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Preventing Illegal Tobacco and Alcohol Sales to Minors Through Electronic Age-Verification Devices: A Field Effectiveness Study

BRAD KREVOR, JOHN A. CAPITMAN,
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INTRODUCTION

TOBACCO use is the leading cause of preventable death in industrialized and developing countries, killing about 4 million people in 1998 with predictions that smoking will kill about 10 million people per year by the 2020's to early 2030's (1-3). Reducing the onset of tobacco use could profoundly reduce tobacco-related mortality and morbidity. Alcohol abuse has also been acknowledged as a leading cause of preventable death, particularly in younger populations (6-8). Public health approaches to reduce tobacco use and alcohol abuse, respectively, call for comprehensive strategies, and research has focused on a broad range of national and local policies, including taxation, restrictions on use and access limitation, treatment, education and behavior modification concerning tobacco and alcohol use (9-14).

One key component of a comprehensive strategy to curb teenage tobacco and alcohol use has been restrictions on minors' access. In a recent study, Americans ranked youth access to tobacco as the most important tobacco control issue (1). In 1992, the Federal government passed the Synar Amendment, whose final regulations (15) impel

states to pass and enforce laws prohibiting tobacco sales to anyone under the age of 18 and to conduct annual surveys of retailer compliance. States that fail to reach an annual target for retailer compliance—80% in 2003 and beyond—will forfeit 40% of their federal substance abuse block grant. State enforcement of youth access to tobacco laws—which the Centers for Disease Control has identified as a Best Practice for Comprehensive Tobacco Control (16)—is now also a priority for state alcohol prevention agencies, since Synar now links full funding of state substance abuse block grants for alcohol and other drug prevention and treatment to achieving high tobacco compliance. As a result, tobacco retailer violations rates have dropped from 40.1% in 1996 to 16.3% in 2001 (17), and alcohol regulatory and enforcement agencies are continuing to explore ways to further reduce underage sales of beverage alcohol (18).

In an environment of increasingly aggressive tobacco and alcohol enforcement and regulation, retailers have been challenged to identify means by which to comply with laws proscribing sales to minors. Electronic Age Verification (EAV) devices are one means to reduce underage sales of tobacco and beverage alcohol and thus avoid the fines and license suspensions/revocations which can result from non-compliance. EAV devices—employing similar technology to credit and ATM card scanners—read the date of birth encoded on the magnetic strip and/or bar code on the back of the customer's driver's license or similar ID and then calculate and display whether the cardholder is old enough to purchase tobacco or alcohol products. Small demonstration projects by the Florida Department of Business and Professional Regulation (20) and the Pennsylvania Liquor Control Board (21)—as well as anecdotal reports from EAV manufacturers and customers—suggest that EAV devices are *efficacious*; i.e., they correctly read the data on the ID and calculate the age of the license holder. What has not been examined is whether deployment of these devices is *effective*; i.e., are they used correctly and frequently enough in a real world retail environment to improve compliance with laws on sales to minors? We conducted a field effectiveness study of EAV technology examining two central questions about EAV use:

1. Are EAVs effective in leading to sustained increases in the frequency and accuracy of age verification?
2. How do EAVs impact the retail environment?

The project sought to examine whether clerks would a) accept EAV devices and employ them consistently when young customers seek to purchase tobacco and alcohol products, and b) how customers who purchase tobacco and alcohol products would respond to being asked to swipe their IDs through EAV devices.

DESIGN AND METHODOLOGY

Selection of Study Sites

Iowa City, Iowa and Tallahassee, Florida were selected as study sites for this field effectiveness study. Iowa City (including Coralville, the adjoining suburban community) has a population of approximately 75,000 and 118 tobacco and alcohol retail permit holders. Tallahassee has a population of approximately 155,000 and just over 200 tobacco and alcohol retail permit holders. Iowa City and Tallahassee best met key selection criteria: the state driver's license contains date of birth data encoded in machine-readable form; they are moderate size cities with both teen and college populations (Iowa City is home to the University of Iowa; Tallahassee is home to Florida State University and the Florida A & M University), cultural/demographic diversity, and a retailer environment and enforcement community supportive of a research project on youth access prevention.

Store Participation

A letter to Iowa City retailers from the Alcoholic Beverages Division of the Iowa Department of Commerce ("IA ABD")—and to Tallahassee tobacco retailers from the Division of Alcoholic Beverages and Tobacco of the Florida Department of Business and Professional Regulation ("FL DBPR")—invited retailers to participate in the EAV study. Given the focus on minors' access and budgetary considerations, stores in the quadrant of each community with the smallest youth population were excluded from the study. That resulted in invitations to participate sent to approximately $\frac{3}{4}$ of the stores in each community. 43 of the 67 identified tobacco and alcohol retailers (64%) in Iowa City and 60 of the 134 identified tobacco and alcohol retail outlets (45%) in Tallahassee agreed—and were able—to participate. Several Tallahassee grocery store chains expressed interest in the project but their cash register system protocols—which prompted clerks to verify and/or enter the date of birth into the register when-

ever tobacco and alcohol products were scanned—could not be suppressed. Those grocery stores did not install EAV devices and were included in the comparison group. Since nearly all stores holding tobacco permits also hold a permit for off-premise alcohol sales (beverage alcohol is sold in convenience stores, grocery stores and pharmacies in both states), the same retail outlets could be inspected for the sale of both products.

An expert in ID fraud from FL DBPR conducted a training session for store managers of participating merchants in Tallahassee on February 21, 2001. The Iowa ABD Administrator hosted a similar training in Iowa City on February 28. In both training events, project staff presented the goals of the study and representatives from the EAV manufacturer demonstrated machine operation. EAVs were distributed to merchants at the training or delivered within the next few days, with on-site training for those unable to attend. Further, a “1-800” Technical Assistance or “help” line to the EAV device manufacturer was provided to all retail stores.

EAV Selection

EAV devices are available in a range of prices and configuration. The least expensive devices (under \$400) read the magnetic strip on the back of a state ID, calculate and display age (and other encoded data like hair color, height). More expensive devices can also read bar codes. High-end models (>\$1,500) have the ability to store the data from the ID in memory, print a record of the transaction and/or electronically transfer data.

The EAV device selected for the project was the Hypercom ICE 5500, manufactured by the Logix Companies of Longmont, Colorado. The unit is a high-end device which stores and downloads data to a central computer accessible via the internet. The capability to access data taken from swiped IDs was suppressed for this project, to forestall any concerns about the misuse of personal information. The Hypercom unit also can perform credit card charges and check authorizations. Since EAV technology was deemed more likely to be employed if ID reading were integrated into a device that conducted other familiar functions, merchants were given the choice of using the Hypercom ICE 5500 as a dedicated EAV device only, or as a multi-purpose point-of-sales device. Interestingly, none of the participating merchants chose to use the device as anything but dedicated EAV

technology, although that might merely reflect an unwillingness to change credit card processing protocols during a trial period and/or a prior service contract which could not be terminated without penalty.

Data Collection and Development of Dependent Measures

Data were collected through mystery shopper inspections, interviews with retail clerks and management, and interviews with customers.

Mystery shopper inspections. In the month prior to the distribution of EAV devices, the study conducted baseline inspections of tobacco and alcohol retailers. The protocol for the retail inspections had unaccompanied 18-year-olds attempt to purchase cigarettes and unaccompanied 21-year-olds attempt to purchase beer. Inspectors, both male and female, were trained to request a cigarette or beer brand by name; and when the sale was proffered, whether or not age had been verified by the retailer, the inspector was trained to “discover” that s/he had too little money or had forgotten to bring money and leave the store. The inspector would then record whether the clerk had 1) immediately offered to sell, 2) offered to sell after merely asking the age of the inspector, 3) requested and visually inspected the inspector’s ID, or 4) requested and swiped the ID through an EAV device. The dependent variable for assessing the effectiveness of EAV’s in increasing age verification was derived from those alternative responses to the mystery shopper inspections. Inspections coded in as conditions 3) and 4) were characterized as *age verification*. Inspections coded in conditions as 1) and 2) were characterized as *no age verification*. Although asking the age of the inspector (condition 2) would appear to be an attempt at age verification, minors who purchase tobacco and alcohol products often misrepresent their age. Asking if the customer is 18 or 21, without inspecting an ID, contributes little to preventing illegal sales.

Several additional protocol elements—altering the time of day of inspections, reassigning inspection routes and turn-over in inspectors (and clerks)—ensured that inspectors would not become familiar to store personnel. The choice to use 18 (or 21)-year-old inspectors, rather than minors, responded to state laws prohibiting the attempted purchase of tobacco or alcohol by a minor except for law enforcement purposes. Additionally, the use of age 18 and 21-year-old inspectors better examines store policies that instruct clerks to

inspect all customers appearing to be under a specific age (age 27, the standard required by the now-defunct FDA tobacco regulations, or age 30 are typically employed by retailers) rather than only those customers who are much younger. Although all inspectors were white, equal numbers were male and female, and gender was balanced by study condition within rounds of inspections.

Seven inspections were conducted. The baseline consisted of two separate inspections (B1 for tobacco and B2 for both tobacco and alcohol) of all treatment and control permit holders in Iowa City and Tallahassee. After the introduction of the EAV devices, the project conducted five post-installation inspections: two in the first month following the month of installation (P1 for tobacco, P2 for tobacco and alcohol), two more at monthly intervals (P3 for tobacco, P4 for tobacco and alcohol), and a fifth inspection in the sixth month of EAV use (P5 for tobacco and alcohol).

Retail clerk interviews. 100 employees at 26 stores had given informed consent to have their first names (only) and their home phone numbers forwarded to Brandeis researchers for the purpose of confidential clerk interviews. Telephone interviewers made up to 5 attempts to reach each clerk, calling at various times of the day. 70 telephone interviews were completed. Eight measures were derived from these semi-standardized, open-ended interviews: 1) the use of EAV's, 2) the frequency of use for tobacco purchases, 3) whether clerks report problems with use, 4) whether EAV's make jobs easier, 5) whether EAV's make it easier to request that customers show IDs, 6) whether EAV's help determine actual ages of customers, 7) whether EAV's make it easier to refuse to sell to underage customers and, 8) whether clerks recommend continued EAV use.

Customer interviews. Exit interviews were conducted with customers of EAV-equipped retailers six to eight weeks after the EAV devices were introduced, in order to gauge the response to the new technology. 133 customers (73 in Florida, 60 in Iowa) appearing to project staff to be under age 27, of whom half had just purchased alcohol or tobacco products, consented to a two-minute interview. Customers were asked whether they had purchased tobacco or alcohol products. For those customers who had made such purchases, interviewers inquired what methods, if any, sales clerks had taken to verify age. Customers were asked their thoughts on the use of EAV's. Measures derived from those interviews include whether the respon-

TABLE 1

Percentage of Stores Which Requested an ID Before Offering to Sell Tobacco Products to an 18-year-old Inspector

		<i>Age Verification Baseline 1</i>	<i>Age Verification Baseline 2</i>	<i>Age Verification Post-Installation 5</i>
<i>Florida</i>	Treatment	81%	86%	72%
	Control	80%	78%	71%
<i>Iowa</i>	Treatment	43%	51%	51%
	Control	61%	52%	65%

dents 1) believe stores should have procedures to stop illegal sales of tobacco and alcohol products; 2) mind clerks checking IDs; 3) would choose to shop at a store that does not have EAV technology; 4) would rather shop at a store that does have EAV's; and 5) object to having data on their ID read by an EAV device.

RESULTS

Do Clerks Use EAV Devices to Verify Age and Authenticate IDs?

For both study sites, treatment group stores provided with EAV devices and comparison stores did not differ significantly in age verification behavior for tobacco or alcohol sales at either baseline or at the final post-test. Evidence for the effectiveness of EAV's might have increased frequency of clerks requesting and inspecting IDs (whether or not the IDs were in fact swiped through an EAV device). In Iowa City and Tallahassee at month 6, stores with EAV devices did not significantly increase their age verification rates over baseline. Nor did stores with EAV devices display significant increases in the rate of age verification compared to comparison stores.

As shown in Table 1, for tobacco, the Florida age verification rates for treatment and comparison stores were 81% and 80% for baseline 1 and 86% and 78% for baseline 2, but by the last post-installation inspection, the rates decreased to 72% and 71% for the treatment and comparison. The first baseline Iowa age verification rates were 43% and 61%, and 55% and 52% for baseline 2, for treatment and comparison stores. The last post-installation inspection resulted in rates of 51% and 65%. There were no significant differences in rates.

TABLE 2

Percentage of Stores that Requested an ID Before Offering to Sell
Alcoholic Beverages to a 21-year-old Inspector

		<i>Age Verification Baseline 2</i>	<i>Age Verification Post-Installation 5</i>
<i>Florida</i>	Treatment	62%	37%*
	Control	77%	63%
<i>Iowa</i>	Treatment	84%	78%
	Control	85%	73%

*one female age 21 inspector appeared very mature and may have accounted for this low age-verification rate.

As shown in Table 2, the alcohol inspections had similar results: Florida baselines were 62% and 77% for treatment and control; the follow-up inspections decreased to 37% and 63%. Iowa baselines were 84% and 85% for treatment and control; the follow-up inspections decreased to 78% and 73%. Again, there were no significant differences in rates.

Trends in Use of EAV Devices

Figures 1 through 4 examine the rates of age verification behavior. The investigators had hypothesized that rates for requesting IDs and employing the EAV's would increase sharply after introduction of the devices, and that EAV use rates (but not necessarily the rates for requesting an ID) would stabilize or slowly move back towards baseline levels over time. The figures show that there was indeed a sharp increase in use of the EAV's and in ID requests at the first post-installation inspection: EAV's were employed in 62% of tobacco inspections in Florida and 44% in Iowa. But EAV use deteriorated rapidly in the succeeding months. By P3 (8 to 11 weeks following EAV introduction), EAV use in tobacco inspections had fallen to 42% in Florida and 24% in Iowa. Alcohol inspections results also showed a decrease in EAV use: in Florida, the use at first post-installation inspection was 12%, but it decreased to 4% in post-installation 5. There was a jump in EAV use at the first Iowa alcohol post-installation inspection, but that rate decreased to that of the baseline over the next two inspec-

FIGURE 1

Florida Tobacco Age Verification

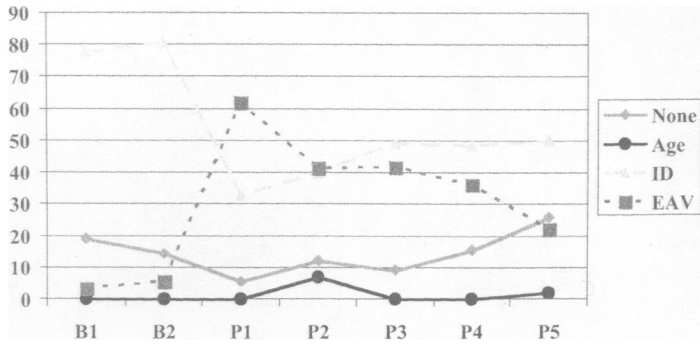


FIGURE 2

Iowa Tobacco Age Verification

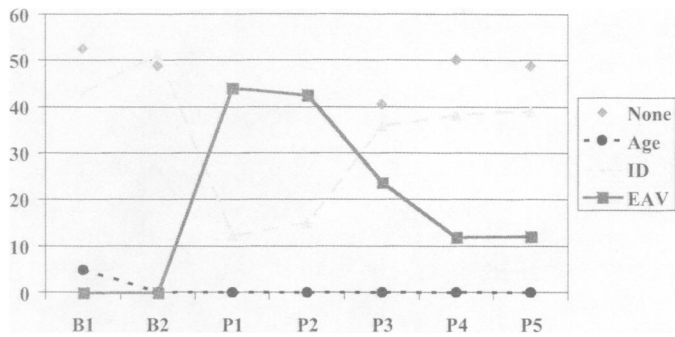


FIGURE 3

Florida Alcohol Age Verification

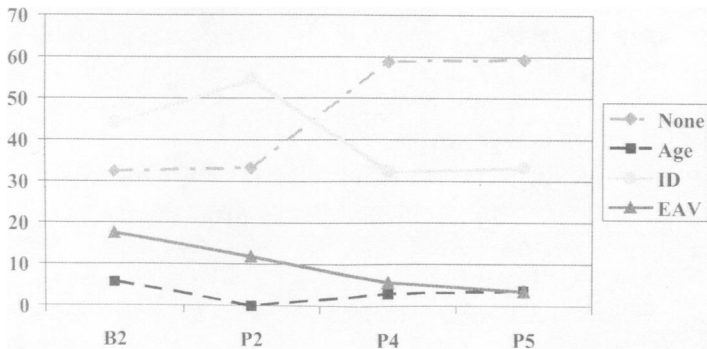
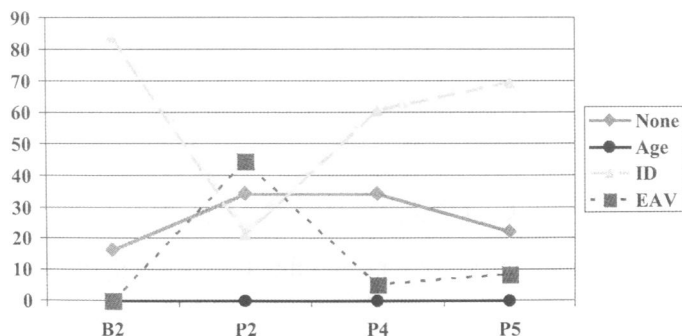


FIGURE 4
Iowa Alcohol Age Verification



tions. Thus, it appears that clerks initially used the EAV devices, but over time that use declined. Overall levels of age verification (inspecting an ID and/or swiping an ID through an EAV device) stayed relatively constant over time.

Sales Clerk Interviews

Most clerks in the experimental study group reported using the EAV devices (85% Florida, 79% Iowa). 51% of the Florida clerks and 35% of Iowa clerks reported frequently using the devices for tobacco purchases, while 48% of the Florida clerks and 42% of the Iowa clerks reported frequently using the devices for alcohol purchases. Some clerks reported having problems with the devices. That was more the case in Iowa, where 47% of clerks commented on concerns with the devices as compared to 19% of clerks in Florida. Two clerks in Florida and 11 clerks in Iowa claimed the devices did not work. The researchers conjecture that clerks may have misconstrued “No Data” displayed by the EAV as a problem with the device when, in fact, “No Data” is the correct reading if a fake ID—with no encoded data on the magnetic strip on the back—were swiped. Nonetheless, one limitation of the EAV device is that magnetic strips can easily be damaged and then may not be accurately read by the EAV.

Nearly half of respondents from participating stores reported that EAV’s made their jobs easier (48% Florida, 42% Iowa), as depicted in Table 2 above. Clerks reported that EAV’s make it easier to request that customers show IDs (85% Florida, 70% Iowa). They also com-

mented that EAV's facilitate determining the actual age of customers (93% Florida, 77% Iowa). Clerks reported that EAV's make it easier to refuse to sell to underage customers (85% Florida, 84% Iowa). Approximately 70% of respondents recommended that their stores continue to use EAV devices to prevent illegal purchases of tobacco products (74% Florida, 70% Iowa).

Customer Attitudes

Customers appearing to be under the age of 27—approximately half of whom had just purchased tobacco or alcohol products—were asked their attitudes about store policies and procedures as well as privacy issues. Almost three-quarters of respondents felt strongly that stores should have procedures that stop sales of alcohol and tobacco products to young people. Most customers stated that they do not mind if clerks check their ID (96% Florida, 81% Iowa). Only 4% of customers in Florida and 2% of customers in Iowa reported that they strongly disagreed with the statement, "It is no problem for me if they check my identification." Very few customers stated that they would ever choose to go to a different store to purchase alcohol or tobacco rather than a store which employed an EAV to verify age. The overwhelming majority (96% Florida, 98% Iowa) said that that would not be a consideration. In fact, 42% of customers in Florida and 55% of customers in Iowa felt strongly that they would rather shop at stores that use EAV devices. The use of the devices does not appear to intimidate customers: only 7% of respondents in Florida and 2% of respondents in Iowa reported that they felt uncomfortable having the data on their IDs read by an EAV device.

DISCUSSION

The most significant finding from this study was that EAV devices were not effective in improving the rate of age verification by store personnel. Most clerks and managers reported using the devices at least some of the time. Along with district managers/owners, they were generally satisfied with their performance and would recommend their continued use. But stores with EAV devices did not require young, unfamiliar customers attempting to purchase tobacco and alcohol products to furnish IDs for inspection (and/or swiping through the EAV) any more frequently than at baseline or any more frequently than stores without EAV devices. Although EAV's may

have improved the *accuracy* of age verification, EAV's did not increase the *frequency* of age verification. The EAV was a useful tool which most clerks and managers used some of the time. For many clerks, it became another option in attempting to meet age verification requirements. But the larger problem—that a significant percentage of young customers attempting to purchase tobacco and alcohol products were never asked to furnish an ID, even though they were unfamiliar to the clerk—was in no way improved by the use of EAV's. Thus, the effectiveness of EAV's is constrained by the very same problems of clerk conduct—the inability to estimate age and/or unwillingness to verify age—that EAV devices are designed to ameliorate.

The other significant finding was the inconsistency observed in store behavior. In the pre-test period, all retailers were inspected for tobacco two times within several days by inspectors of the same age. In 33% of stores in Florida and 42% of stores in Iowa, inspectors recorded different store behaviors—that is, a clerk verified age (inspected an ID visually or swiped it through an EAV device) on the 1st or 2nd visit, but not in both visits. The baseline age verification rates were 81% and 86% for tobacco in Florida, and 43% and 51% for tobacco in Iowa; but a consistent store policy of verifying age was observed only 66% of the time in Florida and 33% of the time in Iowa. Findings were similar regarding alcohol inspections. Thus, the rates at which stores consistently verify age are significantly lower than single-inspection compliance rates would suggest. The percentage of stores that make underage sales some of the time is substantially greater than the percentage of stores that make underage sales at one moment in time. Consistent with recent research that underage smokers are able to purchase tobacco at rates nearly 6 times greater than the nonsmokers used in standard compliance inspections (22), this study strongly suggests that stores consistently decline underage sales of tobacco products at rates which are actually far lower than single inspection protocols would indicate.

Policy Implications

Acting under the authority of Consumer Protection laws, state Attorneys General have engaged national retailers in examinations of their policies and procedures to prevent the sale of tobacco and alcohol products to minors (23). Walgreen's, Exxon-Mobil Corporation and British Petroleum were among the initial chains identified by low

compliance rates in data compiled by the Food and Drug Administration during its regulation of tobacco retailers (the US Supreme Court invalidated the FDA regulations in March 2000). Those discussions have resulted in several Assurances of Voluntary Compliance, in which the signatory chain agrees to stipulated changes in point of sales protocols and in the hiring, training and supervision of personnel who sell—or who supervise those who sell—tobacco products. The need for state Attorneys General and for regulatory and enforcement agencies to identify measures that will prevent underage sales led to the development of a federal guidance document by the Center for Substance Abuse Prevention, *Report on Best Practices for Responsible Retailing* (24). The *Best Practices* report notes a near total absence of research on the effectiveness of specific responsible retailing measures.

EAV technology has been welcomed by both retailers and regulators as a promising tool to reduce underage sales. The Pennsylvania Liquor Control Board, which was involved in an early study of EAV devices (21), has expanded their use, and the West Virginia ABC Administration has encouraged their use by retailers. Three states—New York, Connecticut and Ohio—have passed laws that provide retailers who use EAV devices with an “affirmative defense” against actions arising from the illegal sale of tobacco or alcohol products to minors. The special concern among retailers relates to liability resulting from an underage driving-under-influence accident. Those laws recognize that EAV devices provide merchants with a tool to detect and refuse underage sales and also, with some devices, with a record (print and/or electronic) of transactions. But if, as this study finds, clerks do not employ the EAV device consistently with young customers, then there is serious doubt whether the presence of an EAV device, or a record of ID swipes, can reliably provide evidence that no illegal sales occurred.

EAVs effectively provide age verification if swiping an ID were required to complete every sales transaction involving tobacco and alcohol—a protocol employed by one multiple outlet liquor store in Tallahassee. But there are several problems which would preclude mandatory EAV use as a standard protocol:

- Scratches or exposure to magnetic fields may damage the magnetic strips on some IDs and prevent the data from being read

electronically. An EAV system thus requires either a by-pass key or manual entry of date of birth information. But such by-pass options reintroduce the initial problem whereby clerks may simply circumvent EAV verification altogether. Thus, the effectiveness of a mandatory system can still be compromised by clerks being unwilling to follow the stipulated protocol.

- IDs are not standardized. Only 34 states have machine-readable IDs and the codes are not the same. The issue of non-standardization of IDs is problematic for retailers—especially since many fake IDs are of out-of-state drivers' licenses. A current work group of the American Association of Motor Vehicle Administrators is examining issues of standardization. ID standardization also has implications for Homeland Security.

The low effectiveness of EAV's in increasing the frequency of age verification underscores both the critical role played by clerk decisions whether to verify age and the high variability of clerk behavior. That variability explains the inconsistency observed within each store. As noted above, in 33% of stores in Florida and 42% of stores in Iowa, inspectors recorded different in-store behaviors—that is, a clerk verified age on the 1st or 2nd visit, but not in both visits. Baseline age verification rates were 81% and 86% for tobacco in Florida, and 43% and 51% for tobacco in Iowa; but a consistent store policy of verifying age was observed only 66% of the time in Florida and 33% of the time in Iowa. Clerk attitudes and decisions, rather than store policies, appear to determine store conduct in a sizable minority of stores. Important areas for further research suggested by this study are: 1) a better understanding of the predictors of clerk behavior and 2) identification of ways to improve clerk adherence to age-verification and sales refusal protocols. Public sector policy makers should be mindful that neither retailers, nor regulatory and enforcement agencies, are likely to achieve high compliance simply by establishing firm policies.

Several limitations of this study should be noted. Stores were not randomly assigned to EAV and comparison groups, with group assignment based instead on the willingness of retailers to try the age verification technology. Some supermarkets in the comparison group in Florida had already instituted a prompt to check identification

when alcohol or tobacco products were sold, and thus were unable to volunteer for the EAV group. The non-random group assignment might have yielded some unmeasured differences in store or clerk practices or preferences that contributed to the observed impacts of introducing EAV devices. Given the absence of differences in age verification between study groups at baseline or subsequent inspections, the importance of that design problem is difficult to assess. Second, there are no studies that compare alternative protocols for age verification. It is possible that EAV devices would have had more influence on clerk behavior had inspectors actually been younger than age 18 for tobacco (and 21 for alcohol) or had our young inspectors been accompanied by an adult. No prior studies have compared age-verification practices using alternative inspection protocols, so it is not possible to quantify the impacts of that design choice. It should be noted, however, that the recommended practices in both study communities mandate age verification for all customers seeking to purchase those products who appear to be under age 27. Other limitations of the study include low participation by clerks in interviews about their age-verification experiences and practices, and the use of new measures with unknown psychometric properties for the interviews with clerks and customers.

Thus we found that simply introducing an EAV into stores as a discrete device—with only a single training for managers but with neither comprehensive and standardized clerk training on EAV use and operation, nor a company commitment to EAV use (as might be evidenced by the store's purchase of an EAV device)—did not lead to their consistent and effective use. Perhaps with consistent training in EAV use for all new employees, with integration of the EAV device into the standard protocol for age-restricted products and into the physical configuration of the check-out counter, and with continuing managerial supervision, EAV's could play an important role in an effective system of positive age verification. A study of the adoption and implementation of EAV technology as part of a comprehensive system of responsible retailing within individual retail chains may well show EAV's in a far more favorable light than the current study.

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ABSTRACT

Efforts to prohibit the sales of tobacco and alcohol products to minors are widespread. Electronic Age Verification (EAV) devices are one possible means to improve compliance with sales to minors laws. The purpose of this study was to evaluate the implementation and effectiveness of EAV devices in terms of the frequency and accuracy of age verification, as well as to examine the impact of EAV's on the retailer environment. Two study locations were selected: Tallahassee, Florida and Iowa City, Iowa. Retail stores were invited to participate in the study, producing a self-selected experimental group. Stores that did not elect to test the EAV's comprised the comparison group. The data sources included: 1) mystery shopper inspections: two pre- and five post-EAV installation mystery shopper inspections of tobacco and alcohol retailers; 2) retail clerk and manager interviews; and 3) customer interviews. The study found that installing EAV devices with minimal training and encouragement did not increase age verification and underage sales refusal. Surveyed clerks reported positive experiences using the electronic ID readers and customers reported almost no discomfort about being asked to swipe their IDs. Observations from this study support the need for a more comprehensive *system* for responsible retailing.