributed across audiences was the depiction of food, alcohol, tobacco and illegal drugs. Shows popular among African American and Hispanic audiences were more likely to feature almost every type of food or beverage, including hard liquor, beer or wine, sit-down meals, fruits and vegetables, and desserts or sweets. In contrast, popular African American shows depicted fewer instances of tobacco and illegal substance use than either Hispanic or General audience shows.

These findings demonstrate that popular prime time television conveys a substantial amount of health-related information. The majority of these portrayals show characters dealing with a wide range of health issues and receiving, for the most part, quality care from physicians with whom they have favorable interactions. Moreover, the bulk of the health storylines in our sample contained moderate to strong educational content. Indeed, the picture painted by prime time television of health care in America may be overly optimistic, in that barriers to care such as a lack of insurance, concerns about immigration status, and institutional problems such as understaffing were relatively rare. Finally, as has been documented in other studies, our results reveal that prime time television viewers are exposed to a large amount of violence, alcohol, tobacco, and drugs.

DETAILED METHODOLOGY

The data for this study were drawn from the Television Monitoring Project of the Annenberg School for Communication at the University of Southern California (USC). That Project was launched in January 2003 by Vicki Beck, then the director of Hollywood, Health & Society (HH&S) at USC's Norman Lear Center, along with Sheila Murphy and Michael Cody, faculty at the Annenberg School of Communication at USC. Through the Project, the top-rated prime time scripted television shows among 18–49 year olds were recorded and all health-related content was analyzed.

THE SAMPLE

A crucial first step in conducting a content analysis is to narrow down the scope of the Project to a manageable, but meaningful, size. While a strong case could be made for analyzing the health content of newscasts, talk shows or daytime programming, the Project's selection of popular prime time shows was guided largely by the number of individuals exposed to their content as reflected by their Nielsen ratings. Consequently, each year of the Project, the research team identified and recorded the prime time shows with the largest audience share using Nielsen ratings from the November sweeps (a week where the audience size and composition is used to set advertising fees) as well as promising new shows we felt might break into the top tier during the upcoming Spring season. The Nielsen ratings from the midseason February sweeps week determined the final sample (see page 4 for a complete list of the shows in the sample by year). The sampling frame includes all episodes of the 10 most popular prime time scripted programs for Nielsen's General, African American and Hispanic audiences in the Spring television seasons for 2004, 2005 and 2006.

It would have been relatively simple to identify, record and analyze the prime time shows with the largest overall audiences during the Spring television season. But program preferences are far from random. For instance, an analysis of the top five most popular shows in 2003 for Hispanic, African American and General audiences, as determined by Nielsen ratings, reveals clear ethnic differences in viewing patterns. Only one show, *Friends*, was watched by both Hispanics and the General Audience in large numbers. There was no overlap in viewing preferences between African Americans and the other ethnic groups (Murphy, Cody, Beck, Burkett, Shavitz & Huang, 2003). In short, African Americans and Hispanics—both groups at elevated risk for serious health problems—may be exposed to very different televised health messages than the General Audience. Due to these clear ethnic differences in program preferences (as reflected by Nielsen ratings) the decision was

made to content analyze the top 10 most popular shows for each of these three audiences—General Audience, Hispanic and African American.

The research team made several other key decisions regarding the selection of shows. For instance, it should be noted that we analyzed only English-language programs. Moreover, the Project did not include “non-scripted” shows such as reality shows like *Survivor* or *American Idol*, news shows or sports events. This decision does limit the generalizability of the results to scripted prime time shows.

DEFINITIONS AND CODING

The content analysis of these programs required two related, but separate, code sheets—a general episode content code sheet and a specific health content code sheet. The general code sheet was required for every episode of every show in our sample. Specific health code sheets were required for each separate health-related topic that rose to the level of at least a dialogue.

For the purpose of this project, a health issue was defined as something dealing with “disease, injury or disability.” This definition is broader than what may commonly be considered a “health issue” since it includes such things as unintentional injury and mental health, in addition to topics more commonly considered “health problems” such as heart disease and cancer. Commonly occurring health conditions that were not seen as a “problem” were not coded. For instance, while a fertility problem or an unwanted pregnancy would be coded, a healthy, wanted pregnancy would not.

In addition to coding the type of health problem, researchers also coded its prominence in the program. The prominence categories were visual cue only; brief mention; dialogue; minor storyline; and major storyline. A visual cue was defined as a brief action, sign, etc. without related dialogue (i.e., smoking a cigarette). A brief mention was a passing mention with no further information or comments. The definition of dialogue was a depiction that entailed more conversation than a brief mention (at least three lines of text), yet did not rise to the level of a minor storyline. A minor storyline was identified as a secondary plotline, often carried throughout the entire episode, but not as central to the episode as the major storyline. Finally, a major storyline was defined as a primary focus of the episode. For most of this report we discuss only those health issues that rose to at least the level of a dialogue. The exception to this is when we discuss depictions of eating, drinking and smoking where we present visual cues and brief mentions as well.

LEVELS OF ANALYSIS

Coding was performed at two distinct levels of analysis: the episode level and the level of the specific health issue. We also maintained two separate, but related, data files. In the first dataset, each case was a distinct episode of a top-rated series. This “general episode level” codesheet and dataset allows us to answer questions such as what percentage of episodes contained cancer-related information and whether this varied by genre, by series, or over time. In the second dataset, each case was a specific health-related issue. So if an episode of *Everybody Loves Raymond* contained absolutely no health-related content, it was included as a case in the first dataset but not in the specific health issue dataset. Other shows, like *ER* for example, also had a single entry in the episode dataset but could have multiple entries per episode in the second specific health issue dataset. This second “specific health issue” dataset allows us to compare the relative prevalence and prominence of various health issues in popular prime time programs. In other words, a “case” or unit of analysis in the general episode dataset was each individual hour or half hour episode but the unit of analysis in the second dataset was each separate specific health storyline or reference contained in the sample (see Krippendorff, 2004 for a discussion of units of analysis). Thus, these two datasets allow us to answer distinct, but related, questions.

General Episode Level of Analysis

As noted above, a general episode level codesheet was required for each individual episode in our sample of prime time shows. Coders first entered the unique identifiers of a particular episode (e.g., show, episode name, time, date, length, new/repeat, genre, network, major character composition in terms of gender, ethnicity, etc.). As a result of ongoing concerns and controversies regarding medical coverage, the episode level code sheet also asked coders to indicate whether any “access to care” issues were shown (e.g., inadequate health insurance, cutback of public health coverage programs or public medical facilities, immigration status concerns, confidentiality concerns, embarrassment/stigma concerns, lack of health/health care information, international concerns) and whether the health care received was adequate. In recognition of longstanding research on the impact of violence in the media, the general code sheet also recorded if violence occurred in a particular episode and, if so, what type. In this report we did not include violence as a health issue, but provide a separate summary of our findings regarding the incidence and type of violence in our sample of shows.

Given the national obesity epidemic, we were also deeply interested in the portrayal of food. Coders were asked to identify what food or beverages were shown, discussed, and/or consumed. Because prior research has demonstrated that modeling is an important component of learning (Bandura, 1977; 1997; 2001; 2004), we felt it was crucial to distinguish between an apple shown sitting in a bowl on a counter versus an apple actually being consumed by a beloved character. Coders recorded food consumption for the four most prominent characters shown eating and drinking for up to four foods or beverages per character. As a result, our dataset slightly

under-reports the amount of food and beverages consumed on popular shows.

But perhaps the most important section of the general health code sheet was a grid which asked coders to identify which, if any, specific health issues appeared in the episode and how prominent the depiction was (e.g., a brief visual cue, a brief mention, a dialogue, a minor or major storyline). A specific health code sheet was completed for each health issue that rose to the level of a dialogue between characters (at least three lines of text). Episodes often contain overlapping, related health issues. For example, a person may have heart disease due to high cholesterol. In such cases, both “high cholesterol” and “heart disease” would be entered as separate health issues on the general episode codesheet with the relationship between the two indicated on each of two separate specific issue codesheets. In medical shows such as *House*, *ER* or *Grey’s Anatomy*, multiple health issues may be associated with a single character. Each possible cause mentioned on the program would be coded as a separate health issue along with its prominence in the overall storyline ranging from a brief visual cue or mention to a major storyline. Again, only those health topics that rose at least to the level of a dialogue among characters was subjected to further coding with the specific codesheet.

Specific Health Issue Level of Analysis

The specific health issue code sheet was designed to gauge the relative frequency and type of health depictions an average viewer of the 10 most popular prime time programs would be exposed to over the course of a season. For this report, the following variables were analyzed.

- The educational content of the storyline (none, weak, moderate or strong),
- The type of health-related information conveyed (prevention, risk factors, symptoms, diagnosis, treatment, complications, prognosis),
- The presence and type of access to care issues (health insurance, institutional, immigration, confidentiality, stigma and lack of information),
- The primary setting of the storyline (home, work, school, health care setting, outdoors, mixed, other),
- The health outcome of the character (the storyline resulted in death, decline, unchanged, improved, unresolved/unclear or other),
- The quality of the care received (no care given, low quality, adequate, high quality)
- The quality of the health care interaction (no care given, unsatisfactory, satisfactory, mixed),
- The presence and type of violence portrayed,
- The presence or consumption of food or beverages,
- Depictions of exercise, nutrition, and obesity, and
- Depictions of alcohol, tobacco or drugs.

CODER TRAINING AND RELIABILITY

Each year during training 6 to 8 coders viewed and coded a training reel of 12 shows from the prior season with increasingly complex health-related content, using a highly detailed codebook of rules. Each week three or four shows were coded at home using the codesheets and then subsequently discussed in a series of meetings led by the project manager. Differences in coding were discussed until coders understood the relevant decision rules. In addition, inter-rater reliability was assessed throughout the season by

having the project manager serve as a second coder on a subset of shows (at least 10%). Reliability for all variables reached the level of at least 77% agreement between the coders. The overall average reliability across all variables was 95%. Overall, these reliability analyses provide the basis for strong confidence in the accuracy of the data described in this report. Once coder training was complete, each coder was assigned the same 2 to 3 programs to code for the entire spring season.

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