

# Teen penalties for tobacco possession, use, and purchase: evidence and issues

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A handful of empirical studies have related changes in youth smoking to popular laws that penalise tobacco possession, use, and purchase (PUP). In this paper, we review the literature and outline reasons why PUP laws may be unlikely to reduce youth smoking significantly at the population level. In theoretical terms, we argue that PUP laws lack important features required for punishment to be effective in changing behaviour. In practical terms, PUP transgressions seem difficult to detect. Conceptually, there is potential for PUP laws to undermine conventional avenues of discipline, such as the parent-child relationship and the school environment. Strategically, PUP laws may divert policy attention from effective tobacco control strategies, relieve the tobacco industry of responsibility for its marketing practices, and reinforce the tobacco industry's espoused position that smoking is for adults only. To assist further debate and discussion, we identify research issues requiring attention.

provide conceptual clarification from the law as to the definition and status of these types of punitive approaches. Against this background, we summarise and reflect upon the literature pertaining to PUP laws, comparing and contrasting them with the imposition of penalties for youth smoking in school settings and by parents.

## PSYCHOLOGICAL PERSPECTIVES ON PUNISHMENT

Punishment can technically be defined as the response contingent application of an unpleasant or aversive event in an attempt to suppress, or prevent the recurrence of, an unwanted behaviour.<sup>1</sup> An aversive event may be physical (such as spanking a child), material (such as imposing a fine or a loss of freedom), or emotional (such as an expression of disapproval). The assumed deterrent effect of punishment is to influence the future behaviour of the offender being punished, or generally to influence other potential offenders directly or indirectly observing the punishment, or both. Specific deterrent effects can be evaluated by studying the behaviour of offenders after punishment, whereas general deterrent effects (such as changed social norms) can be evaluated by studying the behaviour of the community from which punished offenders come.

Psychologists have long studied the effects of punishment on behaviour.<sup>2-4</sup> Research has explored the effect of varying elements of the punishment, such as intensity, consistency or certainty, and timing in relation to the transgression. Studies have also examined the perceived legitimacy of the punishment, the relationship between the punisher and recipient, and whether the punishment focuses upon shaming the behaviour or shaming the individual.<sup>5</sup> All of these elements appear to have a role in influencing the likelihood of future unwanted behaviour on the part of the recipient.<sup>1</sup>

Punishment can result in the recipient taking more care to avoid detection and apprehension, rather than a change in the offending behaviour, especially if the punishment is perceived as unfair.<sup>6,7</sup> In addition, others may conspire to protect the offender, increasing the likelihood of successful avoidance of detection.<sup>1</sup> The pursuit of avoidance, in turn, may result in lessened contact with good role models and promote a sense of belonging to a social outgroup (that is, a group

Throughout the past decade in the USA, there has been considerable attention and effort devoted to the passage and enforcement of laws to reduce minors' access to tobacco. On the one hand, sales to minors (STM) laws attempt to prevent the sale of tobacco to youth and punish the vendor for non-compliance. On the other hand, there is a set of laws that penalise youth for tobacco possession, use, purchase, and attempt to purchase (hereafter, referred to as possession, use and/or purchase laws, or PUP laws). During the past decade, there has been an unprecedented increase in the number of US states and counties that have passed PUP laws. These laws have been introduced with less than positive support from tobacco control advocates, partly because of limited evidence for effectiveness, partly due to philosophical concerns about the use of punitive approaches in shaping behaviour, and partly based on strategic endorsement of the approach by tobacco companies. This paper reviews the status of these laws in the USA as of 2001, considers the results of research relating to enforcement and effect on youth smoking behaviour, and reflects upon how the tobacco industry may have benefited from this effort. We draw some conclusions about the role of PUP laws in tobacco control, and highlight issues requiring further research.

To provide a context against which to interpret research evidence, we first consider the broader picture from the psychological literature on the use of punishment in behaviour change. We also

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**Abbreviations:** CTFK, Campaign for Tobacco-Free Kids; DABT, Division of Alcoholic Beverages and Tobacco; NATCD, National Association of Tobacco and Confectionery Distributors; PUP, possession, use, and purchase; STP, sales to minors

distanced from mainstream society, such as a delinquent or criminal subgroup).<sup>8</sup> A number of studies have found that punishment actually increases offending behaviour in social outgroups.<sup>9</sup> Thus, punishment may have counterproductive effects from those intended.

Punishment has been found to completely suppress unwanted behaviour only when the punishment is so severe as to be greater than would normally be regarded as humane.<sup>10</sup> Intense punishment may also elicit emotional reactions, such as defiance, that interfere with any intended learning of alternative behaviours.<sup>9</sup> Overall, intense punishment may temporarily suppress behaviour, but of itself does not correct behaviour in the long term.<sup>7</sup> In other words, punishment appears to be a suboptimal behaviour change strategy.

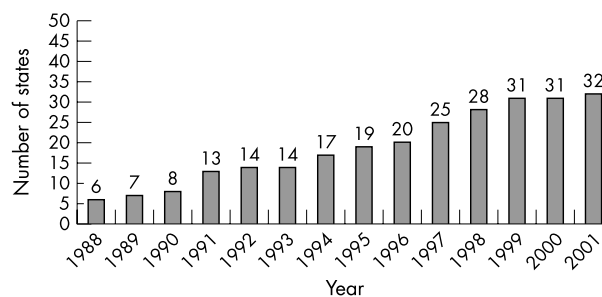
For lasting deterrence, a potential offender must believe that if the offense recurs, there is a good likelihood that detection and punishment will result.<sup>8</sup> In the case of drunk driving (random breath testing) or speeding (speed detection cameras), it has been possible to increase the likelihood of detection; but for most unwanted behaviours, it is much more difficult to achieve substantially higher rates of offence detection.

Importantly, punishment is more likely to act as a deterrent if the punisher has a close affectionate relationship with the offender (which is more characteristic of the relationship between parents and children), as opposed to the relationship being distant and impersonal (as in the case of the formal justice system).<sup>11</sup> Where the punishment is delivered on behalf of the community, its effects will be influenced by the degree of bonding between the offender and society.<sup>12</sup> Thus, punishment might be expected to more often deter crime among members of the mainstream society, but may increase crime among social and cultural outgroups.<sup>9</sup> The literature on diversion programmes for alcohol and drug offenses (programmes that mandate attendance at an educational or treatment program rather than a fine per se) suggest that many are not effective in reducing repeat offenses, leading to an increase in drug use over time, more deviant self labels regarding drug use, and a lower level of normative group involvement.<sup>12-15</sup> Thus, a risk of this kind of programme is that it may lead some youth to relabel themselves as deviant, leading to a change in social group membership and an increased risk of the problem behaviour.

### LEGAL PERSPECTIVES ON PUP LAWS

Rosenberg<sup>16</sup> explains that every state has a separate juvenile court system that has jurisdiction over two forms of conduct by children: criminal law violations and status offenses. Criminal law violators are usually defined as minors who commit acts that if committed by adults would constitute crimes. Status offenders are those who commit acts that are criminal only for children, such as curfew violations, consumption of alcohol, and running away from home. Before the 1960s, Rosenberg points out that these two types of offenders were often treated similarly and designated as “delinquents”, such that runaways and truants found themselves incarcerated in the same secure state facilities as rapists and murderers.

Over time, and in response to criticism of this practice, status offenders have been categorised separately and treated differently from criminal law violators. In addition, status offenses have been more explicitly defined, in order to ensure fair notice of the proscribed acts, both to the public and those who enforce the law. However, in almost all jurisdictions, a status offender who violates a court directive not to engage in further unlawful conduct (such as truancy), can be converted into a delinquent simply by engaging in further conduct that itself is not criminal, and may then be incarcerated. Laws that penalise tobacco PUP are generally categorised as status offenses, rather than criminal law violations.



**Figure 1** US states (includes DC) with legislation restricting possession of cigarettes to persons aged  $\geq 18$  years, 1988–2001. Source: *State legislated action on tobacco issues, 1988–2001*. CDC’s STATE system, Roswell Park Cancer Institute.

### EMERGENCE OF TOBACCO PUP LAWS

Giovino *et al*<sup>17</sup> found that by the first quarter of 2001, only six US states and the District of Columbia did not have a PUP law. Overall, 37 states had a law prohibiting the purchase of cigarettes by minors, 32 had a law prohibiting possession, and 19 had a law prohibiting use. Figure 1 shows how quickly laws prohibiting tobacco possession by a minor have been adopted by states in the past decade; the pattern is similar for use and purchase laws.

Over two thirds of all states with PUP laws authorise penalties in addition to a monetary fine.<sup>18</sup> States impose a variety of penalties ranging from a ticket to a fine, an appearance in court, suspension from school, denial of a driver’s licence, or any combination of these. Some states have graduated penalties from zero to over \$750 (for example, Wyoming), and some mandate an increase in fines with repeat violations.<sup>18</sup> Denial of driver’s licence also varies in the way it is implemented—for example, in Florida minors may lose their licence or be prohibited from obtaining one. This practice seems to be reserved for repeat offenders and licences are usually lost for between three and six months.<sup>19</sup> Courts specially convened to try tobacco offenses by minors have been instituted in some states such as Florida, Indiana, Oregon, and Utah.<sup>19</sup> For example, in Plantain, Florida, teens must appear before the judge with their parent or guardian, must view an anti-smoking video, and experience a lecture from a throat cancer survivor.<sup>19, 20</sup>

In addition to state laws, there are many municipal and county ordinances that prohibit youth PUP of tobacco. For example, in New Jersey, 37 municipalities (out of 567), representing 13 counties, enacted a youth tobacco PUP ordinance in the six years before 2001.<sup>21</sup> Overall, 62% of ordinances applied to all public areas and 62% applied to school areas. Of the ordinances, 51% required a cited youth to pay a fine and 43% required participation in an education programme. Penalties ranged from verbal warnings to fines and community service and were implemented at various stages of the offence. Violation was more likely to result in a fine on the second offence and educational programmes were typically not required until a third violation.

One of the difficulties of applying alternative penalties, such as education programmes, is that it is often unclear what the explicit goal of the programme should be—whether the main end point sought should be punishment per se, smoking related attitude change, and/or smoking cessation. Conceptually, a short single session educational programme might be perceived by many to be an unlikely method of encouraging and supporting smoking cessation.

The growth in PUP laws emerged over the long period of increase in teen tobacco use in the USA,<sup>22</sup> probably as a result of increasing concern being expressed by government about youth smoking. Lantz *et al*<sup>19</sup> suggest that PUP laws emerged under pressure from retail merchants’ associations, who argue

that there should be a balance of sanctions against the vendor and the buyer. The tobacco industry has also been an active proponent of this view. Jacobson and Wasserman<sup>23</sup> suggested that the Synar amendment (Federal Public Law 102-321) may be fuelling the growth in the penalising of PUP among minors. Although compliance has generally improved over time,<sup>24</sup> youth are less likely to report being able to purchase cigarettes from stores.<sup>25</sup> Social contacts have become a more important source for tobacco.<sup>26–28</sup> These factors may have underpinned and reinforced additional policy initiatives such as PUP laws to keep tobacco out of the hands of youth.

To date, there is scant evidence that PUP laws have been enforced at a level that could be expected to exert a general (as opposed to specific) deterrent effect on youth smoking. Crawford *et al*<sup>29</sup> undertook a qualitative study of 178 focus groups involving 1175 teenagers in the USA, covering all levels of smoking experience. They reported that rarely did any participant in the study, even those living in communities with PUP laws for two or three years, comment on the fact that their tobacco possession or use was against the law. These findings cast doubt on just how salient the enforcement of these laws may be to teens. Generally, during the period over which they are proposed, PUP laws are discussed in news media,<sup>30–32</sup> but once passed, they may be unlikely to continue to gain news coverage. Langer *et al*<sup>33</sup> in Florida, a state where enforcement efforts have purportedly been high, also found that many parents or guardians of teens who had been cited for PUP did not know about the law. In a survey of 402 parents/guardians of teenagers who were interviewed at the time of their child's court appearance for a PUP violation, 48% indicated they did not know of the existence of the law. These studies suggest that any potential general deterrent effect of PUP laws may be difficult to realise in practice. Enforcement efforts may need to be accompanied by concerted media advocacy about the law and the fact that it is being enforced.

In concept, these laws seem popular with youth, parents, and policymakers. For example, an internet survey of youth in Saskatchewan, Canada, reported that 75% of the mostly 10–19 year old respondents indicated that it should be illegal for youth to possess tobacco products.<sup>34</sup> In addition, 55% agreed that being fined for possession would deter them from smoking. This survey was not a random sample survey and the characteristics and representativeness of respondents was unknown. A survey of parents and guardians of minors who were attending a court appearance for tobacco PUP in Florida<sup>33</sup> reported that 66% were very much or extremely in favour of the government's role in reducing teen smoking. The circumstances of this survey would be likely to have promoted a socially desirable response, so further research is required to gauge the strength of public opinion. However, to the extent that parental views are seen to favour youth penalties, the push for PUP laws will gain support.

Arguably one of the main reasons these laws receive popular support is the notion that, without them, youth can be given a mixed message about the harm posed by tobacco use, relative to alcohol and other illicit drugs. For example, Sutton<sup>35</sup> expresses concern that youth may get mixed messages if on the one hand they are told that tobacco is worse than alcohol or illicit drugs, but on the other hand the law treats tobacco as the "lesser evil" by not punishing youth for tobacco PUP, while it does so for alcohol or illicit drug possession. In qualifying her view, Sutton makes it clear that she supports civil penalties involving community service, rather than fines or detention, arguing that fines are usually paid by the parents rather than the youth, and that jail is too strong a penalty. This underlines the point that not all penalties are equal. Thus, community service penalties may counter the image of tobacco being "cool", but monetary fines alone provide no tangible educational benefit.

Although PUP laws have become popular, there is little information about the extent to which these restrictions are

actively enforced. Some have suggested that the opportunity to approach youth for tobacco PUP may enable police to check out other potential offences, such as illicit drug possession (K Ribisl, personal communication, 2002). However, given the large number of youth relative to the number of retailers, a practical concern about these laws is that they are difficult to enforce.<sup>33</sup> Further, Cismoski<sup>36</sup> points out that the rate of enforcement compared to the rate of violations is extremely small. In order to have a deterrent effect upon use, the risk of detection must be perceived to be high. Because of the portability and ease of possessing cigarettes, it is unlikely that the rate of apprehension would be adequate to have a meaningful deterrent effect upon use. Kelder<sup>37</sup> agrees, suggesting that the police are unable or unwilling to devote a large amount of time and personnel to enforcement of these laws. Critics of PUP laws argue further that, since such measures are rarely enforced, a climate of disrespect for the law may be created.<sup>37</sup> These issues raise questions about the deterrent effects of these laws, especially the general deterrent effects. Publicity about PUP violations might increase youths' perceived risk of the likelihood of apprehension, but studies of this kind of media advocacy were not found.

### EFFECTS OF PUP LAWS ON OTHER TOBACCO CONTROL STRATEGIES AND PRACTICES

One of the concerns about PUP laws is that they may divert attention and resources from tobacco control strategies that are already presumed or proven to have benefit in reducing population smoking, including youth smoking.

#### Sales to minors laws

In relation to STM laws, a number of commentators have made the case that there is great potential for PUP laws to divert enforcement efforts from retailers who sell tobacco.<sup>34 38 39</sup> In addition, these laws sometimes pre-empt existing laws, making it difficult for youth to participate in sting operations and limiting which enforcement agency may be involved in sting operations. There have been three studies that have specifically examined the extent to which enforcement attention might be diverted from STM to PUP laws.

In a 1993 study of ordinances collected from 222 of the 229 cities in Minnesota with a population greater than 2000 people, Forster *et al*<sup>40</sup> found that 87% of cities warned minors for a violation of the PUP laws and 40% had penalised minors. Police were more likely to prosecute minors for PUP than to prosecute retailers for violation of the STM laws—retailers were the subject of warning or prosecution in only 6% of all communities, with 38% of communities conducting compliance checks. Forster *et al*<sup>40</sup> suggest that these findings are consistent with reports from Utah and South Dakota, where minors seem to be selectively targeted. They suggest that the police may find it easier to enforce laws against minors than retailers, with a disproportionate use of enforcement resources focused on youth. This is similar to the situation with respect to alcohol minimum age of sale laws, where nationally the arrest rate for minors using alcohol is more than 40 times the arrest rate for retailers selling alcohol to minors.<sup>40</sup> Despite the fact that more than half of alcohol outlets directly sell alcohol to youth, for every 1000 arrests of a minor for youth possession of alcohol, only 130 retailers have any action taken against them and only 88 adults are arrested for supplying alcohol to youth.<sup>41</sup>

Howard-Pitney *et al*<sup>42</sup> documented figures from California showing the percentage of agencies that had issued warnings and citations for STM laws, compared with PUP laws, during the years 1996, 1998, and 2000. Overall, they found that a similar percentage of agencies had issued warnings against retailers and youth (over 80%), but a higher percentage had issued citations against youth than retailers, 91% and 71%, respectively, in 2000.



More recently, Gray and Chaloupka<sup>43</sup> merged Food and Drug Administration compliance check data from over 100 000 establishments in 45 states and the District of Columbia with store zip code, socioeconomic characteristics, and state level policy measures, including PUP laws. They found that the probability of an illegal sale was slightly but not significantly lower in stores located in states with a law penalising youth for possession (odds ratio (OR) 0.85, 95% confidence interval (CI) 0.69 to 1.04; NS) and significantly lower in states penalising purchase of tobacco (OR 0.84, 95% CI 0.66 to 0.98;  $p < 0.05$ ). These findings are consistent with the notion that laws penalising youth for tobacco purchase may indeed lead to fewer attempts by underage youth to purchase tobacco directly from stores. However, youth may then seek to obtain tobacco elsewhere, such as from social sources.<sup>26–27</sup> This analysis adjusted for strength of youth access laws; store signage; legal age for purchase; vendor licence suspension or revocation; the urbanicity, age structure, and racial and ethnic characteristics of the community; store type; the time and day of week of the purchase attempt; the sex of the clerk; and level of state cigarette tax as a proxy measure for anti-tobacco sentiment of the state. Although these findings are suggestive, the study was unable to source data on the extent of PUP enforcement efforts in different states, so the existence of a law is presumed to be a proxy for an enforced law. In addition, the study used 1998 records of PUP laws, but included compliance check records from the later years of 1999 and 2000, thereby underestimating the extent of PUP laws for these years. Further analyses updating these records are planned. Ultimately, it would be important to determine whether STM laws are more vigorously enforced in communities without PUP laws than in those with such laws.

The idea that PUP laws may divert resources from STM enforcement to possession enforcement may in fact be unimportant, since there is evidence that STM laws are not as effective in reducing youth smoking as price increases and clean indoor air laws.<sup>44</sup> However, Jason *et al*<sup>45</sup> suggest that PUP laws might make it more difficult for youth to obtain cigarettes from social sources. Among mainstream youth at least, there may also be less peer pressure to take a cigarette.

### Parental controls

There is good evidence that strong connectedness between parents and children is associated with reduced likelihood of smoking uptake.<sup>46–49</sup> Youth who expect to be punished by their parents for smoking are less likely to have smoked in the past 30 days, less likely to be current smokers, and more likely to be in earlier than later stages of smoking uptake.<sup>50–53</sup> This relationship is generally stronger when parent–child connectedness is high.<sup>51</sup> However, lack of consistent parental punishment for smoking was associated with increased likelihood of smoking in one study<sup>50</sup> and had no association in another.<sup>54</sup> Strong parental disapproval of smoking is generally found to be associated with reduced youth smoking or has no effect, but approval or acceptance of smoking is reliably associated with increased likelihood of youth smoking.<sup>55–56</sup>

In their qualitative study of judges and other law enforcement officials in relation to PUP laws, Woodhouse *et al*<sup>57</sup> note that a range of reactions from parents are encountered in relation to the law. For example, some parents who are unconcerned about smoking by their children become angry because they do not want to pay the fine or take time to have their child attend community service. In these situations, PUP laws may conceivably exacerbate already problematic parent–child relationships. On the other hand, some parents are motivated to take more interest in their child's smoking, because of the threat of a penalty. Although this might at first glance be perceived as a potentially positive secondary outcome of PUP laws, the probability of sustained change from a permissive and/or unengaged parent to an engaged and authoritative one is unknown.

These findings are very consistent with the aforementioned psychological literature that indicates that the relationship between the punisher and recipient, and consistency of punishment, are important mediators of the effectiveness of penalties in changing subsequent behaviour. Further research is needed to examine the extent to which parental controls on smoking may be strengthened or undermined by PUP laws.

### School policies

Apart from the issue of STM laws, another concern about PUP laws is that they run the risk of undermining other informal controls on youth smoking from schools. Kropp<sup>39</sup> argues that PUP laws can introduce confusion in schools as to who is responsible for enforcement when a student is found smoking. He suggests that schoolteachers may be less likely to enforce school rules if the outcome involves a process outside the school, such as an appearance before a judge. On the other hand, these kinds of laws may prompt schools to seek collaboration with local enforcement officials, so that enforcement efforts may be stronger or more consistent.

When enforced, school policies have been found to be associated with reduced smoking by schoolchildren. For example, both Wakefield *et al*<sup>58</sup> and Pinilla *et al*<sup>59</sup> found that enforced smoke-free policies at school were associated with reduced smoking among schoolchildren. Moore *et al*<sup>60</sup> found a significant association between greater smoking policy strength, policy enforcement, and reduced smoking prevalence among school students. In a study of 23 California schools, Pentz *et al*<sup>61</sup> found that those schools with more comprehensive policies, including a greater emphasis on prevention and a lower emphasis on cessation, had lower rates of student smoking. However, in this study, punitive consequences of policy violation had no effect. In a study using data from the 1999 and 2000 Monitoring the Future surveys, Kumar *et al*<sup>62</sup> found that close monitoring of the school smoking policy was associated with lower likelihood of daily use of tobacco in middle school but not high school students. A greater severity of consequences for infraction was unrelated to student smoking for both student groups.

To the extent that PUP laws result in less consistent monitoring of school smoking policies, school smoking policies might be less effective in reducing youth smoking. However, PUP laws might equally increase and strengthen enforcement of school smoking policies, if schools and local enforcement agencies were to work together. There is a need for research to examine the interaction between PUP laws and school smoking policies.

### Other tobacco control policies

A common concern among tobacco control advocates is that PUP laws may be passed at the expense of policies that have a greater base of evidence for reducing tobacco use. For example, the Campaign for Tobacco-Free Kids (CTFK)<sup>63</sup> indicates that in at least 12 states in 2001, state PUP laws preempt state and local tobacco control laws that are more comprehensive than those of the respective states. For example, in North Carolina, the youth access law implemented in 1995, which includes PUP provisions, removed the ability of any county, city, or other authority to enact laws or regulations relating to the sale, distribution, display, or promotion of tobacco products or wrapping papers. Mosher<sup>64</sup> contends that the tobacco industry has vigorously campaigned for PUP laws in an effort to prevent the passage of more effective tobacco control measures. This can be accomplished by both undermining existing laws, as noted by the CTFK, and by diverting policy attention from other areas of tobacco control into PUP laws. Alternatively, it may be that the path to passage of PUP laws can provoke interest by policymakers in other tobacco control policies with established effectiveness.

Kropp<sup>39</sup> suggests that PUP laws may lead youth to be less likely to seek help for trying to quit, because of the fear or

inconvenience of being penalised. To date, there has been no systematic research to examine the extent to which policy action in favour of PUP laws may be associated with weaker policy action in other areas of tobacco control (that is, higher tobacco taxes, more restrictive smoke-free policies, or less tobacco control expenditure). This kind of research would be important to provide evidence of diversion of tobacco control efforts.

### Tobacco industry profile

Critics of PUP laws argue that they reduce tobacco industry liability by laying the blame for smoking firmly at the feet of the “victims” of tobacco marketing.<sup>34</sup> Ling *et al*<sup>34</sup> argue that both STM and PUP laws have been widely supported by the tobacco industry because they reinforce the industry’s key marketing message that smoking is for adults. Kropp<sup>65</sup> argues that youth PUP laws show teens that tobacco is a “forbidden fruit”, thus making it attractive to rebellious young people.

Industry sponsored programmes such as “We Care” and “It’s the Law,” as well as laws that penalise youth for PUP, have helped the industry gain an entrée into the minds of policymakers and the public by being seen to be doing the right thing.<sup>44</sup> Links developed with retailer associations have proven invaluable in obtaining advance notice of pending legislation, and in the use of a “front group” to help dilute and delay tobacco control legislation.

As Robert Bexon from Imperial Tobacco Canada remarked, in an address to the National Association of Tobacco and Confectionery Distributors (NATCD) in Arizona in November 2000, “no matter what line of business you’re in, good friends and allies are among your most important assets and NATCD is always there for us”.<sup>66</sup> In 1990, a Tobacco Institute internal memorandum, referring to anticipated 1991 legislative action in Minnesota, indicated that a conference call had resolved that the industry should assist the Minnesota retail community in their efforts to get PUP legislation enacted. The memo revealed that the Institute would “provide our retail and legislative allies with information on the states that do provide penalties so that this information can be used in committees and floor debates”. Finally, the memo reflected: “It is arguable that legislation like this fits within the context of the industry’s youth programme. In the next few weeks, we will be doing much to educate the retail community and the general public on how seriously the industry views youth purchases of tobacco.”<sup>67</sup>

Ling *et al*<sup>34</sup> equate the tobacco industry’s vocal support of youth access programmes with their campaign to accommodate smokers and non-smokers in separate areas in response to laws that would completely eliminate smoking from indoor public venues. This adoption of a position that appears at first look to be reasonable permits the industry to portray tobacco control advocates as extremists. However, since PUP laws appear to have broad public support, and would require a complex public education effort to correct what is probably an over optimistic view of their potential to reduce youth smoking, one would need to consider the opportunity cost of public health efforts to oppose these laws.

### EFFECTS OF PUP LAWS ON YOUTH SMOKING

Lazovitch *et al*<sup>68</sup> studied 112 adolescents in Minnesota who had been cited for tobacco PUP and had the choice to either pay a fine (\$50 first offence or \$75 second offence) or attend a single tobacco education class of 2.5 hours duration with a \$25 fee, in which case the misdemeanour would be removed from their records. Of the youth surveyed, 35% elected to attend the programme. Youths attending the class were more likely than those paying the fine to report indicators of addiction (including earlier age at first use ( $p = 0.03$ ), higher Fagerstrom score ( $p = 0.03$ ), and more physical effects from smoking ( $p = 0.01$ )). At a three month follow up of 95 of the youth,

there were non-significant differences observed in the percentage who reported that they decreased their smoking frequency in the fine group (18.9%) and tobacco education class group (15.5%) and no significant changes in readiness to quit. Small sample sizes, self selection by youths into the fine or diversion class groups and lack of a non-intervention control group hamper interpretation of these results. The relatively small percentage choosing the diversion programme may indicate lack of receptivity to such an option in general or in the format provided. The authors also suggested that although youth may have participated in the class to genuinely obtain help to quit, avoidance of the fine could also have enabled their purchase of tobacco.

Langer *et al*<sup>69</sup> studied the characteristics and subsequent smoking behaviour of youth cited for PUP who appeared in a court in South Florida between January to May 1999. Once cited, the youth and parent or guardian made a mandatory appearance before a judge at a special teen tobacco court, and both then watched a video on the health effects of smoking. After this, the judge discussed tobacco use with them and ordered fines, community service, or mandated a tobacco education class for the youth. The youth was required to complete documentation of compliance. Two thirds of the 420 youths interviewed (96% response rate) at their court appearance were males and two thirds were aged 16–17 years, with the remainder being 12–15 years. At the court appearance, 16% of teens reported they had not used tobacco since being cited, 28% had used less tobacco, 52% had not changed, and 5% used more. Reported no use rates were significantly higher among younger than older teens. Two months later, a follow up interview was conducted with the 210 teens who were able to be contacted. Of these, 28% claimed to have not used tobacco since being cited, 29% said they used less, 41% had not changed, and 2% used more. At this follow up, no-use rates did not differ significantly by age group. This study was limited by the brief period of follow up; the possibility that, despite re-assurance, teens may have misreported their smoking to avoid being further penalised; and the lack of a comparison group.

Livingood *et al*<sup>70</sup> undertook a study in Florida of a statewide PUP law with differing levels of enforcement effort. They compared teen smoking attitudes and behaviours in two Florida counties with the highest level of PUP enforcement (high E), with two counties with the lowest levels of enforcement (low E), based upon records kept by the state Division of Alcoholic Beverages and Tobacco (DABT). Survey results of middle and high schools in these counties found that students in high E counties were significantly more aware of the law concerning underage possession, more aware that their licence could be suspended for smoking, more aware that they could be fined for smoking, more likely to know someone who was fined for smoking, and to know someone who had received a citation for smoking. Retail sales rates of assessment of compliance were higher in low E counties than high E counties, and students who smoked in low E counties were less likely to indicate they had bought cigarettes from stores than students in high E counties. After controlling for race and grade, being in a high E county was significantly associated with a reduced likelihood of 30 day tobacco smoking (OR 0.82;  $p < 0.05$ ). Middle school students were more likely than high school students to indicate they would be less likely to use tobacco because of possible penalties and less likely than high schools students to use it near schools for this reason. Separate regressions were not run for middle and high school students to examine the relation between enforcement condition and 30 day smoking, and the investigators did not control for possible differences in local STM laws and STM enforcement.

A methodological complication of all these studies is that, to avoid further penalty, youths may under report smoking or intentions to smoke in future, especially where laws are more strongly enforced.

In a recent controlled study by Jason *et al.*,<sup>45</sup> four towns in Illinois were assigned to enforce both sales to minors laws and tobacco PUP laws (P), and four towns were assigned to enforce only sales to minors laws (NP). Towns in each condition were matched for population size and median income before being randomised to one of the two conditions. Tobacco use among sixth, seventh, and eighth grade students was assessed over a two year period using a repeated cross sectional survey design. There was evidence of higher enforcement of the possession law in P towns. For example, in NP towns the rate of citations issued to youth was equivalent to 0.05% of residents per year cited, whereas in P towns the rate was equivalent to 0.12% of residents per year. At the two year follow up, NP towns achieved illegal sales rates in test purchases of 17% (down from a baseline of 31%), whereas the illegal sales rate of test purchases in the P towns was 4% (down from 21%), with the relative decline significantly greater for P towns ( $p < 0.05$ ). The study found that white youth in P towns had significantly ( $p < 0.01$ ) smaller increases in tobacco use than those living in NP towns, but no effects were observed for black youth (as measured by ever smoking, occasional smoking, daily smoking and days smoked in past 30 days). The different findings by race are difficult to understand and require further research. The authors reflected that the study resulted in greater vigilance of STM laws as well as increased enforcement of possession laws, so effects cannot be solely attributed to enforcement of possession laws. These findings are intriguing, however, and Jason *et al.* are undertaking a larger controlled trial to further study effects of possession laws on youth smoking.

Giovino *et al.*<sup>71</sup> obtained records of laws applying in each state and merged these data with survey data from almost 250 000 grade 8, 10, and 12 students surveyed as part of the Monitoring the Future Study for the years 1991 to 1998. Records were obtained for the presence or absence of laws pertaining to youth possession, use, and purchase and a PUP index was calculated as the sum of the number of laws in each state in a given year. After adjusting for state tobacco control expenditures, cigarette prices, strength of sales to minors, and clean indoor air laws, as well as a range of sociodemographic variables, presence or absence of possession and use laws was not associated in logit analyses with the presence of past month smoking, nor past month smoking intensity. However, there was a trend for laws penalising youth tobacco purchase to be associated with a lower likelihood of past month smoking ( $p = 0.08$ ) and a lower past month smoking intensity ( $p = 0.05$ ). In addition, a higher PUP index was associated with a lower likelihood of past month smoking ( $p = 0.04$ ) and lower smoking intensity ( $p = 0.02$ ).

Further analysis was conducted by age group and risk status (a variable constructed from answers to four questions pertaining to grade point average, truancy, nights out during the week, and religious commitment, which has previously been shown to predict uptake of smoking during teenage years).<sup>72</sup> Subgroup analyses indicated that consistent positive associations existed for purchase, use, and possession laws and the PUP index for students aged 14 years or less, who were of low to medium risk status for taking up smoking ( $p < 0.001$ ). Students aged 15 or older and those who were at higher risk of smoking uptake, with one or two exceptions, did not evidence reduced smoking.

These results suggest that PUP laws are associated with reduced smoking only among young students who have a low likelihood of taking up smoking. This pattern of findings is as would be predicted by the literature on punishment, with those who have more conventional values or strong family and social ties being easier to deter. This may be because the penalty brings the offence to the attention of other conventional people who matter to them and thereby jeopardises valued social relationships.<sup>72</sup> Further analysis will incorporate meas-

ures of enforcement, local laws rather than state laws, and examine the time since passage of implementation of the laws.

## CONCLUSIONS

On balance, there are theoretical, practical, and strategic reasons why PUP laws may be unlikely to significantly reduce youth smoking at the population level. In theoretical terms, PUP laws lack a number of important features required for punishment to be effective in changing behaviour. The laws have a low likelihood of detection and uncertain punishment, a relatively long time delay between the offence and the punishment, a substantial potential for active avoidance of detection, and a relatively distant and impersonal relationship between the punisher (the state) and recipient (the youth). However, these effects may not be equal across all youth: younger and more conventional youth may be more responsive, while older and more marginal youth may be less responsive. Research is needed that is designed to determine under what circumstances and for which subgroups of youth PUP policies may be more or less effective in reducing smoking.

In practical terms, there are two key issues. Some have pointed out the difficulty of detecting and enforcing transgressions in terms of the manpower resources that would be required, although others note that the police can and do use this kind of contact as an opportunity to investigate other issues. It is unclear to what extent these laws have been enforced and thereby provide a true test of whether PUP laws can be effective in reducing smoking, through general (changing social norms), as opposed to specific (individual change), deterrent effects. The second issue is that smoking is addictive and so, for many youth, stopping smoking is difficult. There may be better models for structuring the education or cessation programmes offered as an alternative to a fine, if the goal of these programmes is to reduce smoking among those who attend them. Conceptually, there is potential for PUP laws to undermine conventional avenues of discipline such as the parent-child relationship and the school environment. On the other hand, under some circumstances, these laws could reinforce these relationships and research is needed to identify, as opposed to undermining, beneficial models of policy enforcement. Strategically, PUP laws may divert policy attention from effective tobacco control strategies, relieve the tobacco industry of responsibility for its marketing practices, and reinforce the tobacco industry's espoused position that smoking is for adults only. However, these laws seem popular and there will be an opportunity cost for the time and complex public education effort it would take to oppose them.

Overall, there are only a handful of empirical studies relating PUP laws to change in youth smoking. Based on these studies, it is difficult to conclude there are strong positive effects from PUP laws. Some of the studies suggest small effects for some subgroups, such as low risk younger students. However, in assessing the value of PUP laws, it is important to consider the net effects of these laws, rather than focusing upon one positive or negative aspect.

## Issues for further research

- To what extent are PUP laws enforced by states and at the local level?
- Are there different effects of PUP laws depending upon whether they offer educational or community service penalties rather than fines? To what extent do any effects apply only to those who receive the fine or penalty (specific effects), as opposed to youth in these communities in general (general effects)?
- How can media advocacy efforts be used to enhance the general deterrent effects of PUP laws and their enforcement efforts?



- What are the effects, especially in relation to their costs, of the diversion programmes frequently offered as alternative consequences for PUP offenses?
- Are there different effects on youth smoking related attitudes and behaviour associated with different kinds of diversion programmes? How might research on youth cessation strategies inform the development of diversion programmes?
- To what extent is stronger enforcement of PUP laws associated with greater or lesser quitting activity among teens who already smoke? Given the possibility that youth may be less likely to admit to smoking and seek assistance to quit, to what extent is there evidence of lower use of formal methods for quitting by youth, in states with active enforcement of PUP laws?
- To what extent, and under what circumstances, might tobacco PUP laws be associated with stronger or weaker enforcement of school policies and parental controls on smoking?
- To what extent have PUP laws diverted attention from tobacco control strategies clearly shown to be effective in reducing population smoking, including youth smoking? Have states with PUP laws been less inclined or slower to adopt higher tobacco taxes, or stronger clean indoor air legislation, and do they spend less on tobacco?
- What kind of messages do youth take away from PUP laws? Are youth in states/regions with strongly enforced PUP laws more likely to believe smoking is “an adult thing” or “an uncool thing” to do? Are youth attitudes about smoking influenced by the introduction of an enforcement of PUP laws? Among which youth subgroups (age and risk status) is attitude change most likely?

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