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SMOKING ROOMS IN THE HOSPITALITY INDUSTRY ARE UNWORKABLE AND WILL BE A NEW RISK FOR TOBACCO INDUCED DISEASE IN CATERING WORKERS AND CUSTOMERS

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Submission to Legislative Council Bills Committee
22 May 2006

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Executive Summary

In the prevention of diseases caused by second-hand smoke exposures:

The claim by British American Tobacco that smoking rooms provide an effective alternative to comprehensive bans on smoking in catering facilities is not supported by the results of their experiments.

Smoking rooms create new indoor health hazards, for both non-smokers and smokers, as intensive sources of tobacco chemists.

The official position of the US ventilation standards organization ASHRAE is now to advocate, unequivocally, smoking bans as the only reliable option to prevent second-hand smoke exposures.

The Hong Kong SAR Government and the Legislative Council must ensure that the public health measures introduced to prevent second-hand smoke exposures are effective.

Key Points

- There is no evidence that smoking rooms can be operated in a way which will protect customers and workers either inside or outside of the rooms.
- The operation and maintenance of the room cannot be achieved without greatly increased costs and risks to workers who are required to service them. The requirement to monitor, test and enforce standards will fall on the public sector, but without benefit to the public.
- Smoking rooms introduce an intense source of tobacco smoke directly into the environment of the catering venue. This will pose a major risk to smokers and a significant potential risk to other customers and workers.
- The BAT experiments clearly demonstrate that, under the conditions tested, smoking rooms are unworkable and unsafe.

Background

British American Tobacco (BAT) and some Hong Kong catering and entertainment groups have proposed ventilation systems as a means of eliminating the health risks of second-hand smoke (or Environmental Tobacco Smoke (ETS) as an alternative to comprehensive smoke free policies.

Analysis and Recommendations

The proposal from BAT should be rejected by the HKSAR government and the Legislative Council Bills Committee on the following grounds:

- First, BATs rejection of the evidence on the harm caused by second-hand smoke is unsustainable and their selective reference to a single report from the International Agency for Research on Cancer is seriously misleading.

  The World Health Organisation, International Agency for Research on Cancer (IARC) study found, consistent with earlier studies, a 16% increase in the risk of lung cancer in nonsmoking spouses of smokers and a 17% increase in nonsmoking workers exposed at work.[1] The study design was flawed and was not large enough for statistical significance, but a subsequent meta-analysis by the IARC did show *significant* association between lung cancer and exposure to a spouse's smoking with an excess risk of about 20% for women and 30% for men.[2] Exposure to smoke at work was associated with a 16-19% increase in risk of lung cancer. In this study there was insufficient evidence to link *cancer* in children with exposure to smoke from parents. However the risks of injury to the chest and circulation of both children and adults, from tobacco smoke are well documented and even much higher than those for cancer.

  The IARC study, although consistent with earlier and subsequent studies on cancer and second-hand smoke, was hailed by the tobacco industry as indicating no increased risk of lung cancer although this is a misleading interpretation of the actual results. This was a plan determined by Philip Morris even before the study was published which (in their own words) aimed to:

  * *"Delay the progress and/or release of the study"*
  * *"Affect the working of its conclusions and official statement of results"*
  * *"Neutralize possible negative effects of the study, particularly as a regulatory tool"*
  * *"Counteract the potential impact of the study on government policy, public opinion, and actions by private employers and proprietors"*[3]

  For this misinformation plan, Philip Morris budgeted over US$2 million for one year's work.[3]

  It is now accepted that passive smoking causes not only lung and other cancers but heart disease in adults and acute and chronic respiratory disease, including asthma and middle ear infections in children.[4]

- The evidence that side-stream smoke ((which comprises 90% of second-hand smoke) was first demonstrated to be highly toxic to experimental animals, in the secret experiments of the Philip Morris Tobacco Company, more than 20 years ago. The evidence was suppressed until it was discovered by independent investigation of tobacco industry documents and published recently in the medical journal *The Lancet.*[5]

- There is now overwhelming and irrefutable evidence, based on hundreds of reports, that second hand smoke causes lung and heart disease and injury to other vital organs in people of all ages, and to non-smokers and smokers alike.[4]

- ASHRAE (The American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc), an accepted authority on ventilation specifications and standards, further revised its position on environmental Tobacco Smoke on June 30 2005.[6] It unequivocally accepts and supports the conclusions of international and national authorities and their multi-disciplinary reports on the harm caused by second-hand smoke. ASHRAE concludes:

  > *"At present the only means of eliminating health risks associated with indoor exposure is to ban all smoking activity"*

  ASHRAE adds to this that:

  > *".... adverse health effects for the occupants of the smoking rooms cannot be controlled by ventilation"*

- BAT's "showcases" clearly demonstrate failure to protect the occupants of the smoking room and there is no evidence provided that their system prevented egress of significant amounts of tobacco chemicals into the surrounding air space.

- In the BAT smoking room particulate levels rose to over 2000 micrograms per cubic metre ($\mu g/m^3$) in the space of 4 or 5 minutes. (These very high levels levels approximate to those in the great London smog of 1952 which killed 4000 people in the space of 5 days.) The levels subsequently returned to values of between 500-1000 $\mu g/m^3$. The background dance floor level was 500$\mu g/m^3$ which is 10 to 25 times the new WHO guideline for fine particulates (PM_{10}) (24 hr: 50$\mu g/m^3$; annual 20$\mu g/m^3$) and 20-50 times the guideline for ultra-fine particulates ($PM_{2.5}$) (24 hr: 25$\mu g/m^3$; annual 10$\mu g/m^3$).[7] It is clear that the entire venue was heavily contaminated with tobacco smoke and BATs ventilation system made no material difference to this in terms of health protection.

- In the "earlier" IAQ test by BAT, which was claimed to be the equivalent of smoking 20 cigarettes, the starting concentration of RSP was well over 100$\mu g/m^3$ and increases to 622$\mu g/m^3$. Nine minutes later this pollutant reached an apparent plateau of 99$\mu g/m^3$. This level is 5 times the WHO 24 hour guideline for $PM_{2.5}$ (25$\mu g/m^3$) and 10 times the annual guideline (10$\mu g/m^3$).

  We categorically refute the EPD classification as *"Good"* (<180$\mu g/m^3$) for the stated level of particulates achieved (139$\mu g/m^3$) after this test. This level is nearly 3 times the WHO 24 hour guideline for PM_{10} (50$\mu g/m^3$) and nearly 6 times the 24 hour guideline for

ultra-fine particulates ($PM_{2.5}$) (25µg/m^3). (The guideline for the ultra-fine particulates would be more appropriate for the assessment of tobacco smoke contamination).

- The levels of pollution achieved during the operation of the smoking room, which BAT claim to be indicators of "good" air quality, are very high indeed, notwithstanding the claim that they comply with the Environmental Protection Department standards. A level of particulates of 139µg/m^3, derived from tobacco smoke, is unquestionably a major health hazard.

  It has recently been demonstrated by a World Health Organisation report that the Hong Kong EPD Air Quality Objectives for outdoor air are seriously deficient.[7,8] We believe the same applies to the indoor air standards and that the certification of indoor air quality requires urgent review and revisions. We urge legislators to question the validity of these criteria. There is no reason why they should be used by BAT to oppose essential public health legislation.

- We have shown in Hong Kong that contamination of non-smokers (non-catering workers), who avoid smoky places, is very high.[9] We estimated that these levels are associated with significant risks of mortality from heart disease and lung cancer. A notional "safe" level of exposure (ie a 40 year working lifetime risk of death of 1 in a million) would be 1000 times less than the present minimum ambient levels of exposure to second-hand smoke, based on a recently published Hong Kong study.[9] Second-hand smoke is a ubiquitous air contaminant and smoking rooms will continue, or add to, this hazard.

- The average levels of markers for tobacco chemicals in the body fluids of non-smoking catering workers were 7 times those we found in the non-smoking non-catering subjects. To eliminate their risks of fatal heart disease or lung cancer (not including risks of chronic chest disease or other cancers) we estimate that the level of air changes in catering venues would have to be 8,400 per hour (ie 13,500 litres per second per person) rather than the BAT proposal for 9 changes per hour for upstairs bars, or even the 50 changes per hour for the smoking rooms where the levels of smoke exposure will be even higher than in the usual working environment of bars and restaurants.

- In the UK, the "Public Places Charter" aims to reduce second-hand smoke through increasing non-smoking areas and ventilation, but a recent report demonstrated that the use of even sophisticated ventilation systems did not have a significant health protection effect on concentrations of markers of second-hand smoke.[10]

  The UK findings are relevant to the analyses of various performance measures published in the ASHRAE Journal (July 2003).[11] This technical report clearly demonstrates the critical nature of room design (especially the ceiling plenum), the sealants, pressure differentials, leakage rates, types of doors and effects of opening doors, and other parameters. The report makes it clear that smoking rooms must be operated to exacting laboratory standards if they are to mitigate contamination of non-smoking areas. However there is still doubt as to whether they can achieve this under even optimal conditions. The BAT report provides no evidence that this can be achieved in Hong Kong.

The authors of this ASHRAE technical report also draw attention to the following important problems:

** *"Health effects associated with low level ETS exposures in the non-smoking areas"*
** *"Leakage of residual and sorbed ETS from a smoking room when the room is unoccupied and its ventilation turned off*
** *"Transfers of ETS from smoking areas to non-smoking areas by occupant clothing"*

Also of interest and potential concern to catering operators would be:

** *"Ventilation rates for odor control in the smoking rooms"*

Smoking rooms would be a potent source of stale tobacco odour without regular and extensive decontamination of the deposits on the structure of the booth.

- We would emphasise the frequently expressed warning, about the implementation of smoking rooms, that cleaning and maintenance will inevitably expose workers to tobacco chemicals, from re-emission (off-gassing) of chemicals sorbed (ie adsorbed) onto furniture and fittings in the room.

  This is an unnecessary and avoidable hazard and no worker should be required to do this work, especially in a venue where food is being prepared and served.

- Smoking rooms will create new health risks for smokers. We have shown that in Hong Kong smokers who are exposed to second-hand smoke have greatly increased risks of injury to their lungs, as indicated by increased frequency of cough, phlegm and wheeze.[12] These findings are entirely plausible given the demonstration many years ago by Philip Morris Tobacco Company that, weight for weight, second-hand smoke is more toxic than mainstream cigarette smoke.

- The BAT report makes no reference to the additional energy requirements incurred by operating smoking rooms. The costs of construction, operation and maintenance are likely to be prohibitive for many establishments.

- In addition, the ability to retrofit smoking rooms will lead to discrimination against some establishments and destroy the "level playing field" approach which is the basis of the smoke-free policy. It is likely that this proposal will be rejected by many operators on that ground alone.

Conclusions

- There is no evidence that smoking rooms can be operated in a way which will protect customers and workers outside of the rooms.

- The operation and maintenance of the room cannot be achieved without greatly increased costs and risks to workers who are required to service them. The requirement to monitor, test and enforce standards will fall on the public sector, but without benefit to the public.

- Smoking rooms introduce an intense source of tobacco smoke directly into the environment of the catering venue. This will pose a major risk to smokers and a significant potential risk to other customers and workers.

- The BAT experiments clearly demonstrate that, under the conditions tested, smoking rooms are unworkable and unsafe.

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