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In Collaboration with
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State Synar Report FFY 2005

Youth Access To Tobacco In Louisiana

Executive Summary

Public health importance of youth tobacco use. Tobacco use is the leading preventable cause of chronic illness and premature death in the world, resulting in 4 million deaths in developing countries and 440,000 deaths in the United States each year. It is estimated that tobacco will cause 10 million worldwide deaths/year by 2030, 70% of those deaths in developing nations. The economic consequences of tobacco use are more than 100 billion dollars per year. Every day, 2000 American adolescents begin smoking on a daily basis and it is estimated that 1/3 of these children will eventually die of tobacco related illness. The easy availability of tobacco products, sophisticated marketing methods used by tobacco companies, and relatively minor legal and social consequences of use, combined with nicotine's addictive properties leads to experimentation with tobacco products, and ultimately addiction to tobacco products. Less than 7% of those who try to quit are abstinent 1 year later, highlighting the importance of preventing youth access to tobacco.

Federal Synar Amendment. In 1992, Congress passed the Synar Amendment to the Alcohol, Drug Abuse and Mental Health Administration Reorganization Act. The Synar Amendment, named after its congressional sponsor Mike Synar, requires States to develop laws reducing the sale and distribution of tobacco products to individuals under the age of 18. The law was based upon research evidence that nearly 90% of adult smokers began smoking before the age of 18 and that they regularly purchased their own cigarettes from stores and vending machines. In 1997, state baseline violation rates ranged from 7.2% to 72.7%, with an average rate of 40.6%. Federal actions were taken to move all states to less than 20%. States that fail to comply with the amendment risk losing between 10 and 40% of Federal block grant funds allocated for substance abuse prevention and treatment. It is important to note that Louisiana, which had the highest violation rate in the nation at baseline in 1997, is one of the states with the lowest violation rates in FFY 2004. In the most recently published national data (FFY 2004), Louisiana was ranked 9th, with a non-compliance rate of 7.4%.

Louisiana Synar Initiative. The Louisiana Synar Initiative was created to meet the annual targets for non-compliance established by the Federal Government. The initiative includes the components required of all states (enacting state tobacco statues, conducting random unannounced inspections, and enforcement); in addition, the Louisiana initiative includes a common theme and statewide logo, state agency mobilization, community mobilization and merchant education, and mass media strategies. The state initiative achieved the target rate of 20% in FFY 1999, 3 years ahead of schedule.

Research Methods. This research provides the most recent evidence of the impact of the Louisiana Synar Initiative on the state non-compliance rate. The study design is a cross-sectional survey of compliance, with compliance is defined as the refusal to sell tobacco to minors. A stratified random sample of outlets are identified and surveyed by a team of one youth operative and two adult agents. The youth operative attempts to purchase tobacco from unrestricted outlets. The adult agents record characteristics of outlets, inspection events, and outcomes, and cite non-compliant outlets and clerks. Information about outlets, inspectors, and the inspection event are entered into an electronic data system via laptop at the time of inspection.

Eligibility and Completion Rates. The Synar inspections for the annual survey were conducted from 7 July 2004 to 10 August 2004. At the point of inspection, the outlet name and address was verified. Ineligible outlets and non-completed outlets were identified. Eligible outlets were inspected. 26.9% of outlets in the original sample were ineligible for inspection, primarily adult clubs and outlets that were permanently out of business. 2.9% of eligible outlets were not inspected, primarily because the outlet was in operation but closed at the time of the visit or judged unsafe to access.

Characteristics of outlets. The predominant types of outlets were convenience stores (57.1%), and small grocery stores or supermarkets (18.8%). Most of the time, tobacco is sold over-the counter, assisted by a salesclerk (95.3%). Most of the time, federally-mandated warning signs were posted (96.5%). Only 37 of the outlets had vending machines (4.7%).

Characteristics of the inspection event. Most of the time, the purchase attempt was over the counter, assisted by salesclerk (95.3%). Only 4.7% of all attempts involved vending machines, reflecting the low rate of vending machines currently in tobacco outlets. Most of the purchase attempts involved white female salesclerks older than 30, white female salesclerks 30 or younger, white male salesclerks older than 30, or African American females. 65.7% of all purchase attempts involved female salesclerks, 66.3% of the purchase attempts involved salesclerks older than 30, and 53.1% of the purchase attempts involved white salesclerks. Most of the time, salesclerk requested photo identification to verify the youth's age (84.9%).

Statewide Non-Compliance Rate. The current weighted violation rate for Louisiana is 7.3% with a 95% probability that the rate is between 0 and 8.8%. Of the 59 non-compliant outlets, 79% of the violations involved the successful buy of cigarettes; 17% involved the successful buy of smokeless tobacco. All non-compliant outlets were given a citation for Administrative Violation 26:911a1, Louisiana ATC Title 26 Administrative Law, Sales of Tobacco to Underage, and all sellers were given a citation for Criminal Offense 14:91.8, Louisiana Title 14 Criminal Law, Sales of Tobacco to Underage.

Factors Associated With Non-Compliance. Characteristics of minors, characteristics of outlets, and characteristics of inspection events, were tested for their association with non-compliance using two-way cross-tabulation. Significant variables from the bivariate analysis were further investigated using three-way crosstabulation. In the final multivariate model, salesclerk age and buyer age identification were significantly associated with non-compliance. Salesclerks who are 30 or younger are less likely to ascertain the youth's age, either by requesting a photo ID or by asking the youth his/her age, resulting in significantly higher sales to youth by younger clerks.

***Relationship of Non-Compliance to Youth Tobacco Use*.** Non-compliance rates for each region from the first year of the Louisiana Synar Initiative (FFY98) through FFY01 were examined, and regions that were in the top third of non-compliance for at least two years were identified. 30-day use rates for cigarettes for two years following this period (2001 & 2002) were examined, and regions that were in the top third of 30-day use rates were identified. There appears to be a modest pattern of regions with high non-compliance also being high in youth smoking. This pattern suggests the need for an expanded research agenda that will investigate whether the Louisiana Synar Initiative's success in reducing non-compliance has fulfilled the policy's intended impacts on youth smoking and its associated health and economic consequences.

Conclusions. The methods for selecting the Synar sample, the quality of the sampling frame, the structured inspection procedures, enhanced method of collecting data via laptop computers, strengthened training sessions for agents, and use of multivariate analyses to identify a set of risks for non-compliance that persist in the presence of other risks minimize bias in Louisiana's Synar Research. Therefore, strong confidence may be placed in the sharply declining non-compliance rate, and the identified risks of non-compliance.

Policy Recommendations. The State of Louisiana, through the Office for Addictive Disorders and Alcohol Tobacco Control, has been extremely successful in reducing the illegal sales of tobacco products to minors. This dramatic, sustained decrease in non-compliance is one of the sharpest declines in the country, and reflects a highly effective education and enforcement program. Continued leadership in the nationwide effort will be contingent upon both maintenance of current efforts and the initiation of innovative approaches towards high-risk groups. The Office of Alcohol and Tobacco Control has a limited number of agents to conduct compliance checks. The large rural populations make it logistically difficult for agents to conduct compliance checks in a timely manner. OATC is legally responsible for enforcing the tobacco and alcohol laws, but receives limited resources from the

state to enforce these laws. Therefore it is critical to use the state's scarce economic resources wisely. The results concerning high-risk outlet types, clerks, and locations potentially identify targets for upcoming enforcement and education activities. As the Synar rate gets lower, enhancing the universal statewide efforts with more intensive targeted efforts at high-risk groups is imperative for continued improvement in preventing youth access to tobacco. Targeting activities is not only a significant way of further lowering the non-compliance rate, but feasible, given that the Office for Addictive Disorders and the Office of Alcohol and Tobacco Control have developed a true partnership, and the 10 Regional Synar Programs have broad and deep capacity to ensure the maintenance of a comprehensive statewide Synar program. Four regions have non-compliance rates higher than the state average rates. Targeting merchant education and enforcement resources to those four regions should continue to decrease to statewide non-compliance rate. In addition, salesclerks younger than 30 have are twice as likely to fail to ascertain the age of youth. This has a profound effect on the statewide rate. If younger salesclerks ascertained youth age at the same rate as salesclerks 30 and older, the statewide rate would drop from 7.3% to 5.7%. Targeting merchant education resources to younger salesclerks should continue to decrease to statewide non-compliance rate.

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Agent Jeff Moore
Agent David Dean

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Lisa Ulmer

I. BACKGROUND

Youth Tobacco Use

Public health importance of youth tobacco use

Smoking is the most preventable cause of chronic illness and premature death in the world, resulting in 4 million deaths in developing countries and 440,000 deaths in the United States each year (McGinnis & Foege, 1993; World Health Organization, 1999). It is estimated that tobacco will cause 10 million worldwide deaths/year by 2030, 70% of those deaths in developing nations (World Health Organization, 1999). The economic consequences of tobacco use are more than 100 billion dollars per year. Cigarette smoking is also an important contributor to health inequalities, being more common among the disadvantaged worldwide and in our country (US Department of Health and Human Services, 1998; National Household Survey on Drug Abuse, 2001; World Health Organization, 1999).

Currently, 28.2% of Americans under the age of 18 smoke cigarettes (National Household Survey on Drug Abuse, 2001). In national surveys, 15.1% have used tobacco products in the 30 days preceding the survey, with cigarettes the most common tobacco product used.

Concurrent with tobacco use, adolescents are substantially more likely to have physiological symptoms of lower levels of lung function, reduced endurance, faster resting heart rates, and shortness of breath, compared to non-users. They are also more likely to see health professionals for psychological complaints, and more likely to engage in a constellation of risky behaviors including fighting, unprotected sex, and alcohol and other drug use (Arday, Giovino, Schulman, Nelson, Mowery, and Samet, 1995; US Department of Health and Human Services, 1994).

Many adolescent smokers continue smoking into adulthood (US Department of Health and Human Services, 1994). Every day, 2000 American adolescents begin smoking on a daily basis and it is estimated that 1/3 of these children will eventually die of tobacco related illness (Morbidity and Mortality Weekly Report, 1996; National Household Survey on Drug Abuse, 2001). The median cessation age for young smokers is estimated to be 33 years for males and 37 years for females. Therefore, 50% of adolescent males may smoke for at least 16 years, and 50% of adolescent females may smoke for at least 20 years, based on a median age of initiation of 16 years (Pierce & Gilpin, 1996).

Currently, 22.8% of adult Americans smoke, and half of adult smokers will die prematurely of tobacco-related illness. Tobacco use is responsible for more than the combined deaths from AIDS, car accidents, alcohol, homicides, illegal drugs, suicides and fires (Lynch and Bonnie, 1994). Of the 440,000 deaths/yr due to tobacco-related illness, 25% are smokers who die in middle age (22 YPLL), 25% are smokers who die in old age (8 YPLL), 43,000 deaths are due to heart disease and lung cancer in non-smoking adults exposed to environmental tobacco smoke, 1000 deaths are infant deaths due to maternal smoking, and 863 deaths are due to tobacco-related fires (Peto, Lopez, Boreham, Thun, & Heath, 1994; Steenland, 1992; US Environmental Protection Agency, 1992). In addition to the tremendous burden of tobacco-related mortality, there is also heightened morbidity including 300,000 lower respiratory infections in children <18 months each year and 200,000 asthma attacks of increased severity each year.

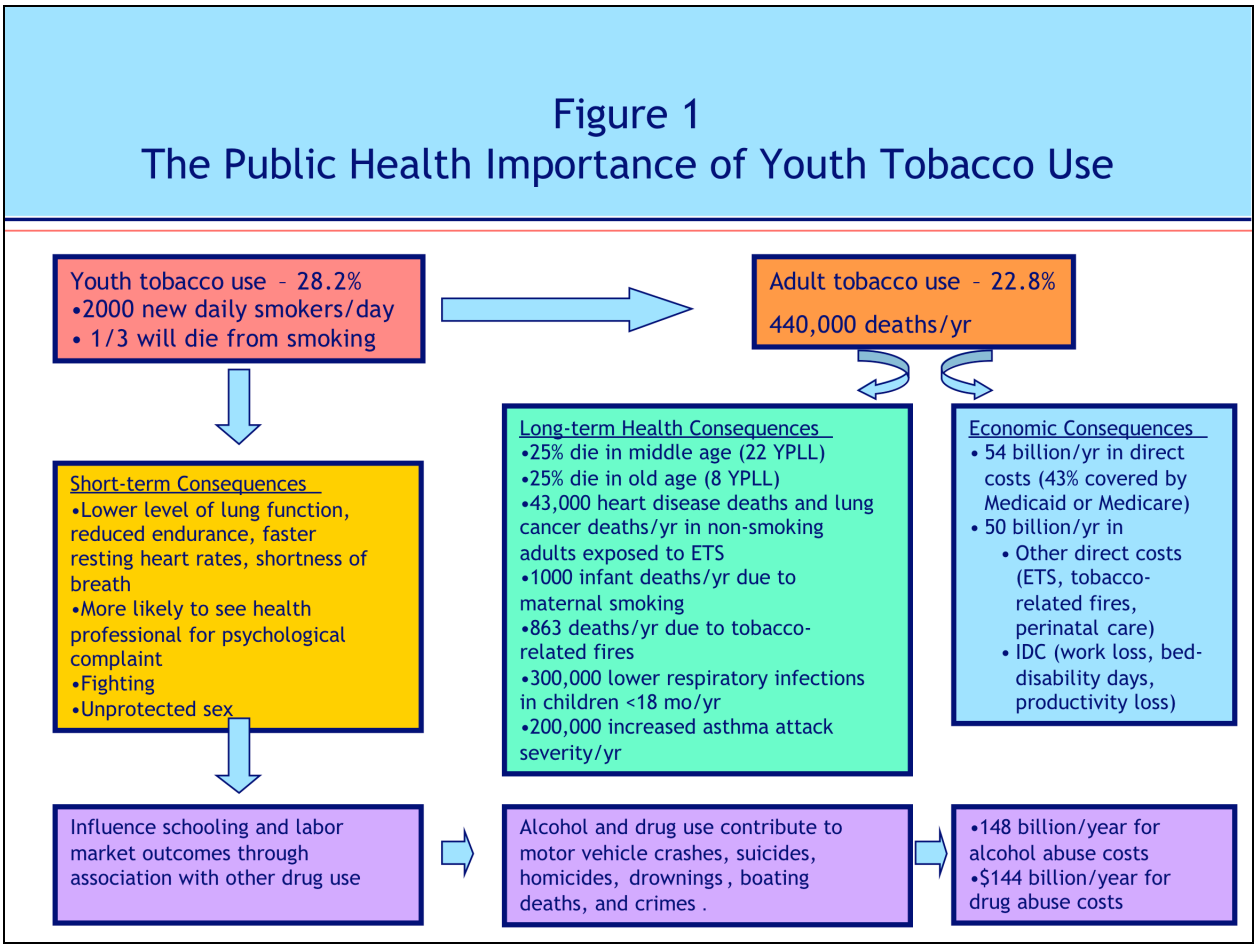
Current tobacco smokers are more likely to use alcohol and other drugs. Smokers have almost 5 times higher heavy alcohol use compared to non-smokers (14.0% vs. 3.0%) and 3 times higher binge drinking rates (40.2 % vs. 14.0%). Smokers also have 6 times higher rates of illicit drug use compared to non-smokers (18.2% vs. 3.3%). Tobacco has additional social impacts through its association with alcohol and other drug use. Alcohol and drug use contribute to motor vehicle crashes, suicides, homicides,

drownings, boating deaths, and crimes. (Grossman, Chaloupka, Saffer, & Laixuthai, 1994; Inciardi & Pottieger, 1991; Perrine, Peck, & Fell, 1988)

The direct economic costs of tobacco use are estimated at $54 billion per year, with 43% covered by Medicaid or Medicare (Bartlett, Miller, Rice, & Wax, 1994; Miller, Ernst, & Collin, 1999). An additional $50 billion per year includes other direct costs from exposure to environmental tobacco smoke, tobacco-related fires, and perinatal care of infants whose mothers smoke, and indirect costs from work loss, bed-disability days, and productivity loss.

Current analyses of the costs generated by substance use problems in the U.S. population estimate that the U.S. economy absorbed $148 billion per year in alcohol costs and $144 billion per year in substance abuse costs. Most of the costs of substance abuse are due to crime, including the costs associated with police protection, private legal defense, property destruction, and productivity losses for those who engage in drug-related crime or for people incarcerated in prison as a result of a drug-related crime (Harwood, 1998). Additionally, researchers have linked substance use during high school and young adulthood to lower educational attainment and lower earnings. Alcohol is implicated in more than 40 percent of all college academic problems and 28 percent of all college dropouts. At both 2- and 4-year colleges, the heaviest drinkers make the lowest grades. High school students who use alcohol or other substances are five times more likely than other students to drop out of school or to believe that earning good grades is not important (Cook & Moore, 1993; Kenkel & Ribar, 1994; Yamada, Kendix, & Yamada, 1996). Figure 1 illustrates the public health importance of youth tobacco use.

Figure 1
The Public Health Importance of Youth Tobacco Use



Conceptual model underlying prevention of youth tobacco use

The addictive nature of nicotine underlies the intractability of smoking behavior (Stolerman and Jarvis, 1995; US Department of Health and Human Services, 1988). Nicotine has been shown to have effects on brain dopamine systems similar to drugs such as heroin and cocaine (Pick, Pagliusi, & Tessari, 1997). Over 80% of adult smokers began smoking before age 18, and 35% were daily smokers by age 18 (United States Department of Health and Human Services, 1994). 70% of current smokers are not ready to quit, and of the 30% who attempt to quit, only 0.5% are successful, highlighting the importance of prevention of youth tobacco use. Rates of dependence vary by age. Adolescents are particularly vulnerable to becoming nicotine dependent, especially at low levels of cigarette consumption, and when they continue to smoke on a regular daily basis, suggesting the importance of preventing initiation of smoking as well as shortening smoking careers (Kandel and Chen, 2000).

The addictive nature of nicotine combines with the easy availability of tobacco products, minimal social and legal consequences, and advertising and promotion strategies to increase the likelihood of tobacco use. Over the past 3 decades, a wide range of prevention strategies have been directed at reducing the demand for tobacco products by modifying individual characteristics (increasing drug knowledge, changing attitudes about drugs, increasing social skills, and resisting social influence or peer pressure) and the environmental context of individuals (changing school, workplace, and community policies[1]). Research indicates that social learning-based drug prevention programs directed at individual risks for tobacco use have positive long-term effects on tobacco, alcohol, and marijuana use (Botvin, Griffin, Diaz, Scheier, Williams, Epstein, 2000; Dusenbury & Falco, 1995; Eggert, Thompson, Herting, Nicholas, & Dicker, 1994; O'Donnell, Hawkins, Catalano, Abbott, & Day, 1995; Pentz, 1999). Similarly, price increases, restrictions on tobacco advertising and promotion, restrictions on smoking in public places directed at environmental risks for tobacco use, lead to significant reductions in cigarette smoking (Bickel & Madden, 1998; Chaloupka & Grossman, 1996; Chaloupka & Warner; King, Siegel, Celebucki & Connolly, 1998; Pierce, Choi, Gilpin, Farkas, & Berry 1998; Pierce & Gilpin, 1995). Less is known about the effect of reducing youth access to tobacco on subsequent tobacco use (Cummings et al, 1998; Forster et al, 1998; Forster & Wolfson, 1998; and Gemson et al, 1998); however, recent federal legislation requiring states to reduce the sale of tobacco products to minors (Synar amendment) and Food and Drug Administration regulations establishing 18 as the national minimum age of tobacco sale and requiring vendors to verify purchaser age have stimulated the investigation of supply-side prevention strategies. Figure 2 illustrates the conceptual model underlying youth tobacco prevention strategies.

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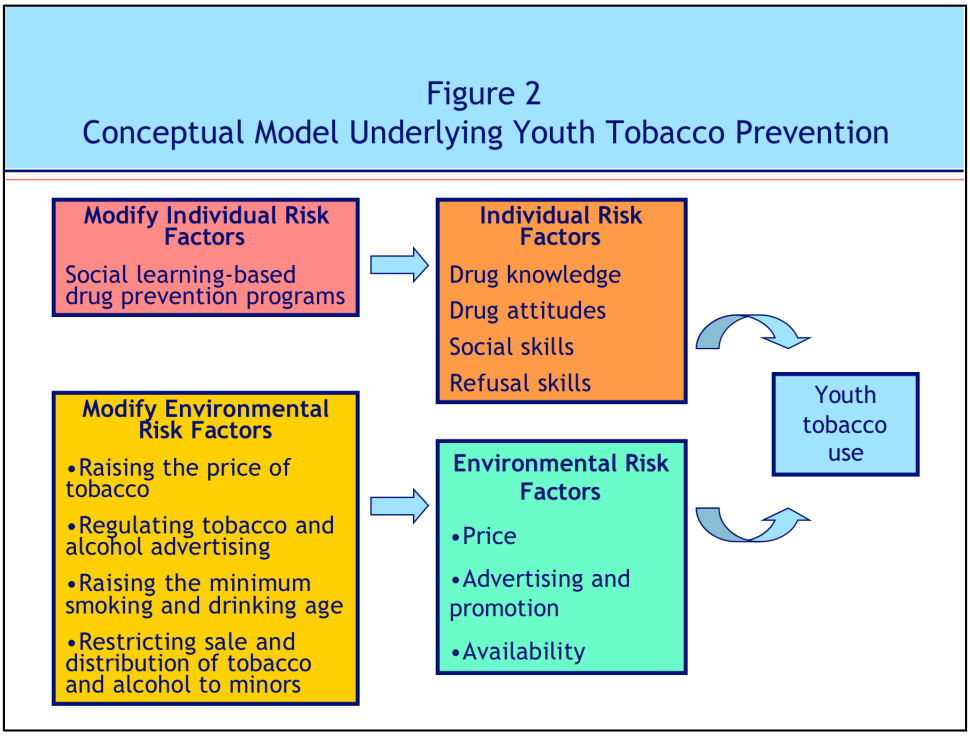
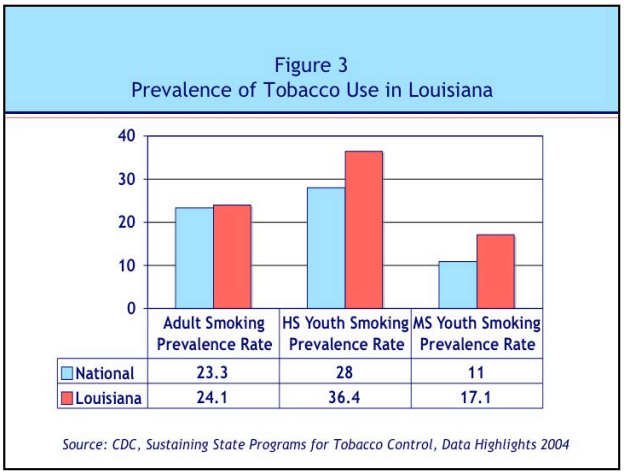
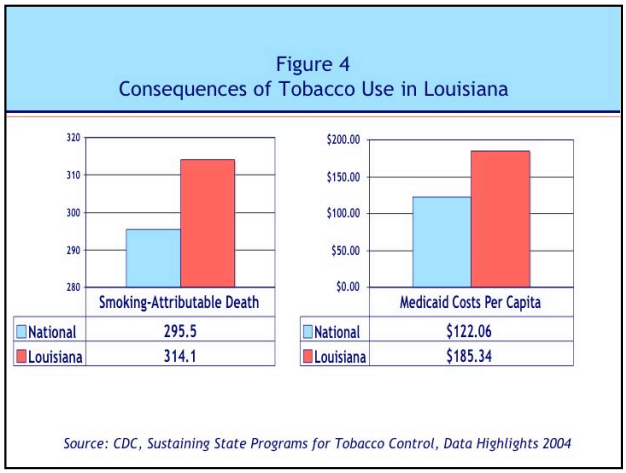
[1] School, workplace, and community policies include laws or policies creating drug-free environments, restricting the sale and distribution of tobacco and alcohol to minors, raising the minimum drinking age, regulating tobacco and alcohol advertising, and raising the price of tobacco and alcohol.



Tobacco Use in Louisiana

Although the adult smoking rate in Louisiana is similar to the national adult smoking rate (24.1 % vs. 23.3%), youth smoking rates, smoking-attributable death rates, and Medicaid costs per capita are higher in Louisiana than the nation. Smoking rates are higher for Louisiana high school students compared to high school students nationally (36.4% vs. 28.0%) and smoking rates are higher for Louisiana middle school students compared to middle school students nationally (17.1% vs. 11.0%). The smoking attributable death rate, which includes smoking related disease for adults 35 years of age and older, smoking related disease for infants, and deaths from cigarette related fires, is higher in Louisiana than the nation (314.1 vs. 295.5), and Medicaid costs attributable to smoking are higher in Louisiana than nationwide ($185.34 vs. $122.06). Figures 3 & 4 compare the extent and magnitude of tobacco use in Louisiana to the nation.





Federal Synar Legislation

History and Major Requirements of Synar Amendment

In 1992, Congress passed Section 1926 of Title XIX of the Federal Public Health Service Act, commonly called the Synar Amendment, after its congressional sponsor Mike Synar. The Synar Amendment requires States to develop laws reducing the sale and distribution of tobacco products to individuals under the age of 18, and was based upon research evidence that nearly 90% of adult smokers began smoking before the age of 18 and that they regularly purchased their own cigarettes from stores and vending machines. On January 19, 1996, the U.S. Department of Health and Human Services issued the final implementation regulations for the Synar Amendment. Compliance with the Synar Amendment is a condition of funding for states receiving the Substance Abuse Prevention and Treatment (SAPT) block grant. 40 percent of the block grant funding can be withheld for not complying with the Synar Amendment. The main requirements of the law include:

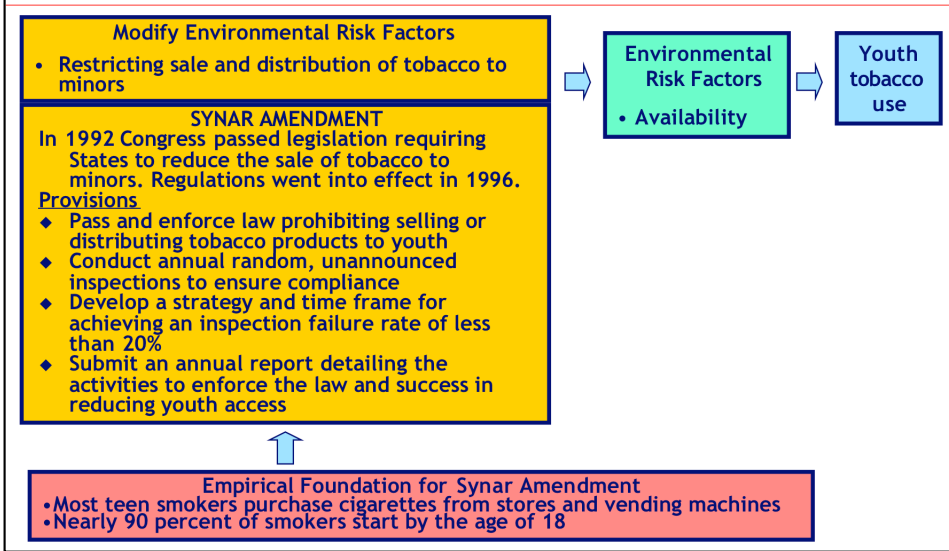
- **Enforcement**: States pass and enforce law prohibiting selling or distributing tobacco products to any individual under the age of 18 (19 in Utah);
- **Monitoring Compliance**: Conduct annual random, unannounced inspections to ensure compliance;
- **Strategic Plan:** Develop a strategy and a time frame for achieving an inspection failure rate of less than 20
- **Communicating Results**: Submit an annual report detailing the activities to enforce their law and overall success in reducing youth access.

The regulations are based on the assumption that enforcement of the minors' access law will lead to a decrease in the number of outlets making illegal sales to minors, thus lowering youth access to tobacco, and ultimately reducing youth tobacco use. Synar activities include:

1. Conducting frequent unannounced retailer compliance checks to identify retailers who sell tobacco to minors
2. Imposing a graduated series of civil penalties on the retailer, including license revocation
3. Eliminating tobacco vending machines and self-service displays in stores accessible to young people
4. Providing comprehensive merchant education to deter retailer violation
5. Sending minors into stores to attempt to purchase cigarettes

Figure 5 illustrates the conceptual model underlying the Synar Amendment as a youth tobacco prevention initiative.

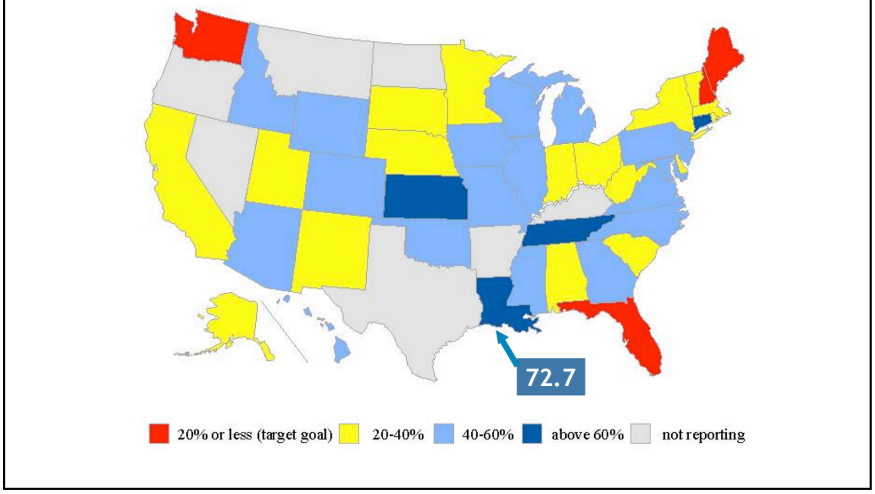
Figure 5
Conceptual Model Underlying Synar Amendment as Youth Tobacco Prevention Initiative



National Violation Rates

In 1997, the baseline violation rate ranged from 7.2% to 72.7%, with an average rate of 40.6%. Figure 6 shows the 1997 Baseline violation rates (i.e., % of illegal tobacco sales to minors) for all states. It is important to note that Louisiana had the highest violation rate in the nation (72.7%).

Figure 6
Baseline Non-Compliance Rates (1997)



Federal actions were taken to move all states to less than 20%. States that failed to comply with the amendment risk losing between 10 and 40% of Federal block grant funds allocated for substance abuse prevention and treatment. Overall, the national non-compliance rate dropped to 12.8 percent in 2004, down from 14.1 percent reported in 2003 and 40.1 percent since the annual surveys began in 1996. Figure 7 and Table 1 show the state results for 2004. 48 states achieved the legislative goal of non-compliance rates at 20% or less, with 9 states at 7.5% or less, including Louisiana.

Figure 7
FFY 2004 Non-Compliance Rates

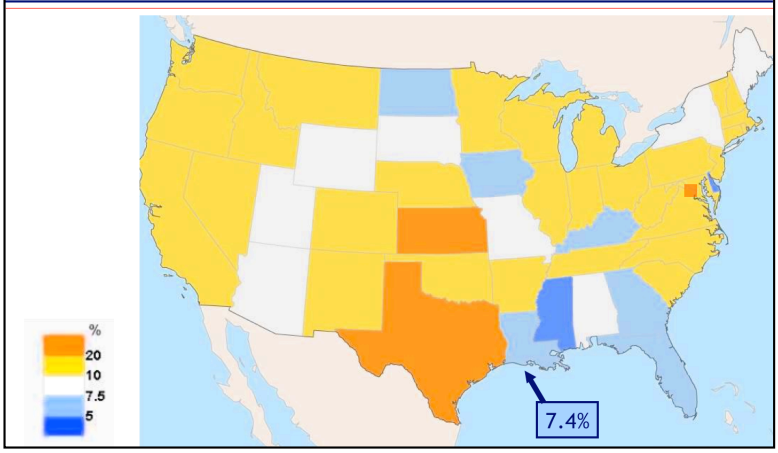


Table 1
State Non-Compliance Rates, 2004

Rank	State	Rate	Rank	State	Rate
1	Delaware	3.9	27	Nevada	11.4
2	Mississippi	3.9	28	Massachusetts	11.6
3	Iowa	5.2	29	South Carolina	11.9
4	Georgia	6.2	30	Maryland	12.1
5	Hawaii	6.2	31	Minnesota	12.1
6	Kentucky	6.7	32	California	12.2
7	Florida	7.1	33	New Jersey	13.0
8	North Dakota	7.3	34	Ohio	13.5
9	Louisiana	7.4	35	Tennessee	13.5
10	Wyoming	8.0	36	Idaho	14.7
11	South Dakota	8.5	37	North Carolina	14.8
12	Alabama	8.7	38	New Mexico	14.9
13	Maine	8.8	39	Nebraska	15.5
14	Arizona	8.9	40	Vermont	15.9
15	Missouri	8.9	41	Oregon	16.3
16	Utah	8.9	42	Arkansas	16.6
17	New York	9.4	43	Indiana	16.6
18	Oklahoma	10.0	44	Illinois	16.8
19	Alaska	10.2	45	Rhode Island	16.9
20	Virginia	10.2	46	Wisconsin	18.5
21	West Virginia	10.3	47	Michigan	18.7
22	Colorado	10.5	48	Connecticut	18.9
23	New Hampshire	10.7	49	Kansas	22.1
24	Pennsylvania	10.8	50	Texas	23.8
25	Washington	10.8	51	District of Columbia	41.9
26	Montana	11.2			

Louisiana Synar Initiative

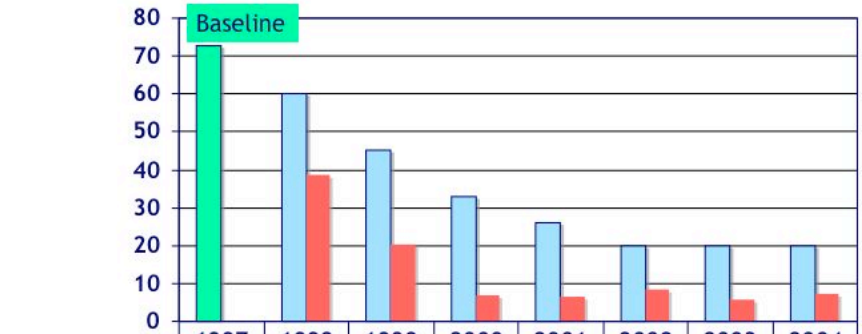
Lead Synar Agency and Enforcement Agency

The Synar Amendment to the Public Health Service Act (PL 102-321) requires the State of Louisiana to conduct random, unannounced inspections of tobacco outlets to measure the unlawful distribution of tobacco products to individuals under age 18. The Office for Addictive Disorders (OAD) in Louisiana's Department of Health and Hospitals (DHH), is the single state agency charged with tobacco policy implementation under federal law. The Louisiana Office of Alcohol and Tobacco Control is the regulatory agency for both alcohol and tobacco as stipulated in Louisiana State Law. The Louisiana Department of Revenue's Office of Alcohol and Tobacco Control (OATC) is the agency responsible for implementation of the Synar inspections. The random sample of tobacco outlets to be visited during the Annual Synar Study is provided to OATC by OAD. The Office of Alcohol and Tobacco Control conducts the random, unannounced inspections of the tobacco outlets and is responsible for enforcing the tobacco access laws.

Louisiana Baseline, Target Rates, and Actual Rates

In December 1996, the first baseline was conducted on tobacco sales to persons under the age of 18. 72.7% of Louisiana merchants were non-compliant with the law. As a result of the baseline, target non-compliance rates were set by CSAP for the state by Federal Fiscal Year. The Louisiana Synar Initiative was created to meet the annual targets for non-compliance established by the Federal Government. The state initiative achieved the target rate of 20% in FFY 1999, 3 years ahead of schedule, and the FFY 2004 survey revealed that Louisiana had a non-compliance rate of 7.4%. Louisiana's baseline rate, target rates, and actual rates are shown in Figure 8.

Figure 8
Louisiana Baseline Non-Compliance Rate and Target Rates

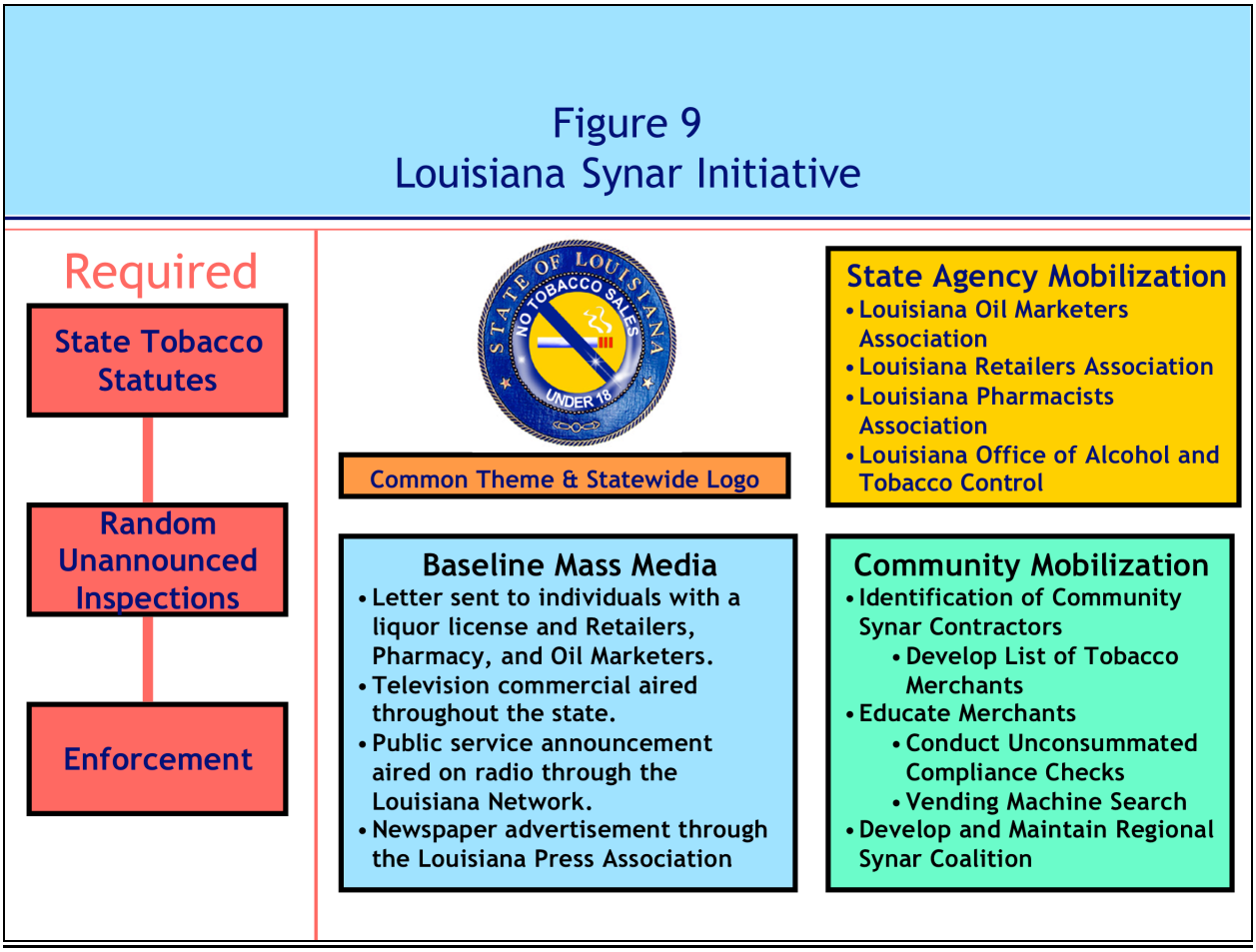


	1997	1998	1999	2000	2001	2002	2003	2004
Targets	72.7	60	45	33	26	20	20	20
Actual Rates		38.8	20.3	6.7	6.5	8.5	5.7	7.4

Major Components of the Initiative

The Louisiana Synar Initiative was created to meet the annual targets for non-compliance established by the Federal Government. The initiative includes the components required of all states (enacting state tobacco statues, conducting random unannounced inspections, and enforcement); in addition, the Louisiana initiative includes a common theme and statewide logo, state agency mobilization, community mobilization and merchant education, and mass media strategies. Figure 9 illustrates the components of the Louisiana Synar Initiative.

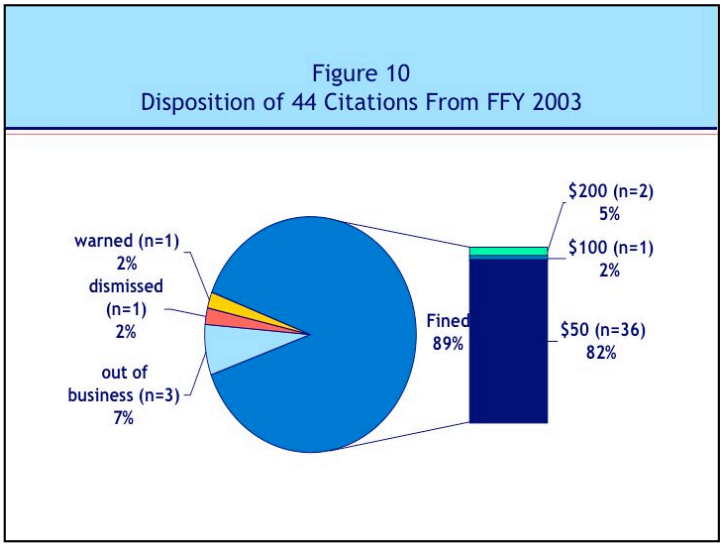
Figure 9
Louisiana Synar Initiative



Synar Inspections and Enforcement. Louisiana combines Synar inspections with enforcement. The State of Louisiana has both a criminal law addressing underage sales and possession as well as an administrative law that covers licensed establishments and their workers. If the violation generates from a sale at a licensed establishment, generally both the clerk and the business are cited. The business is generally issued an administrative violation and the clerk is cited criminally. However, in cases where a licensed establishment is not involved only criminal citations are issued. Criminal citations are turned over to the District Attorney within the Parish (county) where they are written and adjudicated within the court system of that Parish. The clerk of court for the respective district keeps the records of the court decision regarding these cases. Administrative violations are handled by the Louisiana Office of Alcohol and Tobacco Control administrative prosecutors' office and are heard by the Commissioner of OATC or the Staff Attorney. Records of all administrative cases are kept by case file at OATC.

For state Synar reports prior to FFY 2003, OAD has been unable to obtain disposition records of OATC tobacco compliance checks records. In FFY 2003 OAD worked to ensure that administrative citations for the annual Synar Report would be tracked by OATC and provided to OAD for reporting in the Annual Synar Report. The dispositions of all of the 48 merchants issued a citation during FFY 2004 Annual Synar Report have been accounted for. The 48 violations indicated above were those issued during the FFY 2004 Annual Synar Report. The 36 fines assessed are those specific to store owners with the following amounts paid: 28 at $50.00, 6 at $150.00 and 2 at $200.00. The remaining dispositions were as follows: 4 were issued warnings, 5 were dismissed and 3 were continued. Store owners are issued an administrative citation and store clerks are cited criminally. OATC handles all administrative violations and records are kept by case file at OATC. OAD has worked to ensure that administrative citations for the annual Synar Report will be tracked and their disposition reported. Criminal citations are turned over to the District Attorney within the parish where the citation was issued and are adjudicated within the court system of that parish. Dispositions of the 48 citations from FFY 2004 are shown in Figure 10.

Figure 10
Disposition of 44 Citations From FFY 2003



During the Synar Inspections for this annual report (FFY 2005), 1130 outlets were surveyed. Of the 1130 surveyed, there were 304 ineligible outlets (26%) and 826 eligible outlets (73%). 793 of the eligible outlets (96%) were tested for compliance of which 59 merchants were found to be non-compliant with the law (7.3%). These 59 merchants were issued a citation.

Community mobilization to increase support for retailer compliance with youth access laws. Regional Synar coalitions were established in each of the 10 regions in the state during the FFY 1997 and a coalition in each of the parishes within a given region was established during FFY 1998. Members of the coalitions include representatives from regional OAD prevention coordinators, local district attorney's office, mayor's office, Department of Education, local law enforcement, local media, and local parent Organizations. During FFY 2004, nine (9) of the ten (10) OAD regions had a Regional Synar Contractor. Each of these 9 contractors hosted a Regional and Parish Coalition meeting once per quarter. During these coalition meetings, members received training and information about educating merchants and conducting unconsummated compliance checks.

Merchant Education and/or Training. In years past, a Synar Contractor was funded in each of the 10 OAD administrative regions in the state. An important role of the Synar Contractor has been to train and supervise youth volunteers to conduct unconsummated compliance checks. During FFY 2004, only 9 of the 10 regions funded a Synar Contractor. One region (Region 8) was unable to secure a Synar Contractor and instead required existing SAPT Block Grant prevention providers to provide Synar educational materials to tobacco merchants in their immediate area. Region 8 provided 50 Synar educational packets to area tobacco merchants. A total of 3,364 unconsummated compliance checks were conducted statewide from July 1, 2003 to June 30, 2004 to include the following: 350 in Region 1; 350 in Region 2; 369 in Region 3; 350 in Region 4; 509 in Region 5; 325 in Region 6; 361 in Region 7; 356 in Region 9; and 394 in Region 10. During unconsummated compliance checks, these merchants were provided *Thank You* and *No Thank You* cards, educational cards, and certificates as appropriate. Each merchant where an unconsummated compliance checks was conducted was also provided an educational packet including written materials, window decals, and stickers regarding the current laws and goals of the Synar Amendment. In addition to the 3,364 merchants educated during the unconsummated compliance checks, 160 (including the 50 in Region 8) more merchants received educational packets for a statewide total of 3,414 merchants receiving educational materials.

***Incentives for merchants who are in compliance*.** During unconsummated compliance checks conducted by community coalitions, merchants were provided *Thank You* and *No Thank You* cards, educational cards, and certificates as rewards or reminders. During routine, consummated compliance checks conducted by agents of the Office of Alcohol and Tobacco Control, merchants who are found in violation are issued administrative and criminal citations. Those are found to be compliant with the law receive a letter of appreciation by mail signed by the Commissioner of the Office of Alcohol and Tobacco Control.

***Community education regarding youth access laws*.** The Office for Addictive Disorders is the single state authority for the treatment and prevention of substance abuse (NASADAD) as well as being the agency responsible for Synar implementation. OAD used SAPT Block Grant funds to contract with primary prevention providers. These contractors provided services in the programmatic areas of Information Dissemination, Education, Alternative Activities, Problem Identification and Referral, Community-based Process and Environmental. All contractors were required to address the prevention of alcohol, tobacco, and other drugs (ATOD). During FFY 2004, OAD sponsored 8 Regional Teen Institutes (RTI). Approximately 500 youth (ages 14 to 17) and adult sponsors participated in RTI. The purpose of RTI is to provide teams of youth and adults with the knowledge and skills to return to their community and implement programs in the area of alcohol, tobacco and other drug prevention. As a part tobacco education, RTI participants were provided with information specific to the Synar Amendment and Louisiana's Synar Program. OAD awarded mini-grants to RTI groups to support year round youth activities related to ATOD. Several of these mini-grants were specific to tobacco prevention.

Media use to publicize compliance inspection results. The Department of Health and Hospitals Secretary Dr. Fred Cerise, Louisiana Office of Alcohol and Tobacco Control Commissioner Murphy Painter, and DHH Office for Addictive Disorders Assistant Secretary Michael Duffy hosted a press conference Tuesday, July 6, 2004 to announce the results of this study. The press conference took place at the Cracker Barrel Convenience Store, 4245 Nicholson Drive, Baton Rouge, Louisiana, at 10 a.m. This particular Cracker Barrel location, along with many other convenience stores statewide, had never received a violation for selling tobacco products to youth under 18.During the press conference it was revealed that the non-compliance rate was 7.4%. This 7.4% non-compliance rate was well below the national goal of 20% non-compliance. In addition to the formal Press Conference, a press release was issued outlining the results of the survey and a copy of the full report was posted on the DHH website.

Research Questions and Approach

The major national Synar research gaps include the need to improve sampling methods, the need to improve data collection methods, and the need to examine legislative impact. Louisiana Synar research is contributing to filling these national gaps by using probability-based sampling methods based upon jurisdiction, investigating the quality of the frame, standardizing guidelines for youth operatives, improving OATC inspection data collection methods, improving the gender distribution of youth operatives, handling the ethical dilemma of inspections in bars, and exploring the feasibility of linking compliance data with youth smoking data to explore impact of the Synar amendment. Table 2 shows how Louisiana Synar Research is addressing major national research gaps.

Table 2
National Synar Research Gaps Addressed by Louisiana Research

National Synar Research Gaps	Louisiana Synar Research
Improve sampling methods	• Develop a probability sampling method based upon jurisdiction • Investigate the quality of frame
Improve data collection methods	• Standardize guidelines for youth operatives • Improve existing information system • Improve gender distribution of youth operatives • Handle ethical dilemma of youth operative in bar
Analyze the legislation's impact on youth smoking	Explore feasibility of linking with youth tobacco data

This study is a collaborative effort between the State Department of Health, Office of Addictive Disorders, and the State Alcohol and Tobacco Control Commission to determine the status of enforcement of the minor's access law by measuring non-compliance rates for Louisiana tobacco outlets. The non-compliance rate is defined as the proportion of all outlets at which an inspection or compliance check results in a sale, or a willingness to sell, to a youth under 18 years of age.

A stratified random sample of tobacco outlets was selected for inspection. A team of a youth operative accompanied by two adult agents conducted a cross-sectional survey of outlets. The youth operative tested the compliance for each outlet. The adult agents recorded information about the outlet and inspection event, and cited violations.

This research will use the survey data to identify the state's non-compliance rate. The non-compliance rate is a critical indicator of the success of the state's efforts to restrict minors' access to tobacco products. This research will also investigate whether characteristics of the minors, characteristics of outlets, characteristics of the inspection event, and/or key parish environment characteristics are associated with non-compliance, in order to guide implementation of the Synar Initiative in the coming year, and to contribute to our nation's ability to understand and prevent youth access to tobacco use.

II. METHODOLOGY

Design

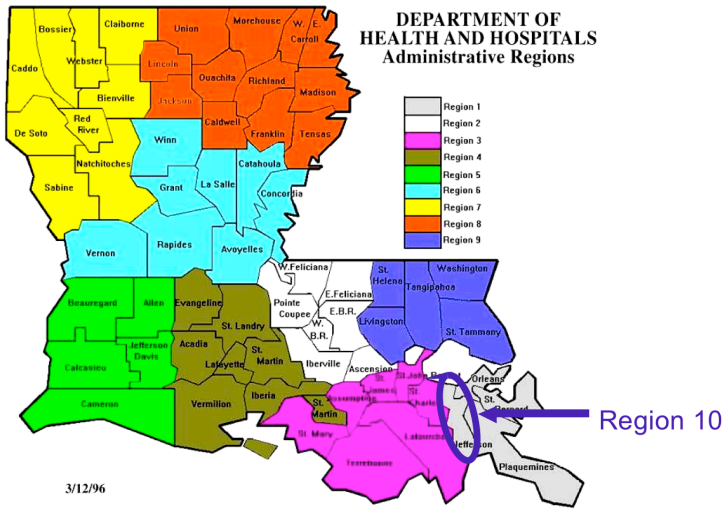
The study design is a cross-sectional survey of compliance. Compliance is defined as the refusal to sell tobacco to minors and the prevention of entry of a minor to outlets restricted to youth. A stratified random sample of outlets are identified and surveyed by a team of one youth operative and two adult agents. The youth operative attempts to purchase tobacco from unrestricted outlets and tests the access of restricted outlets. The adult agents record characteristics of outlets, inspection events, and outcomes. This design is an appropriate method for measuring the rate of non-compliance and factors associated with non-compliance.

Population and Sample

Sampling design and methodology

The study uses a stratified random sampling design. Louisiana is divided into ten geographic regions, as shown in Figure 11. These 10 administrative regions comprise the strata. Simple random sampling without replacement was used to select the sample from each stratum.

Figure 11
Department of Health and Hospitals Administrative Regions



Stratum sample sizes are determined proportionally to the stratum population sizes. Within strata, outlets are selected using simple random sampling without replacement and with equal probability, regardless of tobacco sales volume. This sampling method was chosen in order to maximize sampling efficiency and to provide estimates of the non-compliance rate for each region.

The sampling methodology remains essentially the same as previous years. In prior years, the design was also a stratified simple random sampling design, with the 10 administrative regions of Louisiana comprising the strata. Stratum sample sizes were determined proportionally to the stratum population size, and within strata, outlets were selected using simple random sampling without replacement, and with equal probability, regardless of tobacco sales volume. The State Tobacco License List was the source of the outlet population, with invalid addresses removed prior to sample selection to improve the accuracy of the frame. Outlets eligible for inspection included tobacco outlets not accessible to youth such as bars, lounges, and gaming establishments[2], with youth access tested and included in calculating the state non-compliance rate. Verification that the outlets on the sampling frame sold tobacco was determined at the point of inspection by the agents, with outlets not selling tobacco identified as ineligible and thus not checked for compliance. There were no additional methods used to locate tobacco outlets that were not on the sampling frame, as the working assumption was that only licensed outlets sold tobacco. We used the non-compliance rate for the previous year, established a 2% margin of error, and used the value of Z for a one-tailed 95% level (1.645), to calculate the effective sample size, and used a design effect for stratification of 1.33, the eligibility rate from the most recent coverage study, and a conservative estimate of the completion rate to calculate the original sample size.

The major change to sampling methodology occurred prior to the FFY 2004 inspections as a result of a policy change at the Office of Alcohol and Tobacco Control. In prior years, youth access to age-restricted tobacco outlets[2] such as bars, lounges, and gaming establishments, was tested by the youth operative entering the outlet and the agents determining whether the youth's age was checked by the bartender or other employee, and the youth then asked to leave. Age-restricted outlets that did not check the age of the youth and allowed the youth to stay were considered non-compliant, per CSAP guidance, and included in calculating the state non-compliance rate. In June 2003, the Office of Alcohol and Tobacco Control responded to agent and supervisor ethical concerns about exposing youth operatives to age-restricted outlets, and formulated a policy that limits the testing of youth access to age-restricted outlets to only those outlets with a doorman present at the time of inspection. This policy has narrowed the definition of outlet eligibility in the sampling frame; in the past two surveys age-restricted outlets that do not have doorman at the time of inspection were considered ineligible.

Several minor changes to sampling methodology in FFY 2004 and FFY 2005 include using a smaller margin of error (1.5% rather than 2%) to calculate the effective sample size, and using a smaller estimate of the design effect (1.25 rather than 1.33) to calculate the original sample size. In addition, in FFY 2005, a commercial business list was used to remove bars, taverns, nightclubs, adult clubs, private clubs, correctional centers, and sheriff's offices from the state tobacco license list, in order to reduce the percentage of ineligible outlets.

The source of the sampling frame

The study population includes all tobacco outlets in Louisiana that are accessible to youth. A tobacco outlet is any location that sells at retail or otherwise distributes tobacco products to consumers. Louisiana passed a law licensing all tobacco vendors, which took effect 1 July 1998, and the State Office of Alcohol and Tobacco Control Tobacco License List was used as the sampling frame to select a statewide representative sample of outlets. The list contained the name of the outlet, license number of outlet, and location of outlet (street address, town, parish, and zip code). A total of 10,265 outlets were included on the list. The total outlet number is similar to the previous year (10,221 in FFY 2004).

[2] *Adult clubs are not eligible for youth inspection, per state law.*

Procedures to update the sampling frame to insure that the addresses of tobacco outlets on the sampling frame are accurate

The State Office of Alcohol and Tobacco Control Tobacco License List is regularly updated to add newly licensed outlets and to remove licensed outlets no longer selling tobacco products. At the time a business applies for a license, Alcohol and Tobacco Control verifies the address with the Department of Revenue. The Tobacco License List for selecting this year's sample was extracted 4 May 2004, and represented the most up to date and accurate outlet information available at that time.

Numbers, names, and addresses of the 10,265 outlets on the License List extracted 4 May 2004 were examined for duplicates and invalid values, after aggregating by permit number and converting 9-digit zip codes to 5-digit zip codes. There were no duplicate outlets on the list. 458 ineligible outlets were removed from the list by merging the Tobacco License List with a business list from InfoUSA. Outlets removed included 333 bars, taverns, nightclubs, and adult clubs, and 125 private clubs, correctional centers, and sheriff's offices. The merge with the business list yielded 9807 eligible outlets.

Frame sources and updating methods are detailed in Table 3.

Table 3
Sources Of The List Frame

Name of Frame Source	Type of Source	Description	Updating Method and Cycle
State Office of Alcohol and Tobacco Control Tobacco License List	3	All tobacco outlets in Louisiana that sells at retail or otherwise distributes tobacco products to consumers	ATC continuously removes non-renewed permits from the list and updates the list with new permits
InfoUSA	1	Used to remove ineligible outlets from the list prior to sampling. Ineligible outlets include bars, taverns, night clubs, adult clubs, private clubs, correctional centers, and sheriff's offices	InfoUSA's file is compiled from over 5,000 sources & further verified by 20 million telephone verification calls annually. Data is updated monthly.

Source

1 – Statewide commercial business list
2 – Local commercial business list
3 – Statewide tobacco license/permit list
4 – Statewide retail license/permit list
5 – Statewide liquor license/permit list
6 – Other

The criteria used to determine accessibility of outlets to youths

Tobacco outlets that are not accessible to youth include jails, gaming establishments, and bars and lounges. In selecting the sample, a business list was used to remove ineligible outlets from the sample. If an outlet is deemed to be inaccessible to youth during the inspection process, the outlet is not inspected, and the disposition of the inspection event is coded as ineligible.

The methods used to verify that outlets identified on the sampling frame actually do sell tobacco

Verification that the outlets on the sampling frame actually do sell tobacco is determined at the point of inspection by the agents. Outlets that don't sell tobacco are identified as ineligible and are not checked for compliance.

The methods used to locate tobacco outlets that were not on the sampling frame

There are no additional methods used to locate tobacco outlets that were not on the sampling frame, as the working assumption is that only licensed outlets sell tobacco.

The accuracy of the frame

Of the 10,265 outlets on the Tobacco License List extracted 4 May 2004, 9,807 were eligible outlets with valid addresses, yielding an accuracy rate of 95.5% for the list. Of the sample of 1130 outlets, 826 were eligible for inspection, yielding an accuracy rate of 73.1% in the sample. The accuracy of the list is slightly higher than the rate from FFY 2004 (95.5% this year compared to 92.4%in FFY 2004), and the accuracy rate of the sample is also slightly higher than the rate from FFY 2004 (73.1% this year compared to 71.8% in FFY 2004). We will be using additional selection criteria for InfoUSA lists to improve identification of bars, taverns, nightclubs, adult clubs, private clubs, correctional centers, and sheriff's offices for FFY 2006, so a greater percentage of ineligible outlets can be eliminated from the frame prior to selecting the sample.

The coverage of the frame

Under the Synar Regulation, states are required to assess the quality of the State Tobacco License list used as the sampling frame for the annual inspections of outlets to verify that the list covers at least 80% of all outlets that sell tobacco products. The State is required to report the accuracy of the list (the percent of outlets on the State Tobacco License List that sell tobacco products and have accurate addresses), and coverage (the percent of all eligible tobacco outlets that are included on the State Tobacco License List). The quality of the State Tobacco License list was measured in spring 2003, just preceding the FFY 2004 Synar Survey. Five geographic areas across the state were selected for the survey: (1) Baton Rouge and (2) Hammond were selected in order to use the same two areas surveyed in the first coverage study (Harris, 1999); and three additional areas were surveyed to provide a more accurate representation of the state Tobacco License List: (3) New Orleans, (4) Alexandria, and (5) Lake Charles. The coverage study used a cross-sectional design to survey outlets in the five geographic regions of the state. For each geographic region, a retail area was selected, and all outlets in the area were visited to identify whether the outlet sold tobacco products. Each retail area had at least 60 businesses, with 371 businesses surveyed overall. A field survey form was used to document the outlet name, address, and whether or not the outlet sold tobacco products, ultimately yielding 61 tobacco outlets overall. Following the fieldwork, data was entered and verified, and then merged with the state Tobacco License List to identify outlets on the list that were and were not selling tobacco products, according to field survey results. Outlets selling tobacco products that were not on the list were also identified. Figure 12 displays geographic and methodological information about investigating the quality of the sampling frame.

Figure 12
Investigate the Quality of Sampling Frame

1 Identify five geographic regions across the state and select a retail area within each region.

2 Construct a field survey form and a survey route for each area.

3 Collect data about the tobacco sales status of each outlet in the area.

4 Enter and verify data.

5 Match survey data with data from the Tobacco License List for the survey area.

6 Estimate accuracy and coverage for the State

The accuracy rate for the state is 87.7%, ranging from 82.4% in New Orleans to 100% in Hammond. The coverage rate for the state is 82.0 % and is more variable than the accuracy rate, ranging from 62.5% in Alexandria to 88.9% in Lake Charles. The regional statistics and state rates are shown in Table 4.

Table 4
Regional And State Accuracy Rates

Region Statistics	East Baton Rouge	Hammond	New Orleans	Alexandria	Lake Charles	State
n	15	10	17	6	9	57
a	2	0	3	1	1	7
b	2	3	2	3	1	11
% Accuracy = 100 x (1-a/n)	86.7	100.0	82.4	83.3	88.9	87.7
% Coverage = 100 x (1-b/(n=a+b))	86.7	76.9	87.5	62.5	88.9	82.0

Both accuracy rate and coverage rate have increased since the previous study done in 1999. At that time, the coverage of the list did not meet the Federal guidelines for coverage of at least 80%; in the current study, the coverage does meet Federal guidelines. In addition, the current study better represents the state by selecting 5 geographic areas rather than two, and the tobacco outlet frame increased twofold. A comparison of state rates from the current study and 1999 study is shown in Table 5.

Table 5
Change In State Accuracy Rates Between 1999 & 2003

State Statistics	1999 Study	Current Study
n	28	57
a	4	7
b	7	11
% Accuracy = 100 x (1-a/n)	85.7	87.7
% Coverage = 100 x (1-b/(n=a+b))	77.4	82.0

Although the federal guidelines require 80% coverage, 90% coverage is recommended. With ATC beginning to institute electronic field data entry of inspected outlets, it is likely that the coverage of the list will approach the recommended level in the near future.

The type of random sample design used to conduct the Synar survey

A stratified random sampling procedure was used to estimate the sample size for the compliance check study. There are 10 administrative regions in the state that divide the state into 10 homogeneous geographic locations. The regions comprise 10 strata. Simple random sampling without replacement was used to select the sample from each stratum. The outlets within each stratum were sorted by parish, town, and zip code, prior to selection.

The original and effective sample size

In calculating the effective sample size, we used the following formula:

$$n_e = \frac{1}{((e/Z)^2/p(1-p))+1/N)}$$

where n_e is the minimum effective sample size, e is the margin of error, Z is the normal deviant corresponding to the specified precision level, p is the prevalence rate, and N is the size of the sampling frame.

We established a 1.5% margin of error, used the value of Z for a one-tailed 95% level (1.645), used the 7.4% non-compliance rate for 2003, and the sampling frame size of 9807. This yielded an effective sample size of 760:

$$n_e = \frac{1}{((.015/1.645)^2/.074(1-.074))+1/9807)} = 760$$

To account for the design, eligibility rates, and completion rates, we used the following formula:

$$n_o = \frac{d}{r_e * r_c} (n_e)$$

where n_o is the minimum original sample size, d is the design effect, r_e is the eligibility rate, r_c is the completion rate, and n_e is the effective sample size.

We then calculated an original sample size using a design effect for stratification of 1.25, using the eligibility rate from the most recent coverage study of 87.7%, and the completion rate from last year's survey of 95.9%. This yielded an original sample size of 1130:

$$n_o = \frac{1.25}{(.877*.959)} * 760 = 1130$$

The final sample was allocated within the 10 different strata using the proportional allocation procedure according to the stratum size of outlets in the population.

$$n_i = n(N_i/N)$$

where n_i is the sample size for the ith stratum, n is the total sample size for Louisiana, N_i is the number of outlets in the ith stratum, and N is the total number of outlets in Louisiana

Simple random sampling without replacement was used to select the sample from each stratum. The sample is shown in Table 6.

Table 6 Distribution Of Tobacco Outlets By Stratum For Louisiana			
Strata	Geographic Sampling Unit	Total Number Of Outlets (N_i)	Sample Outlets (N_i)
1	Orleans, Plaquemines, St. Bernard	1670	192
2	Ascension, East Baton Rouge, East Feliciana, Iberville, Pointe Coupee, West Baton Rouge, West Feliciana	1303	150
3	Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, Terrebonne	1017	117
4	Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, Vermilion	1288	149
5	Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis	516	60
6	Avoyelles, Catahoula, Concordia, Grant, LaSalle, Rapides, Vernon, Winn	566	65
7	Bienville, Bossier, Caddo, Claiborne, DeSoto, Natchitoches, Red River, Sabine, Webster	1001	115
8	Caldwell, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, Union, West Carroll	693	80
9	Livingston, St. Helena, St. Tammany, Tangipahoa, Washington	897	103
10	Jefferson	856	99
Total		9807	1130

Measurement Methods

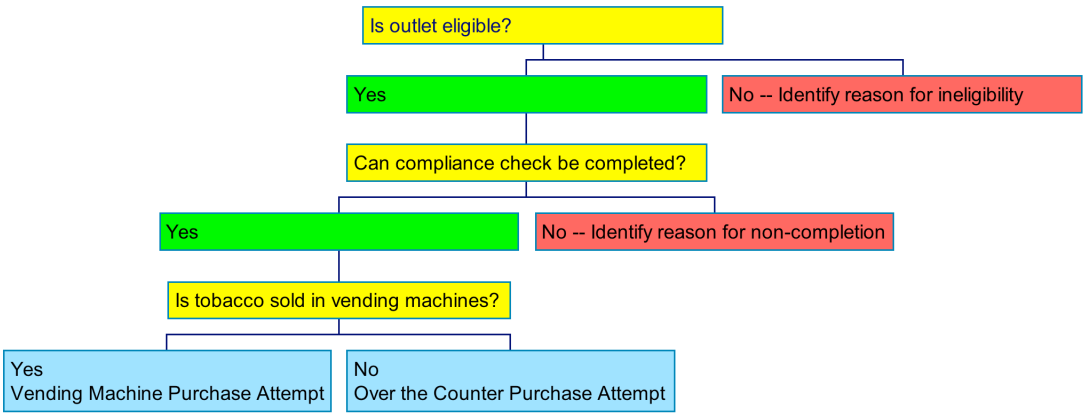
Random Unannounced Inspection Procedure

Inspection Methodology. At the point of inspection, the outlet name and address is verified. If the outlet is out of business, does not sell tobacco products, is a private facility not accessible to the public, is temporarily closed, is not located at the address, or is an adult club, the outlet is coded ineligible and the specific reason for ineligibility identified. If the outlet is in operation but closed at the time of 3 separate visits, is judged unsafe to access, or the youth inspector knows the salesperson, the outlet is coded non-complete and the specific reason for non-completion is identified.

Eligible outlets are inspected, including all outlets selling tobacco products not accessible to youth (except for adult clubs). Two commissioned OATC agents accompany the youth during attempts to purchase tobacco. One agent observes the sale, and the second stands by as backup and to record the data about the context of the attempt and results. Youth are required to carry valid identification with them and provide the identification if asked by the clerk. If the clerk instead asks for the youth's age, the youth must advise the clerk of their correct age.

When attempts to purchase tobacco were successful, the agents issued citations and summons in accordance with the State of Louisiana Alcohol and Tobacco Control Law. OATC agents enter the information on laptop computers immediately following each inspection. This data is then forwarded to the Office of Addictive Disorders for verification and analysis. Figure 13 provides details about the inspection process.

Figure 13
Inspection Process



Methods to locate vending machines, how vending machines selected for sample, and the ratio of vending machine inspections to over-the-counter inspections. Vending machines in Louisiana are located in places that are accessible to youth. However, the State's license list does not distinguish between over-the-counter and vending machines for tobacco sellers. Inspection teams entering an outlet would initially determine how tobacco was sold (over-the-counter assisted by a clerk; over-the-counter self-service; and vending machine). If tobacco was sold in vending machines, an attempt would be made to purchase from the vending machine. As part of a vending machine attempt, the youth operative would approach the clerk to ask for change to use the vending machine. It is important to note that the ratio of vending machine inspections to over-the-counter inspections is small, 39:754 (4.9%). This is likely due to the combined effect of vending machines being harder to manage and monitor, while at the same time, being subject to more frequent compliance checks because of their location in outlets that are inspected for alcohol compliance as well as tobacco compliance.

Recruitment and Training of Youth Operatives

Recruitment and Selection of Youth Operatives. Youth operatives are recruited by OATC from youth groups, community groups, and agent contacts. The age of youth operatives ranges from 15-16 years old. The youth is photographed during the screening process to make sure that the youth's appearance reflects his/her actual age. Youth operatives can be paid or volunteer their time; those that choose to be paid are compensated at a rate of $10.00 per hour.

Training of Youth Operatives. Youth operatives are trained and supervised by OATC agents. Agents clearly discuss the guidelines for underage operatives with the youth. In addition to requirements for underage operatives, OATC agents train youth in the tobacco compliance check protocol. Guidelines for underage operatives conducting tobacco compliance checks are shown in Figure 14.

Figure 14
Guidelines for Youth Operatives

Youth Operatives

- Must not be deceptively mature in appearance, or disguise or alter appearance.
- Must carry valid identification and state correct age if asked.
- Must avoid speaking to anyone except the employee at each location.
- Minors under the age of 18 must have a signed letter of approval from a parent/guardian.
- Operatives can be paid or volunteer their time.
- Two photos must be taken of the operative the day of the investigation; one full face, and one head to toe.

Protocol Guidelines

- Enter the location after the agent.
- Request the pre-determined tobacco product.
- Pay for tobacco product (get a receipt if possible)
- If asked for ID, show legal identification.
- If asked your age, respond with correct age.
- Maintain possession of the tobacco product until an agent can take possession of it.

Legal Requirements. Youth Operatives are required to be truthful. Compliance checks are conducted by law enforcement personnel as law enforcement undercover operations. OATC follows laws pertaining to undercover operations and regulations such as work laws and times. The youth operatives are cooperating individuals immune to prosecution do to the nature of the agreement with law enforcement. Youth operatives are regarded in the same manner as a confidential informant and in all

cases the utmost effort is given to prevent appearance and testimony by them in court. Undercover agents witness the sale and testify to the offense.

Training of Agents

Synar Compliance Agent Training. All OATC Agents are Commissioned and Certified Law Enforcement Personnel. Agents are trained in all required law enforcement procedures and also undergo field training within the agency with senior agents, field training personnel, and supervisors. OATC does not have a formal training curriculum for compliance inspections; however, procedures for compliance inspections are outlined in the agency's Policy and Procedure Manual. Synar Compliance Training builds on the existing OATC procedures for compliance inspections with a separate training session for all OATC supervisors and agents one week prior to the Synar Survey. Additional training is warranted in order to ensure that Synar Survey methods and procedures are implemented by OATC officers with fidelity and uniformity. In FFY 2005, a day-long training was held on 7 July 2004 at the OATC Auditorium. The training included the following topics:

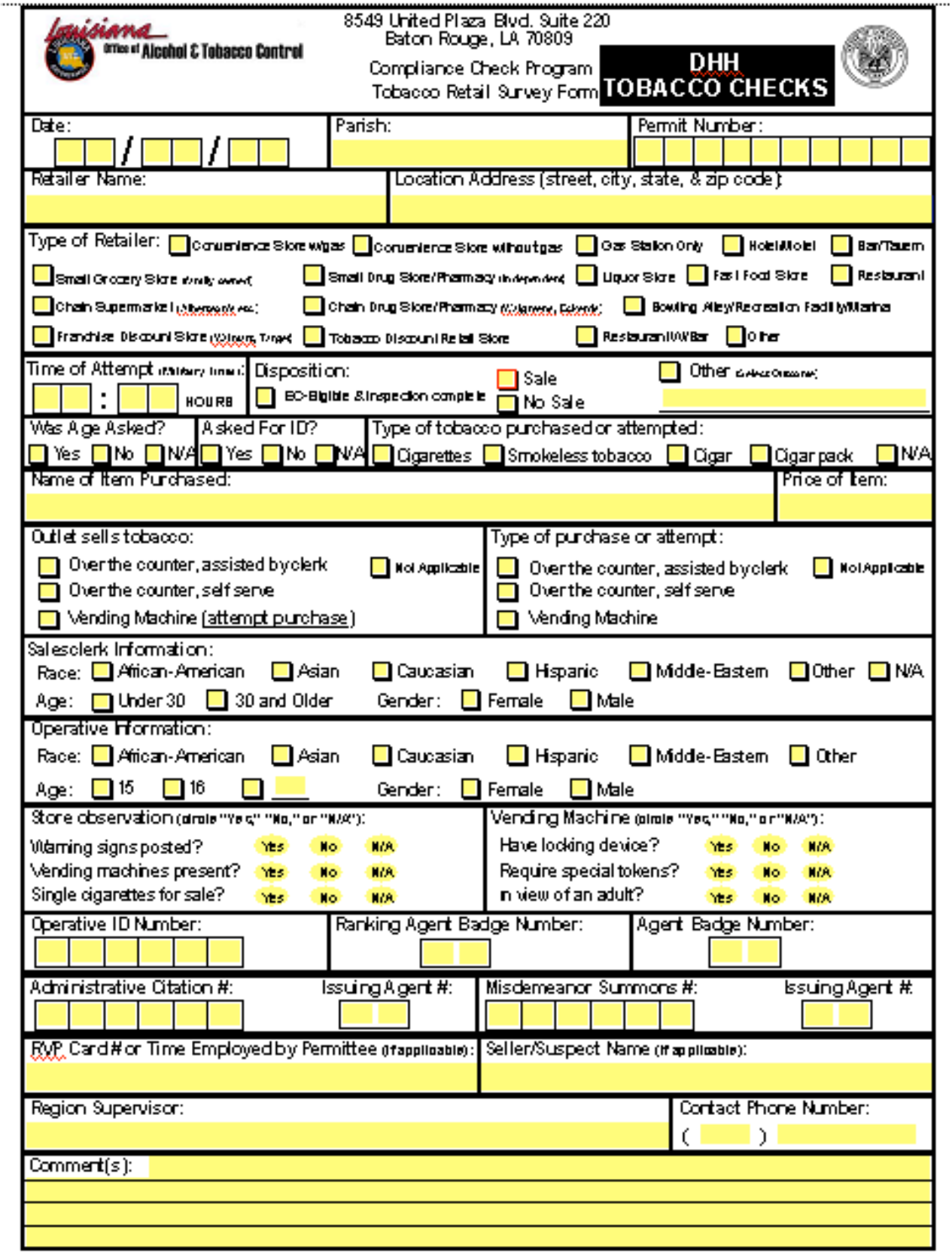
- Success of Synar Program in Louisiana
- Continuing Challenges
- Defining Retailer Violation Rate
- Selecting the Sample
- Collecting the Data
- Monitoring the Data
- Practice Session

All agents were certified to conduct the Synar Compliance checks based on their performance during the practice session.

Data Collection

Developing Database Entry Form. Prior to the FFY 2004 survey, the feasibility of laptop data entry of the sampled outlets was explored, initially with OATC staff officers, and then through a focus group with the regional supervisors. The two major reasons for moving to electronic data entry were to improve accuracy and timeliness of the survey results, and to reduce agent burden. There was unanimous support to develop an electronic data entry system from both OATC headquarters and the regional supervisors. Epi Info was used to create the beta-version data entry program, and headquarters staff, headquarters technical support, and supervisors tested the program. Minor revisions were made based on beta testing, and the final version of the form was used in the FFY 2004 survey. The state decided to use OmniForm for electronic forms in fall 2003, and we migrated our EpiInfo form to OmniForm for FFY 2005 data collection. The database entry form is shown in Figure 14.

Figure 14
Data Collection Form



Louisiana Office of Alcohol & Tobacco Control

8549 United Plaza Blvd. Suite 220
Baton Rouge, LA 70809

Compliance Check Program
Tobacco Retail Survey Form

DHH TOBACCO CHECKS

Date: ☐☐ / ☐☐ / ☐☐

Parish:

Permit Number: ☐☐☐☐☐☐☐☐☐☐

Retailer Name:

Location Address (street, city, state, & zip code):

Type of Retailer:
☐ Convenience Store w/gas ☐ Convenience Store without gas ☐ Gas Station Only ☐ Hotel/Motel ☐ Bar/Tavern
☐ Small Grocery Store (locally owned) ☐ Small Drug Store/Pharmacy (independent) ☐ Liquor Store ☐ Fast Food Store ☐ Restaurant
☐ Chain Supermarket (Albertson's, etc.) ☐ Chain Drug Store/Pharmacy (Walgreens, Eckerds) ☐ Bowling Alley/Recreation Facility/Marina
☐ Franchise Discount Store (Winn Dixie, Target) ☐ Tobacco Discount Retail Store ☐ Restaurant/VFW/Bar ☐ Other

Time of Attempt (Military time): ☐☐ : ☐☐ HOURS

Disposition:
☐ EC-Eligible & Inspection complete
☐ Sale
☐ No Sale
☐ Other (Explain Circumstances):

Was Age Asked? ☐ Yes ☐ No ☐ N/A

Asked For ID? ☐ Yes ☐ No ☐ N/A

Type of tobacco purchased or attempted:
☐ Cigarettes ☐ Smokeless tobacco ☐ Cigar ☐ Cigar pack ☐ N/A

Name of Item Purchased:

Price of Item:

Outlet sells tobacco:
☐ Over the counter, assisted by clerk
☐ Over the counter, self serve
☐ Vending Machine (attempt purchase)
☐ Not Applicable

Type of purchase or attempt:
☐ Over the counter, assisted by clerk
☐ Over the counter, self serve
☐ Vending Machine
☐ Not Applicable

Salesclerk Information:
Race: ☐ African-American ☐ Asian ☐ Caucasian ☐ Hispanic ☐ Middle-Eastern ☐ Other ☐ N/A
Age: ☐ Under 30 ☐ 30 and Older Gender: ☐ Female ☐ Male

Operative Information:
Race: ☐ African-American ☐ Asian ☐ Caucasian ☐ Hispanic ☐ Middle-Eastern ☐ Other
Age: ☐ 15 ☐ 16 ☐ ____ Gender: ☐ Female ☐ Male

Store observation (circle "Yes," "No," or "N/A"):
Warning signs posted? Yes No N/A
Vending machines present? Yes No N/A
Single cigarettes for sale? Yes No N/A

Vending Machine (circle "Yes," "No," or "N/A"):
Have locking device? Yes No N/A
Require special tokens? Yes No N/A
In view of an adult? Yes No N/A

Operative ID Number: ☐☐☐☐☐☐

Ranking Agent Badge Number: ☐☐

Agent Badge Number: ☐☐

Administrative Citation #: ☐☐☐☐☐☐ Issuing Agent #: ☐☐

Misdemeanor Summons #: ☐☐☐☐☐☐ Issuing Agent #: ☐☐

RVP Card # or Time Employed by Permittee (if applicable):

Seller/Suspect Name (if applicable):

Region Supervisor:

Contact Phone Number: (☐☐☐) ☐☐☐-☐☐☐☐

Comment(s):

Data Collection Procedures. Information about software, process of entering data, compliance check procedures, tobacco purchase attempts, and compliance with Federal procedures is included in Figure 16.

Figure 16
Data Collection Procedures

Software
- The Omni Form program will be used, with the new DHH Synar Survey Form.

Entering Data and Preventing Loss of Work
- The master list of outlets for your region includes all the outlets for your compliance checks.
- Use your copy of the master list to plan your compliance checks for the day.
- Enter the data for each compliance check to your form database.
- Backup each day's work on the floppy and provide a copy to your regional supervisor.

Compliance Check Procedures
- Every outlet must have identifying information completed.
- If you attempt to purchase tobacco, you must complete the tobacco purchase section.
- If the outlet is not eligible, or you could not complete the compliance check, you must indicate the reason for ineligibility or non-completion.
- Indicate whether the permit number of the outlet differs from the master list.
- Add comments, if you wish.

Tobacco Purchase Attempts
- Restaurants with bars are included in tobacco purchase attempts.
- All tobacco purchase sections are completed for every purchase attempt, except the vending machines section, which is only completed for vending machine attempts.
- If the outlet has a vending machine, you must attempt to purchase at the vending machine.
  - The youth should ask for change to purchase cigarettes from the bartender or hostess.
  - The bartender or hostess gender, age, and race are entered in the salesclerk gender, age, race section.
  - Identify the vending machine characteristics in addition to everything else on the orange part of the form.

Compliance With Federal Procedures
- Use 15 or 16 year olds whenever possible.
- Please use female youth inspectors as much as possible this summer, so we can continue to improve the gender balance of youth this year.
- Please conduct compliance checks 7 days/week.

Monitoring Data Collection. Three layers of monitoring are developed to ensure accuracy of the data. Each agent checks the form before submitting the form to his/her supervisor. Then, the supervisor reviews the form before sending the form to ATC headquarters. Finally, the State Synar Coordinator reviews each form before sending to the Synar Principal Investigator.

Data Management & Analysis

Data Entry

OATC agents were responsible for completing each electronic form in its entirety after the purchase or purchase attempt.

Data Management And Verification

Frequency distributions of all variables were generated to check for missing and out-of-range values. The comment section of each record was reviewed to edit data as needed, and missing data was added from data entry logs and personal communications with OATC. Logical consistency checks were run, and discrepancies resolved in consultation with OATC. Analytic variables were constructed as needed. The variables included in the analytic dataset are shown in Figure 17.

Figure 17
Analytic Dataset

General Information
- Permit number
- Merchant name
- Address
- Type of outlet
- Date and time of inspection
- Adult agents
- Youth operative
- Gender, age, and race of youth operative
- Disposition (ie purchase attempt, youth access tested, ineligible, not completed)

Purchase Attempt
- How outlet sells tobacco
- Type of purchase attempt
- Gender, age, and race of sales clerk
- Characteristics of vending machines (for vending machine attempts only)
- Posting of warning signs
- Whether the minor's identification was requested
- Whether the minor's age was asked
- Disposition of the attempt
- Type of tobacco purchased (for violations only)
- Citation number (for violations only)

Ineligible or Non-complete Outlets
- Reason for ineligibility
- Reason for non-completion

Data Analysis

Frequency distributions were run to describe eligibility and completion rates, characteristics of outlets and inspection events, and the non-compliance rate. Bivariate and multivariate analyses were run to identify factors associated with non-compliance. Graphical analysis was used to portray the relationship between non-compliance and youth tobacco use.

III. FINDINGS

Eligibility and Completion Rates

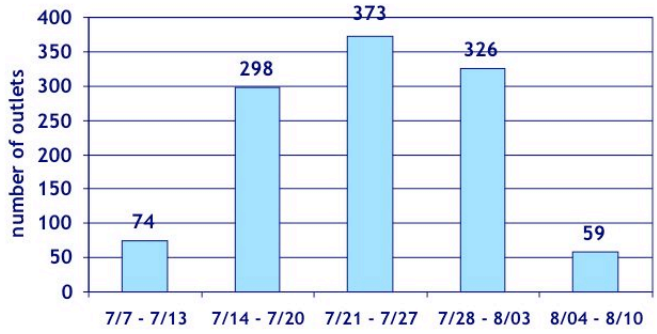
Synar Sample. The sample included 1130 outlets from the Tobacco License List that were selected via stratified random sampling, with each stratum one of the 10 administrative regions for the State Department of Health and Hospitals. Sample outlets were distributed by parish within each region as shown in Table 7.

Table 7
Distribution Of 1130 Sample Tobacco Outlets By Stratum and Parish

Region	Parish	Sample Outlets	Region	Parish	Sample Outlets
1	Orleans,	163	6	Avoyelles	11
	Plaquemines	11		Catahoula	4
	St. Bernard	18		Concordia	6
	Region 1 Subtotal	***192***		Grant	8
2	Ascension	19		LaSalle	3
	East Baton Rouge	93		Rapides	22
	East Feliciana	5		Vernon	9
	Iberville	8		Winn	2
	Pointe Coupee	8		*Region 6 Subtotal*	***65***
	West Baton Rouge	10	7	Bienville	6
	West Feliciana	7		Bossier	17
	Region 2 Subtotal	***150***		Caddo	58
3	Assumption	4		Claiborne	4
	Lafourche	28		DeSoto	5
	St. Charles	10		Natchitoches	5
	St. James	7		Red River	1
	St. John the Baptist	14		Sabine	9
	St. Mary	21		Webster	10
	Terrebonne	33		*Region 7 Subtotal*	***115***
	Region 3 Subtotal	***117***	8	Caldwell	4
4	Acadia	19		East Carroll	4
	Evangeline	13		Franklin	5
	Iberia	16		Jackson	0
	Lafayette	43		Lincoln	7
	St. Landry	24		Madison	6
	St. Martin	16		Morehouse	10
	Vermilion	18		Ouachita	28
	Region 4 Subtotal	***149***		Richland	4
5	Allen	7		Tensas	3
	Beauregard	4		Union	5
	Calcasieu	40		West Carroll	4
	Cameron	3		*Region 8 Subtotal*	***80***
	Jefferson Davis	6	9	Livingston	22
	Region 5 Subtotal	***60***		St. Helena	7
				St. Tammany	39
				Tangipahoa	26
				Washington	9
				Region 9 Subtotal	***103***
			10	Jefferson	99

***Synar Inspection Timeline*.** The Synar inspections for the annual survey were conducted from 7 July 2004 to 10 August 2004. The timing of the survey has not changed substantially from previous years. For the last several years, OATC has been given the Synar sample the first week of July and allowed four to six weeks to complete the inspections. In FFY 2005 OATC was given the sample on 7 July, and inspections were completed within 5 weeks. Figure 18 shows the number of outlets inspected during the survey period.

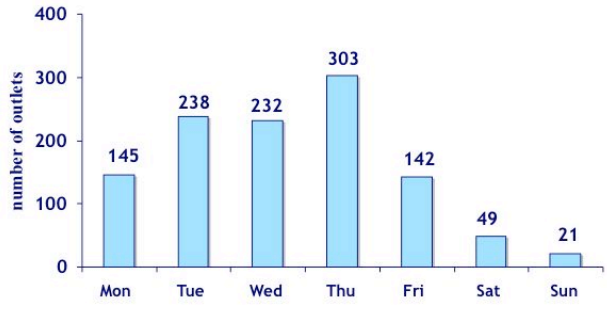
Figure 18
Outlets Surveyed During the Inspection Period



N=1130

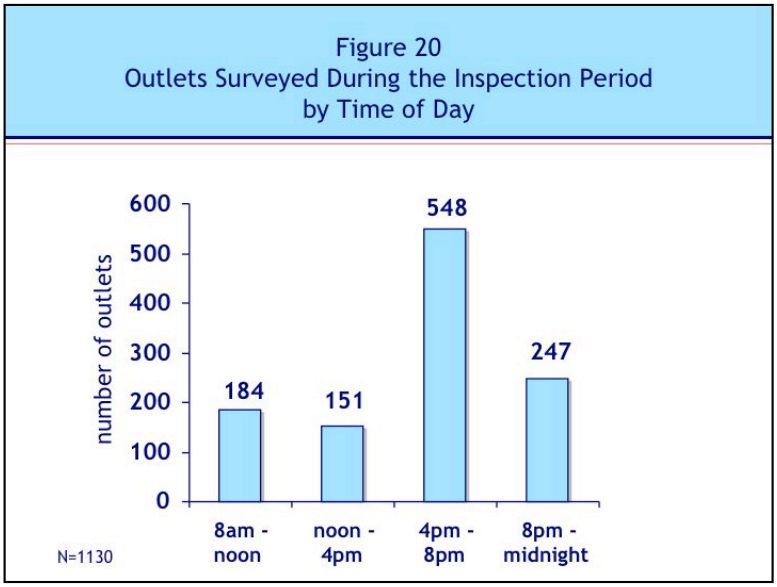
Figure 19 shows the distribution of inspected outlets by day of the week. Inspections were not distributed evenly over the week, with most inspections midweek, and very few inspections on weekends.

Figure 19
Outlets Surveyed During the Inspection Period
by Day of Week

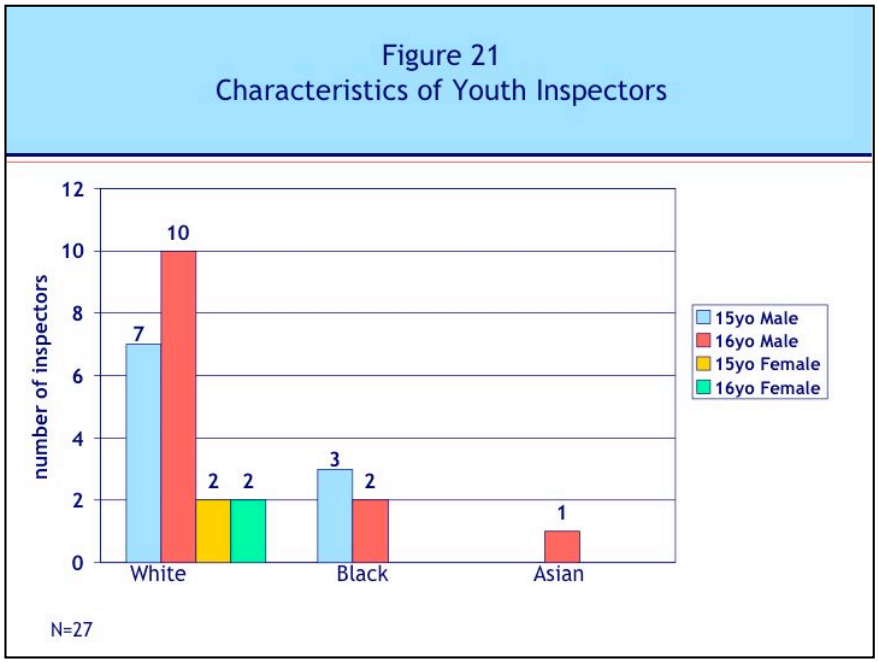


N=1130

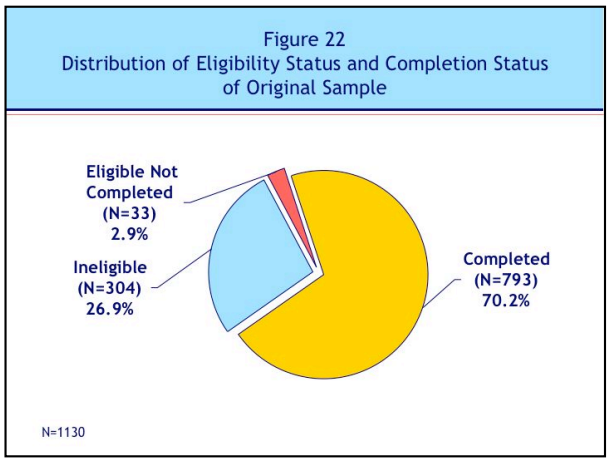
Figure 20 shows the distribution of inspected outlets by time of day. Inspections were not distributed evenly over the inspection day, with almost half of all inspections done in the late afternoon to early evening, from 4 pm – 8pm. The fewest inspections were completed in the early afternoon, from noon to 4pm.



A youth inspector directly supervised by two agents from the Office of Alcohol and Tobacco Control completed inspections of each of the sample outlets. In total, 27 youth operatives and 32 agents were involved in the inspections. 85.2% of the youth inspectors were male (N=23), slightly less than half were 15 years old (44.4%, n=12)) and slightly more than half were 16 years old (55.6%, n=15), and 77.8% of the inspectors were white (n=21), 18.5% were African American (n=5), and 3.7% were Asian (n=1). The characteristics of the youth inspectors are shown in Figure 21.



Difference between the original and effective sample size



At the point of inspection, the outlet name and address is verified. If the outlet is out of business, does not sell tobacco products, is a private facility not accessible to the public, is temporarily closed, is not located at the address, or is an adult club, the outlet is coded ineligible and the specific reason for ineligibility identified. If the outlet is in operation but closed at the time of 3 separate visits, is judged unsafe to access, or the youth inspector knows the salesperson, the outlet is coded non-complete and the specific reason for non-completion is identified. Eligible outlets are inspected, with a youth purchase attempt at outlets selling tobacco products and a youth entry attempt at age-restricted outlets with a doorman present at the time of inspection. The distribution of the original sample is shown in Figure 22 and Form 1. 70.2% (n=793) of the original sample of 1130 outlets were eligible for inspection and were inspected, 26.9% (n=304) were ineligible for inspection, and 2.9% (n=33) were eligible for inspection but not completed. 96.0% of the eligible outlets in the sample were inspected.

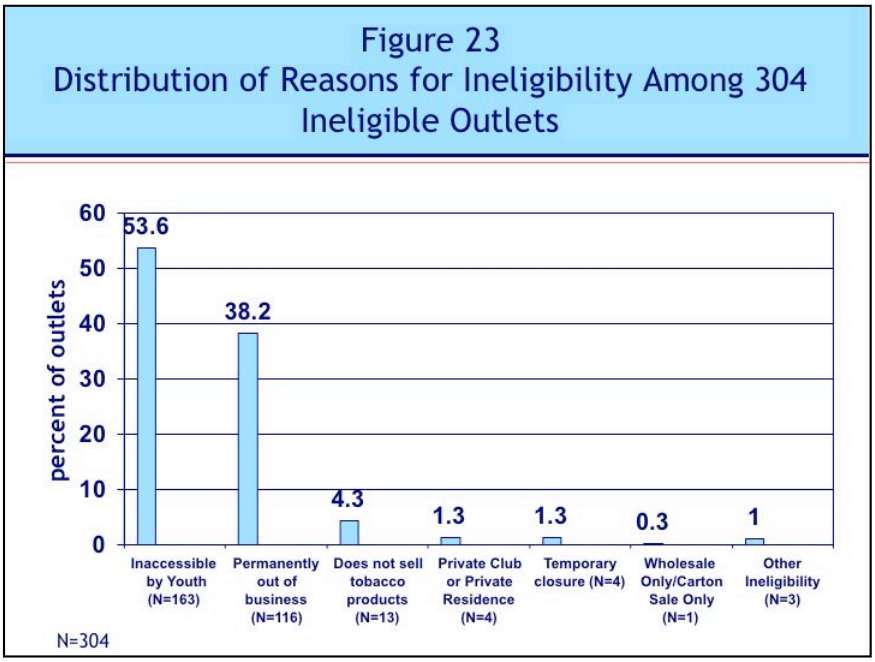
Form 1
SSES Table 3 (Synar Survey Sample Tally Summary)

STATE:
Louisiana
FFY: 2005

Disposition Code	Description	Count	Subtotal
EC	Eligible and inspection complete outlet	793	
Total (Eligible Completes)			793
N1	In operation but closed at time of visit	15	
N2	Unsafe to access	12	
N3	Presence of police	0	
N4	Youth inspector knows salesperson	1	
N5	Moved to new location but not inspected	0	
N6	Drive thru only/youth inspector has no drivers license	1	
N7	Tobacco out of stock	4	
N8	Run out of time	0	
N9	Other noncompletion	0	
Total (Eligible Noncompletes)			33
I1	Out of Business	116	
I2	Does not sell tobacco products	13	
I3	Inaccessible by youth	163	
I4	Private club or private residence	4	
I5	Temporary closure	4	
I6	Unlocatable	0	
I7	Wholesale only/Carton sale only	1	
I8	Vending machine broken	0	
I9	Duplicate	0	
I10	Other ineligibility (see below)	3	
Total (Ineligibles)			304
Grand Total			1130

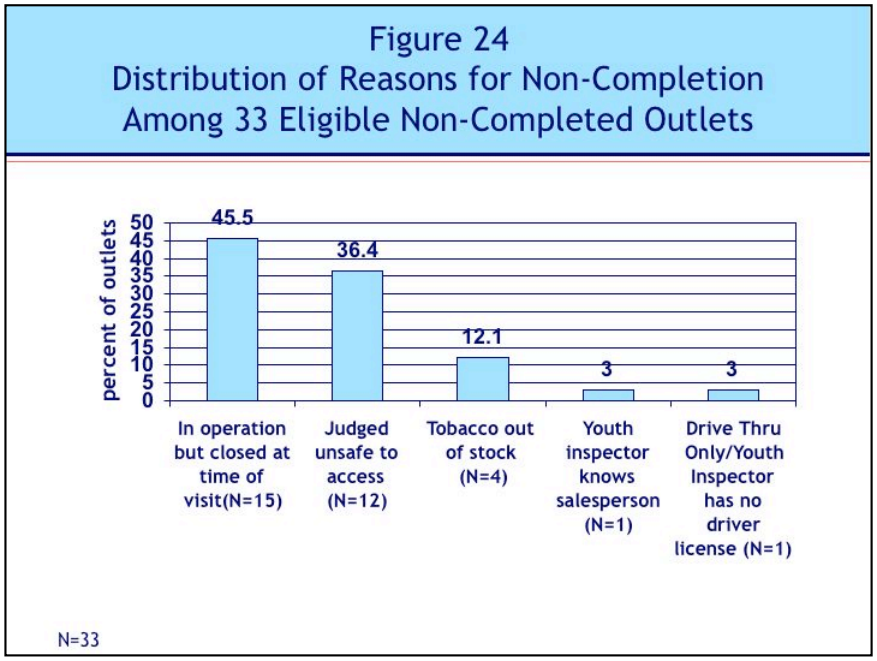
The number of inspections that were not completed because the outlets were ineligible and the reasons for ineligibility

26.9% of outlets in the original sample were not inspected because the outlets were ineligible for inspection. Figure 23 displays the reasons for ineligibility.



The number of eligible but not-completed inspections and reasons for non-completion

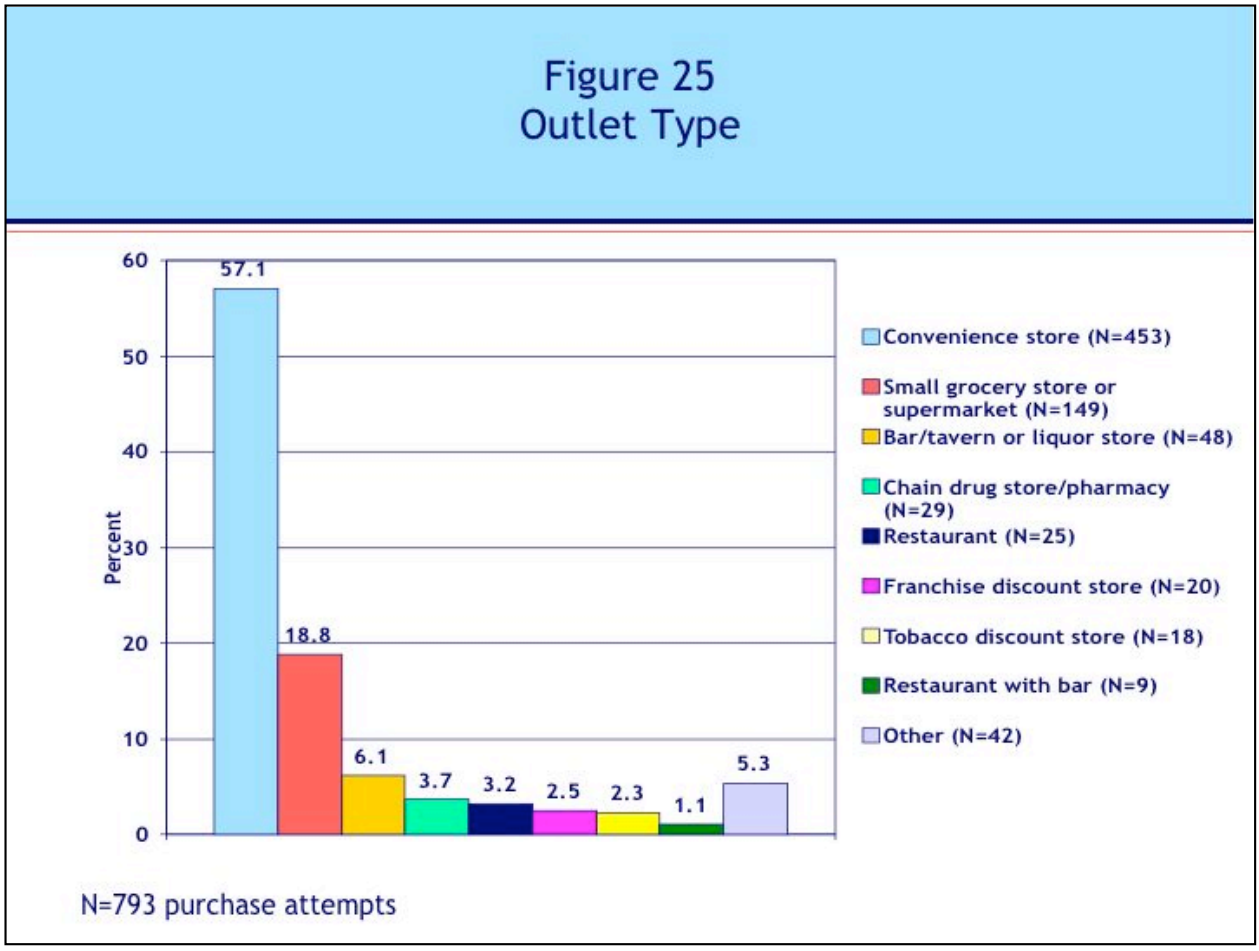
2.9% of outlets in the original sample that were eligible for inspection were not inspected. Figure 24 displays the reasons for non-completion.



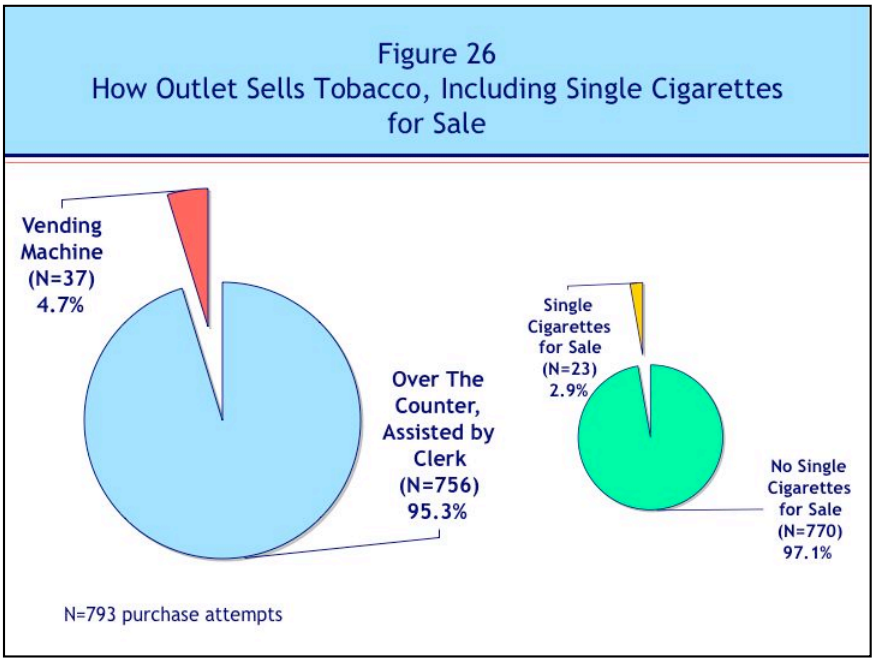
Characteristics of Outlets and Inspection Events

Characteristics of outlets

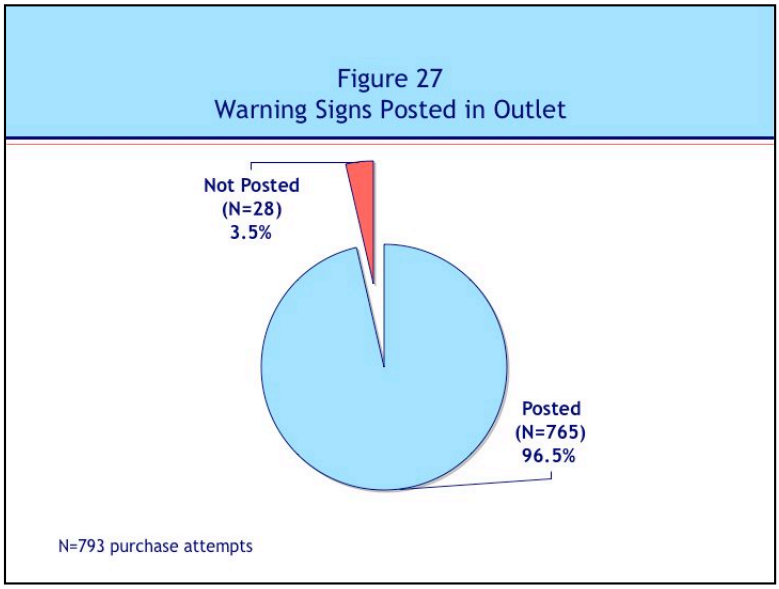
Outlet type. The predominant types of outlets in the subsample of 793 purchase attempts were convenience stores (57.1%), small grocery stores (18.8%), and chain drug stores and pharmacies (6.9%). The distribution of outlets is shown in Figure 25.



How tobacco sold,. Most of the time tobacco is sold over-the counter, assisted by a salesclerk (95.3%, n=756. The remaining outlets sold tobacco in vending machines (4.7%, n=37). 2.9% of all outlets (n=23) in the subsample for tobacco purchases attempts sold single cigarettes. Figure 26 displays information about how tobacco is sold in

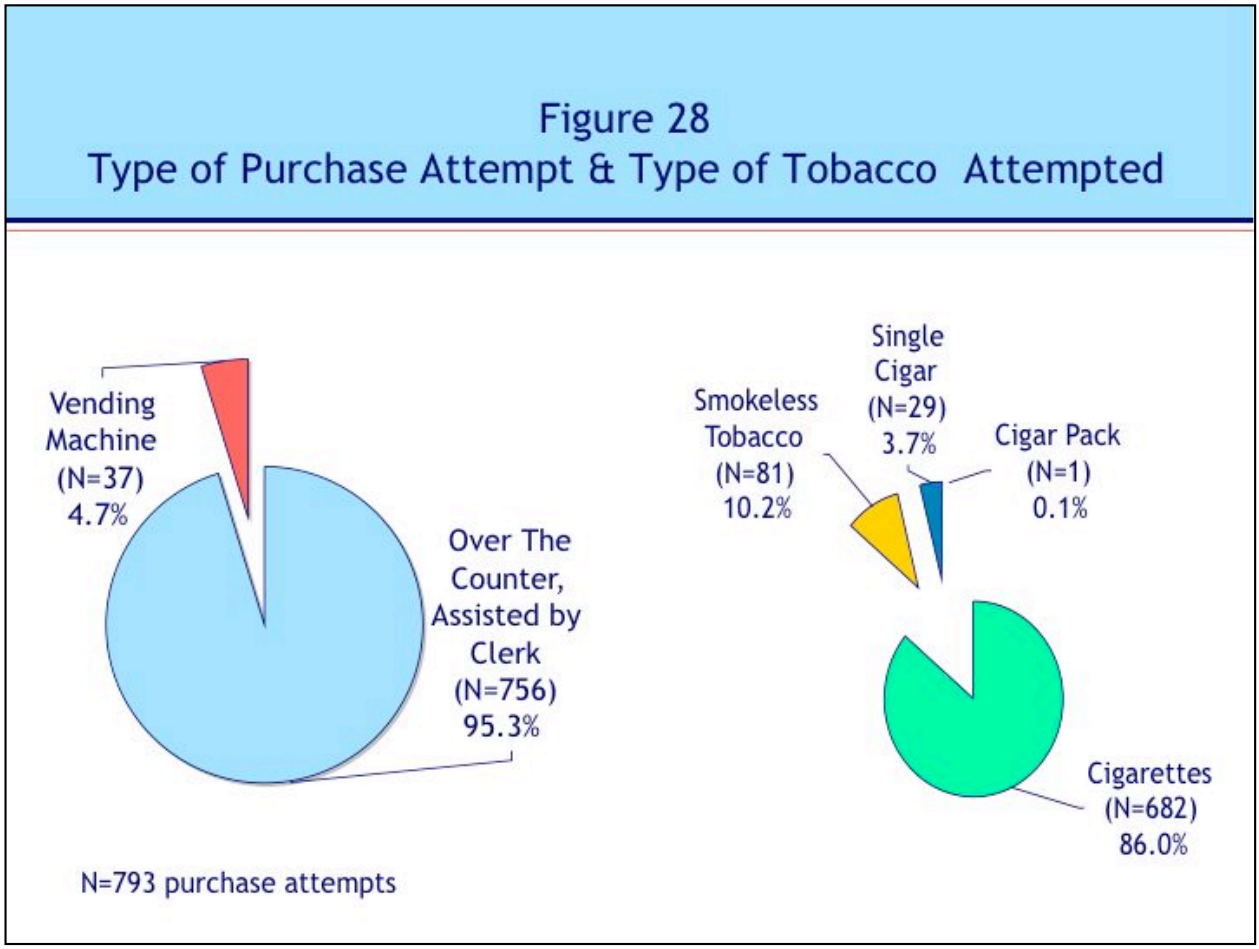


Warning Signs. Most of the time, federally-mandated warning signs were posted (96.5%, n=765).

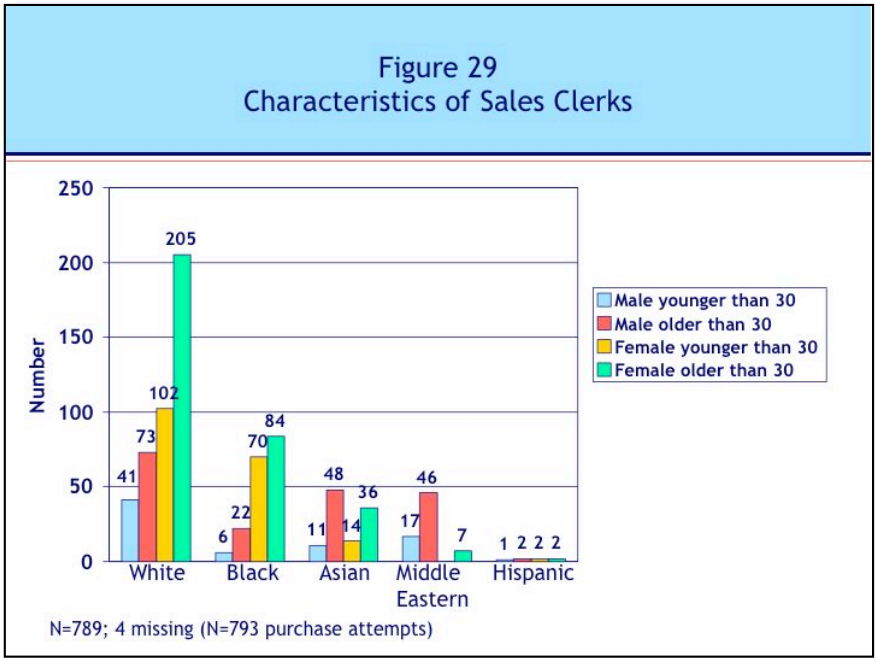


Characteristics of the inspection event

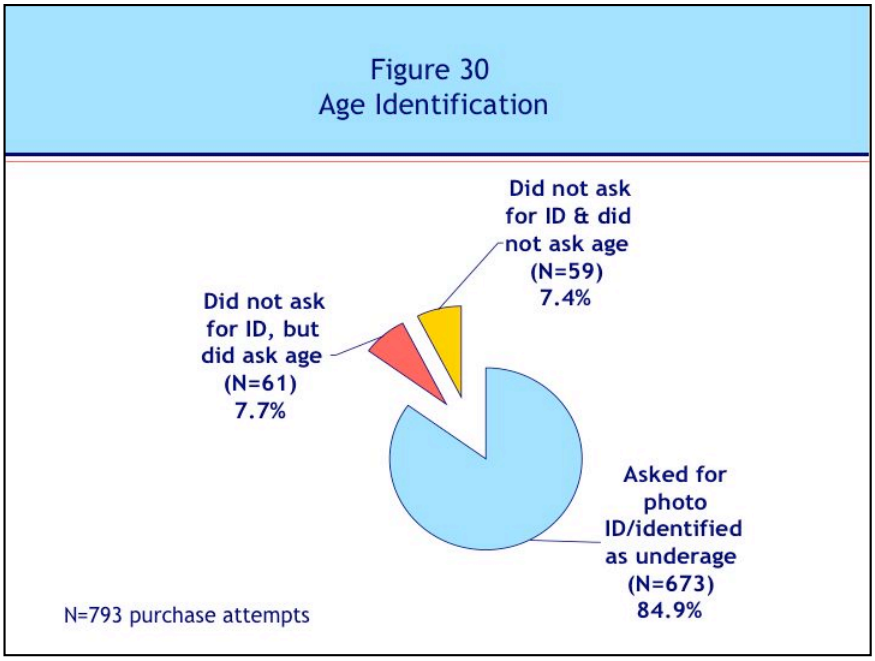
Purchase attempt. Most of the time, the purchase attempt was over the counter, assisted by salesclerk (95.3%, n=756). Only 4.7% (n=37) of all attempts involved vending machines, reflecting the low rate of vending machines currently in tobacco outlets. Figure 28 shows the type of purchase attempt and type of tobacco attempted.



Salesclerk characteristics. Most of the purchase attempts involved white female salesclerks older than 30, white female salesclerks 30 or younger, white male salesclerks older than 30, or African-American females. 65.7% (n=521) of all purchase attempts involved female salesclerks, 66.3% (n=526) of the purchase attempts involved salesclerks older than 30, and 53.1% of the purchase attempts involved white salesclerks (n=421). The demographic characteristics of salesclerks are shown in Figure 29.



Age Identification. Most of the time, salesclerk requested photo identification to verify the youth's age (85.0%), as shown in Figure 30.



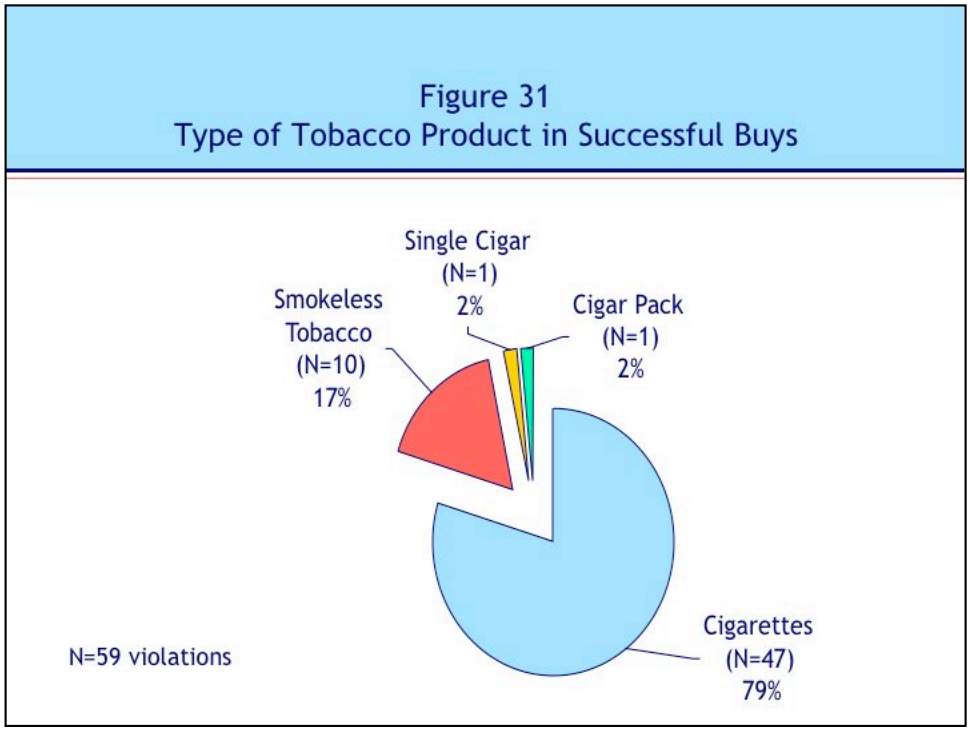
Non-Compliance Rate

Unweighted Non-Compliance Rate

1130 outlets were selected by random sampling from 10 strata representing the administrative geographic regions of Louisiana. 59 of the inspected eligible outlets were non-compliant, yielding an unweighted non-compliance rate of 7.4%.

Type of Tobacco Product in Successful Buys

Of the 59 non-compliant outlets, 79% of the violations involved the successful buy of cigarettes, 17% involved the successful buy of smokeless tobacco, 2% involved the successful buy of a single cigar, and 2% involved the successful buy of a cigar pack. All non-compliant outlets were given a citation for Administrative Violation 26:911a1, Louisiana ATC Title 26 Administrative Law, Sales of Tobacco to Underage, and all sellers were given a citation for Criminal Offense 14:91.8, Louisiana Title 14 Criminal Law, Sales of Tobacco to Underage. The distribution of type of tobacco product in successful buys in shown in Figure 31.



Weighted Non-Compliance Rate

The formula for the weighted variance of a proportion is:

$$var(p_w) = SW_h^2(1-f_h)[p_h(1-p_h)/n_h-1]$$

where: p=proportion, w=weighted, W=weight, h=stratum ,f=sampling fraction, and n=sample size.

The formula for the standard error is:

$$se(p_w)=sqrt[var(p_w)]$$

A 95% confidence interval (ci) was calculated, assuming a one-tailed distribution, using the formula:

$$ci = p + z[se(p)]$$

where: z=1.645

Form 2 shows the Synar Survey Estimates and Sample Sizes.

Form 2
SSES Table 1 (Synar Survey Estimates and Sample Sizes)

CSAP-SYNAR REPORT

State	Louisiana
Federal Fiscal Year (FFY)	2005
Date	11/8/04 10:03
Data	file for sses analysis.xls
Analysis Option	Stratified SRS with FPC

Estimates

Unweighted Retailer Violation Rate	7.4%
Weighted Retailer Violation Rate	7.3%
Standard Error	0.9%
Is SAMHSA Precision Requirement met?	YES
Right-sided 95% Confidence Interval	[0.0%, 8.8%]
Two-sided 95% Confidence Interval	[5.7%, 9.0%]
Design Effect	1.0
Accuracy Rate (unweighted)	73.1%
Accuracy Rate (weighted)	73.1%
Completion Rate (unweighted)	96.0%

Sample Size for Current Year

Effective Sample Size	760
Target (Minimum) Sample Size	1,130
Original Sample Size	1,130
Eligible Sample Size	826
Final Sample Size	793
Overall Sampling Rate	11.2%

Unweighted Non-Compliance Rate by Region

There were 59 non-compliant outlets. Form 3 presents the results by geographic sampling unit, i.e., the 10 administrative regions for the Department of Health and Hospitals, and calculates the unweighted retailer violation.

Form 3
SSES Table 2 (Synar Survey Results by Stratum and by OTC/VM)

STATE:
Louisiana
FFY: 2005

Samp. Stratum	Var. Stratum	Outlet Frame Size	Estimated Outlet Population Size	Number of PSU Clusters Created	Number of PSU Clusters in Sample	Outlet Sample Size	Number of Eligible Outlets in Sample	Number of Sample Outlets Inspected	Number of Sample Outlets in Violation	Retailer Violation Rate(%)	Standard Error(%)
All Outlets											
1	1	1,670	1,217	N/A	N/A	192	140	120	4	3.3%	
2	2	1,303	1,025	N/A	N/A	150	118	115	5	4.3%	
3	3	1,017	652	N/A	N/A	117	75	75	4	5.3%	
4	4	1,288	856	N/A	N/A	149	99	94	9	9.6%	
5	5	516	378	N/A	N/A	60	44	43	11	25.6%	
6	6	566	444	N/A	N/A	65	51	50	5	10.0%	
7	7	1,001	749	N/A	N/A	115	86	85	6	7.1%	
8	8	693	528	N/A	N/A	80	61	61	6	9.8%	
9	9	897	671	N/A	N/A	103	77	75	4	5.3%	
10	10	856	648	N/A	N/A	99	75	75	5	6.7%	
Total		9,807	7,168			1,130	826	793	59	7.3%	0.9%
Over the Counter Outlets											
1	1	1,670	1,197	N/A	N/A	190	138	118	4	3.4%	
2	2	1,303	1,016	N/A	N/A	149	117	114	5	4.4%	
3	3	1,017	626	N/A	N/A	114	72	72	4	5.6%	
4	4	1,288	847	N/A	N/A	147	98	93	9	9.7%	
5	5	516	378	N/A	N/A	59	44	43	11	25.6%	
6	6	566	426	N/A	N/A	63	49	48	4	8.3%	
7	7	1,001	749	N/A	N/A	115	86	85	6	7.1%	
8	8	693	528	N/A	N/A	80	61	61	6	9.8%	
9	9	897	644	N/A	N/A	100	74	72	4	5.6%	
10	10	856	432	N/A	N/A	74	50	50	4	8.0%	
Total		9,807	6,843			1,091	789	756	57	7.4%	0.9%
Vending Machines											
1	1	0	20	N/A	N/A	2	2	2	0	0.0%	
2	2	0	9	N/A	N/A	1	1	1	0	0.0%	
3	3	0	26	N/A	N/A	3	3	3	0	0.0%	
4	4	0	9	N/A	N/A	2	1	1	0	0.0%	
5	5	0	0	N/A	N/A	1	0	0	0	0.0%	
6	6	0	18	N/A	N/A	2	2	2	1	50.0%	
7	7	0	0	N/A	N/A	0	0	0	0	0.0%	
8	8	0	0	N/A	N/A	0	0	0	0	0.0%	
9	9	0	27	N/A	N/A	3	3	3	0	0.0%	
10	10	0	216	N/A	N/A	25	25	25	1	4.0%	
Total		0	325			39	37	37	2	5.4%	3.5%

There is a significant difference in rates between regions (Chi-square=27.74, p=.001), with Region 1 having the lowest rate of non-compliance (3.3%) and Region 5 having the highest rate of non-compliance (25.6%). There are a number of plausible explanations. At the individual level, the variation in race, gender, socioeconomic status, and education level, and concomitant tobacco use, may be associated with regional variation in demand, thus influencing merchant compliance. At the environmental level increased compliance may occur in urban areas where enforcement or merchant education has a more visible presence. In terms of the inspection event, interaction between the youth as part of the purchase attempt may influence salesclerk behavior. It is particularly important to understand whether or not youth inspector behavior varies across the sample; if so, there is a need for more rigorous training of the youth inspectors. Similarly, if malleable environmental factors, such as the frequency of enforcement activities or education activities vary across the sample, there is a need to restructure the equity of Synar enforcement and/or education activities. In the upcoming survey, we will work with OATC to obtain additional information about outlet exposure to enforcement and education activities and youth inspector behavior, in order to minimize measurement error. OAD will also dedicate more resources to the regions with rates higher than the average non-compliance rate, in order to reduce the variation between regions.

Inspection Results by Youth Inspector Age and Gender

Form 4 shows the distribution of outlet inspection results of attempted and successful buys by age and gender.

Form 4
SSES Table 4 (Synar Survey Inspection Results by Youth Inspector Characteristics)

STATE: Louisiana
FFY: 2005

Frequency Distribution

Gender	Age	Number of Inspectors	Attempted Buys	Successful Buys
Male	14	0	0	0
	15	10	297	19
	16	13	407	30
	17	0	0	0
	18	0	0	0
	Subtotal	23	704	49
Female	14	0	0	0
	15	2	27	7
	16	2	62	3
	17	0	0	0
	18	0	0	0
	Subtotal	4	89	10
Other		0	0	0
Grand Total		27	793	59

Buy Rate in Percent by Age and Gender

Age	Male	Female	Total
14	0.0%	0.0%	0.0%
15	6.4%	25.9%	8.0%
16	7.4%	4.8%	7.0%
17	0.0%	0.0%	0.0%
18	0.0%	0.0%	0.0%
Other			0.0%
Total	7.0%	11.2%	7.4%

It is important to note that most purchase attempts are by male youth inspectors. The gender imbalance in inspections is due to OATC policy that restricts the supervision of female youth inspectors to female adult agents; as there are only four female agents in Louisiana, the number of female youth operatives is limited. However, during FFY 2004, the four female agents were paired with male agents, and this concerted effort to reduce the gender imbalance successfully increased the proportion of attempts by female youth operatives. The rate of inspections by female youth inspectors dropped again in FFY 2005 because there are still too few female agents and scheduling did not permit for the pairing of female agents with male agents. OAD will continue its dialogue with OATC about the need to utilize more female youth operatives.

Trends in Non-Compliance

The current violation rate for Louisiana is 7.3% with a 1.5% margin of error at the one-tailed 95% confidence level. The trend in Louisiana non-compliance rates is shown in Figure 26. Regional rates are shown in Table 8.

Figure 32
National Non-Compliance Rates and Louisiana Rates

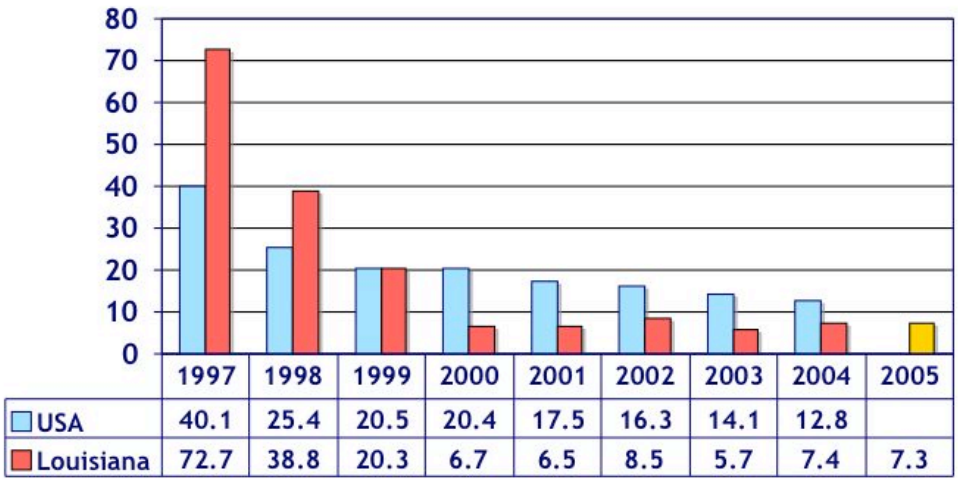


Table 8
Regional Non-Compliance Rates, FFY 97 - FFY 05

STRATUM	FFY97	FFY98	FFY99	FFY00	FFY01	FFY02	FFY03	FFY04	FFY05
1	95.60	59.09	20.90	1.95	3.42	16.78	7.50	6.93	3.3%
2	72.39	38.78	17.29	2.29	8.94	0.00	3.06	2.63	4.3%
3	64.06	15.56	10.68	1.79	8.33	12.61	6.41	3.23	5.3%
4	50.00	27.27	12.64	7.74	5.80	4.79	0.95	6.93	9.6%
5	46.15	32.36	24.69	19.18	10.77	6.78	2.22	9.76	25.6%
6	68.42	47.06	32.95	20.00	6.35	7.46	9.62	7.14	10.0%
7	80.00	29.23	36.36	4.76	8.33	9.01	3.80	21.74	7.1%
8	92.86	32.61	27.08	4.35	8.05	8.97	5.17	3.39	9.8%
9	75.86	48.72	13.27	9.38	4.49	3.23	5.33	5.26	5.3%
10	67.69	58.97	10.47	5.62	1.37	15.22	14.71	11.54	6.7%
Louisiana	71.16	38.81	20.30	6.68	6.52	8.55	5.66	7.42	7.3%

Factors Associated With Non-Compliance

Bivariate Investigation

Characteristics of minors, characteristics of outlets, and characteristics of inspection events were tested for their association with non-compliance using two-way cross-tabulation. Cross-tabulation compares the observed number of cases in each cell to the expected number of cases if the null hypothesis is true. The null hypothesis for each cross-tabulation is that there is no association between the characteristic and non-compliance. The chi-square statistic is computed and compared to the chi-square distribution. If the statistic is large, it is unlikely to be observed when the null hypothesis is true. It is conventional and conservative to use a 0.05 level of significance for interpreting the statistic. Therefore, if the significance level of the chi-square statistic is less than 0.05, the null hypothesis is rejected in favor of the alternative hypothesis that there is a significant association between the characteristic and non-compliance.

In the preliminary bivariate investigation of characteristics of minors, outlets, and inspection events, two variables were significantly associated with compliance. Neither characteristics of minors nor characteristics of outlets were significantly associated with non-compliance. In terms of characteristics of the inspection event, salesclerk age (Chi-Square=12.30, p=.00) and age identification (Chi-Square=681.09, p=.00) were significantly associated with non-compliance. The bivariate statistical results are shown in Table 9.

Table 9
The Relationship Of Characteristics Of Minors, Outlets, and Inspection Events With Non-Compliance

Domain	Variable [3]	Chi-Square	P-Value[4]
Characteristics of Minors	Youth Gender	2.10	NS
	Youth Age	.27	NS
	Youth Race	.04	NS
Characteristics of Outlets	Outlet Type	14.31	NS
	How Tobacco Sold	.23	NS
	Warning Sign Posted	.65	NS
	Single Cigarettes For Sale	2.76	NS
Characteristics of Inspection Events	Day of Week	4.16	NS
	Time of Day	7.58	NS
	Type of Purchase Attempt	.23	NS
	Type of Tobacco Attempted	2.13	NS
	Salesclerk Gender	.24	NS
	Salesclerk Age	12.30	.00
	Salesclerk Race	2.83	NS
	Age Identification	681.09	.00

[3] *In several cases, values of variables were combined in order to have no more than 20% of the cells with expected values less than 5*

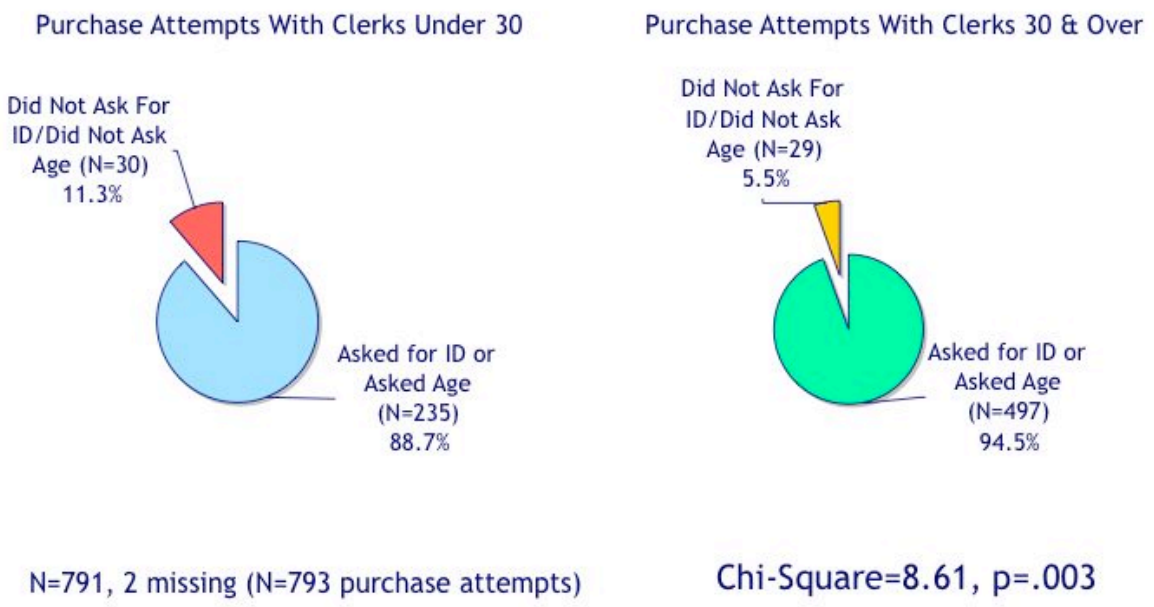
[4] *Fisher's Exact Test used for 2x2 tables.*

Multivariate Investigation

The general method of crosstabulating variables can be generalized to three variables. Three-way crosstabulation was used to examine the association of clerk age, age identification, and non-compliance rate.

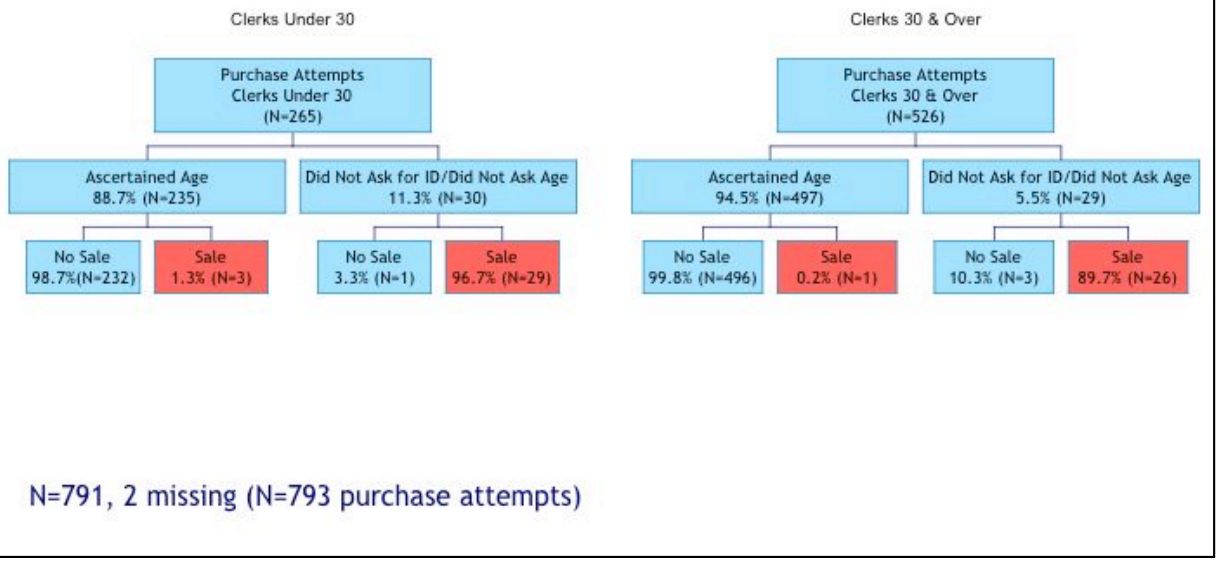
Salesclerk Age. Salesclerks who are 30 or younger are less likely to ascertain the youth's age, either by requesting a photo ID, or by asking the youth his/her age, than clerks who are 30 and over (Chi-square=8.61, p=.003). 11.3% of clerks under 30 years old ascertain the youth's age, compared with 5.5% of clerks 30 and over (Figure 33).

Figure 33
Association of Clerk Age, Age Identification and Non-Compliance



The significantly higher rate of clerks under 30 years old failing to ask for the youth's photo identification or ask the youth his/her age, results in significantly higher sales to youth by younger clerks. Figure 34 shows the differences in age identification and sales by clerk age. 11.3% of the time, younger clerks do not ascertain the youth's age, and then sell tobacco to 96.7% of these youth. 5.5% of the time, older clerks do not ascertain the youth's age, and then sell tobacco to 89.7% of these youths.

Figure 34
Differences in Age Identification and Sales by Clerk Age

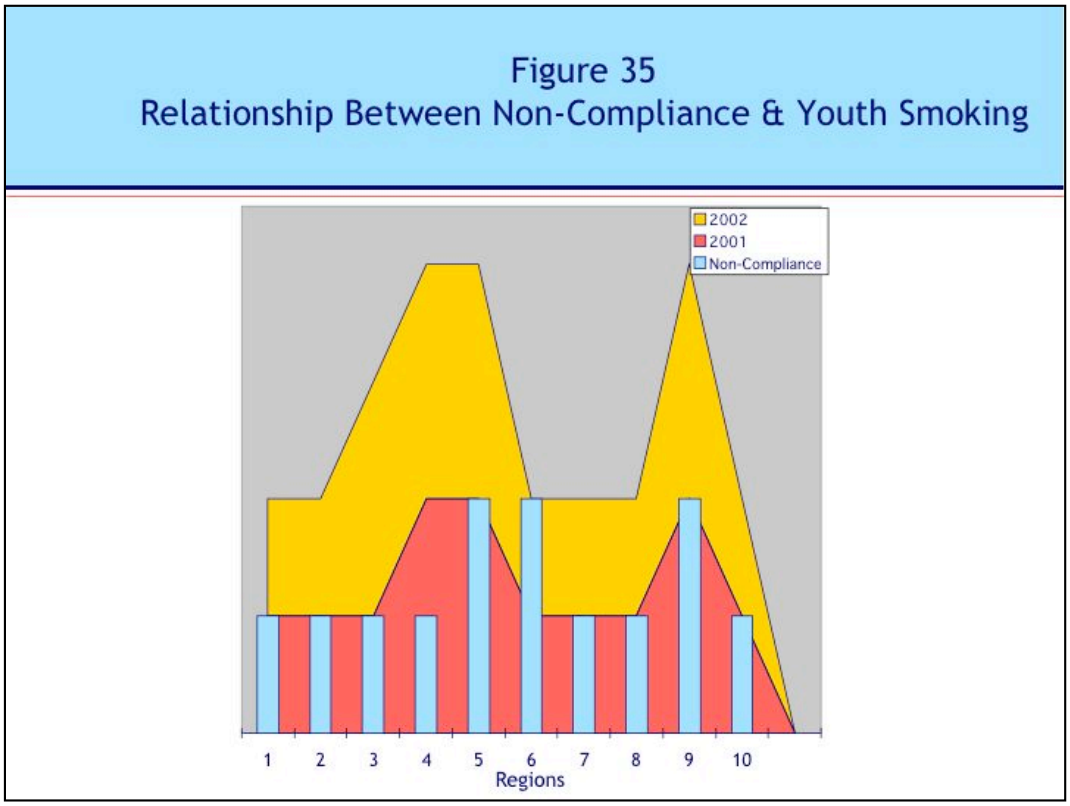


N=791, 2 missing (N=793 purchase attempts)

Relationship of Non-Compliance to Youth Tobacco Use

Existing research suggests that active enforcement of tobacco sales laws changes merchant behavior; however, information about the impact of changes in merchant behavior on youth access to tobacco, youth tobacco use, and age of smoking initiation is scarce. The Louisiana Office for Addictive Disorders mounts an important effort, "Communities That Care Youth Survey," a bi-annual youth survey of 6th, 8th, 10th, and 12th grade students. Data is collected on student sociodemographic characteristics, tobacco, alcohol, and other drug use, problem behaviors, and risk and protective factors. Linking youth tobacco use data from this important epidemiologic study with non-compliance rates from the Synar survey creates a unique opportunity to contribute information about the impact of the Synar Amendment on youth tobacco use.

Non-compliance rates for each region from the first year of the Louisiana Synar Initiative (FFY98) through FFY01 were examined, and regions that were in the top third of non-compliance for at least two years were identified. Regions meeting these criteria include Regions 5,6, and 9. 30-day use rates for cigarettes for two years following this period (2001 & 2002) were examined, and regions that were in the top third of 30-day use rates were identified. These included Regions 4,5, and 9 for 2001, and Regions 3,4,5, and 9 for 2002. Figure 35 shows the relationship between regional non-compliance and regional youth smoking behavior. There appears to be a modest pattern of regions with high non-compliance also being high in youth smoking. Regions 5 & 9 are high for non-compliance and high for smoking. Regions 1,2,3,7,8, and 10 are low for non-compliance and low for smoking. Regions 4 and 6 are discordant, with 4 having a low non-compliance rate and high smoking, and 6 having a high non-compliance rate and low smokng. This pattern suggests the need for an expanded research agenda that will investigate whether the Louisiana Synar Initiative's success in reducing non-compliance has fulfilled the policy's intended impacts on youth smoking and its associated health and economic consequences.



IV. Discussion

Conclusions

Methods for Measuring Non-Compliance Rate

The methods for selecting the Synar sample, the quality of the sampling frame, the structured inspection procedures, enhanced method of collecting data via laptop computers, strengthened training sessions for agents, and use of multivariate analyses to identify a set of risks for non-compliance that persist in the presence of other risks minimize bias in Louisiana's Synar Research. Therefore, strong confidence may be placed in the sharply declining non-compliance rate, and the identified risks of non-compliance.

Sharply Declining Non-Compliance Rate

The objective of this study was to estimate the non-compliance rate for tobacco sales in Louisiana among youth under age 18. This was the ninth consecutive annual study of non-compliance in Louisiana since the implementation of the Synar Amendment in FFY97. A stratified random sample of state tobacco outlets was selected and surveyed by a team consisting of a youth operative and two adult agents from the Louisiana Office of Alcohol and Tobacco Control. The youth attempted to purchase tobacco at unrestricted outlets; the agents recorded characteristics of the outlet and the inspection event, and outlets in violation received administrative citations and criminal citations. Of 826 eligible outlets in the sample, 793 were inspected, yielding a completion rate of 96.0%. 59 of the inspected outlets were non-compliant, i.e., were willing to sell tobacco to the youth operative. A weighting procedure was applied to estimate a statewide non-compliance rate, yielding a weighted rate of 7.3%. It is likely to be among the lowest non-compliance rates in the nation.

It is important to note that Louisiana had the highest non-compliance rate in the nation at baseline (72.7%). Annual targets were established to decrease the state's non-compliance rate to 20% by FFY 2002. However, Louisiana achieved 20.3% non-compliance in FFY99, only two years after the start of the Louisiana Synar Initiative, and 3 years ahead of the scheduled target date. In addition, since FFY99, Louisiana has been below the national average non-compliance rate.

Sustainability of the Decline

The State of Louisiana, through the Office for Addictive Disorders and Alcohol Tobacco Control, has been extremely successful in reducing the illegal sales of tobacco products to minors. This success involves partnership with Louisiana businesses that have responded to State law enforcement efforts. Over the past eight years, the reduction in estimated non-compliance with Louisiana's tobacco laws is marked, decreasing from the highest in the nation in FFY97 to the current rate of 7.3%. This dramatic, sustained decrease in non-compliance is one of the sharpest declines in the country, and reflects a highly effective education and enforcement program. Continued leadership in the nationwide effort will be contingent upon both maintenance of current efforts and the initiation of innovative approaches towards high-risk groups.

Policy Recommendations

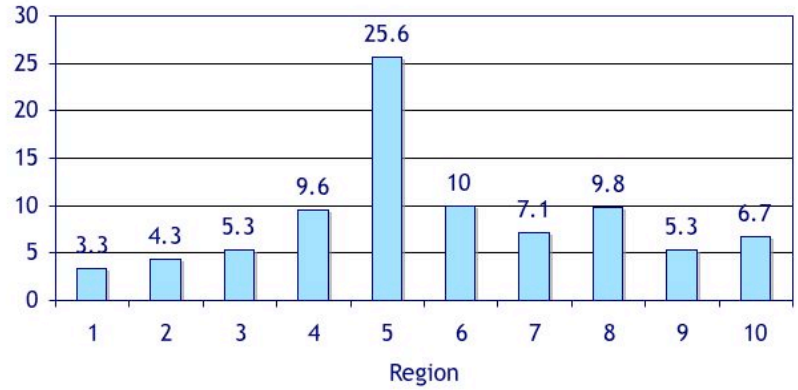
Importance of Maintaining Current Funding. The relationship of enforcement activities to non-compliance highlights the success of the current state policy and strongly suggests the importance of continuing the current level of enforcement activities

Importance of Targeting Synar Strategies to High-risk Groups. The Office of Alcohol and Tobacco Control has a limited number of agents to conduct compliance checks. The large rural populations make it logistically difficult for agents to conduct compliance checks in a timely manner. OATC is legally responsible for enforcing the tobacco and alcohol laws, but receives limited resources from the state to enforce these laws. Due to the limited number of OATC agents and scarce resources, enforcement efforts are strained and often not adequate. Because the Office for Addictive Disorders as the Single State Authority is held accountable for the Synar Regulation, OAD has had to dedicate funds to OATC to ensure that enforcement efforts are taking place. These funds are not always easily acquired. Therefore it is critical to use the state's scarce economic resources wisely.

Four regions have non-compliance rates higher than the state average rates. Targeting merchant education and enforcement resources to those four regions should continue to decrease to statewide non-compliance rate.

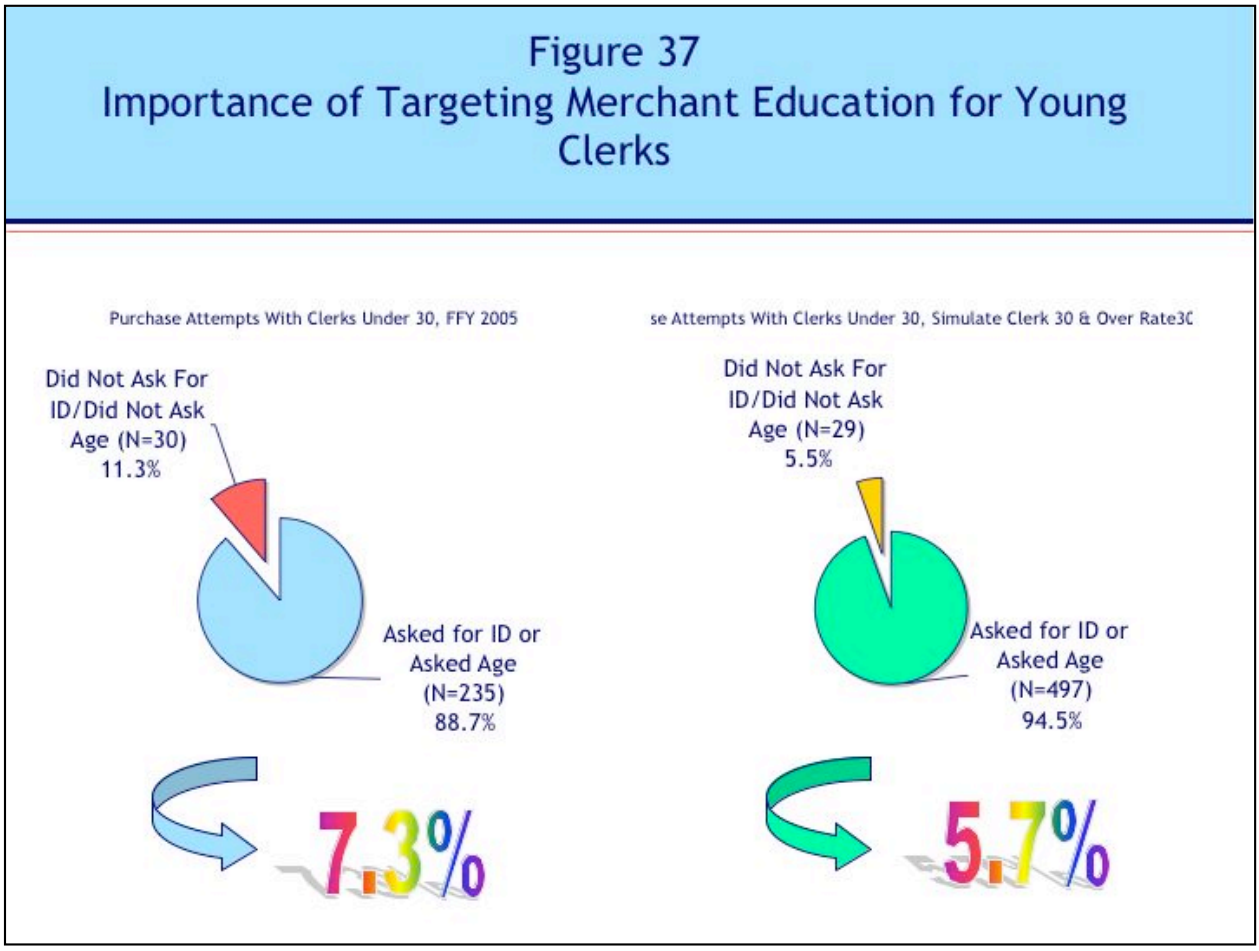
Policy Recommendation 1: Increase merchant education and enforcement resources to high-risk regions 4,5,6 & 8.

Figure 36
Targeting High Risk Regions



Salesclerks younger than 30 have are twice as likely to fail to ascertain the age of youth. This has a profound effect on the statewide rate. If younger salesclerks ascertained youth age at the same rate as salesclerks 30 and older, the statewide rate would drop from 7.3% to 5.7%. Targeting merchant education resources to younger salesclerks should continue to decrease to statewide non-compliance rate.

Policy Recommendation 2: Increase Merchant Education Resources to Address The Importance of Age Identification with Younger Clerks



The results concerning regional variation in rates and the higher rates of sales in clerks younger than 30 identify targets for upcoming enforcement and education activities. As the Synar rate gets lower, enhancing the universal statewide efforts with more intensive targeted efforts at high-risk groups is imperative for continued improvement in preventing youth access to tobacco. Targeting activities is not only a significant way of further lowering the non-compliance rate, but feasible, given that the Office for Addictive Disorders and the Office of Alcohol and Tobacco Control have developed a true partnership, and the 10 Regional Synar Programs have broad and deep capacity to ensure the maintenance of a comprehensive statewide Synar program.

Research Recommendations

Recommendations for Synar Research Methods FFY05

Sampling Methodology. It is important to explore options for obtaining additional outlet information for FFY 2006, in order to eliminate a greater percentage of ineligible outlets from the frame prior to selecting the sample. Also, in order to target enforcement to high-risk outlets, the sampling design should include a new strata in the sample comprised of all violators from FFY 20045

Extending Sampling Methods to Non-Synar Tobacco Compliance Checks. To ensure that OATC is checking both a representative sample of all tobacco outlets and an oversampling of high risk outlets, OAD should continue to use probability sampling methods to draw samples for all tobacco compliance checks.

Inspection Protocol Plans. OAD and OATC should extend current efforts to balance the gender of youth operatives through strategic use of female agents and female staff from OAD in the inspection process.

Data Collection Plans. OAD and OATC should continue to improve the efficiency and accuracy of data collection through the following strategies:

- ATC will provide OAD with citation information for 59 violations from summer 2004
- ATC will work with Synar Study Evaluator to remove ineligible outlets from the Tobacco License List
- ATC will work with Synar Study Evaluator to refine compliance check form, data entry procedures, and data security procedures
- Synar Study Evaluator will provide a one-day training for supervisors and a one-day training for agents
- Regional supervisors are responsible for reviewing and signing each compliance check
- Regional supervisors are responsible for updating the master list with the status of each compliance check weekly during the inspection period. Weekly copies of the master list will be sent to OAD.
- Compliance checks will be done 7 days/week between 8 am – midnight.
- ATC will continue to balance the gender of youth operatives through strategic use of female agents and female staff from OAD in the inspection process.

***Statistical Analysis*.** In addition to existing multivariate methods of investigating non-compliance, further work should be done using geostatistical methods to enhance identification of high-risk areas, and OAD and OATC should continue to explore the links between enforcement, education, non-compliance rates, and youth smoking.

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