

7. Women and Smoking in Central Asia

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Introduction

Smoking is the biggest preventable cause of death and disease burden worldwide. Smoking affects almost every part of the body negatively (WHO 2023). It is not only responsible for the majority of lung cancers but has been linked to cancers in the larynx, oral cavity, oesophagus, pancreas, bladder, stomach, colon, rectum, liver, and other organs. It is also responsible for many cases of ischaemic heart disease and increases the risk of heart attacks and strokes. Smoking during pregnancy significantly increases the risk of pre-term delivery and stillbirth and is linked to low birthweight, increased birth defects, and birth complications (Bernstein et al. 2005; Hackshaw et al. 2011; Jaddoe et al. 2008). It is also associated with negative long-term health outcomes for the baby, such as asthma, breathing problems, and learning difficulties in later life (Banderali et al. 2015). In addition to the smoker's offspring, smoking also negatively affects everyone in the proximity of the smoker: at least 1% of all deaths worldwide are caused by second-hand smoke (Öberg et al. 2011).

While tobacco use is declining globally, this decline is especially steep in certain parts of the world, while there is little decline in others and within certain populations. More specifically, in the past two decades, the steepest decrease in smoking levels has been seen in high sociodemographic index (SDI) countries, whilst the decline has been much smaller or non-existent in low and middle SDI countries. According to the World Health Organization (WHO), today around 80% of the 1.3 billion tobacco users worldwide live in low- and middle-income countries. The decrease in smoking levels in high SDI countries has mostly been driven by a decrease in male smoking, whilst the decrease in female smoking has been less pronounced (WHO 2021).

Smoking behavior is strongly patterned by gender: it is more common in males than in females in all regions of the world. This has arguably led to the problem of female smoking flying somewhat under the radar of public attention and healthcare efforts (Amos 1996). However, smoking is a

high-risk behavior for women: the annual number of female deaths caused by smoking-related diseases is more than two million. The viewpoint that female smoking is a significant health hazard that warrants specific and tailored research and intervention has been a topic of public interest for a while, with the WHO calling for ‘a tailored approach to tobacco control that engages with the challenges faced specifically by women’ (WHO 2008). However, the implementation into health care is slow. This slow-rising interest in female smoking from the public health sector is in stark contrast to the long-standing activities of transnational tobacco companies to recruit women as customers using targeted strategies (Amos/Haglund 2000). Especially in the light of decreased smoking rates in high SDI countries, the tobacco industry is believed to view women and girls in low-income countries as a largely untapped market and a primary target group (Feeny et al. 2021).

In the context of Central Asia, this poses questions about the current state of smoking in women in the region and how the risk of female smoking might develop in the coming years. Given the limited amount of in-depth data on smoking behaviors in the region, especially in women, we are going to approach this topic by illustrating: 1) the specific risks smoking poses to the health of women; 2) known tobacco industry tactics on how to establish and enhance female smoking in a population; 3) the current state of female smoking in Central Asia, using the framework of the Tobacco Epidemic Model; and 4) a summary of current tobacco control efforts in the region.

Smoking and Women

Women have a higher risk of dying from tobacco smoke-related diseases than men. This is due to both sex and gender factors. In the following we will refer to ‘sex’ as the biological sex that is assigned to a person at birth based on recognizable physical characteristics, and to ‘gender’ in terms of social gender or gender identity and social gender roles. Both play a role in the increased risk for women who smoke cigarettes or are subjected to cigarette smoke.

Firstly, women are believed to have a higher biological sensitivity to the toxic substances contained in tobacco smoke than men, both from direct and second-hand smoke. This means that the same amount of nicotine might lead to greater risk of harm in females than in males (Prescott

et al. 2002). Female smokers also are believed to possess a higher risk of developing cardiovascular disease as well as certain cancers, such as bladder cancer, than male smokers (Castelao et al. 2001; Gallucci et al. 2020). The negative effect of nicotine on estrogen production has been suggested to be responsible for some of these findings, given the differences in function of this hormone in women compared to men (Ruan/Mueck 2015). Furthermore, women have a greater risk for a worse prognosis and higher mortality for tobacco-related cardiovascular diseases than men (Gao et al. 2019).

In addition to these biologically determined risks, gender-specific factors often lead to poorer treatment for women. According to the World Health Organization (2021), healthcare systems are geared towards treating men, which means that women are less likely to receive treatment tailored to their needs (WHO 2021). For example, due to their lack of representation in clinical trials, women have a higher risk of developing adverse reactions to most smoking cessation medications. Another example of an increased risk due to gender-specific factors is the fact that contraception is still mainly seen as a woman's responsibility: the contraceptive pill usually contains estrogen and the risk of suffering a stroke increases sevenfold and the risk of a heart attack twentyfold in smokers who take additional estrogen (Bousser/Kittner 2000).

In addition to greater direct health risks from smoking, women who smoke often have greater difficulty to quit than men. This applies to both unassisted attempts to quit smoking as well as attempts with therapeutic or pharmacological support (Smith et al. 2016). The reasons for this are still unclear. Some studies have shown that women are more likely to smoke in order to cope with stress, which could be an additional barrier to quitting if no alternatives for dealing with stress are offered (Torchalla et al. 2011). Research also suggests a lower physical dependence on nicotine and a stronger dependence on smoking-related stimuli in women compared with men, such as the smell of smoke or the ritual act of smoking itself. In this case, classic nicotine replacement therapy, such as a nicotine patch or gum, would not substitute the main drive for smoking and would thus be less effective (Perkins 2001). Furthermore, women are more likely to suffer from depression than men, which is known to be a barrier to successful smoking cessation.

It is clear that women need tailored methods to change their smoking behavior (Smith et al. 2017). In terms of medical treatment, some achievements have been made: it was found that while there is no major difference

in efficacy between the drugs bupropion and varenicline for smoking cessation in men, the efficacy of varenicline in women is significantly greater than that of bupropion (Smith et al. 2015). This finding is now part of smoking cessation guidelines in many countries. It furthermore shows that the targeted investigation of gender-specific differences in smoking cessation can have important real-world consequences.

Smoking during pregnancy bears a high risk for both the baby and the mother. It can increase the risk of ectopic pregnancy, miscarriage, birth complications, stillbirth, low birthweight, and sudden unexpected death in infancy, as well as potentially cause cognitive and developmental disability in later life in the offspring, thus adding to the risks associated with female smoking. Apart from this, probably no other group of smokers experiences greater stigmatization than pregnant women who smoke (Flemming et al. 2013; Loyal et al. 2022; Wigginton/Lee 2013). Discriminatory behavior towards pregnant smokers, however, has the potential to cause distress and hinder smoking cessation (David et al. 2023).

The Tobacco Industry and Women

Since the 1920s, women have been on the radar of the tobacco industry as a desirable consumer base. Before this time, smoking was long considered a behavior of morally loose women in North America and Europe, closely associated with prostitution (Greaves 1996). The introduction of mass-produced cigarettes at the turn of the twentieth century changed the tobacco market and the importance of the tobacco industry entirely and led to a rapid increase of smoking in men. Tobacco companies started advertising their products aggressively, often using images of attractive young women. At this time, however, this was mainly to entice male customers, rather than to attract females to take up smoking, even though showing women in the advertisements without marketing directly to women might have already been a way to raise the interest of females in smoking (Brandt 1996).

An overt interest in females as potential customers only started to develop when, during World War I, women began to challenge traditional gender roles anyways. In the context of women trying to achieve voting rights, labor equality, and the right to be able to partake in (at the time) male-only everyday privileges such as playing sports and wearing trousers, smoking also became a symbol of previously male-only privileges that women were now claiming for themselves. The tobacco industry responded

to this trend by providing potential (female) customers with new, and in some ways opposing, images of female smokers, and rebranding female smoking away from loosely moral behavior to more desirable properties: one was the idea of branding smoking as a means to increase beauty and youthfulness, for example as a weight control measure. One of the first targeted ad campaigns was Lucky Strike's 'Reach for a Lucky instead of a sweet' in 1925 (Amos/Haglund 2000). After this, Lucky Strike became the bestselling brand for several years. Even the invention of the filter was originally to make the cigarette more appealing to women (Houghton et al. 2020). Later on, red filters were invented to hide potentially embarrassing lipstick stains. This was followed by slim cigarettes, slim cigarette packages, and scented cigarettes, all to make the cigarette more appealing to the female consumer.

The other major strategy was to brand smoking as a new symbol for female independence. The most famous campaign selling this idea was the 'Torches of Freedom' campaign that was launched by Edward Bernays in 1929, when women were hired to publicly smoke during the Easter Day parade in New York City (Amos/Haglund 2000). Whether the actual campaign caused as much of a media frenzy as Bernays claimed later is debated today; however, at this point it would have been obvious to anyone in the industry that adapting advertising strategies to specific target audiences works especially well for selling cigarettes (Topić 2021). And indeed, the two strategies detailed above seem to be the blueprint for many of the female-targeted smoking campaigns that were to follow worldwide: smoking as a way to be more attractive (to men) and smoking as an expression of personal freedom.

The latter was especially obvious in post-Soviet Union countries throughout the 1990s. Tobacco companies quickly zeroed in on women in the region with targeted advertisements alluding to the freedom of a Western way of life, with slogans such as 'Test the West' or 'Lady's first' in Hungary, or connecting smoking with Western imagery associated with freedom, such as motorbikes for women in the Czech Republic (Amos/Haglund 2000). In much of the region, smoking rates doubled in women during the 1990s. Similar strategies - linking smoking with empowerment and other aspirations - are still used today, for example in India and numerous African countries (Feeny et al. 2021).

Apart from being quick to adjust to monumental societal changes in different countries and benefitting from this as detailed above, the tobacco industry is also quick to adjust to slower changes within markets. In the

1980s, with growing concerns about the negative health effects of cigarettes, the number of more highly educated smokers was declining the US and other higher SID countries. This is a trend that has continued until today, with the biggest proportions of smokers in higher SDI countries having a lower socio-economic status (SES). A meta-analysis found that the specific targeting of lower SES women in the US started as early as the 1970s. Strategies to expand within this customer base included lowering the price of cigarettes, the use of non-tobacco products to gain access to new markets (i.e. coupons and the like), and even financial service products: Phillip Morris invented a prepaid debit card for the 'unbanked', who were mainly female and with a below-average education (Brown-Johnson et al. 2014).

Apart from promoting female empowerment through slogans, the tobacco industry also has a history of inserting itself into empowerment projects, gender equity campaigns, or anti-youth smoking campaigns (Feeny et al. 2021).

It needs to be stressed that the industry uses many, often contradictory strategies to advertise their products to women. Next to female empowerment, stereotypes and gender norms are often at the core of the messaging, such as the alleged female desire to not embarrass oneself with the unpleasant smell of cigarette smoke or a preference for sweet flavors and floral packaging.

Even though there is good evidence of the strategies the tobacco industry uses to target women in some post-Soviet Union countries, little is known about these strategies in Central Asia. In the following sections we are going to try to gauge whether the tobacco industry might view women in the region as a potential target, by looking at the prevalence of smoking using the Tobacco Epidemic Model.

The Tobacco Epidemic Model

The most widely accepted model of the temporal development of the tobacco epidemic is the Tobacco Epidemic Model, developed by Lopez et al. (1994). The model was originally based on the development of the smoking epidemic in high-income countries over the 20th century but has since been adapted to incorporate evidence from low- and middle-income countries (Thun et al. 2012). Lopez et al. proposed that the tobacco epidemic develops within a population over the course of decades in four distinct stages and presents differently in males and females. The first stage (also called

the 'incipient stage') is marked by very low smoking rates in a population (less than 5% in females and less than 15% in males) and the widespread uptake of the smoking habit in males. Smoking-related deaths are very low. In the second phase, smoking uptake in men increases to a prevalence of anywhere between 15%–65% and within this phase does not decline by more than 10%. Women start taking up smoking too, and prevalence for women increases to anywhere from 5%–45% and does not decline by more than 5% within this phase. An increase in smoking-related death is seen but awareness of the dangers of smoking might still be underdeveloped. Stage three is considered the turning point, where smoking rates in men start declining by at least 10% or more, since knowledge about the health risks of smoking might be well known and smoking-related deaths will have risen to about 25%–30% of all deaths in men. Smoking rates among women start declining towards the end of this phase by at least 5%. In the fourth stage, smoking-related deaths in men peak early, peaking a couple of decades later in women. Smoking rates in males are under 25% and decline by at least 10%. In women, smoking prevalence is under 20% and decline by at least 5%.

The Tobacco Epidemic Model illustrates the difficulty in communicating risks associated with smoking due to the time lag between the widespread uptake of smoking and its full effect on the population's mortality.

In the following section we will classify the development of female smoking behavior according to this model in Kazakhstan, Kyrgyzstan, and Uzbekistan. We will furthermore summaries how transnational tobacco companies gained a foothold in the region after the collapse of the Soviet Union and what tobacco control looks like in these countries today.

Kazakhstan

The Tobacco Industry in Kazakhstan

As with other newly independent states after the collapse of the Soviet Union, Kazakhstan ended up with a state-owned tobacco industry that was on the verge of collapsing as centrally funded subsidies for growers and producers were not available anymore. This provided an opportunity for transnational tobacco companies to expand, which they swiftly took advantage of. The tactics used by British American Tobacco (BAT) in particular to enter the new markets of former Soviet Union countries, first

by establishing imports and then by setting up a manufacturing presence, are clearly detailed in two studies (Gilmore/McKee 2004a; Gilmore/McKee 2004b). In Kazakhstan, Phillip Morris managed to establish a market share of 70% between 1990 and 2000. During this time, 4% of all foreign direct investments (FDI) to Kazakhstan were made by the tobacco sector and the production capacity for cigarettes doubled.

Currently, the Kazakh cigarette market is dominated by Phillip Morris and Japan Tobacco International, both of which have factories in the Almaty region. In 2016 20 billion cigarettes were produced in Kazakhstan (Drope et al. 2022).

Women and Smoking in Kazakhstan

According to the 2023 WHO report on the global tobacco epidemic, 38.5% of males and 7.7% of females were smoking cigarettes (WHO 2023). Smokeless tobacco use and e-cigarette use was below 3% in both males and females. Between 2000 and 2020, the prevalence of cigarette smoking decreased by less than 10% in males in Kazakhstan and did not change significantly in females (Dai et al. 2022). A further study comparing results from two representative surveys in 2001 and 2010 came to the same conclusion (Roberts et al. 2012). However, a survey of 1,201 adults conducted in 2021 found a prevalence as high as 10% among female smokers (Glushkova et al. 2023). According to the Tobacco Epidemic Model, Kazakhstan is in the second stage of the epidemic. There is a lack of research investigating smoking among Kazakh women, which needs to be addressed. This is especially important given the potential increase measured in the most recent survey.

Tobacco Control Policies in Kazakhstan

Kazakhstan has implemented a range of tobacco control policies, more than its neighboring countries, but important policies are still missing. The following areas are mandated to be smoke-free: healthcare facilities, educational facilities, universities, government facilities, and indoor offices, as well as public transport. However, there are no smoking bans in bars and restaurants. Furthermore, there are no funds designated to enforcing these bans. Nicotine replacement therapy (NRT) and other smoking cessation

aids are available and partially covered by public healthcare. There is no national smoking quit line (a nationally advertised and funded telephone hotline that smokers interested in quitting can get advice from). Tobacco packaging regulations mandate a graphic label and coverage of 65% of the package. Kazakhstan is the only country of the three countries discussed here that has run national mass media anti-tobacco campaigns including target audience research, process evaluation to assess implementation, etc. The overall score of Kazakhstan on the Tobacconomics Cigarette Tax Scorecard is 2.63 out of five possible points. The Scorecard assesses the price, change in affordability, tax share, and structure of cigarettes in a given country. According to this rating, the price of cigarettes is too low, the change in affordability is moderate, the tax share of the price is moderate, and the tax structure is good (e.g. reliance on uniform specific excise taxes that are adjusted to outpace growth and inflation). The overall ad ban compliance for tobacco advertising is 65% (Drope et al. 2022).

In July 2024, the sale and distribution of e-cigarettes, vapes, and liquids was banned, as was the use of them in undesigned areas.

Kyrgyzstan

The Tobacco Industry in Kyrgyzstan

Transnational tobacco companies also managed to gain footing in Kyrgyzstan after the collapse of the Soviet Union. By 2000, the tobacco company Reemtsma had secured a position as one of the country's major investors. Cigarette production capacity increased tenfold in this period (Gilmore/McKee 2004a; Gilmore/McKee 2004b). However, in 2014, Reemtsma decided to close production in Kyrgyzstan. This was partially due to its capacity being in excess of its production needs, but also due to Kyrgyzstan joining the Eurasian Customs Union, which freed cigarettes imported from the Union of customs duty. Today the biggest exporters of cigarettes to Kyrgyzstan are Kazakhstan, Russia, the United Arab Emirates, and Uzbekistan (Drope et al. 2022).

Women and Smoking in Kyrgyzstan

According to the 2023 WHO report on the global tobacco epidemic, 2.7% of females and 48.2% of males are smokers in Kyrgyzstan (WHO 2023).

Smokeless tobacco use and e-cigarette use was almost non-existent in females (0.1%) and at 10% in males. There is some evidence for an increase in smoking rates among women in the past decades. Dai et al. present changes in age-standardized prevalence, drawing from a meta-analysis of population data, which show a significant increase for females and males in Kyrgyzstan between 2000 and 2020 (Dai et al. 2022). Given the overall low prevalence of female smoking, the magnitude of this increase needs to be considered small. Still, it is one of the very few countries worldwide in which, during this time frame, female smoking has significantly increased at all. One study comparing results from two surveys in 2001 and 2010 also found an increase in female smoking from 4.5% to 5.9%; however, this was not significant (Roberts et al. 2012). According to the Tobacco Epidemic Model, female smoking is in the incipient stage in Kyrgyzstan, as prevalence is still below 5%. However, male smoking is much higher than 15% and thus can be considered to be in the second stage of the Tobacco Epidemic Model.

Tobacco Control Policy in Kyrgyzstan

Although Kyrgyzstan has implemented tobacco control policies, many avenues for curbing tobacco use are still untapped. The following areas are mandated to be smoke-free: healthcare facilities, educational facilities, universities, and government facilities. There are specific funds in order to enforce these bans. However, there are no smoking bans in indoor offices, restaurants, pubs and bars, or public transport. NRT and other smoking cessation aids are available and partially covered by public healthcare. A national tobacco quit line has been established. Tobacco packaging regulations mandate a graphic label and coverage of 50% of the package. No tobacco control mass media campaigns have been run in Kyrgyzstan. The overall score of Kyrgyzstan on the Tobacconomics Cigarette Tax Scorecard is 3.50 out of five possible points. According to this, the price of cigarettes is relatively low, the change in affordability can be considered good (less affordable), the tax share of the price is moderate, and the tax structure is good (e.g. reliance on uniform specific excise taxes that are adjusted to outpace growth and inflation). The overall ad ban compliance for tobacco advertising is 45% (Drope et al. 2022).

As in Kazakhstan, the parliament passed a bill banning the sale and distribution of e-cigarettes, vapes, and liquids, as well as the use of them in undesignated areas in 2024.

Uzbekistan

The Tobacco Industry in Uzbekistan

British American Tobacco managed to achieve a market share of 70% by 1999, securing a monopoly position in Uzbekistan. Its investment at the time accounted for one third of all FDIs made in Uzbekistan. How BAT managed to achieve monopoly status and the favorable treatment of the government is laid out in detail by Gilmore/McKee (2004a/b). Locally produced cigarettes are most commonly used in the country. The share of imported cigarettes is only around 5%. In 2016, 11 billion cigarettes were produced in Uzbekistan (Drope et al. 2022).

Women and Smoking in Uzbekistan

According to the 2023 WHO report on the global tobacco epidemic, less than 1% of females and 13% of males are smokers in Uzbekistan (WHO 2023). The prevalence of cigarette smoking did not change significantly in females or males between 2000 and 2020 (Dai et al. 2022). However, in Uzbekistan, smoking cigarettes is not the only major way to consume tobacco. The traditional use of Nasway, a chewing tobacco made of tobacco, butter, and slaked lime, is likely as prevalent or even more prevalent than cigarettes. A study from 2011 estimated Nasway use among 1,795 men at 22% and cigarette use at 20% (Usmanova et al. 2012). Co-use of the two products was found to be common, too. There is a lack of research on smoking in females, mainly because smoking prevalence is estimated to be very low. The authors furthermore suggest that it could be the use of Nasway that keeps prevalence of cigarette use relatively low, despite strong efforts from the industry to target the Uzbek market. According to the Tobacco Epidemic Model, female smoking is in the incipient stage in Uzbekistan, as prevalence is still below 5%. However, male smoking is at around 20% and can thus be considered to be in the second stage of the Tobacco Epidemic Model.

Tobacco Control Policy in Uzbekistan

Uzbekistan has implemented some tobacco control policies; however, many of the common tobacco control policies have not been implemented yet. There is only one area that is mandated to be smoke-free, which is public transport. Healthcare facilities, educational facilities, universities, government facilities, indoor offices, restaurants, and pubs and bars do not have smoking bans. There are furthermore no specific funds allocated to enforce smoking bans. NRT and other smoking cessation aids are available and partially covered by public healthcare. A national tobacco quit line has not been established. Tobacco packaging regulations mandate a graphic label and coverage of 40% of the package. No tobacco control mass media campaigns have been run in Uzbekistan. The overall score of Uzbekistan on the Tobacconomics Cigarette Tax Scorecard is 1.88 out of five possible points. According to this, the price of cigarettes is too low, the change in affordability can be considered good (less affordable), the tax share of the price is moderate, and the tax structure is considered bad (e.g. little reliance on uniform specific excise taxes that are adjusted to outpace growth and inflation). The overall ad ban compliance for tobacco advertising is not known (Drope et al. 2022).

Discussion

Drawing all the preceding evidence together, it becomes clear that data on smoking in Kazakhstan, Kyrgyzstan, and Uzbekistan is scarce, especially in women. The data we do have show that female smoking in the region has historically been—and continues to be—uncommon, with all countries being at the first stage of the Tobacco Epidemic Model for females. This is likely partially due to the relatively strong conformity to traditional gender roles in the region and the idea that smoking is not for women. However, there is some evidence that this might be changing in both Kyrgyzstan and Kazakhstan as some data is suggestive of an increase in female smoking. In a recent meta-analysis of population data, Dai et al. described Kyrgyzstan as one of the few countries where smoking rates in women had actually increased (Dai et al. 2022). This increase was likely of small magnitude, but it is an alarming finding nonetheless as an increase in female smoking was only found in nine other countries worldwide in this meta-analysis during that time. In Kazakhstan, a survey conducted in 2021 found a smoking

rate in women of 10%, which is higher than the generally estimated 7% (Glushkova et al. 2023). Both of these findings indicate that smoking in females might become more common in these countries. In Uzbekistan, considered the most conservative of the three countries, female smoking rates do not seem to have changed, but it should also be taken into account that data on this are also very hard to come by.

It is hard to estimate at the current point in time if and in how far female smoking will increase in the region. However, if the opportunity presents itself, be it because of a change in the traditional role of women or a trend towards novel tobacco products, the tobacco industry will not wait to capitalize on this. Anti-tobacco laws exist in all three countries but leave out some important measures, and only in Kyrgyzstan is a specific budget allocated for the enforcement of these laws.

The fact that an outright ban of e-cigarettes was decreed in both Kyrgyzstan and Kazakhstan in 2024 is a potentially alarming indicator of an increase in smokers, including women. It is currently not easy to judge what determined this decision, but there are several explanations at hand: it could point to a fairly strong involvement of the tobacco industry in political decision-making, as banning tobacco-free e-cigarettes will likely tie their consumers more closely to their tobacco-containing products. Evidence in this direction could be seen in the fact that while e-cigarettes were banned, smokeless tobacco heaters - arguably the more dangerous of these two relatively novel nicotine delivery devices, as tobacco is still involved - are not subjected to this ban. Another explanation might be the fear of the initiation of smoking in groups in which smoking rates are currently still relatively low, such as children and women. There is indeed some evidence that e-cigarettes are more appealing to women. However, in this case, it is still unclear why tobacco heating devices do not fall under this ban. The official explanation is the fear of dangerous counter banned products currently flooding the market. But again, this cannot explain the exclusion of tobacco heating devices from this ban.

This recent development is a stark reminder that we cannot assume that the current low smoking rates mean that tobacco control is unnecessary in a population or, as Dai et al. put it in their 2022 paper on the evolution of the global smoking epidemic, ‘The large number of countries where female smoking is low could well follow the transition observed for men unless important lessons are learnt and applied about smoking disincentives for women.’

More fine-grained data on smoking in different subgroups of the region's population are urgently needed, including data on attitudes towards smoking in these subgroups, as well as sufficient funds to enforce smoking cessation bans.

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