RESEARCH PAPER

Physician assessment of patient smoking in Indonesia: a public health priority

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Received 14 October 2006 Accepted 14 December 2006 **Objective:** To explore Indonesian physician's smoking behaviours, their attitudes and clinical practices towards smoking cessation.

Design: Cross-sectional survey.

Setting: Physicians working in Jogjakarta Province, Indonesia, between October and December 2003. **Subjects:** 447 of 690 (65%) physicians with clinical responsibilities responded to the survey (236 men, 211 women), of which 15% were medical faculty, 35% residents and 50% community physicians.

Results: 22% of male (n = 50) and 1% of female (n = 2) physicians were current smokers. Approximately 72% of physicians did not routinely ask about their patient's smoking status. A majority of physicians (80%) believed that smoking up to 10 cigarettes a day was not harmful for health. The predictors for asking patients about smoking were being male, a non-smoker and a medical resident. The odds of advising patients to quit were significantly greater among physicians who perceived themselves as sufficiently trained in smoking cessation.

Conclusions: Lack of training in smoking cessation seems to be a major obstacle to physicians actively engaging in smoking cessation activities. Indonesian physicians need to be educated on the importance of routinely asking their patients about their tobacco use and offering practical advice on how to quit smoking.

obacco use is one of the greatest causes of preventable deaths and disease in human history. According to the World Bank, four-fifths of the world's 1.1 billion smokers live in low-income or middle-income countries.1 East Asian and Pacific countries currently account for about 38% of the world's smokers and men, especially those aged 30-49 years, account for about 80% of these smokers.2 In Indonesia, 59% of male, but only <5% of women, smoke.3 Notably, the rates of tobacco use, especially among adolescents and young adults in East Asia, continue to rise.1 Although reliable national data are unavailable for Indonesia, estimates in 2004 showed a high incidence rate of tobacco-attributable mortality and morbidity.4 For example, in 2002, the International Agency of Research on Cancer Globocan estimated that the age-standardised mortality of respiratory tract cancer in Indonesia among men was 68.5 per 100 000 population, but that among women was only 21.5 per 100 000 population.⁵

Nations such as Indonesia continue to bear significant health and socioeconomic burdens associated with tobacco use, primarily due to aggressive tobacco industries marketing and the slow progress in tobacco control activities resulting from a strong dependency of the national economy on the tobacco trade. To reduce the economic and health burden from cigarette smoking, effective measures for smoking cessation and tobacco control are clearly needed. Public health education, and governmental policies such as taxation on sales and restrictions on advertisement may serve as useful tools to limit the use of tobacco products. Currently, such measures are lacking in Indonesia.

Smoking behaviour and attitudes towards smoking cessation by healthcare providers in Western countries have been studied extensively.9-11 Research findings suggest that asking about smoking and offering advice about cessation help smokers quit.12-16 Of equal importance is the observation that the smoking status of healthcare providers may influence their

willingness to offer smoking cessation advice to smokers.¹⁶ ¹⁷ Unfortunately, limited research is available on non-Western countries in regard to behaviours, perceptions and attitudes towards smoking among physicians and other healthcare providers.¹⁶ ^{18–20}

Understanding the attitudes of health professionals towards cessation of tobacco use is an important early step in the development of a country's comprehensive anti-tobacco initiative. This step is especially important in countries like Indonesia, where there are few anti-tobacco initiatives and physicians play a particularly important role as opinion leaders and role models. To understand physician's attitudes towards tobacco, we conducted a survey of physicians to explore a range of issues including smoking behaviours, and their attitudes and clinical practices regarding smoking.

METHODS

Study overview

This study was conducted as part of Quit Tobacco International (www.quittobaccointernational.net): a multi-country (India, Indonesia and US) research project.²¹ The main focus of the parent project is to build tobacco cessation research capacity in India and Indonesia. The Indonesian research team consisted of an anthropologist, a psychologist and a physician. The institutional review boards of the Faculty of Medicine, Gadjah Mada University and the collaborating US institutions (University of Minnesota, University of Missouri—Kansas City and the University of Arizona) approved the study.

A cross-sectional survey was conducted among physicians with primary clinical responsibilities including direct patient contact in Jogjakarta Province, Indonesia, from October 2003 to December 2003. It measured the attitudes, beliefs and smoking behaviours of three groups of physicians: (1) medical school faculty at the Faculty of Medicine, Gadjah Mada University; (2)

residents at the Dr Sardjito Provincial General Hospital; and (3) community physicians working at the Public Health Centre, District Hospital, District Lung Clinic and District Health Office in Jogjakarta Province, Indonesia. Each institution provided a list of physicians and their contact information.

Physicians, with the exception of residents, were recruited individually by research assistants. Residents were recruited after one of their regular clinical sessions. The study was explained and consent was obtained before the enrolment of participants in the study. Research staff provided a copy of the questionnaire to each participant and collected it on completion.

To verify the accuracy of physicians' self-reports of their asking about and advising patients to quit smoking,²² we conducted exit interviews with patients attending the outpatient clinics of four public health centres serving large outpatient populations.

Measures

A culturally sensitive survey instrument was developed for use with physicians in Indonesia. To ensure some degree of comparability with global data, we used some standardised questions on smoking frequency. However, most of the survey questions on physicians' attitudes, behaviours and practices were developed from formative research involving interviews and observations of physicians' tobacco use.²¹ This paper reports on a subset of items contained in the questionnaire. The survey instrument was piloted in September 2003, 1 month before the survey administration.

To determine smoking status, participants were asked "About how many cigarettes have you smoked in your entire life?" and "During the past 30 days, on how many days did you smoke one or more cigarettes?" Never smokers were defined as those who had never smoked, not even a puff of a cigarette. Former smokers were defined as those who smoked >100 cigarettes during their lifetime but had not smoked during the preceding 30 days. Experimental smokers were defined as those who had smoked <100 cigarettes in their lifetime and had not smoked during the preceding 30 days. Current smokers were defined as those who smoked during the preceding 30 days regardless of the numbers of cigarettes they had smoked during their lifetime.

The survey instrument measured participants' perception of harm of smoking by asking "In your opinion, how many cigarettes a day is it okay to smoke before being harmful for health?" Confidence in assisting patients to quit smoking and perceived training needs were assessed by the following questions:

- Do you feel that you have sufficient training or experience to help people quit smoking?
- Would you be interested in receiving training in counselling skills to help people stop smoking?

The main outcomes of interest, physicians' propensity to ask and advise patients about smoking, were assessed through the following questions:

- During a consultation, do you ask patients whether they smoke?
- What kinds of patients do you ask about their tobacco habit?
- What kinds of patients do you usually advise not to smoke?
- In the last year, how many patients have you advised to give up smoking?
- In your opinion, what percentage of patients who received your advice actually quit smoking?

• In your opinion, are health professionals in the public sector the appropriate people to help patients quit smoking?

Data analysis

A data entry specialist entered the survey information into the database in EpiInfo V.6.04. To ensure accuracy, 10% random samples of the data were cross-validated by the data entry specialist and research assistants. Stata V.8 was used for statistical analyses. Outcome variables were "asking about smoking" and physicians "giving advice to quit smoking". Univariate and multivariable logistic regression analyses were performed to identify which variables best predicted the outcomes of interest. p Values <0.05 were considered significant.

RESULTS

The questionnaire was distributed to 690 physicians. The overall response rate was 65%, and ranged from 43% among medical school faculty to 85% among community physicians. Of 447 respondents, 53% were male (47% female) and 15% were medical school faculty (35% were residents and 50% were community physicians). The medical school faculty were older (median age faculty 50 years vs resident 33 years vs community 35 years).

Physician surveys

Female physicians were analysed separately because cultural restriction on female smoking in Indonesia was expected to result in significantly different responses from them. Smoking rates were higher among male physicians (current smoker: $n = 50 \ (21.7\%)$ vs $n = 2 \ (1.0\%)$, p = 0; ever smoker: $n = 155 \ (67.1\%)$ vs $n = 15 \ (7.1\%)$, p = 0). There were no significant differences between the three groups of physicians. Female physicians were more likely to perceive smoking as harmful (median cigarettes per day considered harmful: 5 (medical school faculty three, residents five and community physicians five) vs 10 (all groups of male physicians)).

Assessment of patient smoking status

About 72% of physicians did not routinely ask about their patient's smoking status. Overall, male physicians were more likely than female physicians to assess their patients' smoking status (34.2% vs 21.2%, p=0.002). However, female physicians were more likely to ask certain categories of patients about their smoking status—namely, those who had cancer, oral problems, or were known to have a pregnant wife and/or young children at home. Community physicians, both male and female, were the least likely group of physicians to inquire about their patients' smoking status (table 1).

Advice to quit smoking

Male and female physicians were equally likely to advise their patients to quit smoking (table 2), except when a patient had a pregnant wife and/or young children at home—in which case, female doctors were more likely to offer advice. Male physicians were more likely to assume that their patients had quit smoking after being advised to do so: a perception more common among medical faculty physicians than community physicians (table 2).

Training for smoking intervention

Female physicians were more likely to perceive themselves as having insufficient training or experience to help people quit smoking: 3.3% females (95% CI 0.9% to 5.7%) vs 12.1% males (7.9% to 16.3%), p = 0.001. Although all physician groups were similar with respect to their perception of adequacy in being able to help people quit smoking, community physicians

	Medical school faculty		Residents		Community physicians	
	Male n = 44		Male n = 95	Female n = 60	Male n = 97	Female n = 127
Assessment of smoking status						
Do you ask patients whether they smoke?						
Never	18.2	8.7	6.5	8.5	4.1	3.2
Occasionally	50.0	56.5	50.5	64.4	69.1	81.0
Almost always	22.7	17.4	29.0	20.3	18.6	14.3
Always	9.1	17.4	14.0	6.8	8.2	1.6
What kinds of patients do you ask about their smoking status?						
Only smokers	26.3	33.3	29.8	28.1	29.2	37.6
Patients with respiratory problems	84.2	90.5	68.1	75.4	85.4	89.6
Patients with heart problem	73.7	85.7	61.7*	77.2	<i>77</i> .1	80.8
Patients with cancer	47.4	61.9	36.2*	57.9	43.8	43.2
Patients with oral problems	18.4*	42.9	22.3	31.6	30.2*	44.0
Patients with diabetes	23.7	38.1	23.4	31.6	24.0*	36.0
Patients with pregnant wife/children	31.6	57.1	28.7*	59.6	38.5	48.8
All patients	7.9	9.5	21.3	10.5	5.2	4.0

expressed the greatest interest in receiving some training in counselling to help people quit smoking (table 3).

Predictors of asking patients about smoking

Univariate analyses for assessing tobacco use showed that males (OR 1.94; 95% CI 1.26 to 2.97), medical school faculty (1.88; 1.03 to 3.44) and residents (2.24; 1.41 to 3.56) were more likely to ask patients about their smoking behaviour than females and community physicians. A similar association was found among physicians who were not current smokers, those interested in counselling, and those who perceived themselves as having a role or sufficient training in helping smokers quit. However, in a multivariate logistic regression model, the odds of asking about a patient's smoking status were significantly greater among male physicians (OR 2.34; 95% CI 1.32 to 4.17), non-smokers (2.35; 1.00 to 5.51) and residents (1.91; 1.13 to

3.23) compared with female physicians, current smokers, and medical faculties or community physicians (table 4).

Predictors of advising patients to quit

On univariate analyses, physicians who were more likely to advise patients to quit smoking were those who routinely asked patients about their smoking status (OR 2.82; 95% CI 1.84 to 4.32), older, those who felt sufficiently trained in cessation counselling (2.52; 1.24 to 5.15) or former (2.47; 1.03 to 5.91)/experimental smokers (2.73; 1.3 to 5.73). Multivariable logistic regression showed that the odds of advising patients to quit smoking were significantly greater among physicians who routinely asked patients their smoking status (OR 2.78; 95% CI 1.74 to 4.45), perceived themselves as sufficiently trained in smoking cessation (2.27; 1.02 to 5.08) or were experimental smokers (2.49; 1.12 to 5.56; table 5).

	Medical school faculty		Residents		Community physicians	
	Male	Female n = 24	Male n = 95	Female n = 60	Male n = 97	Female n = 127
Advice for cessation	n = 44					
n the last year, how many patients have you advised to give up	smokina?					
None	11.6*	0.0	12.0	14.0	9.5	6.4
1–10 patients	25.6	35.3	29.3	24.6	23.2	28.8
11-20 patients	2.3	23.5	15.2	12.3	15.8	12.0
21–30 patients	9.3	11.8	8.7	10.5	7.4	14.4
>30 patients	51.2	29.4	34.8	38.6	44.2	38.4
Only smokers Patients with respiratory problems Patients with heart problem Patients with cancer Patients with oral problems Patients with diabetes Patients with pregnant wife/children All patients	46.2 61.5 61.5 43.6 15.4 15.4 28.2 17.9	61.9 71.4 66.7 33.3 23.8 23.8 38.1 9.5	29.8 61.7 55.3 33.0 18.1 22.3 28.7* 20.2	40.4 66.7 68.4 45.6 24.6 27.9 19.3	3.2 29.5* 81.1 74.7 42.1 26.3 24.2 36.8* 9.5	44.1 81.9 75.6 38.6 37.0 35.4 51.2 8.7
Vhat percentage of patients who received your advice actually % responding I do not know Estimated median % of patients who quit following advice	quit? 76.2 45.0	90.9 40.0	79.6 22.5	86.0 10.0	76.3 5.0	84.3 20.0

Table 3	Perceived	need c	of training	for smo	king	intervention
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	Medical sc	Medical school faculty		Residents		Community physicians	
	Male	Female	Male	Female	Male	Female	
Training need	n = 44	n = 24	n = 95	n=60	n = 97	n = 127	
Do you feel you have sufficient training or exp	perience to help people quit smok	ing?					
% Responding yes	16.7	4.3	11.8	6.8	10.3*	1.6	
Somewhat interested Not interested	34.9 37.2	45.5 31.8	52.2 13.0	50.8 11.9	30.9 15.5	33.6 8.8	
Would you be interested in receiving training	on druas that may help people a	uit smokina?					
	26.2	21 <i>.7</i>	47.3	41.4	56.8	61.3	
Yes, very interested		47.8	44.1	48.3	31.6	29.8	
Yes, very interested Somewhat interested	35.7	47.0	77.1				

Patient exit interviews

Yes

Of 355 male patients who participated in the exit interview, 41% reported smoking in the last 30 days (table 6). Even though half of the patients thought that doctors should ask about patients' smoking behaviour, only 10% of them reported being asked about smoking during their clinical encounters, regardless of their smoking status. Patients with respiratory disorders and heart diseases were most likely to report having been asked about their smoking behaviour, although <20% of patients with heart disease reported being asked. When asked whether they had received advice to quit smoking, only 6.4% of smokers replied that they had. Furthermore, only 4.3% of these patients had ever requested their doctor's help to quit smoking.

DISCUSSION

Seven findings emerge from this study of Indonesian physicians. Firstly, over 20% of male doctors were current smokers, a striking contrast to developed countries such as Australia, Sweden and UK, where only 4–8% of physicians smoke.³

Secondly, few doctors ask patients about their smoking status. Illness is a teachable moment when people are most health conscious. The act of asking patients about their smoking status increases smoking cessation rates and moves those who are not yet ready to quit to contemplate doing so. In the West, it has been reported that the probability of remaining abstinent after 1 year is higher among smokers whose physicians advised them to quit.¹⁶ The "asking" behaviour of

	Ask patie	ents	OR (95% CI)			
Predictors	Never	Yes	Univariate	Multivariate		
Age			1.01 (0.98 to 1.03)	1.01 (0.98 to 1.04)		
Sex						
Female	164	44	1.00	1.00		
Male	154	80	1.94 (1.26 to 2.97)	2.34 (1.32 to 4.17)		
Working institution						
Doctor at district level	1 <i>77</i>	46	1.00	1.00		
Faculty member	45	22	1.88 (1.03 to 3.44)	1.56 (0.74 to 3.29)		
Resident in training	96	56	2.24 (1.41 to 3.56)	1.91 (1.13 to 3.23)		
Smoking status						
Current smoker	40	12	1.00	1.00		
Former smoker	25	13	1.73 (0.68 to 4.39)	1.76 (0.64 to 4.83)		
Experimental smoker	54	25	1.54 (0.69 to 3.44)	1.73 (0.72 to 4.13)		
Never smoker	194	74	1.27 (0.63 to 2.56)	2.35 (1.00 to 5.51)		
Dala af da a baadda aa afaasi aa al i'u balai aa aa ah						
Role of the health professional in helping smok No	ers quit 133	42	1.00	1.00		
Yes	181	79	1.38 (0.89 to 2.14)	1.41 (0.87 to 2.29)		
162	101	/7	1.30 (0.07 10 2.14)	1.41 (0.07 10 2.27)		
Sufficient training in cessation						
No	294	108	1.00	1.00		
Yes	21	14	1.81 (0.89 to 3.70)	1.52 (0.70 to 3.30)		
Interest in counselling						
No	54	14	1.00	1.00		

260

106

1.57 (0.84 to 2.94)

1.44 (0.72 to 2.90)

	Advise pati	ents	OR (95% CI)		
Predictors	Never	Yes	Univariate	Multivariate	
Age			1.02 (1.00 to 1.04)	1.01 (0.98 to 1.03)	
Sex					
Female	124	87	1.00	1.00	
Male	134	102	1.09 (0.75 to 1.58)	0.89 (0.52 to 1.54)	
Working institution					
Doctor at district level	130	94	1.00	1.00	
Faculty member	33	35	1.47 (0.85 to 2.53)	1.34 (0.68 to 2.66)	
Resident in training	95	60	0.87 (0.57 to 1.33)	0.73 (0.44 to 1.19)	
Smoking status					
Current smoker	37	15	1.00	1.00	
Former smoker	19	19	2.47 (1.03 to 5.91)	2.00 (0.78 to 5.16)	
Experimental smoker	38	42	2.73 (1.30 to 5.73)	2.49 (1.12 to 5.56)	
Never smoker	159	113	1.75 (0.92 to 3.35)	1.61 (0.73 to 3.57)	
Role of the health professional in helping smokers qu	uit				
No	110	66	1.00	1.00	
Yes	146	117	1.34 (0.90 to 1.97)	1.08 (0.70 to 1.67)	
Sufficient training in cessation					
No	243	163	1.00	1.00	
Yes	13	22	2.52 (1.24 to 5.15)	2.27 (1.02 to 5.08)	
nterest in counselling					
No	44	24	1.00	1.00	
Yes	210	160	1.40 (0.82 to 2.39)	1.36 (0.73 to 2.53)	
Asking patient smoking status					
No	206	112	1.00	1.00	
Yes	49	75	2.82 (1.84 to 4.32)	2.78 (1.74 to 4.45)	

Indonesian physicians contrasts sharply with that of high-income countries in Asia and the West.¹¹ ²³ The prevalence of physicians routinely assessing their patient's smoking status

Variables	Percentage
Have you used any form of tobacco in the last 30 days?	
Patients reporting yes	41.0
Do you think doctors should ask about your tobacco use?	
Patients reporting yes	49.2
Smoking patients reporting yes	52.1
Non-smoking patients reporting yes	47.4
Did doctor ask about your tobacco use?	
Patients reporting yes	10.1
Smoking patients reporting yes	9.0
Non-smoking patients reporting yes	11.0
Did the doctor advise you to not smoke?	
Smoking patients reporting yes	6.4
Have you ever asked the doctor to help you quit tobacco?	
Smoking patients reporting yes	4.3
Disease-specific patients being asked about smoking behav	iour
Patients with respiratory disorders (n = 44)	25.0
Patients with heart diseases (n = 34)	17.6
Patients with diabetes (n = 19)	0.0
Patients with oral problems (n = 16)	6.3
Patients with pregnant wife/children (n=39)	2.6
Patients with other diseases (n = 203)	8.4

varied from 67% in the US¹¹ to 82% in Japan.²³ In Indonesia, three-quarters of the physicians failed to routinely ask patients about their smoking status and 40% of those who routinely assessed their patients' smoking had not advised them to quit smoking during the 12 months preceding the study.

A third finding is that in Indonesia, the practice of asking patients about smoking differs markedly by presenting diagnosis. Physicians were found to be more likely to ask about the patient's smoking status for respiratory disorders and heart disease than for diseases such as oral pathology or diabetes, a pattern that was particularly evident among female physicians. A study assessing university hospital physician's practice towards smoking cessation in Turkey showed that physicians working at respiratory medicine and cardiology departments were more likely to ask patients' smoking status and to conduct smoking cessation intervention than physicians working at other departments.²⁴ Inquiries about smoking status in our setting, although more common for respiratory disorders or heart disease, were still disappointingly low.

The fourth finding is that physicians' perception of the risk of smoking, no doubt, influences their willingness to ask their patients about cigarette smoking. Of particular importance is the fact that a majority (80%) of the physicians believed that smoking up to 10 cigarettes in a day was not harmful to health. Those physicians who believe that smoking 5–10 cigarettes is relatively safe were less likely to assess patients' smoking behaviour.

The fifth finding suggests that physicians overestimate how often they ask patients questions about cigarette smoking and advise them to quit. Even though 28% of physicians reported that they had given antismoking advice to patients, only 10% of patients recalled such advices. The proportion of smoking

messages reported by community physicians as given to patients was three times higher than that recalled by patients. Although it is possible that patients underestimated physician assessment and advice, the fact that they did not recall a physician's antismoking message is clinically important. These data suggest that even if physicians inquire about patients' smoking status, patients do not deem such inquiry as important enough to remember. This would call into question the effectiveness of the present physician's intervention related to smoking. Our findings, although insightful, need to be interpreted cautiously as exit interviews were conducted in a subsample of public health centres, and may not be representative of the overall clinical experience. Nonetheless, our study showed that it is rare for physicians and patients to discuss smoking in all clinical contexts.

A sixth finding is that few patients initiate discussions with physicians about smoking or how to quit. Less than 10% of patients who had existing smoking-related diseases asked their doctor about whether smoking was related to their illness, or asked help in quitting.

A seventh and final finding is physicians lack confidence in their ability to counsel patients, but are possibly predisposed to receiving training in smoking cessation. Physician's present lack of engagement in smoking cessation counselling may be due, in part, to inadequate training in smoking cessation.9 25 26 Only 8% of our sample of physicians thought that they already had sufficient training in smoking cessation. In all, 85% of physicians reported that they were interested in receiving training in cessation counselling. Notably, medical school faculty, entrusted with the training of the next generation of physicians, were the least interested in receiving smoking cessation training compared with residents or community physicians. One possible explanation for the lack of interest may be that faculty physicians have very busy schedules that leave little time for additional training activities that are perceived as not directly relevant to their area of specialisation. The results showing that community physicians were less likely than other physicians to assess patients' smoking status might

What is already known on this topic

- Physicians asking about smoking and offering advice about cessation help smokers quit.
- Studies of smoking behaviours and beliefs of healthcare providers, especially physicians and nurses, should constitute an important early step in the development of a comprehensive anti-tobacco initiative.
- In Indonesia, a role for physicians in tobacco cessation or control has not been studied previously.

What this study adds

- This study shows that in Indonesia few physicians presently enquire about their patients' smoking status or offer advice about smoking cessation.
- Lack of training in smoking cessation seems to be a major obstacle to physicians actively engaging in smoking cessation activities.
- Efforts need to be taken to introduce the importance of smoking cessation in medical schools and to provide outreach training in smoking cessation to physicians currently in practice.

be explained by the fact that they were less familiar with counselling activities at the primary care level. Healthcare at public health centres has been so focused on curative care that preventive care is less practised by the physicians. Familiarity with smoking cessation procedure will increase the chance for physicians to get involved in smoking cessation activities.²⁶

CONCLUSION

An important first step in reducing national rates of tobacco use in any country is reducing rates of smoking among health professionals, especially among physicians, who need to be seen as a role model for their community. An important second step is for doctors to routinely ask all patients about their smoking status and advising them to quit.

The four challenges to smoking cessation in Indonesia are: (1) many physicians smoke; (2) many doctors feel smoking <10 cigarettes per day is not harmful for health; (3) many patients feel that advice not to smoke is limited to the period of illness only, as non-smoking is culturally associated with illness; and (4) physicians lack the confidence to provide patient counselling. On the basis of this study, a medical school education programme has been initiated and a Quit Tobacco International programme begun in Indonesia.

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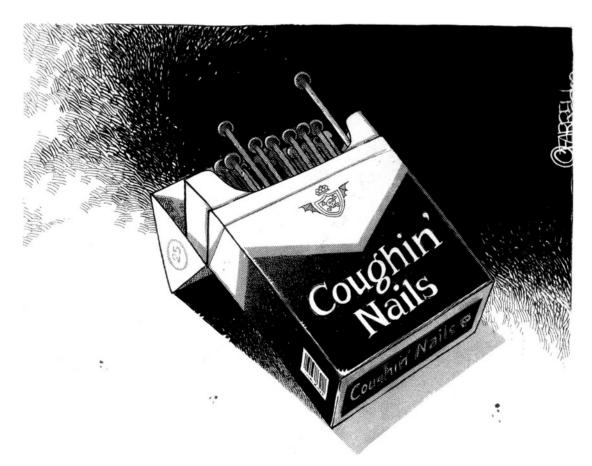
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The Lighter Side



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