Initial Findings from a Pilot Program of a Novel System to Improve Retailer Compliance for Tobacco Product Purchases

Shivaani Prakash, MSc, PhD; Jonah Joselow; Joseph O'Hara; Rasmus Wissmann, MS, PhD JUUL Labs, Inc., San Francisco, CA, USA

Significance

- As part of its youth-prevention initiatives, JUUL Labs has developed a standards-based program, tied to the retailer's point-of-sale (POS) system, for the sale of JL Electronic Nicotine Delivery System (ENDS; JUUL Labs, Inc.) products. The program is called RACS™ (Retail Access Control Standards).
- This standard controls transactions involving JL ENDS products from beginning-to-end, ensuring that the retailer verifies the purchaser's age and ID validity and limits the amount of product that can be purchased.
- The core objective of RACS is to reduce underage access to, and ultimately use of, JL ENDS products through traditional retail channels, by addressing main underage access points -- lack of age verification and social sourcing.
- The company conducted a pilot of its RACS program across a subset of regional convenience stores to assess its real-world effectiveness in changing retailer behavior and preventing transactions without age verification regardless of the apparent age of the consumer
- Results from this pilot have informed efforts that are underway to implement this POS standard alongside additional access controls nationally across all retailers that sell JL ENDS products.

Methods

- The pilot was conducted from May – June 2019 across a subset of retail outlets for three regional convenience store chains that sell tobacco products, including JL ENDS, across four distinct metropolitan areas in Pennsylvania, North Carolina and South Carolina.
- At participating retail outlets, the store POS systems were updated to ensure compliance with RACS, and then verified to be RACS compliant. Store employees were also trained to comply with RACS requirements for Age Verification (AV) and Bulk Purchasing (BP) compliance.
- A RACS-compliant POS system[1]:
  - Requires scanning of a government-issued ID to verify age and ID validity;
  - Limits the amount of product that can be purchased in a single transaction; and
  - Integrates the sales transaction to prevent manual override by the retail sales associate.
- A total of 3,990 compliance checks were conducted at 171 participating stores, one month prior to launch of the pilot and after implementation of RACS. Retail outlets were given a deadline by which to fully implement RACS, and compliance checks began after the deadline to assess post-RACS failure rates for age-verification and bulk-purchasing compliance.
  - Compliance checks entailed sending adult secret shoppers aged 21+ (and above local minimum age for tobacco product purchases) to pilot stores to attempt to purchase JUUL products. These secret shoppers were drawn from a convenience sample and not specifically selected based on age.
  - Secret shoppers noted whether an AV failure occurred (i.e., an auditor purchased a JL ENDS product and their ID was not scanned, or the ID that was scanned was expired/invalid) or a BP failure occurred (i.e., an auditor completed a single transaction above the purchase limits allowable by RACS).
- Audit failure rates were compared before and after RACS implementation overall, by chain, location and failure type (AV failures vs BP failures).
- Paired t-tests determined if there were significant differences in failure rates across the overall sample pre- and post-implementation of RACS, as well as within sub-samples when stratified by characteristics such as location and chain.

Figure 1. Comparison of overall age verification and bulk purchase failure rates across stores before and after RACS pilot implementation

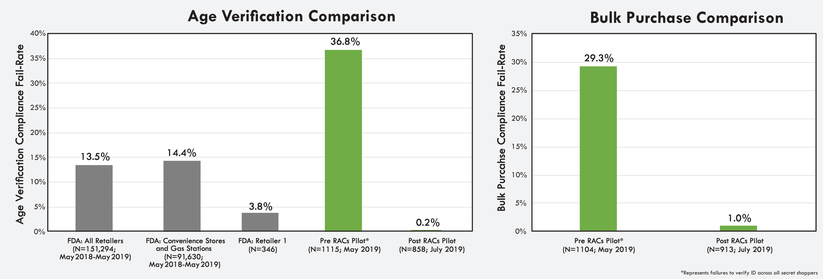

Table 1. Comparison of Age Verification and Bulk Purchase Failure Rates By Chain Before and After RACS Pilot Implementation

Retailer / State		Age Verification					Bulk Purchase				
		Pre RACS Pilot		Post RACS Pilot			Pre RACS Pilot		Post RACS Pilot		
Retailer	State	Number of Audits	Failure Rate	Number of Audits	Failure Rate	Significant Decrease Post-RACS	Number of Audits	Failure Rate	Number of Audits	Failure Rate	Significant Decrease Post-RACS
Retailer 1	**Overall**	**375**	**26.1%**	**322**	**0.3%**	*	**379**	**23.0%**	**271**	**0.0%**	*
	State A	190	24.7%	152	0.0%	*	217	21.2%	128	0.0%	*
	State B	185	27.6%	170	0.6%	*	162	25.3%	143	0.0%	*
Retailer 2	**Overall**	**359**	**32.3%**	**245**	**0.0%**	*	**349**	**10.6%**	**308**	**0.0%**	*
	State C	359	32.3%	245	0.0%	*	349	10.6%	308	0.0%	*
Retailer 3	**Overall**	**381**	**51.4%**	**291**	**0.3%**	*	**376**	**53.2%**	**334**	**2.7%**	*
	State C	381	51.4%	291	0.3%	*	376	53.2%	334	2.7%	*
Overall		**1,115**	**36.8%**	**858**	**0.2%**	*	**1,104**	**29.3%**	**913**	**1.0%**	*

Note: * indicates p<0.05 from pre-post t-test

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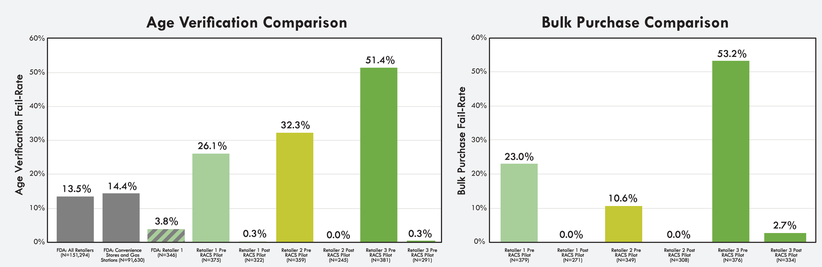
Figure 2. Comparison of age verification and bulk purchase failure rates by chain before and after RACS pilot implementation



Results

- Prior to implementing RACS, the overall audit failure rate was 36.8% for meeting AV standards, and 29.3% for meeting BP standards for JL ENDS purchases.
- Following the pilot, these rates reduced to 0.2% and 1.0% respectively, a statistically significant decrease for both types of failures ($p<0.01$) (**Figure 1**).
  - AV failure rates prior to RACS (N = 1,115 audits) ranged from 26.1% to 51.4% across each of the chains and reduced to 0.0 – 0.3% in the post period (**Figure 2**).
  - Similarly, BP failure rates ranged from 10.3% to 53.2% in the pre period across chains (N = 1,104 audits) and decreased to 0.0 - 2.7% in the post period (**Figure 2**).
  - All reductions in failure rates by failure type were statistically significant ($p<0.01$).
- T-tests across stratified samples also found significant differences in the rate of reduction in failure rates by chains and by states ($p<0.01$) (**Table 1**).
- The primary reason for AV failures in the pilot was the clerk scanning their own ID when the secret shopper did not bring a valid ID; for BP failures, the cause was largely technical issues with RACS or disabled features in the POS system.
- AV failure rates in the post period were also lower than the 13.5% past-year national failure rate for tobacco product purchases reported by the FDA for U.S. retailers and the 14.2% past-year national failure rate reported by FDA for U.S. convenience stores and gas stations specifically[2]. (**Figure 1; Figure 2**).
  - While FDA retailer compliance checks are largely conducted by minors and are designed to test adherence to a federal standard for checking ID if a shopper appears to be below age 27, their data provide an overall benchmark for comparison to our pilot. Although we did not specifically select shoppers to test this specific standard, stratification of our data by age cohort show similarly significant reductions in AV failures in the post-RACS period among just those secret shoppers below age 26 (data not shown).

Conclusions

- This pilot provides preliminary evidence of automated retail-level tobacco control measures that can improve compliance and prevent access to age-restricted products like JUUL products without proper verification.
- While results reflect a short-term pilot, the significant reductions in both age-verification (AV) and bulk-purchasing (BP) failure rates suggest that wider implementation of this type of point-of-sale (POS) standard can effectively reduce common sources of underage access to tobacco products.
- Further evaluation is underway to understand the long-term impact of implementing these standards, as well as factors that impact long-term success of RACS in retail locations including both chain convenience stores and independent stores.

[1]Source: https://www.racscompliance.org/documentation/
[2]Source: Data from secret shopping conducted by FDA between June 2018 and May 2019, gathered from FDA data online portal; includes any Warning Letter, CMP or No-Tobacco-Sale Order issued by the FDA upon an inspection