

Monitoring Youth Exposure to Alcohol Advertising in Magazines

Joshua Ostroff BA and David H. Jernigan PhD

I. INTRODUCTION

Nearly 11 million young people between the ages of 12 and 20 report drinking in the past 30 days, and almost 7.2 million report binge drinking (defined as five or more drinks on a single occasion, usually within two hours).¹ Every day, over 5,000 young people under the age of 16 have their first full drink of alcohol.² Underage alcohol use is responsible for 5,000 deaths per year among persons under age 21.³ Incidence of the onset of alcohol dependence peaks at age 18.⁴ Young people who begin drinking prior to age 15 are five times more likely to suffer from alcohol-related problems later in life than those who wait until they are 21.⁵

The average age of first use of alcohol for persons under 21 was 15.6 in 2005.¹ Although there is some use of alcohol among persons under age 12, according to the National Survey on Drug Use and Health, by age 12 only 4% of young people are drinkers (past 30 days) and only 2% are binge drinkers.¹ These percentages rise rapidly beginning at age 12, suggesting that the group at greatest risk of initiating underage alcohol use is 12 to 20 year olds.

Numerous studies, using different methodologies, have found that youth exposure to alcohol advertising increases the likelihood that young people will drink or intend to drink in the near future. Longitudinal studies have found that exposure to alcohol advertising on television,⁶⁻⁸ in magazines,^{6,8} via in-store beer displays and beer concessions,⁸ on the radio,^{6,8} on billboards⁶ or other outdoor signage,⁹ or via ownership of beer promotional items⁸ or branded merchandise¹⁰ predicted likelihood of subsequent drinking. Econometric analysis working from youth drinking surveys has estimated that a 28% reduction in alcohol advertising would reduce the percentage of adolescents who drink monthly from 25% to between 24 and 21%, and the percentage who engage in binge drinking monthly from 12% to between 11 and 8%.¹¹ Regression analyses have found that advertising for beer, spirits and alcopops is more likely to be placed in magazines with disproportionately youthful audiences¹² and on television programming disproportionately viewed by adolescent girls.¹³

Although they have argued that alcohol advertising does not influence alcohol consumption,¹⁴ alcohol industry trade associations have adopted voluntary standards for where alcohol companies will place their advertising in order to reduce the possibility of youth exposure to it. The current voluntary standard adopted by trade associations for the beer, wine and distilled spirits industries is a maximum of 30% underage audiences for media in which alcohol advertising will appear. The National Research Council and Institute of Medicine called for the industry to move towards a 15% maximum of 12 to 20-year-old audiences for their advertising in 2003,¹⁵ and 20 state attorneys-general seconded that call in a letter to the Federal Trade Commission in 2006.¹⁶ Given the documentation of the risks entailed in youth exposure to alcohol advertising, as well as the evidence that this advertising is often placed where youth are more likely to see it per capita than adults despite the industry's voluntary standards, monitoring and reducing youth exposure is an important public health goal. This paper will review the methodological and practical details of a data-driven approach to measuring youth exposure to

alcohol advertising in magazines. It is drawn from the experience of the Center on Alcohol Marketing and Youth (CAMY) at Georgetown University. With the assistance of Virtual Media Resources, a media planning and research firm in Natick, Massachusetts, CAMY has produced a series of reports and publications on youth exposure to alcohol advertising in magazines since 2001.^{17, 18} The paper provides an overview of the process by which researchers obtain data access licenses, access raw data, merge data sources into a robust database, classify advertising occurrences, and generate analyses providing a comprehensive and detailed understanding of youth exposure to alcohol advertising in magazines.

II. DATA SOURCES

CAMY's approach has been to rely on data sources similar to those used by alcohol companies themselves when they and their advertising agencies are making decisions about where to place their advertising. These data sources are commercially syndicated, meaning that licenses for access to the same data set may be purchased by many different parties, including advertisers, marketers, and media companies as well as public health researchers. Using syndicated research ensures that findings may be readily reproduced. The Center sought out the syndicated sources that would provide data on youth audiences for the largest number of magazines. These sources generally collect data on readers age 12 and above. There are limited data available for those under 12; however, the publications for which these data are available tend to be those published specifically for children, and not for publications commonly read by older youth or adults.

Data for youth alcohol ad exposure reports have been drawn from three sources: Mediamark Research, Incorporated (estimates of audience demographics); TNS Media Intelligence (information about advertising occurrences), and Impact Publications (information about alcohol brands and parent companies).

- MRI audience data were accessed using application software licensed from Interactive Market Systems (IMS). IMS programs allow for detailed reports of audience estimates by publication and demographic group.
- TNS occurrence data were accessed using Strategy™ application software provided by TNS.
- Impact Publications data were accessed using the Impact Databank™ annual reference.

Audit vs. Planning Perspective

In assessing youth exposure to alcohol advertising, CAMY acknowledges two approaches. The “audit perspective” provides a measure of retrospective exposure based on monitored occurrence and exposure data. The “planning perspective” provides an estimate of likely exposure based on information available at the time the advertising was planned and purchased. CAMY's magazine reports have used the audit perspective to report on actual exposure using the most appropriate resources available. However, the planning perspective is also valuable in assessing probable exposure as may have been anticipated by marketers.

WORKING PAPER – October 25, 2007

Since advertising cycles and practices vary (e.g., many marketers do not use a calendar year for advertising planning), the planning perspective is subject to interpretation. CAMY's magazine reports have employed the audit perspective in order to provide the best available estimate of actual youth exposure for a calendar year.

A. Audience Estimates: Mediamark Research Inc. (MRI)

MRI is the most widely used source for U.S. magazine audience estimates. MRI's estimates provide "average issue audience" estimates of publication readership. These estimates of the average audience for the survey period are the currency of magazine advertising planning, buying and sales. The estimates are not issue-specific; such issue-specific estimates are not generally available to advertising researchers. More precise estimates of circulation (i.e., copies sold to subscribers or at newsstands) are available, but the relationship between circulation and audience can vary greatly, depending among other factors on the number of pass-along readers for each publication.

MRI audience data for a given publication are applied to advertising that appears within that publication. In practice, of course, not every advertisement is seen by every reader, and not all advertisements are equal in terms of their effect or other attributes. The principle that CAMY uses is based on the opportunity for advertising exposure, which is based on the MRI-reported audience for a particular publication.

MRI surveys approximately 25,000 persons age 18 and older each year using two 12,500 person waves of fieldwork, with an additional annual sample of approximately 2,100 youth ages 12 to 19. MRI produces a number of reports from its periodic surveys:

- The *Fall* and *Spring* reports provide audience estimates for persons age 18 and older using the most recent 12 months (two waves) of respondent data;
- The *Doublebase* report, published each summer, merges two consecutive years of persons ages 18+ data;
- The *Teenmark* report, published each November, uses two years of youth (ages 12-19) data from the teen surveys;
- The *TwelvePlus* report combines the age 18+ results of the *Doublebase* study with the youth ages 12-17 results of the *Teenmark* study.

In order to obtain estimates for youth ages 12-20 and for adults age 21 and older, one may use the *TwelvePlus* survey alone, or combine the age 12-17 data from the *TwelvePlus* or *Teenmark* data with the most recent *Fall* or *Spring* report. The advantage of using *TwelvePlus* alone is primarily one of convenience. The advantages of using the combined *Spring* + *TwelvePlus* data are recency (the adult audience estimates are more likely to be based on the most recent measurements available) and scope (newly measured magazines will be included in the *Spring* report at least one year before they appear in the *TwelvePlus* report). In order to report on the largest number of magazines, CAMY uses the combination of *Spring* and *TwelvePlus* for its magazine reports, but the use of *TwelvePlus* alone is acceptable. As a rule, CAMY applies the average audience for a publication to ad placements that appear within that publication.

WORKING PAPER – October 25, 2007

MRI employs two methodologies for its magazine audience estimates. The adult survey methodology, which CAMY uses for persons age 18+, uses a “recent reading” (RR) technique as part of a personal interview, which identifies readers in the average issue of each publication by asking those respondents who have read or looked into any issue of the publication in the last six months whether they have read or looked into any issue of the publication in the last week, two weeks, or 30 days, depending on the specific publication interval.

For readers ages 12-17, MRI uses a household sample drawn from the adult survey, which employs a mailed questionnaire that includes a Recent Reading question and a “Frequency of Reading” (FOR) question for all measured publications. In the teen surveys, respondents indicate how many issues they have read (out of an average four). Teen audience estimates are based on the sum of weighted responses to the FOR questions. In effect, teen respondents who claim to read one out of four issues have a probability weight of approximately .25, teens who claim to read two out of four issues have a weight of approximately .50, etc. The weights are adjusted slightly based on the relationship between RR and FOR estimates in the MRI adult studies.

CAMY uses the MRI readership estimates for ages 12-17 from the teen studies, and for all readers age 18 and older from the *Spring* studies. The two surveys represent differing methodologies, a common feature of advertiser-supported media surveys, but they are also the most commonly accepted and used magazine audience surveys for their respective markets. MRI itself combines the results of these two methodologies in its *TwelvePlus* reports. In addition to differences in methodology, the adult surveys provide audience estimates for a more extensive roster of publications than do the teen surveys. Approximately 235 magazines are reported in the age 18+ surveys; roughly 50 publications have reported audiences for ages 12-17.

To assess the impact of the two different methodologies on estimating youth readership, Virtual Media Resources compared the ages 18-19 audience ratings for the 31 publications with alcohol advertising between 2001 and 2005 for which MRI provided audience data using both methodologies. For 26 of the 31 publications, the reported ages 18-19 ratings using the adult (RR) method was higher than that reported using the teen (FOR) method. The ten publications with the highest reported alcohol advertising expenditures over the five year period all had higher ages 18-19 readerships using the adult (RR) than the teen (FOR) methodology. Given the potential instability caused by examining such a small population segment, it is more reliable to average results for each publication over several years. Estimates for ages 18-19 readerships averaged 36% higher for the ten publications with the highest reported alcohol advertising expenditures, and 25% greater for all 31 publications.

From this analysis, it is reasonable to conclude that the ratios of youth versus adult exposure typically reported using MRI data are conservative. The likely effect of the different measurement methodologies is to understate the youth ages 12-20 audience relative to adults, and thus a comparable readership methodology for all ages would very likely produce higher youth audience compositions and greater youth exposure relative to adults than are currently reported by MRI.

C. Advertising Occurrences: TNS Media Intelligence

TNS Media Intelligence, formerly known as CMR or Competitive Media Reporting, is one of two services commonly used in the US for advertising occurrence and expenditure information across multiple media, the other being Monitor-Plus from Nielsen Media Research. TNS tracks advertising expenditure and occurrence data in magazines, television, radio, newspaper, out-of-home and other media, providing both national and local information. It provides specific occurrence information for every advertisement in every issue of the approximately 400 publications it monitors.

For magazine analysis, TNS is preferred over Monitor-Plus because it uniquely reports occurrences in special editions of magazines, such as demographic or geographic editions. Many publications offer advertisers the opportunity to advertise in a portion of their circulation, defined by geography or by subscriber characteristics. An example might be *People Top Ten* (sent to subscribers in the largest U.S. media markets), or *Newsweek Business Plus* (sent to subscribers who qualify based on job title, income and geography). For alcohol advertisers, it is more common to use subscription-only editions or editions for which the subscriber is age 21 or older. Through database matching techniques, most magazines can select specific subscribers and offer these selections to advertisers with a specific target market. For further discussion of these demographic editions, see Section IV below.

D. Parent Companies and Brand Classifications: Impact Publications

To aggregate brands both by alcohol category (i.e. beer, distilled spirits, alcopops, and wine) and by parent company, CAMY has relied on the Impact Databank, a product of M. Shanken Communications Inc., a market research firm serving the alcoholic beverage industry. Parent companies for major brands may change from time to time due to mergers and acquisitions, and Shanken publishes annual updates that contain profiles of each of the three major divisions of the industry (beer, spirits, wine).

III. Definitions

Advertising research has its own lexicon of terms. Definitions of the key terms are supplied below.

Audience. The number of readers for a particular publication who are thus potentially exposed to advertising within that publication. Typically equivalent to “average issue audience,” which refers to the average number of persons who read a publication during a survey measurement period. “Audience” is commonly qualified by a demographic, such as persons age 21-34.

Rating. The audience as a percentage of the total population for a particular demographic. The percentage of a population that is exposed to a publication or advertising within that medium is the rating for that publication or advertising.

Impressions. An advertising “impression” occurs when one person sees or hears an advertisement. If this ad is seen by five different people, that counts as five impressions. If a

WORKING PAPER – October 25, 2007

particular advertising medium, such as a magazine or television program, has an audience of 100,000 people, an ad placed in that magazine or during that program generates a number of impressions equal to the audience size—in this case 100,000 impressions.

Gross Impressions. The sum of impressions for a given ad campaign, or for any other combination of ads, is referred to as “gross impressions”—so-called because they include multiple exposures for some or all of the people who are exposed to the advertising. If five people see the same ad five times, this counts as 25 gross impressions. For a national advertising campaign, it is common for an advertising schedule to generate hundreds of millions of gross impressions.

Gross Rating Points. “Gross rating points” (GRPs) are a standard measure of per-capita advertising exposure. GRPs measure advertising exposure for a particular population, relative to the size of that population, and may be calculated by dividing gross impressions within that population by the number of people in the population. GRPs are the sum of ratings, described above, and are also the mathematical product of reach and frequency, defined below.

Reach and Frequency. Reach enables advertisers to know what percentage of a population is exposed to advertising. Frequency measures how many times each individual is exposed to a series of ads. Reach, frequency and GRPs are standard measures of media planning.

Audience Composition. Research companies collect demographic information about audiences for different media such as magazines, television programs, or radio stations. Demographics usually include age, gender and race, among other factors. Using the example of a medium with an audience of 100,000 people, research may report that 20,000 are ages 2-20, and 80,000 are age 21+. In that case, the composition of the audience is calculated by looking at the percentage of the audience that meets different demographic criteria. In this example, the audience composition is 20% ages 2-20 and 80% age 21+.

IV. METHODS

A. Overview

VMR worked with CAMY and the data vendors to negotiate licenses that permit data extraction, aggregation and reporting. Raw occurrence and audience data were extracted from the source data sets and placed in a relational database (Microsoft SQLServer) to permit aggregation, quality control and reproducibility. The database includes standard reference tables for *brands* (including brand classifications such as Distilled Spirits, etc.), *publications*, and *surveys* (i.e. the specific MRI audience survey from which data are obtained), permitting updates to these as needed. The database can produce comparisons of exposure to alcohol advertising for various demographic groups, including gender, race and age. The MRI data provide considerable flexibility in constructing age ranges, with ages 12-20 and age 21+ being the most common groupings in CAMY analyses.

Advertisers create schedules of advertising for their brands based on their own advertising cycles and on marketing requirements for individual brands. Syndicated data on magazine readership is

WORKING PAPER – October 25, 2007

not available on an issue-specific basis, but rather are typically based on six or more months of fieldwork. Thus analysis of brand and category trends are best done by aggregating and reporting occurrences on an annual basis, rather than trying to replicate brand advertising schedules. Multi-year analysis can reveal changes at the brand, category and publication levels.

Because advertisements are typically planned and bought for individual brands, analyses must be done at the brand level. For instance, the target audience for a mass market brand such as Budweiser is likely to be different from the target audience for a premium brand such as Grey Goose Vodka. The sum of the age 12-20 GRPs for a brand's entire advertising schedule over a given period of time expresses the total youth exposure to that brand's advertising for that period of time. Similarly, adult exposure is measured by adding all of the 21+ GRPs. In a similar manner, GRPs for all brands of beer or all distilled spirits brands may be aggregated to calculate an exposure measurement for the entire category.

Youth exposure to alcohol advertising is measured relative to adult exposure by comparing GRPs for each group. The simplest way to make this measurement is to create a ratio of youth GRPs (ages 12-20) to adult GRPs (ages 21+). Since GRPs are per-capita advertising measures, they are properly normalized to allow a comparison between adult exposure and youth exposure. If the ratio of youth GRPs to adult GRPs is a number greater than 1, then it is an indication that youth are being exposed to more advertising per-capita than adults. By this definition, if an advertisement for an alcohol ad has a GRP ratio greater than 1, it is an ad that overexposes youth relative to adults on a per-capita basis. The GRP ratio also helps quantify how much greater was the youth exposure to an ad relative to adults. For example, if the GRP ratio is 1.20, then we can conclude that youth were exposed to 20% more advertising than adults on a per-capita basis.

Actual audiences for magazine advertisements cannot be known with certainty in advance of the advertising placement. The best indication of the expected audience for a magazine is the most recently published audience data (e.g. in the case of magazines, the most recently published MRI survey). Reports produced by CAMY have thus far focused on the reported magazine audience for the calendar year in which the advertisement was placed. This "audit perspective" is an objective measurement of the reported audience at the time the advertisement appeared. To provide a "planning perspective" when making advertisement placement decisions, different media buyers or advertisers may use different MRI surveys, based on timing and other factors. Using a planning perspective requires making assumptions about which surveys advertisers might have used, and is therefore more subjective than the audit perspective. However, the audit perspective cannot be said to replicate what media planners do, since it is using after-the-fact rather than before-the-fact data.

B. Generating and Merging Data Sets

1. Audience Data

Generating Data

MRI data are extracted using IMS software, which generates a table of publication audience data for each demographic group. The tables include the publication name, demographic group description (e.g., ages 21-34) and audience data for each measured

WORKING PAPER – October 25, 2007

publication, in addition to the name of the specific MRI survey (e.g., *Spring 2006*). The universe projection (population estimate) for each demographic group for each survey is also provided.

Survey-specific audience tables extracted using IMS software are then imported into the relational database.

Calculating Data

CAMY reports are standardized on a calendar year. Audience data for all age 18+ population segments are based on the *Spring* MRI report for the subsequent year; for example, the *Spring 2006* report is used for calendar 2005, as the fieldwork period is closest to the calendar year of any MRI report. Audience data for ages 12-17 are based on the MRI *TwelvePlus* report published in the calendar year; this report is based on fieldwork from that and the prior year.

Using the Publication ID field to ensure that publications are properly matched, audience data are combined by VMR as follows:

- [Ages 12-17] (from *TwelvePlus*) + [Ages 18-20] (from *Spring*) = Ages 12-20
- [Ages 12-17] (from *TwelvePlus*) + [Ages 18+] (from *Spring*) = Ages 12+
- All age groups that include ages 21 and older populations are derived directly from MRI's *Spring* reports, or are calculated from MRI estimates. For example, ages 21-34 = ([ages 21-24] + [ages 25-29] + [ages 30-34])

Audience compositions are based on the total audience for ages 12+; for instance, the percentage composition for ages 12-20 is calculated as ([readers ages 12-20] / [readers age 12+]).

Audience estimates are provided from MRI using impressions to indicate the average issue audience, in thousands. Impressions are converted to Gross Rating Points to represent per-capita exposure using the formula

$$[\text{Impressions} / \text{Population}] * 100 = \text{GRPs}$$

GRPs are calculated for all populations analyzed by CAMY, including ages 12-20, ages 21-34, age 35+ and age 21+, among others.

2. Occurrence Data

Generating Data

Using the TNS Strategy application, tables of occurrence data are generated with one record for each occurrence, including the publication name, issue date, brand, parent company, product category, headline, page, color, size and estimated cost. The data extract also includes the edition type and name (as noted above, many publications produce special editions based on geography, subscriber demographics and other factors).

WORKING PAPER – October 25, 2007

Classifying Ads and Editions

TNS also provides a visual image of each ad placement, which is used for classification purposes. Advertisements are classified according to type: *product*, *corporate* (i.e. promoting a company's overall corporate image, such as Anheuser-Busch saluting the troops), "*responsibility*" (e.g. with underage drinking, drinking driving or moderate drinking as the primary message of the advertisement, as opposed to a single responsibility slogan or logo on an advertisement otherwise dominated by product promotion) or *event* (i.e. an event sponsored or co-sponsored by an alcohol brand, but with the message primarily about the event itself and not the brand). Only product ads (those which are clearly intended to promote a specific product) are included in the analysis of product advertising exposure.

For each occurrence, TNS includes a field for Edition Type and Edition. Only national editions are included in CAMY analyses, because only national edition audiences are measured by MRI. This omits a number of ad placements in so-called "21+ editions," which are discussed below.

C. Standardization

In order to ensure accuracy and quality, certain fields must be standardized. For magazine analyses, these include Publication Name and Brand Name. As a rule, CAMY does not alter the source data, but will use intermediate steps to trap and resolve potential inconsistencies. With so many data extracts, it is essential to have a system in place to capture and reconcile anomalies.

For example, publication names as reported by MRI may vary from survey to survey. *Sports Illustrated* in one survey may appear as *Sports Illus.* in another. VMR has built a table of publication names that include all variants. This table is continually updated. It assigns a unique Publication ID to each publication; multiple spellings of the same publication will always resolve to a standardized name.

Brand Names as reported by TNS are also updated. TNS may label one brand in multiple ways. The Brand Name table will resolve any inconsistencies, and also assigns each brand to its appropriate beverage type, using classification data from the Impact Databank.

To use these standardized tables of publication and brand names, Publication ID and Brand ID fields are created and populated within the import tables.

D. Merging Audience and Occurrence Data

Once the Audience and Occurrence tables are complete, a Master Occurrence table for each year is created by merging the two sources using the Publication ID field. This Master table includes information on each occurrence, including the Publication, date and audience information, and the Brand and Category information. This Master table is the basis for most calculations used in CAMY's magazine reports.

E. Aggregating Exposure Data

Using the Master tables, exposure may be aggregated by brand, beverage type and demographic. Occurrences that meet certain criteria may also be analyzed, such as overexposure, or those that exceed 15% and 30% youth audience composition.

F. Generating Reach and Frequency Data

Reach and frequency (R/F) estimates for magazines are calculated using IMS software designed for this purpose. Since reach is a measure of net exposure, multiple ads that appear within a particular issue of a publication are not counted. For example, if four ads for distilled spirits brands appear within a specific issue of *Rolling Stone*, VMR will only count the one issue of *Rolling Stone*. The effect of the additional ad placements will be to increase the Frequency of exposure, rather than the net number of individuals who are exposed to the advertising.

VMR generates schedules for each measure of R/F by exporting a table of for all alcohol advertising or by beverage type that includes the publication name and the number of discrete issues in which advertising appears. This table is created separately for age 18+ and ages 12-17 demographics, because the IMS software provides R/F estimates that are specific to each MRI survey.

Using MRI-provided estimates of the audience duplication between publications, the IMS application converts the advertising schedule to an estimate of net reach, expressed as the net impressions and the net percentage exposure for each population segment.

Because CAMY combined audience estimates from two MRI reports (*TwelvePlus* and *Spring*) to produce ages 12-20 readership, the R/F estimates also required the use of two reports. Separate estimates for ages 12-17 and ages 18-20 were combined to calculate net reach for ages 12-20.

IV. Assessing “Demographic” Edition Placements

Many magazines offer “demographic” editions, that is, editions tailored for advertisers who want to target a subset of a magazine’s readership, based on characteristics such as income, age, gender, geography, etc. For alcohol advertisers, a number of publications offer “21+ editions,” based primarily on the age of subscribers. Publishers of these editions data-match the magazine’s subscriber file with demographic and household information to identify subscribers who meet certain criteria. Those subscribers receive the special edition, which offers the same editorial content as the full-run edition but with different and/or additional advertising pages.

Certain publications, in addition to or instead of providing a “21+ edition” offer a subscriber-only edition for which they have a reasonable estimate of the audience composition of subscribers. The criteria for each publication vary. *Sports Illustrated* is the most restrictive in that the publication verifies that there are no household members under age 21. Other magazines simply base the 21+ subscriber subset on the age of the subscriber alone.

Magazines offering 21+ editions for alcohol advertisers as of the date of this analysis include:

WORKING PAPER – October 25, 2007

- *Vibe* Subscriber Edition
- *ESPN The Magazine* 21+ Subscriber Edition
- *Sports Illustrated* 21+ Subscriber Edition
- *Rolling Stone* Subscriber Edition
- *Jane* 22+ Subscriber Edition

Note: *Spin* no longer provides a demographic edition, and *Jane* has ceased publication.

Syndicated audience research firms such as MRI do not provide estimates for demographic editions like they do for the version of a magazine that goes to the full subscriber base (known as “full-run” editions). Magazine audience research does not identify the specific edition that is read by a survey respondent, so there are no generally accepted estimates for these less-than-full-run editions. It is thus difficult to ascertain whether “21+ editions” actually satisfy the alcohol industry’s placement code provisions.

Since 2003, the principal alcohol industry trade associations have all included in their voluntary codes of good marketing practice a commitment to placing advertising in media whose youth audience composition is less than 30%. (See Appendices A and B for advertising placement provisions adopted by the trade associations from the industry segments with the largest advertising spending, distilled spirits and beer.) There is reason to believe that some demographic editions may not in fact meet this voluntary 30% maximum for youth audiences. The reason for this is that magazine readership is comprised of two components: subscribers and “passalong” readers. For every copy purchased by subscription or at a newsstand, there are many more passalong readers. For this reason, the demographics of a magazine’s subscribers do not mirror the demographics of its total audience. In fact, passalong readers are frequently much younger than subscribers. For example, 12% of *Vibe* subscribers are ages 12-20; yet over 32% of *Vibe*’s total audience is ages 12-20. *Vibe* has approximately 10 Readers-per-Copy or “RPC,” which means that there are ten times as many total readers of *Vibe* (9.7 million) as there are copies sold (approximately 975,000).

As Table 1 shows, the audience composition for passalong readers in full-run editions – that is, the editions that may be found on newsstands or which are sent to subscribers who do not receive a special demographic edition – is typically younger than for subscribers.

Publication	% under 21		
	Total	Subscribers	Passalong Readers
<i>Vibe</i>	32.3%	12.0%	34.6%
<i>ESPN The Magazine</i>	27.0%	21.0%	27.8%
<i>Sports Illustrated</i>	22.0%	12.0%	23.7%
<i>Rolling Stone</i>	26.8%	15.0%	28.2%
<i>Jane</i>	28.0%	5.0%	34.5%
Sources:	MRI	Magazine Subscriber Studies	MRI

The key question is whether for demographic editions, unlike for full-run editions, the passalong readership mirrors the age demographics of subscribers. To answer this it is necessary to isolate

WORKING PAPER – October 25, 2007

the age composition of magazine subscribers and passalong readers, using a combination of readership data from Mediamark Research Inc. and the individual publications' subscriber research. This is done by applying the age demographic percentages of passalong readers of the full-run edition to the passalong readership of the demographic edition; the passalong demographic composition, when combined with the demographic composition of subscribers to the demographic edition, will provide an estimate of the demographic edition's total audience.

A series of calculations are required to arrive at this estimate of demographic edition audience composition. We start with several known factors:

- The MRI audience composition for the full-run edition, both percentages and numbers
- The circulation (i.e., actual number of copies sold) for both the full-run and demographic editions
- The subscriber demographic profile for both the full-run and demographic editions (i.e., what percentage and number of subscribers are ages 12-20 and age 21+)
- The readers-per-copy (RPC) for each publication; $RPC = Audience / Circulation$

Using this information, the following steps are taken to estimate audience compositions of demographic editions.

1. First, we require an estimate of the total audience of the demographic edition. Absent evidence to the contrary, we apply the RPC for the full-run edition to the circulation for the demographic edition:

$$(Demo\ Edition\ Circ) * (Full-Run\ RPC) = (Demo\ Edition\ Audience)$$

2. Next, we calculate the number of total (Age 12+) passalong readers for both the full-run and demographic editions:

$$(Total\ Age\ 12+\ Audience) - (Circulation) = (Total\ Passalong\ Audience)$$

3. Next, we calculate the number of ages 12-20 and age 21+ passalong readers for the full-run edition:

$$\begin{aligned} (Ages\ 12-20\ Total\ Readers) - (Ages\ 12-20\ Subscribers) &= (Ages\ 12-20\ Passalong\ Readers) \\ (Age\ 21+\ Total\ Readers) - (Age\ 21+\ Subscribers) &= (Age\ 21+\ Passalong\ Readers) \end{aligned}$$

4. Next, we calculate ages 12-20 and age 21+ composition for passalong readers of the Full Run Edition:

$$\begin{aligned} (Ages\ 12-20\ Passalong\ Readers) / (Age\ 12+\ Passalong\ Readers) &= \\ (Age\ 12-20\ Passalong\ Composition) & \end{aligned}$$

$$\begin{aligned} (Age\ 21+\ Passalong\ Readers) / (Age\ 12+\ Passalong\ Readers) &= \\ (Age\ 21+\ Passalong\ Composition) & \end{aligned}$$

WORKING PAPER – October 25, 2007

5. Next, we apply the ages 12-20 and age 21+ passalong reader composition from the full-run edition to the demographic edition and convert these percentages to the number of readers.

$$(\text{Ages 12-20 Full-Run Passalong Reader Composition \%}) * (\text{Age 12+ Demo Edition Passalong Audience}) = (\text{Ages 12-20 Demo Edition Passalong Readers})$$

$$(\text{Age 21+ Full-Run Passalong Reader Composition \%}) * (\text{Age 12+ Demo Edition Passalong Audience}) = (\text{Age 21+ Demo Edition Passalong Readers})$$

6. Next, we add the number of ages 12-20 demographic edition passalong readers (from Step 5) to the number of ages 12-20 demographic edition subscribers, and divide the result by the total demographic edition audience (from Step 1) to estimate the audience composition of the demographic edition.

$$((\text{Ages 12-20 Demo Edition Passalong Readers}) + (\text{Ages 12-20 Demo Edition Subscribers})) / (\text{Age 12+ Demo Edition Audience}) = (\text{Ages 12-20 Demo Edition Audience Composition})$$

This analysis rests on two important assumptions about the audience for 21+ Editions, in the absence of evidence to the contrary:

- The readers-per-copy (RPC) is the same for both the Full Run and the 21+ Edition.
- The passalong reader age composition is comparable for both the full run and the 21+ editions (a demographic edition with a more restrictive qualification, such as *Sports Illustrated*, may in fact have a different passalong age composition relative to the full run edition, but this has not been tested or verified).

Based on this analysis, the ages 12-20 composition for total readers, subscribers and passalong readers for current and recent “21+ Editions” can be estimated as follows:

Publication	% under 21		
	Total	Subscribers	Passalong Readers
<i>Vibe</i> Subscriber Edition	32.0%	9.0%	34.6%
<i>ESPN The Magazine</i> 21+ Edition	24.6%	0.0%	27.8%
<i>Sports Illustrated</i> 21+ Edition	20.3%	0.0%	23.7%
<i>Rolling Stone</i> Subscriber Edition	26.8%	15.0%	28.2%
<i>Jane</i> 22+ Edition	26.9%	0.0%	34.5%
Sources:	MRI + Sub. Studies	Subscriber Studies	MRI

7. Finally, we can use this approach to compare audiences of demographic editions to full-run edition audiences. The qualification of subscribers has a very limited effect on the audience composition of the “21+ Editions,” ranging from a 0.0% reduction (*Rolling Stone*) to a 2.4% reduction (*ESPN The Magazine*). In the case of *Rolling Stone*, there is no reduction at all. The readers-per-copy are shown in Table 3 to demonstrate that the subscribers are a small percentage of the total readership for these publications.

WORKING PAPER – October 25, 2007

Table 3: RPC and Ages 12-20 Composition for Full Run and “21+ Editions”			
		% under 21	
Publication	RPC	Full Run	“21+ Edition”
<i>Vibe</i>	10.0	32.3%	32.0%
<i>ESPN The Magazine</i>	8.6	27.0%	24.6%
<i>Sports Illustrated</i>	9.7	22.0%	20.3%
<i>Rolling Stone</i>	7.0	26.8%	26.8%
<i>Jane</i>	4.5	28.0%	26.9%
Sources:	MRI + Audit Bureau of Circulations	MRI	MRI + Sub. Studies

IV. CONCLUSION

This paper has documented how commercially-available databases may be used to estimate youth exposure to alcohol advertising in magazines. The measures and calculations followed in this approach are standard to the advertising research and placement fields. This method may be used to assess trends in youth exposure to alcohol advertising in magazines, as well as to test the effectiveness of current or proposed means of reducing youth exposure, such as the use of demographic 21+ subscriber editions, in shielding youth from unnecessary exposure to alcohol advertising.

WORKING PAPER – October 25, 2007

Appendix A: DISCUS Placement Guidelines¹⁹

Demographic Data/Advertisement Placement Guidelines to Implement the Responsible Placement Provisions of the DISCUS Code of Responsible Practices for Beverage Alcohol Advertising and Marketing

Set forth below are guidelines regarding placement of advertisements in various media and periodic, random after-the-fact audits (post audits) of placements to meet the demographic standard where at least 70% of the audience for TV, print and radio advertisements is reasonably expected to be 21 years of age or older (the legal purchase age (LPA) audience composition).

I. Media placement and the 70% LPA standard

A. A placement will be considered to be in compliance with this LPA standard if:

- i) The advertiser has a reasonable expectation, determined by using reliable, up-to-date audience composition data, that the LPA audience composition will be at least 70%;
- ii) The advertiser conducts internal, semi-annual after-the-fact audits of a random portion of past placements to verify that such placements were in compliance with the 70% LPA audience composition standard; and
- iii) The advertiser, upon learning of a non-compliant placement, takes appropriate, corrective action for future placements.

B. A reasonable expectation for meeting this demographic standard takes into account marketplace realities, the medium and available demographic audience composition data, and includes:

- i) Recognition that a company's media buys generally are determined prior to its upcoming fiscal year for placement during the course of that fiscal year;
- ii) Recognition that a company's media buys rely upon historical demographic data to estimate the future LPA audience composition;
- iii) Recognition of the availability and publication intervals of syndicated audience composition data; for example, MRI *TwelvePlus* data are published annually and Arbitron data are published quarterly, whereas national broadcast networks have the most frequently measured syndicated audience composition data (national Nielsen data) thereby affording, among other things, more data for advertisement placement and for more expeditious after-the-fact audits, as compared to, for example, local (spot) TV and cable, as well as radio and print media.

II. Media placement and audience composition data

A. For TV--broadcast (network/local), cable (network/local) and syndication:

WORKING PAPER – October 25, 2007

- i) Purchase by program (or, if program specific data are unavailable, by daypart/timeslot) using nationwide “2+” audience composition data, such as national Nielsen data, based upon the last two quarters of such data
- ii) For new programs, data for similar programs or time periods
- iii) A placement will be considered appropriate when the above-referenced data show that the placement is in compliance with the Code
- iv) Post audits: A past placement will be considered appropriate where data published or supplied for the quarter in which the placement ran show an LPA audience composition that was in compliance with the Code

B. For radio:

- i) Purchase by daypart (e.g., “a.m. drive,” “midday,” “afternoon drive,” etc.) using “12+” audience composition data, such as Arbitron data, based upon the last two quarters of such data
- ii) If the station is not measured by a syndicated data source (e.g., a new station or a station not measured by Arbitron), data provided by the station regarding the target listenership audience or data for stations with similar formats in similar markets
- iii) More specific data than daypart can be used for audience composition such as, for example, narrowing the a.m. drive hours from 6:00 a.m.-10:00 a.m. to 8:00 a.m.-10:00 a.m. to determine audience composition
- iv) A placement will be considered appropriate when the above-referenced data show that the placement is in compliance with the Code
- v) Post audits: A past placement will be considered appropriate where data published or supplied for the quarter in which the placement ran show an LPA audience composition that was in compliance with the Code

C. For print:

- i) Purchase by publication using “12+” audience composition data, such as MRI consolidated *TwelvePlus* data (designed to allow analysis of “12+” youth and adult readership) or, if unavailable, MRI “18+” data, based upon the last publication of such data
- ii) If the publication is not measured by a syndicated data source (e.g., a new publication or a publication not measured by MRI), data provided by the publisher regarding target readership audience or data for similar publications (see section D below for general circulation unmeasured magazines)
- iii) More specific data regarding audience composition also meet this standard, such as a “21+” subscriber special edition of the publication

WORKING PAPER – October 25, 2007

- iv) A placement will be considered appropriate when the above-referenced data show that the placement is in compliance with the Code
- v) Post audits: A past placement will be considered appropriate where data published or supplied subsequent to the placement show an LPA audience composition that was in compliance with the Code

D. Independent measurement of unmeasured magazine demographic profiles (effective October 1, 2006):

- i) Magazines intended for general circulation that are not measured by a syndicated data source, such as MRI or Simmons, and have or are intended to have a subscriber base should have an independent measurement of their subscribers, which meets the following criteria:
- ii) A demographic survey of subscribers should be conducted periodically for established magazines and for new magazines before consideration of an advertisement placement (and again for new magazines once the subscriber base has stabilized; for example, after initial subscribers have had an opportunity to renew would be appropriate in the latter instance)
- iii) Survey of magazine subscribers must be conducted by an independent third party research company using established research methods, such as the ABC Subscriber Study Audit requirements
- iv) Survey supplier and date survey was conducted must be identified
- v) Sample should be at least 300 in-tab (tabulated) respondents with the sample frame fully reported
- vi) Sample must be pulled on an nth name basis from all eligible names on the publication's full subscriber file for U.S. only. No complimentary copies, international, business addresses, demographic, or regional edition splits (unless these copies also are used for the advertising)
- vii) Subscribers, not other household members, should be asked to fill out and return the survey
- viii) Actual age, year of birth or check off for appropriate bracket of age are acceptable, as long as the age bracket identifies 21 as a starting point (for example, 21-34 versus 18-24)
- ix) Upon the receipt of the independent demographic survey, a potential advertiser will evaluate the audit in conjunction with other factors prior to purchasing an advertising placement, such as the content of the magazine, similar or comparable publications, the “pass along” rate and/or circulation distribution of similar or comparable publications

These Guidelines will be reviewed periodically to ensure that they reflect the most current and appropriate recognized electronic and print audience composition data.

March 2006

Appendix B: Buying Guidelines for the Implementation of Section 3(c) of the Beer Institute Advertising and Marketing Code²⁰

Section 3(c): Beer advertising and marketing materials shall only be placed in magazines, on television, or on radio where at least 70% of the audience is expected to be adults of legal drinking age. A placement will be considered reasonable if the audience composition data reviewed prior to placement met the percentages set forth above. What constitutes a reasonable basis for placement depends on the medium and available data for that medium. Buying guidelines for the implementation of this section will be distributed in conformance with the dissemination provisions of this code. The brewer placing advertising or marketing materials in magazines, on television, or on radio shall conduct periodic after-the-fact audits, at least semi-annually where possible, of substantially all of its placements. If a brewer learns that a placement did not meet the Code standard, it will take steps to prevent a reoccurrence. These steps may include, but are not limited to: investigating exceptions; canceling placements on programs with unacceptable audience composition; reallocating purchases to a different and acceptable time slot; contacting the media outlet/station with regard to placement errors or possible reporting errors; reemphasizing audience composition requirements with media buyers and media outlets; and continued monitoring of a program or time slot to determine whether buys should be canceled or reallocated.

Brewers shall use the following guidelines when purchasing advertising in magazines or on television or radio.

Magazine Guidelines

- A. For the purchase of print advertisements in magazines, use of a nationally recognized measurement service providing age 12-plus audience composition data to the extent available, or if not available, age 18-plus audience compositional data, or, if unmeasured, subscription data and/or other data from comparable publications.
- B. For the purchase of print advertisements in new magazines, use of subscription data and/or other data from comparable publications;
- C. A placement will be considered appropriate when data supplied by the sources referenced in (A) and (B) above shows that the publication is in compliance with the code.
- D. Placement of print advertisements in editions of magazines that are published for subscribers 21 years of age or older will be deemed compliant with the Code.

Television Guidelines

- A. For national network television advertising buys, use of national audience composition data on the program in the timeslot;
- B. For syndicated, cable or local spot television buys, use of national audience composition data for the program or daypart being bought;

WORKING PAPER – October 25, 2007

- C. For new buys, use of national audience composition data for comparable programs in comparable timeslots;
- D. A placement will be considered appropriate when data for two consecutive rating periods shows that the program or daypart is in compliance with the Code.

Radio Buying Guidelines

- A. Audience composition restrictions apply to all paid and bonus spots including rotators, negotiated and agreed upon mentions, liners, tags, billboards, and any other type of announcement.
- B. For audited radio stations, audience composition will be determined by the Average Quarter Hour (AQH) Persons measurement in Arbitron quarterly reports.
- C. Time periods in which radio spots may be placed shall be in the following Arbitron standard dayparts or other time periods as specified below that satisfy the code provision that 70% of the audience composition is 21 years of age or older:
 - 1. Arbitron standard dayparts:

i.	AM Drive	Monday thru Friday	6:00 a.m. - 10:00 a.m.
ii.	Midday	Monday thru Friday	10:00 a.m. - 3:00 p.m.
iii.	PM Drive	Monday thru Friday	3:00 p.m. - 7:00 p.m.
iv.	Evening	Monday thru Friday	7:00 p.m. - 12:00 midnight
v.	Monday through Friday		12:00 midnight – 6:00 a.m.
vi.	Sat. & Sun.		6:00 a.m. – 10:00 a.m.
vii.	Sat. & Sun.		10:00 a.m. – 3:00 p.m.
viii.	Sat. & Sun.		3:00 p.m. – 7:00 p.m.
ix.	Sat. & Sun.		7:00 p.m. – 12:00 midnight
x.	Sat. & Sun.		12:00 midnight—6:00 a.m.
 - 2. Any period of time adjacent to an Arbitron standard daypart that is also purchased, provided that each additional hour independently satisfies the code provision that 70% of the audience composition is 21 years of age or older.
 - 3. Any period of two or more consecutive hours, provided that each hour independently satisfies the code provision that 70% of the audience composition is 21 years of age or older.
- D. Radio spots placed will be considered appropriate when data for each rating period covering the previous six months from the day the ad placement is made shows that the time period purchased satisfies the code provision that 70% of the audience composition is 21 years of age or older.

WORKING PAPER – October 25, 2007

- E. As new Arbitron reports become available during the term of an agreement to purchase future radio spots, brewers will review the new data to determine whether spots purchased under the agreement continue to satisfy the Code provision that 70% of the audience composition is 21 years of age or older. If not, brewers will, as soon as practicable, make schedule adjustments, cancellations, or other appropriate changes to comply with the “70% standard” for the duration of the agreement.

- F. For unaudited radio stations, radio spots placed will be considered appropriate if they meet these guidelines through use of audience compositional data from time periods for comparable stations in comparable markets

ENDNOTES

1. Substance Abuse and Mental Health Services Administration (SAMHSA). *National Survey on Drug Use and Health*. Rockville, MD: Office of Applied Studies; 2006.
2. Calculated from Ibid.
3. U.S. Surgeon General. *Surgeon General's Call to Action To Prevent and Reduce Underage Drinking*. Washington, D.C.: Department of Health and Human Services, Office of the Surgeon General; 2007.
4. Li TK, Hewitt BG, Grant B. Alcohol use disorders and mood disorders: a National Institute on Alcohol Abuse and Alcoholism perspective. *Biological Psychiatry*. 15 November 2004;56(10):718-720.
5. U.S. Surgeon General. Press Release: Acting Surgeon General Issues National Call to Action on Underage Drinking. <http://www.hhs.gov/news/press/2007pres/20070306.html>. Accessed June 20, 2007.
6. Snyder L, Milici F, Slater M, Sun H, Strizhakova Y. Effects of alcohol exposure on youth drinking. *Archives of pediatrics and adolescent medicine*. 2006;160(1):18-24.
7. Stacy AW, Zogg JB, Unger JB, Dent CW. Exposure to televised alcohol ads and subsequent adolescent alcohol use. *American Journal of Health Behavior*. 2004;28(6):498-509.
8. Collins RL, Ellickson PL, McCaffrey D, Hambarsoomians K. Early adolescent exposure to alcohol advertising and its relationship to underage drinking. *Journal of adolescent health*. 2007;40(6):527-534.
9. Pasch KE, Komro KA, Perry CL, Hearst MO, Farbakhsh K. Outdoor alcohol advertising near schools: what does it advertise and how is it related to intentions and use of alcohol among young adolescents? *Journal of Studies on Alcohol and Drugs*. 2007;68(4):587-596.
10. McClure AC, Dal Cin S, Gibson J, Sargent JD. Ownership of alcohol-branded merchandise and initiation of teen drinking. *American Journal of Preventive Medicine*. 2006;30(4):277-283.
11. Saffer H, Dave D. Alcohol advertising and alcohol consumption by adolescents. *Health Economics*. 2006;15(6):617-637.
12. Siegel M, King C, Ostroff J, Ross C, Dixon K, Jernigan DH. Comment: Alcohol Advertising in Magazines and Youth Readership: Are Youths Disproportionately Exposed? *Contemporary Economic Policy*. In press.
13. Chung PJ, Garfield CF, Elliott MN, et al. Alcohol Advertising and Age 12-20 Viewership on Cable Television. Submitted.
14. Beam Global Spirits and Wine I. Beam Global Spirits & Wine, Inc. Voluntarily Adopts Stricter Advertising Policies; Thanks 37 State Attorneys General for Their Support. <http://www.beamglobal.com/jbbw/pr/MediastandardsFINAL5-7-07.pdf>. Accessed August 22, 2007.
15. National Research Council and Institute of Medicine. *Reducing Underage Drinking: A Collective Responsibility*. Washington, D.C.: National Academies Press; 2004.
16. Rowe GS, Shurtleff ML, Goddard T, et al. RE: Alcohol Reports, Paperwork Comment, FTC File No. P064505. A Communication from the Chief Legal Officers of the Following States: Arizona, Connecticut, Delaware, Hawaii, Idaho, Illinois, Iowa, Maine, Maryland, New Jersey, New Mexico, New York, Ohio, Oregon, Rhode Island, Utah,

WORKING PAPER – October 25, 2007

- Vermont, Washington, Wyoming [California subsequently signed on].
<http://www.ftc.gov/os/comments/alcoholmanufacdstudy/522852-01287.pdf>. Accessed December 6, 2006.
17. Jernigan D, Ostroff J, Ross C, O'Hara JA. Sex differences in adolescent exposure to alcohol advertising in magazines. *Archives of Pediatrics and Adolescent Medicine*. 2004;158:629-634.
 18. Jernigan DH, Ostroff J, Ross CS, Naimi TB, Brewer RD. Youth exposure to alcohol advertising in magazines - United States, 2001-2005. *Morbidity and Mortality Weekly Report*. August 3 2007;56(30):763-766.
 19. Distilled Spirits Council of the United States Inc. Demographic Data/Advertisement Placement Guidelines to Implement the Responsible Placement Provisions of the DISCUS Code of Responsible Practices for Beverage Alcohol Advertising and Marketing. <http://www.discus.org/pdf/DemographicGuidelinesRevised3-06.pdf>. Accessed October 23, 2007.
 20. Beer Institute. Buying Guidelines for the Implementation of Section 3(c) of the Beer Institute Advertising and Marketing Code. <http://www.beerinstitute.org/BeerInstitute/files/ccLibraryFiles/FILENAME/00000000441/ADCODEBUYINGGUIDELINES2006.pdf>. Accessed October 23, 2007.