Report of the Tobacco Policy Research Study Group on Access to Tobacco Products in the United States

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There are many factors that influence young people to start and to continue smoking. Interventions to reduce tobacco use can focus on either limiting the supply or decreasing the demand for tobacco. Clearly, interventions of both kinds are necessary. Efforts to reduce access should be complemented by comprehensive prevention curricula in schools, making schools smokefree zones, and the elimination of tobacco advertising and promotions, to name a few activities of high priority. Access to tobacco may be thought of as a system, comprised of the environment (tobacco outlets, distributors, companies) the agent (tobacco), and hosts (smokers, especially young people). Efforts to prevent tobacco use early in life should consider each component of this system; the eventual goal is a generation of young people who never start using tobacco.

This report summarises the body of research on access to tobacco by young people and outlines questions arising from this research.

Background

TOBACCO USE BY YOUNG PEOPLE

Nicotine is a powerful drug with addictive properties broadly analogous to those of the so called "hard drugs", cocaine and heroin.¹ In 1990, roughly 53 % of high school seniors who smoked at least half a pack a day had made an unsuccessful attempt to stop smoking. Moreover, whereas only 5 % who smoked daily thought that they would still be smoking five years later, about three quarters were still smoking seven to nine years later.² Use of smokeless tobacco, especially among young males, has risen rapidly in recent years. An extensive review of smokeless tobacco³ found that between 40-60 % of males had tried smokeless tobacco and 10-20 % of older teenagers reported recent use.⁴

Although alcohol consumption by teenagers generally receives more attention than their use of tobacco, tobacco is more often used by high school students on a daily basis.² In the United States, the modal age of starting to use tobacco is between 11 and 15 with little initiation after high school graduation.² The younger someone starts to use tobacco, the more likely they are to remain a user, to smoke heavily, to incur high costs for health care, and to die prematurely.

Although the National Institute on Drug Abuse survey found that daily smoking among high school seniors dropped from 29 % in 1977 to 20 % in 1981, the 1990 rate of 19 % shows the recent inability to affect adolescent tobacco use.² This survey also found that in 1990 29 % of seniors had smoked in the past month and 66 % smoked occasionally. About one third of high school seniors do not believe that there is a great risk associated with use of tobacco. The prevalence of smoking is high among high school dropouts, transfer students, and truants.

EFFORTS OF THE TOBACCO INDUSTRY TO LURE MINORS

About 2.5 million smokers in the United States either stop smoking or die each year. This is the number that must be replaced to maintain existing sales levels. Clearly, a key marketing strategy of the tobacco industry is to create demand among young non-smokers. In 1988, the US tobacco industry spent \$74 million on free distribution of tobacco products.⁵ A survey of Chicago students found that about half the elementary and high school students and 28 % of college students had witnessed such free distribution to minors; 14 % of elementary and high school students had personally received free tobacco samples.⁶ Also, \$874 million was spent on coupon (redemption) and "buy one, get one free" promotions, \$190 million on specialty item distribution (for instance, T shirts, mugs), and \$43 million on direct mail.⁵

The tobacco industry also sponsors "It's the law", a low intensity retailer education programme in which retailers are encouraged to purchase signs indicating that sales to minors are prohibited. Public health professionals tend to view "It's the law" more as public relations than public or merchant education.

ACCESS TO TOBACCO PRODUCTS BY YOUNG PEOPLE

As of July 1991, 46 states and the District of Columbia had laws regulating tobacco sales to minors, but these laws are rarely enforced. An enforcement review found that five states had nominal restrictions (for example, laws ban-

ning sales below a minimum age); 38 had age restrictions with penalties; four had moderate restrictions (basic restrictions plus warning signs, state issued retail licence, and a provision for licence suspension or revocation when sales to minors are made); but no state had comprehensive regulations (moderate regulations plus a ban on free distribution and coupons, use of licence fees for enforcement, vending machine restriction or ban, absence of a pre-emptive clause, and allowance for compliance checks/"stings" – where authorities monitor the selling rate to minors who are sent into shops to attempt to purchase tobacco – at the local level).⁷

In field trials, minors have successfully purchased tobacco from stores and vending machines 60–100 % of the time.^{8–12} In the United States, annual illegal sales to minors are estimated at 947 million packs of cigarettes and 26 million containers of chewing tobacco. These sales total \$1.45 billion and generate more than \$221 million, 3 % of total industry profits.¹³ Studies in other countries show that the problem is similarly widespread.^{14,15}

SOURCES OF TOBACCO

Minors obtain tobacco from various sources. A 1989 Chicago study (L Jason, personal communication, 17 July 1991) indicated that minors obtained 71 % of their tobacco from over the counter sales. The outlets from which tobacco was purchased included petrol stations (37 %), food stores (23 %), and drug stores (11 %). A further 19 % of tobacco was obtained from friends, 7 % from parents, and 3 % from vending machines. The minors interviewed were cost conscious; petrol stations were popular sales points because cigarettes there were typically less costly. The extent to which sales of single cigarettes contributes to the youth access problem is unknown, although there is evidence that single cigarettes are available in some communities in the United States. It should also be noted that in the United States store clerks are often minors. Minors who buy tobacco from clerks who are also minors can pose unique challenges to efforts to control tobacco access.

A national study sponsored by a vending machine trade group suggested an inverse relation between age and use of vending machines as a regular source of tobacco.¹⁶ Among those teenagers who reported purchasing tobacco products often or occasionally, 36 % of 13 year olds and 14 % of 17 year olds obtained them from a vending machine. Also, 56 % reported that they used vending machines because they thought they would not be stopped; only 11 % of teenagers reported they had ever been prevented from buying cigarettes from a vending machine. Vending machines represent an important means by which the youngest children obtain cigarettes.

RELATIONSHIP BETWEEN ACCESS AND USE

The most important questions that should be asked in research on access of the young to

tobacco concern the relation between access and tobacco use. Two preliminary studies have directly examined this.^{17,18} In Woodridge, Illinois, researchers conducted a cross sectional survey of more than 600 seventh and eighth grade students about their smoking behaviour before and about two years after legislation was passed concerning retailer licensing, law enforcement, and possession of tobacco by young people. Experimental smoking (tried on at least one occasion) dropped from 46 % at pre-test to 23 % at the two year post-test. Likewise, regular smoking dropped from 16 % to 5 %.¹⁷ In Leominster, Massachusetts, researchers surveyed over 500 12–19 year old students before and about two years after legislation was passed that encouraged law enforcement. The percentage of students identifying themselves as smokers dropped from 22.8 % at pre-test to 15.8 % at the two year post-test. In a complementary but supportive line of research, studies of school smoking policies indicated that making smoking inconvenient discouraged about 25 % of would be smokers from starting.¹⁸

In summary, the Woodridge and Leominster studies provide strong support for the hypothesis that reducing tobacco access among young people can reduce their use of tobacco. Future studies should incorporate randomised designs, longitudinal as well as cross sectional samples, biochemical confirmation of self reported tobacco use, and long term follow up of tobacco use to assess whether these effects are maintained into the early adult years.

Zero tolerance for access of young people to tobacco products must become the community norm. Retailers, law enforcement officers, judges, health professionals, and others can have a major role in conveying a consistent, zero tolerance message to the community. A law that is not enforced is ineffectual. Unenforced laws imply that the subject and intent of the law is unimportant and need not be taken seriously. Conversely, activities necessary to limit access, such as enforcement, legislation, and publicity, raise awareness about the harm caused by tobacco, and pave the way for other efforts. If parents, government officials, and health professionals are to succeed in convincing children and teenagers to recognise that tobacco is detrimental to health, tobacco cannot be sold in vending machines as if it were candy and over the counter as if it were toothpaste.

PUBLIC SUPPORT

A 1989 population survey of 3654 persons aged 25–64 in the 10 Community Intervention Trial for Smoking Cessation (COMMIT) cities showed strong public support for regulating minors' access to tobacco.¹⁹ Across the 10 cities, 70 % of respondents agreed that tobacco products should be as strictly controlled as alcohol products; 88 % agreed that merchants who sell tobacco to minors should be fined; and 84 % agreed that cigarette vending machines should be eliminated in places where teenagers gather.

Interventions to reduce access to tobacco by young people

The primary response to tobacco use among young people has been the implementation of school based primary prevention programmes. Well designed school based programmes stressing life skills, increased self esteem and knowledge, resistance skills, and norms can be effective in delaying onset, in a subset of the targeted population. A few programmes have been shown to prevent tobacco use. The effects were, however, modest in the short term and uncertain in the long term.²⁰⁻²² In isolation, school based programmes may lack the broad efficacy and long lasting impact necessary to alter the prevalence of tobacco use by the young.

After nearly three decades of work on education programmes, it is unlikely that a remarkably effective "magic bullet" programme will be discovered that makes enforcement of access laws unnecessary. Equally, limiting access alone may not be enough to reduce smoking prevalence among youth to acceptable levels. Thus implementation of mutually supportive interventions that target all factors which influence tobacco use are needed. Educational interventions are undermined when children are easily able to purchase tobacco. Thus, even if effective educational interventions were developed, their effectiveness would be reinforced and enhanced by strictly controlled access.

There is now a national consensus that more active steps must be taken to reduce access of young people to tobacco.^{8,12,17,18,23-28} Since the late 1980s, communities around the country have shown a strong willingness to take action to limit such access.¹⁹ This has led to substantial progress in local laws and merchant practices. To date, various measures to reduce access of young people to tobacco have been implemented, including partial or total bans of vending machines, increasing enforcement of age of sale laws, merchant education programmes, posting warning signs at points of purchase, establishing a minimum age for clerks who sell tobacco, requiring single packs of cigarettes to be sold behind the counter, increasing penalties for sales to minors, and increasing the sales price through excise taxes. Little is known about which interventions are effective, their generalisability, whether or not the intervention's effect decays with time, or what can be done to enhance an intervention's effectiveness over time. Also, more information is required about the interactive and synergistic effects of using various interventions together.

MERCHANT EDUCATION PROGRAMMES

Most researchers agree that merchant education is necessary but not sufficient to reduce sales to minors. Interventions that encourage voluntary merchant compliance have achieved substantial but incomplete reductions in over the counter sales to minors, but these cannot sustain reductions without continued efforts.

For example, in Santa Clara County, California, a four month comprehensive educational intervention including direct merchant education, contact with executives of chains and franchises, mass media interventions, and community organisation reduced illegal sales from 74 to 39 % among a sample of 412 stores. Six months after the intervention, sales had risen to 59 %. Vending machine sales to minors were 100 % throughout the intervention.^{8,9}

VENDING MACHINE POLICY OPTIONS

Limiting minors' access to tobacco from vending machines has become a key priority for public health professionals because young minors so often utilise vending machines, and because merchants are reluctant to comply with restrictions on over the counter sales when minors can purchase from vending machines. In Minnesota, for example, more than 50 communities have adopted policies to restrict or prohibit cigarette vending machines.^{11,29} For various reasons, however, many jurisdictions have preferred to implement partial bans. These may prohibit machines from some locations or require the machines to be under supervision. Alternatively, some jurisdictions require vending machines to be equipped with locking devices or to require the buyer to purchase tokens from the retailer. These interventions are designed to allow the retailer to require proof of age from a potential buyer before unlocking the machine, or selling a token for the purchase of cigarettes.

Partial bans that permit vending machines in "adult" locations, such as bars, have not eliminated minors' access, as minors are often able to gain admission to such locations. Locking devices or token systems may reduce but not eliminate access by minors as the machines are difficult to supervise in a busy retail environment. A study in St Paul, Minnesota²⁸ shows the difficulty of employing electronic locking devices. One year after St Paul enacted a law requiring vending machines to have locking devices, 30 % of vending machines were not in compliance with the law and did not have locking devices installed. Ten per cent of the locations had converted to over the counter sales only, and 13 % stopped selling tobacco altogether. The last group included those merchants who owned mechanical vending machines that could not be fitted with locking devices in retrospect or if they could, the cost was prohibitive. The overall ability of minors to purchase tobacco from vending machines was reduced from 86 % before the law was enacted to 48 % one year later. In locations that had installed locking devices on machines, a minor was still able to purchase tobacco 39 % of the time.²⁸ Thus enforcing locking device legislation is challenging: tedious compliance checks are necessary and many merchants ignore the law. Most advocates and researchers now believe that the only effective way to limit minors' access to vending machines is to ban the machines entirely.

ENFORCEMENT OF LAWS TO DECREASE ACCESS TO YOUNG PEOPLE

Dr Louis Sullivan, head of the Department of Health and Human Services, directed the Office of the Inspector General (OIG) to study this issue. The 1990 OIG report consisted of case studies of active state and local enforcement efforts and the results of interviews with 1200 health experts, students, parents, and vendors from 18 states.²⁶ The report determined that although 44 states and the District of Columbia have laws prohibiting the sale of tobacco to minors, these laws are rarely enforced. Local leadership seemed to be the primary factor motivating active enforcement of tobacco laws.

As a result of this investigation, the "Model Sale of Tobacco Products to Minors Control Act"^{25,30} was published, comprised of the primary components:

- Retailer licensing system
- A graduated set of penalties
- Investigation and enforcement conducted primarily in state agencies
- State administered civil penalties with use of local courts to assess fines
- Establishing 19 as legal age of purchase
- Banning vending machines.

In four diverse communities in Solano County, California, a combined comprehensive education and enforcement intervention reduced over the counter sales from 72 % at baseline to 21 % at two years post-test. Vending machine sales were 84 % at baseline and 83 % at post-test.¹⁰ One round of compliance checks resulted in 31 citations, 16 of which reached the courts, where all were dismissed or reduced. In Leominster, Massachusetts, 100 tobacco retailers (34 stores and 66 vending machines) were visited by underage minors on several occasions after active enforcement of access laws occurred. Although there was no pre-intervention measure of sales to minors, the sales rates after an educational and law enforcement intervention was implemented were assessed on three occasions: At 11 months after intervention, 19 % of outlets sold to a 10 year old boy and a 13 year old girl; at 15 months two boys aged 11 and 12 were sold tobacco in 16 % of the outlets they visited; at 19 months two 16 year old girls were sold tobacco in 65 % of the outlets they visited. Also 17 of the 66 vending machines in the community were removed during this period.¹⁸ The experiences with enforcement in Woodridge, Illinois, are discussed in the next section.

LAWS AND POLICIES

In the United States merchants recognise that there are no actively enforced penalties attached to the sale of tobacco to young people. If retailer compliance is to be obtained, law enforcement agencies and the judicial system must be educated about the extent of the problem and motivated to respond. Public health officials rarely collaborate with local authorities regarding access to tobacco. More involvement and commitment from all

agencies will need to occur to significantly increase compliance.

The consensus among health professionals is that administration of a tobacco vendor's licence is more appropriately done through the civil rather than the criminal courts. The preference for the civil route is based on several factors. Firstly, in most communities a civil offence would be handled more expeditiously and cost effectively than a criminal offence. Secondly, many health professionals are uncomfortable with the fact that clerks caught selling tobacco to minors will have a criminal record for life. Likewise, some judges in California communities have expressed concern about imposing a criminal penalty for what they consider a minor offence.¹¹

There are more than a million tobacco outlets, encompassing a complex system of wholesalers and retailers. Wholesalers are able to earn commissions for routing efficiency, sales volume, and in at least one case, for political activity. It may not be feasible to adequately supervise these outlets without uniform licence requirements that are enforced. Because our understanding of the distribution network is limited, our ability to influence it is limited. As minors may simply patronise the remaining outlets that will sell them tobacco, it is critical to show that limiting the number of outlets accessible to the young has a measurable impact on the prevalence of smoking. To date, this has not been done. The large number of retail outlets for tobacco in the United States may be due to the fact that stocking tobacco builds customer traffic, is profitable, increases the likelihood that retailers will be given incentives to sell, and that wholesalers will be given incentives to have a large customer base.

There are examples of communities that have successfully passed access ordinances. In Woodridge, Illinois, a middle class suburb of Chicago (population 28000), for example, a law was passed that licenced tobacco vendors, suspended the licences of those found selling to minors, and banned possession by minors. This virtually eliminated sales to minors in a short period.¹⁷ Four of the five surrounding communities have adopted a tobacco licence law. In one of these (Bolingbrook) sales to minors dropped from 90 % before the law and active enforcement was implemented to 23 %. Although strict enforcement of minor's access laws has been achieved in Woodridge, its overall impact is best considered in the light of the numerous communities around the country, both large and small, that have used the experiences of Woodridge to adopt stronger laws and effective enforcement. This diffusion effect has been substantial and rapid.

In some communities, merchants are most strongly influenced by seeing their tobacco customers walk across the street to their competitor's store than by a fine or threat of arrest. Many state laws are problematic, violations are criminal rather than civil, enforcement is limited to police departments, the judicial system is used for prosecution, and state laws may pre-empt local laws. Correcting

these problems requires that public health professionals work in the political arena, in which many lack expertise or experience.

Finally, there has been considerable debate among public health professionals about the efficacy and desirability of laws that prohibit possession of tobacco by minors. In Woodridge, Illinois, minors' possession is illegal. Technically, this law does not criminalise minors who use tobacco because teenagers receive a citation written on a parking ticket with a maximum mail in fine of \$25.00. No arrest, police report, or juvenile contact record is made. Also, the apprehending officer does not confiscate the tobacco or inform the minors' parents.

In a survey of students in Woodridge, 93 % were aware of the possession law, 72 % thought it would help prevent them from smoking, and 55 % thought it would prevent other students from smoking (B Talbot, personal communication). Other public health professionals argue that such possession laws divert attention away from merchants who sell tobacco to minors and tobacco industry tactics to recruit minors to use tobacco.

SIMILARITIES BETWEEN ALCOHOL AND TOBACCO

Whereas there are important differences between alcohol and tobacco control philosophies, limiting the access of young people to tobacco and alcohol present similar challenges. Much research shows that laws and policies that restrict the availability of alcohol and increase the minimum age of purchase result in decreased alcohol consumption, alcohol related traffic accidents, and alcohol related health problems.^{31,32} For example, there is extensive evidence on the decreases in alcohol consumption among moderate and heavy drinkers and the resultant decreases in cirrhosis mortality brought about by prohibition. Data from the Centers for Disease Control show a 34 % decrease in the percentage of intoxicated teenage drivers involved in a fatal car crash.³³ This reduction occurred coincident with increased public awareness of the hazards of drinking and driving, increased enforcement of existing laws against driving while drunk, enactment of more stringent laws, and the nationwide adoption of age 21 as the legal drinking age. Another historical precedent linking availability with consumption includes reduction in use of opium in England in the mid-1880s that was brought about by restricting its availability to pharmacies.

Research priorities

The five interrelated priority categories of research questions described next should direct more fine tuned research.

ACCESS AND USE

Two studies on the effects of limiting access on the initiation and prevalence of tobacco use by young people support just such a relation,^{17,18} but more research is needed. Ideally, studies

should be randomised controlled trials, confirm self reports of tobacco use with biochemical markers (for example, cotinine), and track tobacco use longitudinally. Research is needed to assess whether reducing access among minors will simply delay the onset of tobacco use.

EFFECTIVENESS OF EDUCATIONAL INTERVENTIONS

Educational interventions directed at merchants and retailers, the community at large, young people, law enforcement agencies, and judges have been attempted. Overall, there are numerous important questions that remain to be investigated. Which are most effective at reducing youth access, under what conditions, and for whom? More specifically, the key research priority subareas include questions such as:

- Do point of purchase signs reduce selling to minors?
- Does heightened community awareness about access reduce access?
- Can knowledge of tobacco retail networks be used to make education more effective?
- What are the effects of the Tobacco Institute's "It's the Law" programme?
- What are effective point of sale messages?
- What educational approaches influence judges to support access laws?
- What is the impact on compliance of store visits versus education delivered via the media?
- What effects do manufacturers' incentive programmes for wholesalers and retailers have on youth access?
- What is the effective threshold of merchant compliance necessary to significantly reduce access?
- How can communities be encouraged to take actions such as collecting purchase data, reporting violations, writing letters, meeting with store managers?
- What are the most effective ways to reward retailers who consistently refuse to sell tobacco to minors?
- Are strategies to promote voluntary merchant compliance effective in the short term and/or long term?
- What are the best methods for involving young people in education?

EFFECTIVENESS OF ACTIVE ENFORCEMENT INTERVENTIONS

Enforcement of access laws through compliance checks is now recognised as a necessary component to any comprehensive intervention to reduce youth access to tobacco. Research questions arising include:

- What are the most effective types of law enforcement and what are their long term effects?
- What are the costs and benefits of routine compliance checks?
- What legal actions against the tobacco industry, distributors, or retailers are effective in reducing youth access to tobacco?
- What attitudes and beliefs do the public,

vendors, and police hold toward enforcement of youth access laws?

- What are the obstacles to the widespread adoption of effective enforcement methods and how can these obstacles be overcome
- What is the optimal enforcement schedule?
- What are the compliance outcomes with different police, health department or others as enforcement agents?

EFFECTIVENESS OF POLICIES AND LAWS

In recent years, widespread attention has been paid to laws that address youth access to tobacco. A central issue here is the effect that state pre-emption of access laws has on local efforts to control access and what communities can do when pre-emption exists. Other key research priority subareas include questions about policies related to age of sale and purchase laws:

- What is the most effective and reasonable minimum age of purchase for tobacco?
- What are the effects on access of establishing a minimum age for people who sell tobacco?
- What are the effects of requiring tobacco to be sold from behind the counter only?
- What effect do single stick sales have on access and use?
- Does access vary based on type of tobacco purchased?
- What is the most effective method to control second party sales?
- What effects do restrictions on vending machine sales have on youth access?
- Do electronic remote control lockout devices or tokens installed on cigarette vending machines prevent minors from buying?
- To what extent do employees allow minors to use machines with inactivated control devices?
- Does licensure that includes suspension or revocation for sale to minors reduce access?
- What is the most effective period for licence suspension on first and repeated offences?
- Do laws that ban the purchase and possession of tobacco by minors affect access and use?
- At what age should possession be illegal?
- What sanctions, penalties, or treatment are appropriate for possession and use?
- What are the effects of holding different groups such as retailers, managers, owners, minors, and parents responsible for sales to minors?
- Is the enforcement of laws that treat tobacco in much the same manner as alcohol – suspension of vendor license for sales to minors, banning possession by minors – an effective means of reducing youth tobacco use?

SOURCES OF TOBACCO

Where minors obtain tobacco is central to our understanding of tobacco access issues.³⁴ The key question in this category relates to proportion of contributors to minors' access made by various sources:

- Do the sources change as overall or source specific access is reduced?

We thank Ruth Corcoran of the American Cancer Society for overall guidance and Dearell Niemeyer of the California Department of Health Services for logistical and financial support.

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