ADHD care seems to have been accomplished by increasing awareness of the national guidelines published and promulgated by the American Academy of Pediatrics that encouraged PCPs they can and should provide this care, and availability of easy-to-use tools to aid diagnosis and treatment monitoring, and effective treatments.[3,5] Thus, it appears that a similar transition for depression care will require active promotion of national treatment guidelines by the American Academy of Pediatrics together with encouragement for PCPs to provide care for depression, education about how to use tools designed to aid diagnosis and treatment monitoring in the primary care setting (such as the Patient Health Questionnaire 9),[6] and system changes to support timely access to mental health professionals when needed as well as improved reimbursement for time spent.

Although these data may not be generalizable because the study sample was small and from one geographical location, study findings and experience with ADHD suggest that such efforts would be welcomed by many PCPs and effective.

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Online-Only Material: The eAppendix is available at http://www.archpediatrics.com.

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Encouraging Trends in Student Access to Competitive Beverages in US Public Elementary Schools, 2006-2007 to 2010-2011

Access to competitive foods and beverages in schools—via vending machines, stores/snack bars, and à la carte lines—leads to consumption of unhealthy products,[1,2] such as sugar-sweetened beverages (SSBs), which are associated with obesity.[3,4] To reverse the childhood obesity epidemic, authorities have called for schools to limit the availability of high-calorie beverages[5-7]; the Institute of Medicine (IOM) recommends that competitive beverages in elementary schools be limited to water, 100% juice, and nonfat or 1% milk.[8]

Previously, we reported on competitive beverage availability in elementary schools from 2006-2007 to 2008-2009.[9] Herein, we extend those findings with 2 additional years of data.

Methods. We gathered data on school practices via mail-back surveys at nationally representative samples of public elementary schools in the contiguous United States. The samples were developed at the Institute for Survey Research at the University of Michigan, based on public use data sets from the National Center for Education Statistics. Surveys were completed by school principals and food service staff during the spring (second half) of each school year, from 2006-2007 to 2010-2011. The institutional review board at the University of Illinois at Chicago approved the study protocol and survey materials. Extensive methodological detail is given elsewhere.[9,10]

We conducted analyses in Stata/SE version 10.0 (StataCorp) to account for sampling stratum and for clustering of schools within districts and states. Weights were developed based on student enrollment and adjusted for potential school nonresponse; all analyses were conducted using these weights, which provide inference to public elementary school students across the United States. Time trends were evaluated in multivariate logistic regression models (controlling for school characteristics) with a linear term and a quadratic term to examine curvilinear trends; both were centered at zero.

Table. Percentage of Students in US Public Elementary Schools With Access to Competitive Beverages in School During the 2006-2007 to 2010-2011 School Years, Stratified by Venue[a]

	Any Competitive Venue					Vending Machines				
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Venue present at school	49.0	56.7	61.3	59.8	54.7[d]	15.7	15.0	14.8	13.1	11.2[c]
Only IOM-approved beverages available	10.0	9.7	16.1	19.2	21.4[b]	5.3	5.0	7.7	7.4	5.0
Any non–IOM-approved beverages available	39.0	46.8	44.8	40.6	33.4[d]	10.4	10.0	6.8	5.7	6.2[b]
Approved beverages										
Bottled water	37.5	40.0	43.3	42.6	39.7	14.9	13.0	13.5	12.5	10.0[c]
100% Fruit juice	31.9	34.8	36.7	35.5	27.0[d]	7.1	5.9	5.4	4.4	4.3[c]
Lower-fat milk	37.9	44.6	48.4	43.3	37.2[d]	4.1	4.6	4.0	1.9	2.6[c]
Nonapproved beverages										
SSBs	17.3	16.6	14.1	14.2	11.9[c]	5.0	5.9	3.8	4.2	3.0[c]
Low-calorie beverages	18.6	17.9	18.1	15.8	12.8[c]	6.9	5.4	4.9	4.3	3.7[b]
Higher-fat milk	29.1	38.2	35.1	32.3	24.7[d]	3.7	4.1	2.9	2.0	2.1[c]

	Stores or Snack Bars					Á La Carte Lines				
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Venue present at school	10.7	16.9	17.3	14.6	15.6[e]	35.5	44.0	51.5	49.6	40.0[d]
Only IOM-approved beverages available	2.3	3.9	6.3	5.4	8.3[b]	6.4	6.2	13.7	15.1	16.2[b]
Any non–IOM-approved beverages available	8.4	12.8	10.8	9.2	7.3[e]	29.1	37.6	37.7	34.5	23.8[d]
Approved beverages										
Bottled water	8.7	13.7	14.8	11.8	12.3[e]	22.9	26.8	31.9	31.1	27.1[d]
100% Fruit juice	6.2	10.9	8.6	9.3	5.6[d]	23.7	27.3	31.0	30.3	21.5[d]
Lower-fat milk	7.0	12.1	10.5	9.0	7.4[d]	32.5	39.0	45.1	40.5	32.9[d]
Nonapproved beverages										
SSBs	3.9	6.0	5.1	4.0	3.1	11.5	9.2	8.8	8.4	7.4
Low-calorie beverages	3.8	5.9	4.3	4.7	2.7	11.3	11.0	11.2	10.6	8.0
Higher-fat milk	5.6	9.6	8.0	5.7	4.1[d]	24.8	33.7	31.7	30.1	20.8[d]

Abbreviations: IOM, Institute of Medicine; SSB, sugar-sweetened beverage.

[a] Data weighted to provide inference to elementary school students. Percentages are unadjusted. Percentages in rows 2 and 3 may sum to less than total given in row 1 because of a small amount of missing data on availability of specific beverages. We tested significance of changes over time in multivariate logistic regressions controlling for school characteristics (school size, race/ethnicity, percentage of students eligible for a free or reduced-price lunch, urbanicity, and US census region). Number of surveys returned and response rates for each year: 578 (54.6%), 748 (70.6%), 641 (61.8%), 680 (64.5%), and 598 (57.4%).

[b] $P < .01$ for linear trend.

[c] $P < .05$ for linear trend.

[d] $P < .01$ for quadratic (curvilinear) trend.

[e] $P < .05$ for quadratic (curvilinear) trend.

Results. Student access to beverages in any competitive venue on campus peaked at 61.3% in 2008-2009 and dropped thereafter (**Table**). The percentage of students who could purchase only IOM-approved competitive beverages increased linearly. Considering specific venues, vending machine access decreased steadily. There were significant curvilinear trends in access to stores/snack bars and á la carte lines, peaking during 2008-2009 and dropping thereafter. In those venues, availability of high-fat milks peaked in 2007-2008, which appears to be driving the corresponding curvilinear trend in availability of non–IOM-approved beverages in stores/snack bars and á la carte lines.

Comment. Beverage vending and the availability of SSBs anywhere on campus decreased steadily since 2006-2007. Student access to stores/snack bars and á la carte beverage lines peaked in 2008-2009 and decreased thereafter. As of 2010-2011, one-third of public elementary school students had access to non–IOM-approved beverages in any competitive venue on campus, and only 11.9% had SSBs available.

In May 2006, the Alliance for a Healthier Generation reached an agreement with the American Beverage Association to limit portion sizes and energy content of beverages offered to students. Those guidelines[11] are consistent with the IOM recommendations. An evaluation released by the American Beverage Association reported that beverage shipments to schools dropped by 72% from 2004 to 2009, but that analysis relied on bottler-supplied reports of shipments to schools that mostly had exclusive distribution contracts. In contrast, our previous analyses[9] indicated that higher-fat milks and SSBs continued to be offered in 2008-2009, perhaps because those products were sourced outside of formal distribution contracts. The American Beverage Association analysis included data for the first half of the 2009-2010 school year, which we then did not include; however, our current data

also show that during 2009-2010, the trend of increasing access to competitive venues reversed, as did the availability of higher-fat milks in stores/snack bars and á la carte lines. This is encouraging, as is the current finding that SSB availability in vending machines (ie, the venue most often covered by distribution contracts) steadily decreased. Increases in district policies pertaining to competitive beverages[12] may have contributed to these improvements and that association will be examined in forthcoming reports.

While subject to the typical limitations of survey research (eg, reporting bias), the current analyses are based on large, nationally representative data sets. Although there is still progress to be made, the trends are encouraging and show not only that change in the school beverage environment is possible, but that it is already under way.

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COMMENTS

School-Based Health Center Use and High School Dropout Rates

In a recent article in the *Archives*, Kerns et al[1] found that high school students of an urban public school district who occasionally used school-based health centers (SBHCs) had a roughly 33% lower dropout rate than non-SBHC users.

The apparent association between lower dropout rates and SBHC visits might have been exaggerated by their methods, which seem to have introduced time-dependent (or "immortal time") bias. This bias, apparently common in clinical studies, arises from modeling a time-dependent treatment in a hazards regression as a fixed baseline covariate instead of as a time-varying covariate.[2] In this case, Kerns et al ignored the timing of SBHC visits, modeling the treatment as a fixed covariate representing the frequency of the subject's SBHC visits, averaged over his or her entire high school career.

Stated simply, this model would inevitably show that SBHC users seem to stay in school longer, if only because the longer a student remains in school, the more opportunities he or she has to visit an SBHC and therefore the higher the probability that he or she would make at least 1 visit. In this way, even if there is no relationship between SBHC use and dropout propensity, the analysis may find one.[3]

Two other aspects of the analysis could also contribute to erroneous estimates. First, the underlying survival model requires the assumption that every nondropout is at risk of dropping out.[4] This assumption cannot be met because students cannot drop out after graduation and 63% of subjects are observed to graduate. An alternative model would consider both possible outcomes, dropout and graduation, as competing risks.[4,5] Second, while the study design admits only 7 discrete event times, Kerns et al apply a continuous-time regression. A discrete-time regression would likely provide more accurate results.[4,5]

Finally, the claims of Kerns et al that their findings indicate that SBHCs "appear to lessen the achievement gap" and "have a role in dropout prevention efforts" are unfounded. Even if a valid statistical analysis finds an as-