

Figure 1. Thermometer Usage and Febrile Data

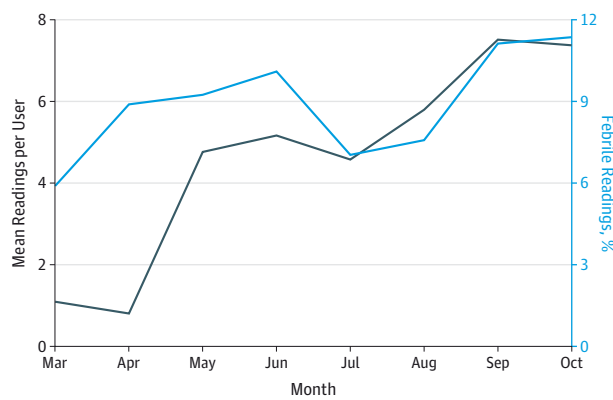
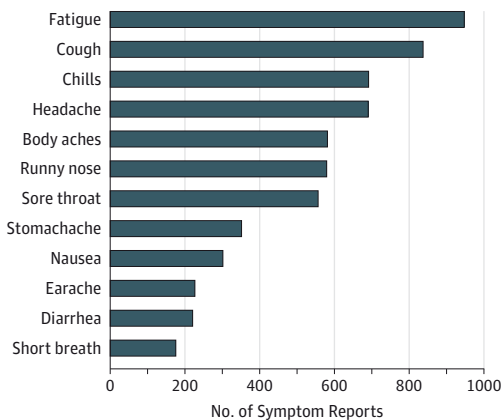


Figure 2. Symptoms Reported October 2014



Results | Two thousand nine hundred eighty thermometers have been used at least once since September 2014. The average thermometer has been used approximately 7 times and 50% of these users also recorded symptoms with the app. Notably, there was a discernible spike in usage in the Dallas, Texas, area after the first patient was diagnosed with Ebola on September 30, 2014. Between September 1 and September 27, 2014, there were 5.6 readings per user and between November 1 and November 28, 2014, there were 10.6 readings per user ($P < .01$). Data on overall usage by month and symptoms reported are summarized in Figure 1 and Figure 2.

Conclusions | “Smart” thermometers have the potential to passively gather signs and symptoms of infection at a population level. Initial data suggest ecological sensitivity to contagion concerns. These data could help predict and prevent epidemics; however, greater market penetration will be needed to assess their utility.

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Screening and Brief Alcohol Counseling of College Students and Persons Not in School

Associated with the top 3 causes of adolescent death (unintentional injuries, homicides, and suicides), underage drinking is annually responsible for 4000 to 5000 deaths and contributes to unprotected sex, social problems, and poor academic performance.¹ A substantial body of experimental research indicates screening and brief intervention for risky alcohol use conducted in adult primary care settings is effective in reducing alcohol misuse and related problems.² Evidence concerning effectiveness among young adults and adolescents is also accumulating.^{3,4} Unfortunately, screening and brief alcohol counseling for adolescents and college-aged emerging adults is not routine.⁵

College students more often drink 5 or more drinks on an occasion and drive under the influence of alcohol more than same-age, noncollege peers.⁶ Important unanswered questions are whether college students are (1) more or less likely than same-age peers to be asked about their substance use, (2) given advice about related health risks, and (3) encouraged to reduce or stop substance use.

Methods | The NEXT Generation Health Study used a 3-stage stratified design to select a sample representative of 10th graders enrolled in public, private, and parochial high schools in the United States. Details of the sample and data collection are provided in Hingson et al.⁵ The survey was conducted by the Eunice Kennedy Shriver National Institute of Child Health and Human Development, whose institutional review board reviewed and approved the protocol. Parents and/or participants provided written consent. Of the national sample of 2519 10th graders (average age 16 years) surveyed in school in 2009,⁵ 2140 (84%) were resurveyed annually through 1 year past high school in 2012 and 2013. Respondents were asked if they had seen a physician in the past year and been asked and counseled about their drinking, smoking, and drug use.

Results | As detailed in the Table, of respondents, 42% were enrolled in a 4-year college, 25% in community college, and 33% were not enrolled. Four-year and community college students were more likely than those not enrolled to have seen a physician. Of them, three-quarters in each group were asked about drinking, smoking, and drug use. Less than half of college students (fewer than same-age peers) were advised about health risks linked to substance use, and significantly fewer college students, less than one-third who frequently drank, used drugs, or smoked, were advised to reduce or stop. Fewer received advice about substance use than exercise, diet, and risky sexual behavior.

Table. Physician Screening and Counseling About Substance Use and Other Behavioral Health Habits According to Whether Respondents Were in College

	%				P Value
	Total (n = 2139)	College			
		4-Year (n = 908)	2-Year (n = 535)	None (n = 696)	
Saw physician in past year	71	75	73	65	.01
Physician asked about:					
Drinking	77	79	78	76	.44
Smoking	81	82	78	82	.67
Drug use	76	77	75	75	.82
Exercise	77	78	77	77	.77
Nutrition	72	72	75	75	.77
Sexually active	77	78	75	77	.93
Physician advised about risks of:					
Drinking	49	45	46	53	.05
Smoking	50	45	47	57	.03
Drug use	48	44	46	55	.05
No exercise	52	49	53	56	.18
Poor diet	54	50	57	57	.19
Risky sexual behavior	54	49	57	57	.25
Physician advised to reduce or stop:					
Drinking	21	15	19	28	.01
Smoking	22	14	20	31	<.001
Drug use	20	14	20	26	.01
Physician advised to:					
Get more exercise	32	25	32	40	<.001
Better nutrition	35	30	37	39	.02
Avoid pregnancy	35	32	40	37	.55
Avoid STD	39	33	43	42	.23
Frequent (≥ 6 times/mo), No. (%)					
Drinkers ^a : physician advised to reduce or stop drinking	297 (29)	147 (22)	56 (23)	94 (41)	.25
Drunk ^a : physician advised to reduce or stop drinking	145 (36)	75 (33)	24 (28)	46 (43)	.70
Smoker: physician advised to reduce or stop smoking	204 (45)	40 (28)	29 (36)	135 (50)	.14
Marijuana: physician advised to reduce or stop drug use	223 (32)	89 (31)	44 (26)	90 (35)	.77
Other drugs: physician advised to reduce or stop other drug use	60 (31)	17 (28)	12 (29)	31 (35)	.85

Abbreviation: STD, sexually transmitted disease.

^a Respondents were asked the frequency they drank in the past 30 days and the frequency that they were drunk in the past 30 days.

Discussion | Most young adults saw a physician in the past year and the majority were asked about substance abuse. However, deplorably low proportions were advised about related health risks and encouraged to reduce or stop drinking, drug use, or smoking. The lack of routine screening combined with counseling to reduce or stop alcohol use among college students is worrisome in light of their higher rates of heavy episodic drinking and driving under the influence of alcohol.

Many barriers exist to screening and brief intervention for substance use among adolescents and young adults. It takes time to ask and to counsel patients about substance use, and some youth may fear confidentiality of their responses, particularly if their use prompts referral to treatment, for which their parents may ultimately pay. The lack of physician training and reimbursement for screening is an issue. The National

Institute on Alcohol Abuse and Alcoholism has prepared and published guides on how to screen for alcohol misuse among adults and adolescents and some reliable screening tools like the CRAFFT assess both alcohol and drug use. Finally, while reimbursement issues could be addressed by the Affordable Care Act, this may vary according to how each state implements the act. Efforts are needed to remove these barriers to screening for all substances and particularly for alcohol misuse because it is the most widely used substance by youth and is the leading contributor to injuries, the leading cause of death in that age group.

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Acquisition, analysis, or interpretation of data: Hingson, Zha, White.

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COMMENT & RESPONSE

Breastfeeding and Childhood Leukemia Incidence: Duplicate Data Inadvertently Included in the Meta-analysis and Consideration of Possible Confounders

To the Editor We read with interest the recent meta-analysis by Amitay and Keinan-Boker¹ about breastfeeding and childhood leukemia incidence. The authors identified published case-control studies and reported an inverse association for breastfeeding for 6 months or more compared with breastfeeding for less than 6 months (summary odds ratio [OR] = 0.81; 95% CL: 0.73, 0.89).¹ Nonetheless, we describe herein the effect of unmeasured confounding as an alternate explanation for the observed association.

The authors used crude ORs from each study as the measure of association with the justification that crude ORs would avoid "...biases that may have arisen from adjustments to different confounders..."¹ Nevertheless, the crude ORs from each study are likely to be more, not less, biased because adjustments for common causes² of breastfeeding and childhood leukemia were ignored. For example, prior evidence suggests that maternal age can influence breastfeeding³ and childhood leukemia,⁴ and thus, lack of adjustment for maternal age would incur bias from unmeasured confounding. The potential consequence of differences in covariates adjusted between studies is heterogeneity in OR estimates. Rather than ignoring covariate adjustment and summarizing biased crude ORs, a more informative approach would be to explore covariate adjustment as a source of heterogeneity between studies.

We used meta-regression to explore heterogeneity related to adjustment for maternal age in the analysis by Amitay and Keinan-Boker.¹ We excluded 1 study from the original analysis because an estimate comparing breastfeeding for more than 6 months with no breastfeeding was not reported. Nonetheless, we included 3 studies that were not used in the authors' analysis despite being eligible and used in a prior meta-analysis.⁵ The random-effects OR was closer to the null for studies that adjusted for maternal age (n = 7; OR = 0.87; 95% CL: 0.68, 1.1) than studies that did not adjust for maternal age (n = 13; OR = 0.73; 95% CL: 0.65, 0.82; ratio of ORs = 1.2; 95% CL: 0.91, 1.6).

Our reanalysis illustrates that estimates reported in published studies about breastfeeding and childhood leukemia can vary by the covariates selected for adjustment, as exemplified by maternal age. Consequently, a single summary estimate may be misleading. The appropriate covariates to adjust for confounding in the association between breastfeeding and childhood leukemia incidence certainly warrants further debate. More importantly, the robustness of the observed findings should be assessed by thoughtfully exploring a priori selected sources of heterogeneity, particularly sources of bias.

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