Doctors for a Smokefree New Zealand

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Secretary
Health Select Committee
Parliament Buildings

Dear Secretary

SMOKE FREE ENVIRONMENTS (ENHANCED PROTECTION) AMENDMENT BILL AND SUPPLEMENTARY ORDER PAPER (SOP)

Introducing *Doctors for a Smokefree New Zealand*

The Prime Minister, the Right Honourable Helen Clark, in opening the RNZGP Conference in Auckland on 28 June, urged doctors to give their support to stronger smokefree legislation. Noting the lack of comment from doctors in the media on the issue, we immediately formed a new group, *Doctors for a Smokefree New Zealand (DrsSFNZ),* to assist doctors to publicise their views, views underpinned by medical scientific knowledge.

We asked doctors whether they would sign to the following

"I support strengthening the law to ensure smokefree working conditions for all workers, including bar, café and casino workers:"

In the information sheet we provided to signing doctors we stated our aims as

- "An end-date to be set in law for all workplaces to become smokefree
- All workplaces smokefree in law by 2002 (including schools, factories, cafes and restaurants).
- Pubs, clubs, casinos smokefree by 2004 at latest
- Opposing smoking room solutions - which concentrate smoke around smokers and their friends."

Over 1000 doctors have signed up to the above statements within 8 weeks.

Percentage agreeing. Of all the doctors we have asked for signature support, 99% have signed with hesitation, and the other 1% declined us. We have had only one or two face to face refusals out of hundreds of doctors male and female whom we approached at hospital grand rounds or at conferences.

Numbers agreeing. We have collected over 1000 doctors' signatures as non-subscribing members, and many besides have sent donations unasked. We would have sought more, but we had achieved our initial objective, to collect sufficient doctors' signatures to prove there was strong medical support for the intention of this bill, and for the need to give it teeth. New members are still sending in their names.

Wide spectrum of doctors agreeing. All categories were contacted. They included general practitioners, specialists, hospital doctors in training, academics and scientists. In addition to support from well-established clinicians, support was especially strong from women doctors and particularly Asian doctors.

Only NZ- registered doctors included. There has been strong interest and support from a number of Australian physicians attending the two conferences where many doctors have joined our organisation We have, however, only signed up doctors on the NZ Medical Register.

Endorsement from the top of the profession:
NZ Medical Association: NZMA's governing council has strongly endorsed our aims.
The Council of Medical Royal Colleges and Faculties (of Anaesthesia, Medicine, Paediatrics, Obstetrics and Gynaecology, Public Health, Radiology, Surgery) has written to the Minister of Health.

The general position of *Doctors for a Smokefree New Zealand* on the Bill (and SOP).

- **DrsSFNZ regards this bill as a watershed.**
  - Either the Bill will be strengthened by this Select Committee to make workplaces smokefree within the next 1-2 years.
  - Or, the Select Committee goes with the bill as written, ensuring 6 years of little progress.
- **DrsSFNZ regards second hand smoke (SHS) as a proven and serious workplace health hazard.**
- **Drs SFNZ agrees with the general intention** of the Bill - to reduce second hand smoke (SHS), but finds the bill weak and too conciliatory towards SHS which is a completely preventable man-made health hazard.
- **DrsSFNZ wants SHS eliminated urgently.** 100 deaths a year from past second hand smoke exposures, and 70 deaths a year from current exposures means 1 to 2 deaths a week.
- **We would recommend use of the guiding principles used in designing Part 1 of the 1990 Bill.** Namely, in a clash between the perceived rights of smokers to pollute and the perceived rights of nonsmokers to smokefree air, the healthy option should prevail.
- **We recommend consistency between this Act and the Health and Safety in Employment Act 1992,** so that the SFE Act provides smokefree working conditions to eliminate the serious hazard of SHS, in line with the HSE Act's intention to bring about health and safety in the workplace.
- **We want end-dates for going smokefree inserted in the bill**. The lack of closure for the various kinds of workplaces to go smokefree is a major defect in the bill. The 1990 Act set clear end dates for going smokefree. Without a specified date for going smokefree, the bill favours office workers with smokefree working conditions as it has since 1990, over blue collar and hospitality workers, who do not enjoy this basic right of a healthy and safe workplace as mentioned in the HSE Act.
- **We urge the Committee** to insert end-dates for all workplaces, by which time the workplace becomes smokefree.
  Smokefree blue collar worksites cafes and restaurants at end of 2002 at latest,
  Smokefree pubs, clubs, and casinos by 2004 at latest. (or together with cafes in 2002).
- **In general, 3-6 months should suffice** to enable smokers to adjust to a law making their workplace smokefree. Such a phase in period is suggested if smokers might object to a smokefree law.

The health issues underpinning this bill are poorly understood.
We urge the Committee to recommend that the Minister of Health as soon possible should allocate funds to educate the public about the health benefits of homes and workplaces being free of smoke. A well informed public will support a strong bill.

We wish to make an oral submission, preferably in Auckland.

Sincerely

Tom Marshall OBE
Chair

Murray Laugesen QS0
Media spokesperson

Contents of the rest of the DrSFNZ submission **page**

1. Recent research on the content and effects of second hand smoke.

1.1 Biologically hazardous chemicals in second hand smoke

The most hazardous compounds in cigarette smoke are fairly similar for mainstream and sidestream smoke,[1] and a Ministry of Health-commissioned report rates the most dangerous constituents as follows:[1]

Table 1. List of 15 priority chemicals in cigarette smoke

(listed alphabetically)

Chemical	Health Effect
1,3 - butadiene	cancer,*** reproductive/developmental*
Acetaldehyde	cancer, respiratory irritation
Acrolein	respiratory irritation***
Acrylonitrile	cancer,* respiratory irritation
Arsenic	cancer, cardiovascular, reproductive/developmental
Benzene	cancer, reproductive/developmental*
Cadmium	cancer
Carbon monoxide	cardiovascular*
Chlorinated Dioxins and Furans	cancer, cardiovascular, reproductive/developmental*
Chromium (VI)	cancer, respiratory irritation
m + p + o Cresol	cardiovascular**
Formaldehyde	cancer, respiratory irritation
Hydrogen cyanide	cardiovascular***
N-nitrosonornicotine (NNN)	cancer*
N-nitrosopyrrolidine (NP)	cancer

*** most hazardous chemical in sidestream smoke in its disease category
hazard = 20%+ as hazardous as *;
*hazard =10%-19% as hazardous as ***.

Source: Fowles J, Bates M, Noiton D. Chemical constituents in cigarettes and cigarette smoke. Priorities for harm reduction. Porirua City: ESR, 2000. Report commissioned by the Ministry of Health.

Note: Test information on sidestream smoke from New Zealand cigarettes is lacking. The above is based on overseas studies mainly in the United States. The classification of chemicals as cancer causing is decided by the International Agency for Research on Cancer in Lyon, a body associated with the World Health Organization, Geneva.

Comment:

- Sidestream smoke which constitutes the bulk of SHS contains much the same hazardous chemicals as mainstream smoke.
- In the case of heart disease[2] and stroke,[3] small exposures have surprisingly large effects.
- Constant and repeated exposure to SHS should be therefore regarded as seriously harmful to health.

1.2 The immediate effects of second hand smoke on a non-smoker entering a smoky workplace

On entering any smoky room - smoky workplace, café, pub, club, casino or home:

- Within minutes, carbon monoxide in smoke slightly decreases the oxygen supply to the heart.[4]
- Over the next 20 minutes, the platelets in the blood become sticky, predisposing to clots, increasing the risk of a heart attack by one third.[2] This risk halves over the next one hour.[2]
- After 30 minutes of second hand smoke, the heart's arteries' capacity to open up under stress to supply oxygen to the heart is reduced by one fifth.[5]
- Repeated exposure to smoke damages and ages the arteries,[6] leading to thickening, stiffening and narrowing of the artery. Effect fades somewhat with no exposure to smoke.[7]

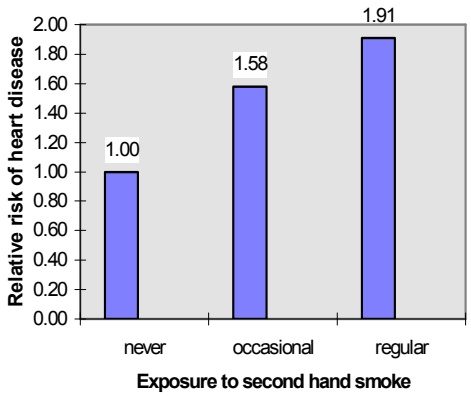
In contrast:

- Making a smoky workplace smokefree reduces the risk for nonsmoking workers - by one half for stroke[3] and by one fifth for fatal heart attack.[8]

1.3 The long term effects of exposure to second hand smoke.

The following research was conducted by a distinguished NZ medical graduate and researcher now a professor at the Harvard School of Public Health, Dr Ichiro Kawachi:

Figure 1. The risk ratio for heart disease for nurses exposed to second hand smoke only at work: the more the smoke the more the risk.[9]



32,000 female nurses (the US Nurses Study) aged 31 to 61 years of age, registered 243,000 person years of exposure. After allowing for diet, exercise and many other variables, regular exposure to second hand smoke only at work was associated with nearly double the risk of heart disease. Unlike most studies, this Study asked the nurses about their smoking on a number of occasions.[9]

2. Latest estimates of second hand smoke damage to New Zealanders.

Over 2000 research papers on second hand smoke are freely available for anyone to study, at <www.pubmed.gov> The best quality research reports published gave the increase in risk. Exposure to second hand smoke was surveyed at work in 1989, 1991, 1996 and 2001 (Ministry of Health). Exposure at work decreased between 1989 and 1991, but little since.

Table 2. Estimated deaths in 1997 at age 15-74 years of age, attributed to exposure to second hand smoke in the late 1980s, New Zealand.

Disease	% increase in risk for nonsmokers if regularly breathes SHS*	% of each disease burden in nonsmokers that is due to SHS at work*	Estimated deaths in 1997 from SHS exposure at work; preventable.	% reduction in personal risk for workers if workplace goes smokefree
Lung cancer	25%	5%	6	-19%
Heart disease	21%	4%	48	-17%
Stroke	**82%**	12%	47	-45%**
Total, work exposure			**101**	
Total, home exposure			**247**	
Work+ home.			**347#**	

Based on Woodward A and Laugesen M. *Tobacco Control* in press, 2001.
*The percentages are low. By 1989 most workers said they were not exposed during actual working hours.
** (-82/182)%= -45%. # rounded to nearest whole numbers.

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3 The burden placed on the health system by second hand smoke (SHS)

Table 3. Estimated costs of hospital care of diseases attributable to SHS, 1995-6.

Disease	No of interventions SHS attributable	In patient bed days attributable to SHS	Estimated $
Asthma age 0-5 years	15,000 episodes*	3,764	183,000
Asthma 6-14 years	of childhood asthma.	2,606	59,000
Pneumonia, bronchiolitis	500 admissions under age 2	19,110	156,000
Chronic ear infection	27,000 GP consultations*	439 (+ day cases 5821)	484,000
Myringotomy for glue ear	1500 operations	1,213	303,000
Coronary heart disease	1200 admissions inc. surgery	116,572	4 452,000
Stroke age 35-74 years	500 admissions	28,206	2 473,000
Lung cancer	Chemotherapy on day basis	10,113	210,000
Meningococcal disease	50 cases a year	2,434	355,000
Total		**18,4457**	**8,676,000**

* The 27,000 GP consultations for children,. and primary care pharmaceuticals were not costed.

Source: Woodward and Laugesen. Report to the Ministry of Health, 2001 <www.ndp.govt.nz> and cost estimates from Tobias and Lyn (Ministry of Health).

SHS. 3200 hospitalisations, equal to 0.6% of total inpatient episodes were due to SHS. $7.1 mln of the cost was heart disease, stroke and lung cancer attributed to SHS at home or work.

Workplace SHS fraction. Nearly half of this cost (based on Table 1) is due to workplace SHS. SHS exposure at work cost the taxpayer $3.3 million in a year for hospital care, apart from pain, grief and suffering borne by families.
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4 Previous legislation has saved the lives of hundreds of nonsmoking workers.

Deaths from SHS before the 1990 SFE Act.
As Table 2 shows, deaths due to 1989 SHS exposures at work caused over 100 deaths annually.

Deaths from SHS at work after the SFE Act made offices smokefree
Future deaths due to 1996 SHS levels will cause about 70 deaths a year, a saving of 30 lives a year.[10] (Table 2). These lives saved will be mainly non-smoking office workers, the main group protected by the 1990 Act.

Effect of the 1990 SFE Act
On this basis we estimate that the 1990 Act was the catalyst for workplace shift away from smoke, that has already probably saved the lives of about 300 people, mainly office workers. Many workplaces had gone smokefree before the 1989 survey.

Average age at death due to SHS
As with direct smoking the average age of death from second hand smoke is most likely to be about 65 years of age, but the age at death will vary greatly.

Years of life lost by nonsmokers
Dying at this age, as in the case of smokers, will lose these nonsmokers on average about 14 years of life.

Also second hand smoke does not always act as a single handed killer, but more likely as one of many factors. The estimates of lives saved apply to the whole population, as for a given individual other personal factors may alter risk.

5 Analysis of arguments for and against smokefree workplaces.

Table 4. Arguments for Smoky Workplaces versus Smokefree Workplaces.

In favour of the Bill which tends to embed smoking with no end-date to go smokefree	In favour of a stronger bill, enacting smokefree worksites (indoor).
Tradition. Workers are expected to breathe smoky air and empty dirty ashtrays.	**Progress** This is the 21st century. We have had clean water for most of the 20th century: clean air is overdue.
Minimisation of risk to workers. This view assumes that some hospitality workers should be expected to breathe SHS in the course of their work.(in contrast to taxi drivers).	**Elimination of smoke risk to workers** This is entirely feasible. Elimination of the hazard, if feasible is required by the Health and Safety in the Workplace Act for serious hazards.
Second hand smoke hazards are not proven. The standard of proof to satisfy British American Tobacco about the hazards of second hand smoke will take another 40 years, as they have only just conceded that direct smoking is risky.	**SHS hazards are proven.** The requirements of proof for second hand smoke have been met to the satisfaction of the US Environmental Protection Agency and the Californian EPA, the world's leading regulatory bodies on environmental hazards. Over 2000 papers published on ETS effects on health in the past 15 years.
Financial argument. The hospitality industry has expressed concern that legislation will force businesses to close. Over 20 studies show this is not the case.	**The health argument** Asking employees to breathe second hand smoke at work is equivalent in health terms, to asking them to drink dirty water every half hour at work.
The ventilation argument The NZ standard (4303) for acceptable indoor air quality "with respect to tobacco smoke and other contaminants does not and cannot, ensure the avoidance of all possible health effects". It is not a health standard and is based on odour levels tolerable to untrained observers. • Ventilation reduces smoke particle concentrations, particles forming the visible part of smoke. Air filters can remove large particles. • Ventilation can dilute somewhat, but not eliminate smoke. It cannot dilute somewhat but not filter out the harmful gases.(see Table 1).Ventilation works mainly by dilution. • To comply with this clause many noisy exhaust fans creating cold draughts will be installed and mostly kept switched off. Or difficult and costly displacement ventilation will be installed by few. (Cost $36,000, and $2000 pa to run.)[1]	**No smoking indoors combined with asking smokers to smoke outside** This is the only method that gives all workers smokefree air. **Why smokefree indoors wins over ventilation** • To halve the smoke concentration, air flow must be doubled. To halve it again, it must be doubled again. • Thus to reduce smoke concentration by 90% below the levels found with the recommended office ventilation rate of 8 Air changes per hour, would require about 80 air changes an hour, 10 times greater than office ventilation! • Health budgets for enforcement of ventilation would be better spent on urgently needed public education on the risks of second hand smoke. Even a theoretical 90% reduction in the level of the risk of SHS (100 deaths a year) is not an acceptable result, as it compares poorly with the low cost and 100% effectiveness of a smokefree workplace law.

[1] MR White, Christchurch. November 2001. Heating and ventilation engineer. Submission on this Bill.

6 Clause by clause comments on the Bill and the Supplementary Order Paper (hereafter simply called the Bill.) We have worked off the integrated version of the bill and SOP, showing how the changes would affect the Act.

6.1 Comments on Part 1.

	Current wording	Comment
5 (3)	**Principle underlying the written smoking policy** Smokers are statistically the most likely to be able to claim aggravation of cancer by other peoples' smoke.	We recommend that the principle should be simply restated as "shall be based on the principle that all persons on a worksite be protected from other persons' " tobacco smoke indoors or in an enclosed area.
5(4)	**Smoking not permitted in a common air space.**	**We strongly support the intention behind this new clause, that shared air should be smokefree air.** However we would suggest that 5A, 5B, 5C weaken it and should be deleted:
5A	**Employers may permit smoking with consent of the occupants.** This clause would permit offices and schools and other workplaces such as factories to come under pressure from smoking staff to (1) allow smoking while working. (2) allow smoking at tea breaks. This convoluted clause is based on libertarianism gone wild, the desire to let workers smoke themselves to death. This is not a sensible legislative response to the promotion of workplace health and productivity. Smoking indoors with other smokers is bound to effectively increase the number of cigarettes inhaled, and to increase harm over that of smoking outside in fresh air.	**We recommend deletion or rapid phase out.** These provisions based on the 1990 Act have served their time and should be deleted, or phased out over 3 to 6 months. In an effort to oblige smokers, continuation of this clause tends to further legitimate smoking as something to be provided for in working time e.g. allowing chain smoking on the job. **Reasons for deletion.** **1 In the interests of workforce health and national workforce productivity** Unless deleted, this clause will tend to increase days off work due to smoker induced sickness. **2.Difficulties for junior workers**. In practice we do not believe that a junior employee with minimal education in their first job is in any position to challenge smoking co-workers. **3 A healthier low-cost option is available: fresh air.** Workers wishing to smoke on the job can be asked to smoke outside, a system that has worked fairly well for most office worker-smokers since 1990, (and in the Ministry of Health since 1987). If there is thought to be difficulty in going smokefree, this requirement can be phased in over a 3 to 6 month period to allow smokers to adjust.

5B	**Designated smoking areas** Besides exposure to smoke from other smokers, 20% of the smoke particles cling to walls and furnishings with later 'outgassing' into indoor air over the next several days. This increases the exposure of smokers to tobacco smoke gases above that in fresh air. As worded to apply to indoor spaces, this clause misses the point, passing up the chance to designate smoking areas as otherwise fresh air areas outside the building, away from building air intakes.	**We recommend delete this clause.** **Reason. In the interests of worker health,** we recommend that smokers do not smoke together indoors, whether with ventilation or without, as both second hand smoke and mainstream smoke are then inhaled, increasing harm to the smoker. Smoking outside does not carry the same SHS risk. **Preferred solution**. We recommend a good dose of fresh air in such situations. **Preferred wording**. We recommend that this clause be recast entirely and used to define outdoor designated smoking areas - not near the intakes of a building's ventilation.
5C	**Employers may permit smoking in certain refreshment areas.** During tea and lunch breaks, approximately 25% of nonsmokers and 65% of smokers say they are exposed to other peoples' smoke. (Ministry of Health survey 2001). At these times the exposure may be intense, from several cigarettes.	Although this clause only applies to work sites with two or more refreshment areas, we recommend **delete** this clause **(1) In the interests of workers' health.** Smoking together indoors is likely to aggravate smoking workers' asthma, incipient lung cancer, stroke, heart disease etc, compared to smoking outside. **(2) Expense.** Removing this alternative takes financial pressure off employers to provide and maintain ventilation. **Preferred and reasonable alternative solutions are available:** • Workers have been asked to please smoke outside at tea break time since 1990 in all office blocks, and in many factories. • If fresh air is not acceptable, we suggest this solution be permitted for a 3-6 months phase in period, to ease the transition for smokers.
6	**Special provisions for certain institutions**	**Prisons** A high rate of smoking among prison inmates, pre-occupation with illegal drug use, and serious lack of ventilation means that SHS is a big problem in prison for non-smokers. We have no suggestions but we would like the Committee to ask Justice and Health Ministries to submit what further could be done about these problems, especially for nonsmoking asthmatics and other diseases.
7(d)	**Duties of employer.**	**We agree** that employers should implement and "and comply with" the written policy.

7A (1)	**Schools and preschools: Universities and polytechnics.** Rationale: There is no valid reason to exempt tertiary institutions from smokefree law, as these are workplaces, and students and staff deserve some protection from smoke in the workplace.	**We support this clause, but believe it should be extended to all educational institutions. We recommend that tertiary institutions also be smokefree**, and be added to this clause or to a new clause with the same intent, perhaps with 3 months lead-in time to ease the transition. This is unlikely to be resisted. Smoking rates among staff are low. **Preferred solution:** Smoking outside. In most universities, fresh air is only a short step away.
7B	**Other places where children cared for.**	**Agree with proposed new clauses.**
12	**Existing licensed premises until 1 January 2007.**	**We recommend advance the date to 31 Dec. 2003, not 31 Dec 2006.** We hope Committee members will be able to visit California and experience the pleasure of smokefree cafes, steak houses, restaurants nightclubs and bars. Nonsmokers of all ages can confidently go out for the evening and enjoy smokefree dining and drinking, without being smoked over.
12A	**New licensed premises and in existing premises after 2006.** Ventilated smoking rooms are only permissible if no staff member has to enter them.	**Delete 12(3) which would permit smoking in a separate ventilated smoking room.** **Reason:** This clause would increase employer costs, rather than improve health, by sanctioning the exposure of workers to second hand smoke in a smoking room. It would disadvantage the smaller restaurants who could not subdivide, and any who could not afford ventilation. Example: Yesterday (19 November 2001) On Melbourne radio 3AK the lawyer of a leading law firm was explaining the case of a young girl client who had an asthma attack in a night club, resulting in 4 days in hospital. The woman is suing the nightclub. **Preferred solution:** A dose of fresh air is recommended. Smoking outside does not impinge on workers' smokefree air. There is no inherent reason why the smell of stale cigarette smoke has to be part of the drink and dance scene.
13	**Smoking in existing restaurants**	**We recommend advance the date to 31 Dec 2002 at latest. Reason: Over 60% of the public in 2001 supported smokefree restaurants.**
13A	**Smoking in new restaurants and in existing restaurants after 31 December 2006.**	**Delete (13)(3) which would permit smoking in a separate ventilated smoking room.**

13A	**Smoking in existing casinos until 1 January 2007.**	**We recommend advance the date to 31 Dec. 2003, not 31 Dec 2006.**
13B	**Smoking in new casinos, and in existing casinos after 31 Dec 2006.**	**Delete 13B(3) which would permit smoking in a separate ventilated smoking room.** • We are particularly concerned that smoking should be legitimated here against a trend to ban it in Australian casinos • Gamblers are often dealing with a triple addiction - to gambling, alcohol and tobacco. **Preferred solution** Gamblers should like most office workers be expected to step outside.
13C	**The ventilated smoking room clause.**	**We recommend delete this clause.** **This clause is harmful for worker health.** It would only be permissible if no employee was permitted or required to enter such a room. Clause (d) Provided that no worker exposure was involved smoking should not be permitted in at least 75% (not half as stated) of the public area of the premises after excluding corridors lifts etc etc as mentioned.

	Clubs. Many clubs in better off suburbs have gone smokefree voluntarily. Others have not, yet all these clubs and employ staff, contract workers, or use volunteers. Many clubs operate like a village pub, with restaurant, bar, dance floor and areas for billiards and areas for pokies. <u>Legislation with separate rules for each of these activities makes it near impossible for these clubs to become smokefree by law. We suggest a clause to deal to clubs and pubs to take care of their many activities all at once.</u>	We wish to see clubs specifically mentioned in this bill, and made smokefree along with cafes and pubs. Clubs range from sports clubs, to business clubs, to RSA and chartered clubs. Sports clubs are particularly important in small towns, influencing smoking habits of the next generation. However RSAs today contain many young people as well as the old soldiers who have not given up on tobacco. **Reasons for making clubs smokefree** **Health protection and human rights argument** Most clubs will have members with medical conditions (heart, lung, stroke) who should not be breathing second hand smoke. (In Australia, asthmatics have won cases based on the rights of the disabled.) **Health promotion principles.** One of the basic principles used in designing the 1990 Act was this - if there is an unavoidable clash between the rights to breathe smokefree air and the right to smoke, the healthy option should prevail.

6.2 Comments on Part 2. Tobacco products control.

On other matters in the Bill, Doctors for a Smokefree New Zealand has not consulted their entire membership and secured a detailed mandate. However our members are well aware that tobacco products kill over 4500 New Zealanders a year. We therefore are from first principles strongly supportive of the strongest possible legislation against tobacco.

For Part 2, we will support the comments supplied by ASH NZ, to which a number of our members belong, and the Smokefree Coalition to which Doctors for a Smokefree New Zealand belongs as an organisation.

References

1. Fowles J, Bates M, Noiton D. Chemical constituents in cigarettes and cigarette smoke. Priorities for harm reduction. Porirua City: ESR, 2000.
2. Law MR, Morris JK, NJ. W. Environmental tobacco smoke exposure and ischaemic heart disease: an evaluation of the evidence. *BMJ* 1997;315:973-0.
3. Bonita R, Duncan J, Truelson T, Jackson RT, R. B. Passive smoking as well as active smoking increases the risk of acute stroke. *Tobacco Control* 199;8:156-160.
4. California Environmental Protection Agency. *Health effects of exposure to Environmental Tobacco Smoke. The Report of the California Environmental Protection Agency. Monograph no. 10.* Bethesda MD: National Institutes of Health, 1999.
5. Otsuka R, Watanabe H, Hirata K, Tokai K, T. M, al. e. Acute effects of passive smoking on the coronary circulation in healthy young adults. *JAMA* 2001;286:436-441.
6. Howard G, Wagenknecht LE, Burke GL, Diez-Roux A, Evans GW, al. e. Cigarette smoking and progression of atherosclerosis: The Atherosclerosis in Communities (ARIC) Study. *JAMA* 1998;279:119-24.
7. Diez-Roux AV, Nieto FJ, Comstock GW, Howard G, M. S. The relationship of active and passive smoking to carotid atherosclerosis 12-14 years later. *Prev Med* 1995;24:48-55.
8. Steenland K. Risk assessment for heart disease and workplace ETS exposure among non-smokers. *Environ Health Perspect* 1999;107(Suppl 6:):859-63.
9. Kawachi I, Colditz GA, Speizer FE, Manson JE, Stampfer MJ, Willett WC, et al. A prospective study of passive smoking and coronary heart disease. *Circulation* 1997;95:2374-9.
10. Woodward A Laugesen M. How many deaths are caused by second hand cigarette smoke? *Tobacco Control* 2001;10: 383-388.