Public Health Advocacy and Tobacco Control: Making Smoking History

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This book is dedicated to my mother Margaret, who died from cancer aged just 64.

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Preface

This is a revised, updated and in its entire first part, a very different version of a book I wrote with Deborah Lupton in 1994: *The Fight for Public Health: Principles and Practice of Media Advocacy*[1]. Those who know that book will recognise that Part II of this book – An A–Z of Tobacco Control Advocacy Strategy – contains much that is similar, although many new sections and more recent case studies have been added and some long-redundant ones cut.

Part I of the first book was an attempt to explore the concept of advocacy and its applications in the broad field of public health, particularly as these related to media advocacy. In this book, I have chosen to take a different approach and to focus on two related objectives. First, I want to explore what needs to be done in tobacco control in the first decades of the twenty-first century if we are to accelerate the decline in smoking that has long been experienced in those nations that have adopted comprehensive tobacco control policies. Next, I want to apply the principles of public health advocacy to tobacco control. As the subtitle of the book suggests, in some nations with advanced histories of tobacco control, we may well be nearing a point when we can be confident that within two decades – perhaps earlier – we will see tobacco use wane to such a point that it will be almost "history": an uncommon, marginal behaviour, largely disappearing from public sight in much the same way that public spitting did in many nations early in the twentieth century[2].

But in most nations today, smoking remains depressingly and avoidably common, legislative controls rudimentary, and the public culture surrounding smoking one that sees it as very normal, accommodated and unexceptional. The future of the global tobacco epidemic, which will see 10 million deaths a year by the year 2030[3], will be increasingly played out in less developed nations. There are important reasons why some key forms of advocacy will not readily transfer (for example) from advanced, industrialised, fully democratic nations to less developed nations with centrally controlled news media. However, there are also many case studies of the successful transfer of strategy that show that tobacco control can become a vital and energetically adopted part of the government of low-income nations.

I have been fortunate to live in Australia for most of my life, and to have spent nearly 30 years working in tobacco control. During this time I have seen huge and extraordinary changes in the social and political climate surrounding tobacco use and efforts to control it. In 2001, I was leaked a staff training DVD from British American Tobacco (Australia). Five senior executives sat in front of the camera blubbing about the inexorable fall in smoking in Australia and how it would only get worse. They tried to inspire their staff by talking up hopes that as the remaining water drained from the pool, they might still snatch profit from brands they might inspire smokers to believe were at the "luxury" end of the market. Luxurious carcinogens. It was desperate stuff, but very heartening all the same. In

the early 1960s, nearly 60% of men and 30% of women smoked in Australia[4]. Today, daily smoking by people aged 14 and over is now 17.4%[5] and shows no signs of having bottomed out. Lung cancer in men has been falling since the early 1980s and female lung cancer appears to have stopped rising[6]. Death rates from coronary heart disease fell by 59% in men and 55% in women between 1980 and 2000, in large part because of changes in risk factors like smoking[7]. Such gains in reducing smoking rank with vaccine uptake, the fall in the road toll and the arresting of the AIDS epidemic as being among the major public health achievements of the last 50 years in Australia. Similar stories can be told about tobacco control for a growing number of nations.

Today smokers huddle in doorways, quietly excuse themselves from meetings and slip out of your house to smoke during visits. Increasingly, to smoke today in many nations is to wear a badge that says "I am either an immature youth, have little education or life aspiration, or am a resigned addict". Thirty years ago it was very different. Through advertising, the tobacco industry had infected smokers with the idea that they had a monopoly on all that was interesting, convivial and sensual. The revelations of epidemiology about smoking and disease rather ruined all that, but it has been advocacy that has ensured the epidemiologists' conclusions became translated into policy, mass outreach programmes and law reform rather than languishing in scholarly journals read by few.

In the late 1970s I was becoming bored in my first job as a community health educator. While I gave interminable talks to Rotarians and teachers' staff development courses about the "drug problem", tobacco advertising wallpapered every conceivable public space. As the then head of the Victorian Anti-Cancer Council, Nigel Gray, once wrote to a newspaper, drug pushers were very publicly jailed while tobacco company directors were quietly knighted. With a few colleagues in 1978, I formed MOP UP (Movement Opposed to the Promotion of Unhealthy Products). We put out a precocious press release and the next week were profiled by the *Sydney Morning Herald* as the latest pebble in the shoe of sin industries[8]. We engineered the removal of the actor Paul Hogan from the hugely successful *Winfield* cigarette advertising campaign[9] ("MOP UP's slingshot cuts down the advertising ogre" read the headline) and re-energized the debate about tobacco advertising that Nigel Gray and Cotter Harvey, the founder of the Australian Council on Smoking and Health, had started in the 1960s.

At our first meeting – held in the lecture theatre of the Sydney morgue in Camperdown – someone stood and declared impatiently that our political letter writing plans were pathetic, and if we had courage, we would take more direct action. BUGA UP, the graffiti movement, was born and over the next eight years revolutionised ordinary Australians' understanding of the politics of tobacco control[10]. My modest involvement was to take on-going responsibility for the billboard on a shop directly opposite the entrance to News Ltd where several Murdoch newspapers were printed, but my admiration for the dozens of courageous people who risked much over a decade of civil disobedience is boundless. We held a 20-year reunion in October 2003.

When I first started in tobacco control, people at parties would occasionally give me wide berth as a probable teetotal morals crusader who would soon move

to turn the music down at your party and pluck sweets from children's mouths. MOP UP and especially BUGA UP changed all that. Understanding that the tobacco industry is a pariah of the corporate world rapidly became a litmus test of a whole set of values. Today, one very rarely reads, hears or sees a tobacco industry executive in the media: they have vanished from public discourse, knowing that their credibility is rock bottom[11] with every public appearance promising further humiliation. As my colleague Stan Glantz from the University of California, San Francisco, has said, "they are like cockroaches. They spread disease and don't like to be seen in the light". No respectable politician would today ever risk open public association with them and this has facilitated the incremental adoption of a legislative programme that puts Australia at the forefront of nations trying to reduce tobacco's toll.

Those heady days and my first degree in media sociology gave me a taste for the nature and importance of understanding news values. They blooded me for a career in which I have tried to translate epidemiologists' conclusions into public discourses that gel with community concerns and taught me how these must be truncated into soundbite-length summations if they have any hope of making the news. I have always had enormous respect for the power of the news media to influence the way that communities think about issues. My honours thesis on imagery in advertising for psychotropic drugs in medical journals was tabled into the Australian Senate Hansard in 1979[12], teaching me that academic work could climb out of its mostly cosseted sanctuary and influence political debates.

Since 1976, I have published over 330 research papers, editorials, letters and commentaries in peer-reviewed journals and another 100 in throwaway journals. I have written twelve books and large reports. A few of these have been cited reasonably well. But if I was to nominate my most influential contributions, without hesitation, I would name some of my 130 newspaper opinion pieces, my letters to newspapers or some of my extended radio and TV interviews during critical periods of advocacy for change like the tumultuous period of advocacy that was required after the Port Arthur gun massacre in 1996 to secure tough gun laws[13].

Years of watching my citation rate splutter upwards and 16 years of editing an international research journal (*Tobacco Control*) have taught me that scholarship, for all its importance, exists in political backwaters and seldom influences practice, public or political opinion. Colleagues boast of a paper being cited a few hundred times or of speaking to 5000 like-minded people at an international conference. I am always aware that a gloves-off opinion piece in a morning newspaper followed by a round of interviews on breakfast radio on the morning of a vital political decision about public health will be read and often discussed by incomparably more people than those who would encounter the same arguments in a journal.

The structure of the book

The book has two parts. Part I addresses *what* needs to be done in the twenty-first century to arrest smoking and the diseases it causes, when the goal is to reduce those risks across whole populations of thousands, millions or hundreds of millions

of people. Part II is devoted to the *how* – it describes strategies and tactics of public health advocacy that can assist in ensuring that tobacco remains in the public and political eye as a priority issue in public health, deserving of appropriate laws and regulations, and of funding support.

According to data from the Tobacco Merchants Association, in 2005 an estimated 5.494 trillion cigarettes were consumed by the world's 1.3 billion smokers[14]. Making significant inroads into a phenomenon of that scale is what effective tobacco control must do. Part I pulls few punches, because over 30 years I have seen a huge amount of effort described as tobacco control that collectively counts for little. It would not really matter if much of this either stopped or doubled tomorrow. There are some people working in tobacco control today who will be offended by parts of these chapters. As readers will come to see, I have little patience for tobacco control activities, interventions and programmes that fail to meet the most elementary criterion of potential population-wide public health impact: the ability to reach and influence the large number of people who are or will be affected by tobacco use. Inconsequential interventions keep busy many people working in tobacco control, but their achievements do not translate into anything capable of seriously reducing tobacco use throughout populations, nor the diseases it causes.

There is an eye-moistening parable that I have sometimes heard motivational speakers use in lectures. It describes a man and his son walking on a beach and seeing thousands of fish being washed up on the shoreline by a strong tide. The fish flap helplessly in the sand, with many already dead. The man begins to throw single fish back into the water, liberating them from their fate. The boy questions his father, asking what the point is of saving a few fish when inevitably, for every one saved, hundreds or thousands more will immediately take their place, being washed ashore with each wave. The father replies that while the boy's observation is true, each fish that is saved by his actions will be in no doubt that being helped to live was a good thing.

This parable is usually told as a way of motivating people to understand that their personal acts of generosity and helpfulness can make important differences to others. This is undoubtedly true. Its counterpart in public health is the concept of the "rule of rescue"[15], which sees political and resource allocation priority always given to efforts to save identifiable individuals, rather than unnamed "statistical" individuals whose lives might be saved or quality of life enhanced in years to come by actions taken today. Civilised societies always value individuals.

Rescuing individuals – or for our purposes here, assisting people to stop smoking or from never starting – is nearly always virtuous. People running small interventions in the community such as quit clinics undeniably help many attenders of their clinics to stop smoking. As I will explore in Chapter 5, such interventions can be among the most cost-effective of all procedures in modern medicine[16,17]. But the problem is that not many smokers attend them, and that while such small numbers of "fish" are being thrown back in the sea to be given a second chance, thousands more are being washed ashore by the force of tobacco industry marketing activity and obstruction of effective tobacco control.

The book commences with three preliminary chapters that address key issues that underscore much in the rest of the book. The first re-examines the ethical

basis for tobacco control. Many of the most heated debates in contemporary tobacco control practice today reflect ethical conflicts. These debates are between the public health interests and the tobacco industry; with governments about the reasons they offer for not acting; and, sometimes, between participants in tobacco control. Because I will be arguing for and against particular positions throughout the first part of the book, it is important that I should declare the values and ethical principles on which those positions rest. I discuss some of these in Chapter 1.

The second chapter addresses a question I am often asked: "does advocacy work?" Those who ask such a question typically come from fairly narrow scientific disciplines where they are used to exploring research questions in artificially controlled experimental situations. Their narrowness can be frustrating in the face of blindingly obvious changes that have been engineered by advocacy efforts. But the persistence of the question, and the continuing neglect of advocacy as a serious, funded priority even among many public health institutions, requires that it be addressed. Chapter 2 pulls together some previous writing of mine on this topic, trying to explain the futility of trying to "remove the (policy and strategy) eggs from the omelette": of trying to apply overly scientific demands to the project of explaining how policy and public opinion changes. It examines in detail the case of the decades-long advocacy effort to secure comprehensive legislation for smokefree indoor air. It also discusses at length the core advocacy skill of framing, again illustrating this with a case study on the struggle to see bars and pubs go smoke free.

The third chapter argues for the centrality of news-making in ensuring that tobacco control gains public and political support. It argues that the news media are neglected by the public health community in its preoccupation with planning, running and evaluating controlled experimental interventions whose effects can be nailed down by tightly controlled research designs. While the majority of the professional public health community are busy running and studying these typically small-budgeted interventions, the world is full of background "noise" in the form of oceans of news reportage and debate about tobacco control, most of which is highly supportive. This noise is largely neglected as both a vital "intervention" in its own right and as a subject to be analysed for its potential to allow greater and more effective participation by those wanting to progress tobacco control. Much of Part II is a detailed menu of ways to make that happen. Chapter 3 makes the case for its importance.

Agent, host, environment and vector

Part I then moves to explore, in a further four chapters, what I consider the most important topics in tobacco control today if we are to reduce the incidence of diseases caused by tobacco use. This part of the book is not an attempt to review exhaustively the latest and best evidence on each of these topics, but instead to put the case for action or changing emphasis on those issues I consider most critical. These topics can be considered under the time-honoured disease control matrix of agent, host, environment and vector. This matrix has mainly been applied to infectious and vector-borne disease control (e.g. with malaria control, the agent is the malarial parasite; hosts are those who can get malaria after being bitten by

a malarial mosquito; environments are the physical environments in which mosquitoes thrive and so need to be monitored and controlled; and the vectors are the mosquitoes that carry the malarial parasite within these environments and bite the hosts who develop malaria.

In trying to understand tobacco-caused disease, the matrix adapts well. In tobacco control the agent is tobacco itself, in all its forms and varieties. The main question here is "can tobacco products themselves be changed so that their continued consumption would significantly reduce health problems caused by their use". Chapter 4 takes up this theme – certainly the most volatile in tobacco control today – and explores at length both the potential and the pitfalls of pursuing harm reduction within a comprehensive approach to tobacco control, including some of the ethical issues arising.

Hosts in tobacco control are those who either use or might one day use tobacco. Here, the main questions are "what are the most efficient ways of motivating and assisting large numbers of smokers to stop their tobacco use?" and "how can we most efficiently prevent non-smokers from starting to smoke?" Chapter 5 considers:

- Why and how most people stop smoking; how we can amplify this; and why we should limit our support for those strategies that have no hope of making a big impact?
- What sort of public awareness campaigns and interventions "work" and which ones merit little effort, in both cessation and prevention?

The "environment" in tobacco control is far more complex than the physical, climatic environment typically considered in the control of infectious diseases. An obvious starting point is to consider the process of how to denormalise further smoking in communities so that smoking becomes exceptional rather than normal. Some big topics emerge here. Chapter 6 considers how we can continue to erode the number of public places where smoking is allowed. It also considers the question of whether employers should be able to refuse to hire (or even fire) smokers when these employees do not smoke at work. I am very much opposed to such a proposition and will argue why such polices should be strongly opposed.

Finally, the "vector" in tobacco control is the tobacco industry and the third parties it increasingly uses to run its arguments in public. Just as malaria control involves studying and seeking to eradicate or biologically control mosquitoes, tobacco control needs to control the tobacco industry's ambitions. Chapter 7 examines how the industry has sought to continue its promotional and advertising activities in environments where "above the line" tobacco advertising is banned, something that will occur in most countries as the global Framework Convention on Tobacco Control is implemented. Australia has advanced experience of this, being one of the earliest nations to ban all advertising and then see the industry seeking to circumvent the spirit and letter of the ban.

Chapter 7 also considers nascent efforts to ban scenes of smoking in films, something I regard as well-meaning but ultimately indefensible in any society that values freedom of expression in the arts and entertainment world.

Chapter 7 also considers how the tobacco industry can be further marginalised in public life as a rogue, "bad apple" industry fully deserving of tough controls and regulation. I will examine its recent efforts at "rebirthing" itself via the global corporate social responsibility movement, and some examples of how these efforts can be derailed. The chapter concludes by considering why the tobacco industry has no place in academic environments, via funding research.

Chapter 8 concludes Part I by asking "how low can we go" in making smoking history. It considers examples that are already occurring of smoking prevalence going below 5% in particular subpopulations, as well as concerns about other subpopulations where smoking remains very prevalent. I speculate in this chapter about the prospect that within perhaps 20 years, smoking might virtually disappear as a major social phenomenon in some nations with advanced tobacco control programs.

An A–Z of advocacy

Part II is a sort of advocacy "cookbook" – a guide to how to promote effective tobacco control. It is a practical, coalface A–Z guide to creating a climate in which tobacco control can become more politically compelling. Many subject headings include examples of the strategy in action.

By the same author

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Part I

Major Challenges for Tobacco Control This Century

Chapter 1

Death is Inevitable, So Why Bother With Tobacco Control? Ethical Issues and Tobacco Control[i]

Tobacco control advocates have had the dismal luxury of being able to call on unimaginably "great" statistics to make their case. Globally, an estimated 4.9 million people die each year from tobacco-related illness[18], compared with 3.1 million from AIDS[19], 2.1 million from diarrhoeal diseases[20], 1.6 million from violence[21], nearly 2 million from tuberculosis[22], 1.2 million from road injuries[23] and 1 million from malaria[24]. Among risk factors for disease, only hypertension and undernutrition kill more people than tobacco use[25].

Between 1950 and 2000, it was estimated that smoking caused about 62 million deaths in developed countries (12.5% of all deaths: 20% of male deaths and 4% of female deaths). Currently, smoking is the cause of more than one in three (36%) of all male deaths in middle age, and about one in eight (13%) of female deaths. In the USA, each smoker who dies loses on average 12.7 years of life[26]. By 2020, the World Health Organization estimates that "the burden of disease attributable to tobacco will outweigh that caused by any single disease"[27].

Those are numbers "to die for", but they so often fail to create a sense of urgency in the media, or among policymakers and the public. They are so stratospheric that they have become almost banal. As Joseph Stalin put it: "A single death is a tragedy, a million deaths are a statistic." Tobacco control advocates have long tried to make smoking statistics resonate with a public numbed by endless quantification rhetoric advanced by myriad interest groups. Annual tobacco deaths in different nations have been routinely compared with deaths from so many jumbo jet crashes, the loss of football stadium crowds, and the obliteration of entire medium-sized cities. Conferences and shopping centres display digital death clocks for tobacco where audiences and shoppers are transfixed by the ever-mounting toll[28]. In 2006, when projections of cancer deaths arising from the 1986 Chernobyl nuclear reactor meltdown were published[29] showing that some 16 000 excess cancer deaths were likely to occur until 2065, the International Agency for Research on Cancer, which coordinated the study, stated: "tobacco smoking will cause several thousand times more cancers in the same population"[30]. Few news bulletins picked up on that comparison.

Community concern about health problems can reach its zenith over low-probability threats that sometimes barely rate an asterisk on national cause-of-death tables. Risk communication research shows that exotic, involuntary, catastrophic and sudden risks can strike fear into the hearts of populations and governments far easier than chronic, day-in-day-out dangers like smoking. Conventional wisdom

says that a small sum spent on prevention is worth a fortune spent on cures, but cancer charities know which emphasis will see larger banknotes flow into street-corner collection buckets. Governments, with eyes firmly trained on the next electoral cycle, continue to give budgetary priority to acute health problems. Politicians cast themselves in rescue fantasies where grateful patients and their families form the backdrop to photo opportunities of more money being poured into facilities to diagnose and treat the sick. And the news media are generally happy to perpetuate these myopic myths. One person killed after ingesting the contents of a contaminated tin of food can be more newsworthy than 4.9 million dying the world over, each and every year, from consuming tobacco products bought off the very same store shelves.

Smoking kills an obscenely large number of people. But it does so one quiet, private death at a time. A single jumbo jet crash that kills 300 people makes the front pages for days. The collapse of the Twin Towers on 11 September 2001 created a climate of fear that will forever mark the generations who went through it "live" on television. Deaths of tobacco users go relatively unnoticed, except by the smokers' grieving relatives. Hannah Arendt wrote of the banality of evil among the very ordinary men who perpetrated the Nazi atrocities[31]. Tobacco deaths have their own banality in desperate need of redefinition so that communities may become outraged in the face of industry misconduct and government inaction.

Sadly, too many people inhabit the definitions of disease caused by smoking that are promoted by the tobacco industry: that smoking is a decision freely made by sentient adults who are fully apprised of the risks they are taking. They smoke with their eyes fully open to the risks, and are incorrigible in their determination to smoke in the face of this awareness – their perfect right in any society that values the rights of its citizens to make risky decisions on their own behalf. In 35% of press articles reporting on the case of a dying woman who took a tobacco company to court, the notion that she was fully responsible for her own smoking was evident in the reportage[32]. As I will discuss below, such conceptions of being fully informed are highly simplistic, and ignore the implications of nicotine being addictive, that most people take up smoking when children and that the levels of understanding that most smokers have of the risks they are taking are primitive.

In this chapter, I consider the harms that tobacco use causes, arguing that the misery it brings smokers while they are alive is as important but much neglected compared with the sometimes confused preoccupation we have with smoking causing death. I then consider the ethical arguments on which tobacco control rests. Ethical considerations, along with both the quantity and the quality of the evidence on how smoking causes disease, are the twin bedrocks of tobacco control. All arguments about policy and strategy in tobacco control are ultimately about whether the evidence is strong enough to warrant action, and about the values inherent in taking action – or not taking it – where directions for solutions to reduce tobacco's harms are apparent. Each of the sometimes volatile policy debates that I will review in Part I of the book are wringing wet with implied value positions that I believe have not received sufficient critical analysis within the tobacco control community.

During my 30-year career in tobacco control, I have met quite a few people whose motivation for being involved in trying to reduce smoking seemed to me to be primarily moralistic. Whatever they knew about the harms of smoking, this only served as post hoc ammunition for a wider purpose: to try to stop people smoking because smoking was *wrong* before it was harmful. To such people, the origins of its "wrongness" sometimes lay in explicit religious doctrines, but more often lay in some deeply puritanical sense that smoking was a moral vice, redolent with visions of other forms of frightening licentiousness and self-pleasuring.

But the overwhelming majority of people involved in tobacco control do not come to the topic as Calvinistic-like moralists. They come to it as health workers who want to help prevent early death and the attendant misery this can bring to smokers and those close to them. Often they are simply decent citizens with no professional roles in public health, who hope to contribute to the same ends. This of course is unavoidably a moral position too, as history has seen many infamous episodes where life has been devalued. An indicator of these values is the revulsion that many expressed at news of the Philip Morris-sponsored study that advised the Czech Republic's government that early deaths of smokers each saved the government $1227 on health care, pensions and housing[33].

Tobacco control therefore has a noble purpose, but it is obviously not the only noble pursuit in the world. Occasionally tobacco control activists act as if it were; but it is important that policy debates should be transparent about the implications of overzealous single-mindedness where this discounts other important values cherished by large sections of society. Tobacco control debates are not restricted to circles of people who eat, drink, live and breathe tobacco control. Propositions for the further control of tobacco need to resonate with the values of wider society, and particularly with those held by key political decision-makers.

An articulate 52-year-old woman called me a few years ago. "Give the 'smoking kills' line a rest", she urged. "I've smoked for thirty years. I have emphysema. I am virtually housebound. I get exhausted walking more than a few metres. I have urinary incontinence, and because I can't move quickly to the toilet, I wet myself and smell. I can't bear the embarrassment, so I stay isolated at home. Smoking has ruined my life. You should start telling people about the living hell smoking causes while you're still alive, not just that it kills you."

I took this call shortly after having discovered online, a 23-page document written in 1978 for the British tobacco industry by Campbell Johnson, a public affairs firm. The document seemed to me the very worst I had ever encountered in several years of studying internal industry documents. It read:

> This last point, a brutally realistic one, implies that, with a general lengthening of the expectation of life we really need something for people to die of. In substitution for the effects of war, poverty and starvation, cancer, as the disease of the rich, developed countries may have some predestined part to play. The argument is obviously not one that the tobacco industry could use publicly. But its weight, as a psychological factor in perpetuating people's taste

> for smoking as an enjoyable if risky habit, should not be underestimated . . . In reality, of course, though in its controlled and positive aspects, cancer is an essential ingredient of life, without which the cells of the human body would be unable to renew themselves[34].

This second statement was written in 1978, a full 16 years after the Royal College of Physicians of London published their landmark report on smoking and health in 1962[35]. This is taken by many to be the date when the first consolidated evidence condemning smoking as a major preventable cause of disease was considered to have become established. Here was a public affairs firm setting out the case to its tobacco client that they should try to make a virtue out of the small "problem" that smoking kills lots of its users. Moreover, cancer, the most dreaded of all diseases, was to be reconceptualised as "an essential ingredient of life", as important as food, air, water and shelter. The industry should feel proud that it was just helping nature along. Its "enjoyable" products would go down in history as having taken their place in this "predestined" theatre of death, as another part in that lay discourse one sometimes hears muttered by people indifferent to the mass death caused by famines, tsunamis and war that "these things just help trim the population".

We are all going to die

The Campbell Johnson author got one thing right. We *are* all going to die. Death itself cannot be prevented. Advanced age is easily the strongest predictor of death, and chronic diseases including most forms of cancer and heart disease become much more prevalent in later life and are the diseases that will appear on most of our death certificates. These truisms have acquired profane, almost unutterable status in contemporary health care debate. Each banal in isolation, they remain banished from polite discussion as indecent reminders of the pathos of the human dust-to-dust destiny, occasionally insisting to be heard amid the unbridled optimism of the scientific legacy. Perhaps the most unabashed manifestation of this denial is the spamming American Academy of Anti-Aging Medicine, which boasts 11 500 members in 65 nations[36], and unblinkingly speculates about the virtues of people living to the age of 120 and possibly as long as 170[37]. Whole death-denying and -defying industries have become established on the back of the age-old human preoccupation with finding fountains of youth and other promises of eternal life.

Indeed, the dominant medical motto for our age might well be "never say die". In 2004, following Richard Nixon's declaration of war on cancer in 1971, the then head of the US National Cancer Institute, Andrew von Eschenbach, caught the spirit of George W. Bush's all-conquering *zeitgeist* and challenged the USA to "eliminate suffering and death from cancer" by 2015[38]. In Sweden, it is government policy that the road toll should strive to reach zero, not merely fall[39]. If you scratch the surface of the Human Genome Project, unstated assumptions about eternal life are not hard to find in the pitch to the often elderly biotech investors.

Single-issue health organisations, including those in tobacco control, often talk of research or progress that might one day eliminate their diseases. Lung cancer

was a rare disease before the mass availability of machine-made cigarettes saw its rapid acceleration after 1920 in nations with easy access to cigarettes. It remains uncommon in non-smokers. So if the disease can appear, it can be made to disappear, the thinking correctly goes. The recent development of a vaccine for cervical cancer[40] is self-evidently a wonderful thing. Here is a almost fully translated research advance that promises to end the collected misery and pain that millions of women would otherwise suffer over the years. The eradication of smallpox and the predicted departure of wild polio from the planet are astonishing achievements. So why not conquer everything else? In wealthy nations today there are few causes of death that cannot boast a non-government agency and a research focus dedicated to eradicating the offending disease. Health agencies' mission statements are purged of anything that even hints that a point might be reached when an organisation might be content with a certain incidence of deaths from their cause. Defeat is anathema to medical progress when it comes to death.

Plainly, there is much to admire in all this. If the go-for-gold death eradication scenarios played out for each preventable cause, a huge number of deaths in young and middle age would be prevented. But if no one of any age died from cancer, was ever killed on the roads, or died from any given cause now subject to ever-onward mortality-reduction targets, what would take their place? If the death toll from late-age smoking-related cancer plummeted, if heart disease became something permanently able to be postponed, would this be progress? Which causes of death would increase when others declined? What *would* we die from? And would this be progress?

Isolated from the wider "if not death from X, then what?" question, advances against deaths from particular diseases may be pyrrhic victories if all it means is that cause-of-death deckchairs are being shuffled on life's *Titanic*, only to sink around the same time.

So, because we all have to die of some cause, what's the problem of such deaths being caused by tobacco use? What virtue is there in stopping people from dying at the end of life from diseases caused by their smoking, and instead seeing the same people die from other diseases, probably soon afterwards, not caused by smoking? Plainly, little – if that was all that was at issue. In the eponymous Greek myth, Sisyphus is condemned to an eternity of ceaselessly rolling a rock to the top of a mountain, only to see the stone fall back because of its own weight. Is this not like the ultimate futility of trying to postpone death by defeating each of its possible causes at the end of life? If so, the ethical justification for preventing tobacco-caused deaths needs to move to other considerations. These are not hard to find.

Tobacco causes early death

First, while some people who die of tobacco-caused diseases are very old – and would be likely to die of *something* sooner than later, a massive number of smokers die each year when they are well below average life expectancy. Of people who smoke for many years, about half will die of a disease caused by their smoking and about half of these will die in middle age[41]. Richard Peto and colleagues

have calculated that for the year 2000, in industrialised nations alone, 1 945 902 people died of tobacco-caused disease. Of these about half (962 313, or 49.5%) died between the ages of 35 and 69[42]. In less-developed nations for the year 2000, 2.41 million deaths were attributable to smoking[43].

Former Beatle George Harrison was one such person who died early from smoking. His death on 29 November 2001 from smoking-caused lung cancer was noted in some reports as if he had died from any other cause, despite losing more than 20 years of the average life expectancy of a 58-year-old British man. Indeed, the ABC network in the USA went so far as to note that unlike many other rock stars of his generation (Jimi Hendrix, Janis Joplin, Jim Morrison) Harrison had died of "natural causes"[44].

If we assume Harrison took up smoking at the age of 15, and on average smoked 20 cigarettes a day, he therefore smoked for around 43 years, smoking 314 115 cigarettes in that time. Observations of smoking show that a cigarette takes about 5.6 minutes to smoke[45]. We can therefore calculate that Harrison had a cigarette alight for a cumulative total of 1221.6 days, or 3.34 years, of his 58 years. Recalling that he lost about 20 years of normal life expectancy for an Englishman, we can calculate that each of the 314 115 cigarettes he smoked took 33.5 minutes off his life – about six times longer than the time it took him to smoke each one.

Few smokers have any realistic idea of the probability (it is 50%) that their smoking will cause their death, nor of how many years on average they will lose. Since early 2005 my website[46] has hosted a quiz for smokers to assess the extent to which they understand the risks of smoking. One question reads:

On average, how much longer do non-smokers live than people who have smoked for a long time?

- None. On average they will live as long as a non-smoker
- Between 1–2 years
- Between 2–5 years
- Between 6–12 years
- Between 12–20 years
- More than 20 years

As at 26 August 2006, 960 people had attempted the question, and only 297 (30.9%) got the correct answer: "between 6–12 years" ("On average, cigarette smokers die about 10 years younger than non-smokers")[47]. Later in this chapter, I consider the ethical questions arising from smokers' inadequate understandings of the risks they face.

Tobacco can greatly diminish quality of life

So, tobacco kills many people, and it kills many people years earlier than they may have lived had they not smoked. If communities value life and believe that the early, avoidable deaths of many of their citizens are cause for concern, we are then already one large step towards justifying tobacco control. But the *process* of dying

from tobacco-caused diseases is also highly relevant. It is here that the wisdom of my 52-year-old caller who pleaded for more attention to the misery that smoking can cause *during* life comes into its own. Tobacco doesn't just kill, and kill many people early, it also seriously erodes the quality of life for millions who live, sometimes for many years, with tobacco-caused diseases before they die.

Most of us have a sense of how we would like to "go" when we die. In the most usual scenario, we see ourselves dying peacefully in our sleep, around normal life expectancy, after having lived our lives free of pain and without major disability, with all of our senses still functioning and being able to continue daily performing most of the activities we enjoy without assistance. We don't want to have to depend on others for basic support in mobility, toileting and eating.

Certainly, there are many lifelong smokers who die this way: who "drop dead" after a decent lifespan, lived largely free of diagnosed disease. Smokers' experience of such people gives rise to the commonly heard self-exempting belief "what about all those people like my Uncle Bob who smoked all his life and died in his sleep at 85?"[48]. But many smokers and former smokers die with significant disability that they may have lived with for years before death. Let us briefly count just some of the ways.

- Smoking is a major cause of cardiac disease, with painful manifestations like angina afflicting millions and greatly reducing sufferers' ability to live a fully participatory life.
- Smoking causes peripheral vascular disease[49], which can cause pain in walking and, in extreme cases, lead to gangrene and amputation of the limbs.
- Smoking is a major causative factor in stroke. Stroke survivors can suffer all manner of mild to severe motor, neurological and sensory problems. People who have had strokes can place huge burdens on their carers for many years.
- Smoking is a major risk factor for blindness resulting from age-related macular degeneration caused by smoking[50].
- Smokers are at greatly increased risk of hearing loss[51].
- Smoking causes periodontal disease, causing teeth loss[52].
- Smoking is a cause of osteoporosis, associated with the risk of bone fractures, immobility and death in older people from pneumonia consequent on that immobility[53].
- Erectile dysfunction. In a recent Australian study of 8367 Australian men aged 16–59 years, men who smoked more than 20 cigarettes a day had a 39% higher probability of having a period of erectile dysfunction that lasted longer than one month[54].
- In 2000, an estimated 8.6 million – 95% confidence interval (CI) = 6.9–10.5 million – persons in the USA had an estimated 12.7 million (95% CI = 10.8–15.0 million) smoking-attributable conditions. For current smokers, chronic bronchitis was the most prevalent condition (49%), followed by emphysema (24%). For former smokers, the three most prevalent conditions were chronic bronchitis (26%), emphysema (24%), and previous heart attack (24%). Lung cancer accounted for 1% of all cigarette smoking-attributable illnesses[55].

One of the most common and chronic diseases caused by smoking is chronic obstructive pulmonary disease (COPD), including emphysema. Emphysema, which is what my caller suffered from, results from destruction of the alveoli (air sacs) in the lung. The effect of this loss of lung tissue on the small peripheral airways is to cause them to collapse when pressure is applied during exhalation or breathing out. When you are with a person with emphysema, you get the impression of it being easy for them to take air in, but not to get it out. In advanced emphysema, which can last many months and sometimes years, the person finds even the simplest energy-requiring tasks hugely exhausting. Walking across a room becomes a major challenge, and climbing even a small set of steps can be nearly impossible. An oxygen cylinder is their constant companion. Speaking more than a few sentences can be energy draining.

People living such lives understandably don't get out and about much, so tend to live the remainder of their lives shut off from the outside world, moving from bed to chair and back again. Understandably, their invisibility to the world means that few people without first-hand experience of a relative or friend living with emphysema have much awareness of the disease. Out of sight is out of mind, which explains in large part why many people find it hard to believe the stratospheric data on the numbers of people killed and affected by smoking. A recent review of global studies of the prevalence of emphysema in different populations concluded that in the population studied the pooled estimated incidence of emphysema was 1.8%, and that 15.4% of smokers had COPD compared with 4.3% of people who had never smoked[56]. Such proportions translate to frighteningly large numbers of seriously debilitated smokers.

In 1980, James Fries first advanced the concept of the compression of morbidity – the notion that the goals of medicine and public health should also importantly involve striving to compress the time in which people experience illness, disability and a significantly reduced quality of life[57]. He argued that a key goal of medicine and public health should be to reduce the number, duration and severity of episodes of illness. A recent systematic review of the *rate* of functional decline in the aged in the USA has shown a significant reduction in this decline in the past three decades, suggesting some success in compressing morbidity (i.e. delaying the onset of illness in elderly people) through both prevention and medical care. However, in many nations the demographic wave of former "baby boomer" generation people now entering late middle and old age will mean that the *number* of people who are disabled, dependent and living with reduced functionality because of multiple chronic conditions will grow to be larger than ever before. Tobacco-caused morbidity will be a significant proportion of these conditions. With this trend compounded by the rapidly growing obesity epidemic, we seem likely to see an unprecedented prevalence of disability in ways that may not have been previously anticipated in disease modelling. Efforts to reduce and compress the incidence of preventable morbidity – such as that caused by tobacco use – will thus become increasingly important as populations age.

Tobacco control needs to pay far more attention to the diseases we get from tobacco use when still alive, particularly those that can affect people in their early

middle age. Efforts should be made to empower people living with chronic disease caused by smoking to become more visible and to assist in tobacco control advocacy.

The ethics of tobacco control

To some, it may seem self-evident that with smoking causing so much preventable early death and suffering, that efforts to control tobacco use will always be entirely ethically defensible. But in fact tobacco control policy presents many complex ethical dilemmas that need careful interrogation. Robert Goodin's seminal paper "The ethics of smoking"[58], and his now out-of-print book[59], which expands his arguments, remain for me the most lucid exposition of the ethical issues associated with tobacco control. Starting with the utilitarian philosopher John Stuart Mill's famous essay on liberty[60], Goodin examines both the question of whether smoking ought to be regarded as "a paradigmatically private-regarding vice" that harms only smokers themselves who have chosen, perhaps knowingly, to take their chances. He also considers the extent to which smoking interferes with the liberty of others, and so might be regarded as a legitimate subject of intervention in any civil society.

Mill's key precept states that "the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection . . . The only purpose for which power can be rightfully exercised over any member of a civilised community . . . is to prevent harm to others"[60].

Broadly, these are the two central questions on which an ethical assessment of the case for tobacco control rests. In the case of the first, the crude argument runs that unless one is an open paternalist who believes it is legitimate to interfere in the liberty of others to protect them from the consequences of their own freely chosen actions, then such interference is ethically unjustified to anyone who subscribes to the ethical force of Mill's core principle. But as I will discuss, such a simplistic assessment is complicated by several key problems: are smokers in fact knowingly taking the risks they "choose" to take? Because nicotine is addictive, what implications are there for the notion that smokers are freely engaging in smoking, particularly because most smokers commence smoking when they are legally children and therefore below the age when informed consent is recognised. And because in welfarist states, the community through taxation provides for the health care of those who are ill, is it reasonable that the state should pay for the costs of caring for sick smokers, who some would argue are "voluntarily" incurring such costs and then expecting the community to pay for them?

In the case of the second major ethical question (does smoking violate the Millean principle of not harming others?), if smoking can also harm people other than the smoker, then a prima facie case exists that smoking in such circumstances should be subjected to ethically legitimate controls. Goodin notes that "there is a world of [ethical] difference between the harms that others inflict upon you and the harms

that you inflict upon yourself." The interesting ethical questions arising here concern the levels of exposure at which "harming others" might be reasonably said to commence. And more fundamentally, what is "harm"? As we will consider in Chapter 6, policy debates have emerged about banning smoking in circumstances where the exposure involved and the probability of harm is extremely low.

The ethics of smokers "knowingly" harming themselves

The legal maxim of *volenti non fit injuria* holds that if people voluntarily participate in activities known full well to them as involving risk, then they waive any rights to redress should they then be harmed. They are said to have "brought it on themselves". This is the position taken by tobacco industry defence teams when sick and dying smokers seek to sue the industry for damages arising from the use of tobacco products when consumed according to the manufacturers' instructions.

The key questions arising here concern the proposition that smokers in fact do really "know" the risks to which they are said to be consenting. People can only be said to have consented if we can be assured that they actually knew what it was to which they were supposedly consenting. If smokers falsely believe that their smoking poses no risks to them, or significantly underestimate those risks, then the central premise of the "informed consent" argument justifying allowing smokers to chose to continue knowingly harming themselves is seriously undermined.

Obligations to provide information to consumers about the risks created by products fall mainly upon manufacturers, and the failure to provide information is a common basis of legal liability. This failure may take the form of positively misleading or deceptive conduct or misleading or deceiving through a combination of positive acts and silence, such as where a manufacturer fails to disclose information where a consumer would have a "reasonable expectation" that, if the manufacturer knew some information likely to be seen as important to a consumer, the manufacturer would disclose it.

No person can be reasonably expected to have a full appreciation of all the risks they face in every behaviour or in every circumstance in which they may find themselves. For similarly obvious reasons, the law never requires a manufacturer to disclose *every* conceivable risk that a product might ever create in any circumstance. Generally though, the obligation is to provide "adequate" information or warnings. As often occurs in law, "adequacy" is an imprecise concept that has to be determined in the context of all relevant circumstances. Relevant questions include whether warnings bring clearly and emphatically to the mind of a consumer the risks associated with use; whether they refer to specific risks; and whether they are sufficiently clear or explicit. As a matter of general legal principle, the greater the magnitude of a risk (i.e. the more likely that the adverse outcome will occur), and the more severe the consequences if the risk materialises, the more important is the obligation to disclose.

As stated earlier, globally each year, tobacco products, when used as intended by their manufacturers, cause the death of (currently) some 5 million people[43]. Around half and perhaps up to two-thirds of long-term users of tobacco will die

from a tobacco-caused disease[41]. Tobacco thus constitutes a prima facie example of a consumer good for which it is imperative that questions about the communication of risk information be considered.

There is a huge disparity between what is known from epidemiological research about the range, extent and probability of tobacco's harm to users, and both the communication of these harms to consumers and smokers' understandings of these harmful characteristics. The proposition that most smokers are fully or even adequately informed about the risks they take is false, manifestly so in populations with low literacy and education.

Governments regularly impose restrictions and conditions of use on goods and services when unrestricted use or provision may cause unacceptable levels of harm either to users or to those exposed to the use of the product or provision of the service. This is more often the case when the harms caused are imminent ("dangerous") rather than chronic ("unhealthy"), the latter typically requiring many years to be expressed as illness. Restrictions implemented through registration and licensing are imposed on manufacturers of consumer products, motor vehicles and their users, firearms, explosives and the performance of dangerous work. Governments restrict access to or performance of certain occupations (e.g. certification of competence to perform electrical work, building, plumbing, medical, dental and pharmaceutical dispensing) and require formal assessment of medical need for access to products (access to addictive drugs such as morphine derivatives). For a product that causes such immense death and disease, the sale of, and access to, tobacco remains minimally regulated (see Chapter 4).

"Informed" smokers: policy implications

The tobacco industry has long acted to avoid, dilute and delay the introduction of health warnings on packs, particularly when these concern specific diseases[61]. When it was forced by legislation to do so, the cloud had a big silver lining, allowing the global industry to adopt the position that all smokers were henceforth "fully informed". For example, the Tobacco Institute of Australia told the Australian Senate in 1995: "The tobacco industry believes that people who smoke do so fully informed of the reported health risks of smoking . . . If the public is adequately informed then the necessity or logic of further government intervention must be questioned"[62]. However, the core assumption of the industry's position has not been sufficiently interrogated: just what is a "fully or adequately informed smoker?" Moreover, if the concept of the fully informed smoker is seen as critical to policy about the obligations of manufacturers and the responsibilities of government, it follows that we should also ask whether it is, or should be, legal to sell tobacco to an "inadequately informed smoker".

Legal proscriptions on children voting, being conscripted into military service, gambling and entering legal contracts, on selling alcohol and tobacco to children, and allowing them to view explicit sexual and violent films are in part based on the premise that children are too intellectually immature to be able to make informed decisions about matters where they might be exploited or suffer harm. Adulthood,

and its legal rights and responsibilities, carries assumptions about individuals being able to reasonably comprehend risks and make informed choices. But such an assumption deserves scrutiny against what is known about smokers' understandings of the risks they face.

There are at least four important consequences for both the tobacco industry and public health policy if the "smokers are fully or adequately informed" argument is accepted uncritically. First, it allows the tobacco industry to resist future reform of pack warnings because it presupposes that all relevant information both known and that might be discovered is already addressed by existing (presumably general) warnings. As Philip Morris' international CEO wrote to an Australian political leader in 1992: "Australians are aware of the warnings against smoking – one would have to be asleep in a cave for 20 years not to be aware – and a change in the existing pack warnings is thus unnecessary."[63]

Second, it allows the tobacco industry to resist other regulatory reforms, such as those dealing with advertising and promotion, product availability (where products can be sold), packaging design or taxation. The Tobacco Institute of Australia's line that "if the public is adequately informed then the necessity or logic of further government intervention must be questioned" can be expected to be deployed in each of these contexts.

Third, the cornerstone of the industry's defence to litigation in most cases brought by dying smokers has been that smokers are aware of the risks they take, through pack warnings and other widely circulated information about smoking and health, and therefore smokers should bear all responsibility for deciding to take these risks. Evidence that the community is "saturated" with information about illnesses said to be caused by smoking and the addictive nature of nicotine (see below) is critical to such a defence. However, the defence remains vulnerable to evidence about the industry's dissembling conduct designed to undermine public confidence in the warnings[64], the reassuring messages it has sent, and continues to send, to smokers and potential smokers through its advertising including alluring pack designs[65], deliberate product manipulation[66] and the significance of addiction.

The fourth area of relevance is concerned with arguments about the costs and benefits of tobacco use to national economies. Industry-commissioned economic reports often assume Viscusi's "rational addiction" precepts[67] about significant awareness of health risks as a basis for arguing that the money outlaid by all smokers should be considered as an economic benefit, thereby allowing the "benefits" side of national cost-benefit ledgers to be artificially boosted significantly.

What is a "fully or adequately informed" smoker?

Four levels of being "informed" about the risks of smoking can be distinguished.

Level 1: having heard that smoking increases health risks. At the most elementary level, one can ask whether an individual has ever heard that smoking is a threat to "health" in its widest sense. Such people might be said to be "aware"

that smoking is regarded as harmful. Today, this level of awareness is very high in nearly all nations and subpopulations, and is that to which the tobacco industry invariably refers when it talks about almost saturation-levels of awareness. Evaluation of recent Australian quit campaigns, which highlight the harms of smoking, suggests over 88% awareness of the campaigns[68]. By contrast, in less developed nations, knowledge can be very poor. In China in 1996, 61% of smokers believed smoking caused "little" harm, with 7.5% believing it caused no harm[69].

Level 2: being aware that specific diseases are caused by smoking. Level 1 awareness often involves little understanding of which particular diseases are caused by smoking, while level 2 awareness involves knowing that smoking can cause particular diseases like lung cancer and emphysema. Level 2 awareness in populations is generally much lower than that for level 1. For example, in one Australian study, only 54% of smokers mentioned lung cancer, unprompted, as a smoking-related illness, though the specific warning had already appeared on packs for several years[70]. Although cigarette smoking has been found to increase the risk of developing many different illnesses, most smokers in developed countries with histories of tobacco control can name only a few illnesses when given the opportunity in surveys to name as many diseases caused by smoking as they can, suggesting that many of the health risks are either unknown or not particularly salient.

Here important questions arise as to how many, and which, diseases a person should be aware of before being said to be adequately "aware" of the full range of risks engendered by smoking. In Australia, awareness of pack warnings among smokers remains high[71], yet a 2002 US Surgeon General review and International Agency for Research in Cancer (IARC) declarations about smoking's relationship to disease found 26 other diseases not covered by the six warnings[72]. Informed decision-making and self-regarding behaviour seem impossible without knowledge of many conditions that have not been the subject of health warnings. For example, conditions caused or exacerbated by smoking such as blindness[73], reduced fertility, deafness and impotence substantially affect lifestyle and life decisions. Other conditions, such as bladder cancer and colorectal cancer[74], could potentially be treated if detected early. Here, information may make the difference between survival and death.

Level 3: accurately appreciating the meaning, severity and probabilities of developing tobacco-related diseases. Being aware of claims that smoking causes particular diseases may not involve an individual having even rudimentary awareness or understanding of what these diseases mean. For example, few smokers are likely to actually know what emphysema is, how it destroys lung tissue, and what the quality of day-to-day life of someone living with emphysema is like. Similarly, few would have seen a person (or even a photograph of a person) suffering from gangrene caused by advanced peripheral vascular disease caused by smoking, and so would have a poorly developed sense of the hideous nature of gangrene, including the pain and smell it causes.

Similarly important is an understanding of the severity of smoking-caused disease, the likelihood of surviving 5 years after diagnosis, the probabilities of contracting

various diseases, or the relative risk of contracting a smoking-caused disease when compared with other risks of life that people would rank as important. For example, when shown a list of possible causes of death that included car accidents, alcohol, asbestos and poor diet, and asked to indicate the one they were most likely to die from, only one-third of smokers in an Australian study identified smoking[70] despite it being by far the greatest health hazard they faced on the list. A considerable proportion of smokers (28%) thought they were most likely to die from a car accident, and 6% thought they would die from "toxic chemicals". A majority of Australian smokers underestimate the risks of smoking[75], and Weinstein et al.[76] state that "Smokers underestimate their risk of lung cancer both relative to other smokers and to non-smokers and demonstrate other misunderstandings of smoking risks. Smoking cannot be interpreted as a choice made in the presence of full information about the potential harm". A comprehensive list of such studies can be found in the Canadian Cancer Society publication *Controlling the Tobacco Epidemic*[77], commencing at page 231. Such studies indicate that many smokers have a poor understanding of the risks that smoking poses to their health. Additionally, given that most harms from smoking occur later in a smoker's lifetime, becoming manifest often after decades of use, special challenges arise in communicating the lifetime probability of acquiring such diseases.

Level 4: personally accepting that the risks inherent in levels 1–3 apply to one's own risk of contracting such diseases. Individuals may have appreciable levels of awareness as described above, but may nonetheless mediate these through various self-exempting beliefs (e.g. "everything causes cancer these days") that effectively allow for the rationalisation of continued smoking.[48] Level 4 awareness involves smokers agreeing that their smoking poses significant risk to their *own* health. Weinstein's review of international evidence on smokers' recognition of vulnerability to harm concludes that "smokers do acknowledge some risk; nevertheless they minimize the size of that risk and show a clear tendency to believe that the risk applies more to other smokers than themselves . . . People may be quite aware of well-publicised risks and may even overestimate their numerical probability, but they still resist the idea that risks are personally relevant."[78]

In principle, an adequately informed smoker would be one who was able to demonstrate specified levels of awareness and understanding of level 2 and 3 information, and who believed that their own smoking was likely to pose significant risks to their health (level 4). However, settling on what these agreed levels of understanding should be and how we would agree that adequate levels of understanding had been demonstrated presents large challenges (see Chapter 8). Nevertheless, the difficulties presented by meeting these challenges should not preclude their being subjected to serious consideration, drawing on the considerable body of evidence assembled by experts in the visual communication of risk[79] and particularly work undertaken in Canada[77] and Australia[80] in the development of more salient health warnings.

Level 2 awareness would require agreement on which diseases smokers should reasonably be expected to know were increased in risk by smoking. The conclusions