

Michigan Tobacco-Free Institute

“Nicotine and the Modern Lung Cancer Epidemic: The True Story”

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Not long ago, I spoke at a lung cancer symposium in Louisville, Kentucky, at the Jewish Hospital Heart and Lung Institute. The Jewish Hospital is just a few blocks down the street from the headquarters of the Brown and Williamson Tobacco Company, the alma mater of Jeff Wigand. During my talk, I observed that there was definitely something peculiar in our situation. Pointing out the window, I said, “You know, if that building ...” – referring to the Brown and Williamson Tower, which was visible from where we were convened for the conference – “... if that building wasn’t there, this building probably wouldn’t be here.”

Of course, some might suggest that an equally strange situation exists in Michigan, where all of us work hard to counter the effects of cigarette smoking on our communities, while powerful tobacco industry allies in Lansing have helped the industry maintain its sales and profits by blocking meaningful attempts to regulate such things as smoking in restaurants and youth access to tobacco products. I am very proud of our state, but this is obviously a serious problem. In short, we have our work cut out for us.

One way that we are addressing this challenge is through the Smoke-Free Environments Law Project, a venture sponsored by MDCH’s Tobacco Section and run by our good friend Jim Bergman at the Center for Social Gerontology in Ann Arbor. I serve as the legal consultant for SFELP, as it’s called. SFELP is a unique statewide project that was created to provide cost-free information, consultation and advice for local tobacco reduction coalitions, businesses, local governments and individuals regarding policies and practices to protect employees and the general public against the debilitating effects of secondhand tobacco smoke. We also offer expertise concerning the legal requirements and liability issues related to secondhand smoke.

With respect to local governments – which, of course, many of you work with on a regular basis – SFELP provides assistance, on request, concerning the smoking policies adopted by municipalities and counties, as employers, as operators of public places and as policymakers. In cooperation with the Tobacco Section, we provide expertise on both

Michigan and federal laws dealing with secondhand smoke and the array of legal liability issues confronting local governments with respect to the workplace and public accommodations. SFELP also reviews and assists in the drafting of smoke-free ordinances and regulations and provides information and expert testimony at hearings and meetings concerning smoke-free policies. A recent example of this is the assistance we have given Ingham County health officials and the Ingham County Board of Commissioners in reviewing and crafting a proposed ordinance to eliminate smoking in the workplace, public places and restaurants.

One of the most useful tools that has been created by SFELP is its one-of-a-kind Web site, which you can visit at www.tcsg.org/sfelp/home.htm. I strongly encourage you to go there and to use it to support your work. Jim has done a fantastic job of assembling an easily accessed menu of resources, ranging from SFELP's backgrounders on legal and liability issues to actual ordinances, fact sheets, frequently updated news reports and many key links.

If you have any further questions about SFELP or any secondhand smoke-related matters that you are working on or are interested in, you can email us at sfelp@tcsg.org or call the Center for Social Gerontology, whose number is 734-665-1126.

Now, I'll move to the subject referred to in the title of my presentation, "Nicotine and the Modern Lung Cancer Epidemic." Let me begin by telling you something that is a key motivator for me in discussing this subject with you today. As you know, lung cancer has a stigma attached to it. That is because, viewed superficially, lung cancer is an illness brought by most of its sufferers upon themselves. As Dr. Gary Strauss of the Harvard Medical School once said, "Lung cancer is the ultimate politically incorrect disease." This perception, and I think he's right, is based on the fact that 9 out of 10 lung cancer cases are caused by cigarette smoking. And it accounts, in part, for the dismal record that individual smokers have had in lawsuits against the cigarette industry, at least until the past two years.

The cigarette companies, in fact, in every single legal case brought against them, continue to perpetuate the fiction that the people who used their products and fell ill are *solely to blame* for their injuries. Even some of the victims themselves believe this. I occasionally speak to groups of lung cancer survivors, and there are many who actually feel ashamed because they have bought into the overly simplistic belief that nobody *has* to smoke cigarettes, and neither did they.

That is one of the things that inspires me to take on one of today's tasks, and that is to try to debunk the myth that lung cancer victims – as well as those who suffer from other tobacco-related illnesses – are somehow "guilty," and to lay the blame where it belongs. It is important for people – especially people like you who are in the trenches – to understand that the chief preventable cause of death in America is not so much cigarette smoking as it is the cigarette *industry*.

In recent years, our understanding of this fact has grown dramatically. In fact, because of breakthroughs in the information now available to the public, which I'll be discussing, we're now in the midst of a revolution of sorts against tobacco. This revolution got a kick-start 12 years ago when I attended a congressional hearing in Washington, at which the key health committee was hearing testimony on the regulatory ramifications of a new "smokeless cigarette" – or so it was being called – that had recently been introduced into the marketplace by R.J. Reynolds. The product, which was named "Premier," was in reality a high-tech device.

(Slide: Dissected Premier)

It contained an aluminum capsule filled with various ingredients as well as a carbon tip which, when lit, heated but didn't actually burn the contents of the product. A nominal amount of tobacco was also included, evidently so that the manufacturer could claim that its new invention was a "cigarette," thus avoiding regulation by the Food and Drug Administration.

At the hearing, an RJR lawyer testified, in response to a question, that approximately 70 percent of the nicotine in Premier was added in the form of a spray-dried tobacco extract that was applied to so-called flavor crystals in the aluminum capsule. In other words, the cigarette company was adding substantial quantities of artificially added nicotine, a substance that Surgeon General Koop had determined that very year to be a drug as addictive as heroin and cocaine.

Just four months into my new career as a tobacco control advocate, I sat their temporarily dumbfounded, and then exclaimed in what was probably a pretty audible whisper to my boss, who was sitting next to me, "They can't do that!" Matt Myers, who is now the president of the Campaign for Tobacco Free Kids in Washington, responded with a tone of resignation, "Yes, they can. There's nothing to stop them."

While veterans of the issue didn't pay any particular attention to what seemed to me to be a revelation, I couldn't stop thinking about it, maybe because I was so new to the Tobacco Wars. So I started to do some digging and, in the following three years, built a file of publicly available but little known information about the cigarette companies' manipulation of nicotine.

The new revolution-in-waiting got an inadvertent boost one day in the fall of 1991 when I received a telephone call out of the blue from a scientist at R.J. Reynolds. At first, this person would not even give me a name, but eventually, in the course of many conversations, we got to know each other well, and I became his lawyer as well as what you might call a handler.

This first important tobacco whistleblower, whom I code-named "Deep Cough," eventually helped me bring the nicotine manipulation story to both ABC News and the FDA. In February 1994, roughly a year before Jeff Wigand came forward with further disclosures, ABC aired an expose and the FDA simultaneously announced that cigarette

companies were dosing consumers with fine-tuned deliveries of a drug that the industry had long known to be addictive.

This bombshell launched a cascade of events. The FDA began a 2_-year-long investigation of the tobacco industry. Congress responded by holding 10 months of historic hearings. It was at one of those hearings that the chief executives of the seven largest tobacco companies raised their right hands and swore, as RJR's CEO James Johnston put it, that nicotine was no more addictive than Twinkies. They also collectively denied that there was any proof that cigarettes caused cancer.

This process prompted other former tobacco company scientists, like Victor DeNoble, to follow Deep Cough's example by coming forward to testify. This was followed closely by the discovery, through litigation, of millions of internal tobacco company documents. In addition, a wide variety of lawsuits were filed, ranging from class actions, such as the *Engle* case in Florida, whose \$145 billion verdict was upheld by the trial court this week, to the state attorney general cases.

So it was in this way that I found myself at the epicenter of the social, legal and political earthquake that has shaken the foundations of the tobacco industry in recent years.

* * *

Speaking of such matters, I thought it might be interesting to show you a brief video that I put together for a session at the 11th World Conference on Tobacco OR Health in August. The session, entitled "Whistleblowers: The Courage to Come Forward," featured three of the folks you're about to see. I've worked closely with all of the people in the video, except the last one. It gives you an idea of the various ways in which these informants have helped our cause – through testimony before Congress and in litigation, television interviews, and appearances in public service ads. It begins with Deep Cough and concludes with a bit of a twist.

(Video clip)

I would like to turn now to the cigarette companies and their particular role in this story.

It may surprise you to hear this, but I don't believe that the people who run the tobacco companies *want* millions of Americans to get sick. On the other hand, I strongly believe that they have acted with what the law refers to as "reckless indifference" to the effects of their products on the health of the public. My personal experiences with the people who work at the top levels of the industry have taught me that they live and work in an insulated culture, where rationalization rules and cognitive dissonance dominates people's thinking.

Ever since the chief executives of the major tobacco companies met secretly at the Plaza Hotel in New York City in 1953 – just before Christmas – and hatched what is now a well-documented conspiracy to mislead the public about the health effects of their products, they have continued to lie and to blame the victim: the customer, who at the average age of 14 began what became a killer dependency on cigarettes.

(Slide: New York Times Magazine cover)

“Big Tobacco Won’t Quit” was the headline of a *New York Times Magazine* cover story featuring Steven Goldstone, the recently retired CEO of RJR. As quoted on the cover, he said:

“What have these public-health people achieved in 40 years?
They think they’ll end smoking by bankrupting us, but believe me, that’s not going to happen .”

That’s Steve Goldstone, humanitarian. Take a close look at the picture and you may notice his sharp incisors.

Another, somewhat subtler example of this rather cynical attitude is seen when we compare two ads that have run at the very same time.

(Slide: Nicorette ad)

One is an ad for Nicorette, the smoking cessation product. It carries the slogan, “You can do it.” And it adds, “Nicorette can help.”

(Slide: Merit ad)

At the same time, an ad for Merit cigarettes carries the same slogan: “You can do it,” followed by the line, “You can switch down to low tar and enjoy satisfying taste,” “satisfying taste” being a familiar euphemism for nicotine impact.

The use of the identical slogan, “You can do it,” raises the obvious question, what’s going on here? You have the Nicorette ad urging people to use the gum to help them quit. And, in response, the Merit ad from Philip Morris obviously targets the same audience: smokers who want to quit without suffering the effects of going cold turkey.

The cigarette industry knows, of course, that in their effort to quit, many smokers switch down to cigarettes with lower nicotine and tar ratings. Cigarette makers also know that when smokers switch down to the so-called lower-yield brands, many of them unconsciously engage in compensatory smoking behavior that keeps them hooked, a topic that I will come back to.

By telling smokers, ‘You can do it’ by switching down to Merit, Philip Morris offers smokers false hope and promotes their ongoing use of tobacco. Ironically, however, Philip Morris implies one thing that is true, and that is that cigarettes are by far the better nicotine delivery system. If you put the gum up against a cigarette in a straight fight for the smoker’s nicotine receptors, the cigarette wins hands down most of the time. Keep in mind that the cigarette company has run these ads, and others like them, knowing full well that less than 3 percent of the smokers who quit each year remain smoke-free for longer than 6 months. And Merit doesn’t help.

The good news is that now we have a great deal more information about *why* Merit doesn’t help. We know, for example, that nicotine is not like caffeine, and not even like alcohol. We also know that – now listen carefully – *nicotine causes lung cancer*. And it also causes emphysema and heart disease. This may sound a little strange to you, because you probably know that nicotine doesn’t *directly* cause those illnesses, with the exception of some effects on the heart – but it is true.

The long-time director of the Behavioral Research Program at Philip Morris, the maker of Marlboro – which is the number one selling consumer product in the world – explained why this is so in a speech to industry colleagues 28 years ago, in 1972. Dr. William Dunn, whose nickname at Philip Morris was the “Nicotine Kid,” a moniker he wore proudly, said nothing about the rising lung cancer epidemic, but chose instead to celebrate the wonders of the modern tobacco technology whose development he was helping to pioneer. This is what he told his fellow cigarette scientists:

(Slide: Dunn quote #1)

“The primary incentive to cigarette smoking is the immediate salutary effect of inhaled smoke upon bodily function... The physiological effect serves as the primary incentive; all other incentives are secondary...

(Slide: Dunn quote #2)

“Without nicotine ... there would be no smoking... No one has ever become a cigarette smoker by smoking cigarettes without nicotine... The physiological response to nicotine can readily be elicited by cigarettes delivering in the range of 1 mg. of nicotine...

(Slide: Dunn quote #3)

“Why then is there not a market for nicotine per se, to be eaten, sucked, drunk, injected, inserted or inhaled as a pure aerosol?...

(Slide: Dunn quote #4)

“The answer, and I feel quite strongly about this, is that the cigarette is in fact among the most awe-inspiring examples of the ingenuity of man. Let me explain my conviction...

(Slide: Dunn quote #5)

“The cigarette should be conceived not as a product, but as a package. The product is nicotine. The cigarette is but one of many package layers...

(Slide: Dunn quote #6)

“There is the carton, which contains the pack, which contains the cigarette, which contains the smoke...

(Slide: Dunn quote #7)

“The smoke is the final package. The smoker must strip off all these package layers to get to that which he seeks...

(Slide: Dunn quote #8)

“Think of the cigarette pack as a storage container for a day’s supply of nicotine...

(Slide: Dunn quote #9)

“Think of the cigarette as a dispenser for a dose unit of nicotine...

(Slide: Dunn quote #10)

“Think of a puff of smoke as the vehicle of nicotine...

(Slide: Dunn quote #11)

“Smoke is beyond question the most optimized vehicle of nicotine and the cigarette the most optimized dispenser of smoke.”

Dr. Dunn’s observations were made candidly, but secretly. They were never intended to be seen by us, the public, the government, the medical community or the media. And they were made *16 years* before the Surgeon General was able to assemble enough publicly available information to warn the public that nicotine is an addictive drug.

(Slide: Yeaman quote)

As long ago as they were, Dr. Dunn's observations were made almost a decade after the general counsel for Brown and Williamson, the maker of Kool cigarettes, wrote, again secretly:

“Moreover, nicotine is addictive. We are, then, in the business of selling nicotine, an addictive drug effective in the release of stress mechanisms.”

This was just before Brown and Williamson's executives, including this same chief counsel, decided to withhold their findings on the addictiveness of nicotine from the Surgeon General, who was then preparing the landmark first report on smoking and health.

The same conclusions were also reached by the top officials at other cigarette companies.

(Slide: Teague quote)

A researcher at R.J. Reynolds, who was later promoted to an executive position, said in 1972, after describing in detail the potent drug effects of nicotine:

“In a sense, the tobacco industry may be thought of as being a specialized, highly ritualized and stylized segment of the pharmaceutical industry.”

The pharmaceutical reference c/o Dr. Claude Teague makes a lot of sense when you consider that the cigarette companies understood starting a long time ago that they needed smokers to inhale the smoke. They knew that inhalation gave the smoker that familiar “hit.”

The average three-tenths of a milligram of nicotine in each puff of a cigarette reaches the brain in about four seconds. The speed – faster than an intravenous injection – is due to the large surface area of the lung, which quickly transfers the drug to the pulmonary artery. To maintain enough nicotine in the bloodstream, the average smoker has one cigarette roughly every half hour. Given an average intake of 30 cigarettes over 16 hours of wakefulness, the smoker is shooting up 300 times a day, pharmacologically speaking.

It is also notable, when you consider this, that the cigarette companies and their spokespeople still claim, under oath, that they use nicotine simply for “taste.” If that is true, it is curious that of the people who have tracheostomies due to throat cancer caused by smoking, more than 40 percent continue to attempt smoking through the holes that have been cut out of their throats, bypassing the taste receptors which are, of course, in the mouth.

(Slide: Surgeon General's findings)

It was only much later that the public started to learn the truth through reports such as the Surgeon General's 1994 report on tobacco and youth, which found that -

- As many as one-half of all children who experiment with cigarettes rapidly become addicted to nicotine.
- Most adolescent smokers are addicted to nicotine and report that they want to quit but are unable to do so.
- Young people experience withdrawal symptoms and relapse rates similar to those reported by adults.

(Slide: Teague quote #1)

The Surgeon General's findings on the effects of nicotine on kids were predated by RJR's Dr. Teague, who wrote 21 years earlier:

“Realistically, if our Company is to survive and prosper, over the long term, we must get our share of the youth market...”

(Slide: Teague quote #2)

“In my opinion this will require new brands tailored to the youth market...”

(Slide: Teague quote #3)

“For the pre-smoker and ‘learner’ the physical effects of smoking are largely unknown, unneeded, or actually quite unpleasant or awkward...”

(Slide: Teague quote #4)

“The [following] information . . . may be used as a basis for arriving at some specifications for new ‘youth’ brands and for determining how they should be promoted...”

(Slide: Teague quote #5)

“Nicotine should be delivered at about 1.0-1.3 mg/cigarette, the minimum for confirmed smokers...”

(Slide: Teague quote #6)

“The beginning smoker and inhaler has a low tolerance for smoke irritation, hence the smoke should be as bland as possible.”

In other words, the company who later developed the cartoon campaign for Camel cigarettes was saying, “not only do we know that nicotine addicts people, but we will design our products to exploit this effect.” In fact, the companies’ targeting of the illegal youth market used to be even less subtle.

(Slides: “Flintstones” Winston ad)

In the 1960’s, RJR used Fred and Wilma to pitch Winstons in TV commercials.

I’ll turn now to what cigarette companies do to keep their customers smoking. You’ve heard the term “nicotine manipulation,” which has become kind of a sound bite, but what does it mean?

(Slide: Anatomy of a cigarette)

I brought some Marlboros and Camels along with me today. I am going to tell you something about what these harmless-looking sticks really are - something that cigarette manufacturers pretend are nothing more than dried and shredded leaves rolled up in white paper. They say they are nothing more than “agricultural” products, an impression they promote by figuratively wrapping their arms around the image of the homespun tobacco farmer.

(Slide: Introduction to methods of nicotine manipulation)

The truth is that it makes no more sense to call the modern cigarette an “agricultural product” than it would to call a Mercedes sports car a “bicycle.” And this is why: In the making of these cigarettes, and trillions more like them, cigarette makers use seven major methods to control nicotine delivery with space-age precision.

(Slide: Manipulation method #1)

- First, they adjust tobacco blends using high-nicotine tobaccos and higher nicotine parts of the tobacco leaf to raise the nicotine concentration in so-called lower-tar cigarettes.

(Slide: Manipulation method #2)

- Second, they add extraneous nicotine to fortify tobacco stems, scraps, and other waste products, which are processed into what is called reconstituted tobacco, an artificial, manufactured material not found in nature that is used in large quantities in almost all major cigarette brands. [Perhaps 25% of this Camel.]

(Slide: Manipulation method #3)

- Third, the companies add ammonia compounds which the companies claim is used for taste, but which prompt a chemical reaction that speeds the delivery of “free” (that is, chemically unbound) nicotine to the smoker, causing the smoker unknowingly to freebase the drug into his or her bloodstream, much as crack users freebase cocaine by burning and inhaling it.

(Slide: Manipulation method #4)

- Fourth, cigarette makers use filter and ventilation systems that remove a higher percentage of tar than nicotine, thus sustaining the addiction.

(Slide: Manipulation method #5)

- Fifth, they genetically engineer tobacco plants to double or even triple the nicotine content, as Brown and Williamson did done by producing and using in mass-marketed cigarettes the super-charged “Y-1” tobacco discovered in the FDA investigation.

(Slide: Manipulation method #6)

- Sixth, they use patented laser technology to produce ventilation holes that are invisible to the naked eye, which dilute the smoke and thus reduce nicotine delivery in machine tests. This results in what are essentially falsified amounts of the nicotine and tar levels that are at least 80 percent understated. What happens is that because most smokers aren’t aware of the existence of these tiny holes, much less the role they play, many smokers who think they are enjoying a health benefit unconsciously cover the holes with their fingers or lips, causing them to inhale much more nicotine and tar than they bargained for.

(Slide: Manipulation method #7)

- Finally, the seventh method of nicotine manipulation: The manufacturers use a variety of psychoactive chemicals, such as acetaldehyde and pyridine, that act synergistically to strengthen nicotine’s effects on the brain and central nervous system.

The information that I’ve just highlighted explains why Dr. William Farone, a former Director of Research for Philip Morris, calls cigarette smoke “a drug cocktail.” Dr. Farone correctly points out that a cigarette is defined, both in law and by the tobacco industry itself, as “tobacco wrapped in paper.” *Tobacco*, he agrees, is an agricultural product, but *cigarettes* are a synthesis of tobacco, paper and chemicals.

Well, where does that leave us? First of all, in spite of this manipulation, it is important to emphasize that it *is* possible to quit smoking. For many people, it is very difficult to do so. But for the majority, it *can* be done. Addiction to a substance, be it nicotine, heroin or cocaine, does not mean that quitting is impossible.

Second, I think that it is important for us, as advocates, to educate others about the fact that it is not just a battle between the smoker's craving and his or her willpower. What it *is* is a war fought out in the arenas of public relations, political influence peddling, advertising, marketing and litigation, and of course cigarette manufacturing practices. It is a war between the user of tobacco, who is often desperate to quit, and the cigarette companies who are equally eager to prevent them from succeeding, regardless of the cost, both physical and financial.

Let me be clear regarding my own philosophical approach to this issue. I consider myself a civil libertarian. I have great trust and faith in the right and the ability of adults to make their own decisions and to live life the way they choose, so long as what they do doesn't hurt others.

What disturbs me is that the cigarette makers often talk about choice, about the freedom of adults to make their own decisions. While talking a good game, they simultaneously do everything in their considerable power to handcuff that choice at the same time as they work successfully to influence children to smoke.

The modern story of tobacco is not a tale of a world in which freedom of choice is absent, which is not what I'm suggesting, but rather a world in which the choice that we have has been manipulated ... a world in which the playing field has been skewed, in which the battle for the brain and central nervous system of the smoker is *still* not a fair one.

That is why we must attempt to level the playing field, which can only be done through independent government oversight and, when necessary, in courts of law.

As you may know, earlier this year, the Supreme Court ruled, 5 to 4, that the FDA does not currently have the authority to regulate tobacco. In its opinion, the Court stated that the FDA "has amply demonstrated that tobacco use, particularly among children and adolescents, poses perhaps the single most significant threat to public health in the United States." But it sent the issue back to Congress to consider extending the FDA's jurisdictional reach to tobacco.

Many have noted the irony inherent in Congress' rapid response to the Firestone tire scandal, involving a total of 100+ deaths, versus the inaction of our elected representatives on the regulation of tobacco products, which involve 1,000+ deaths each day.

(Slide: Eclipse package)

Twelve years after I first learned about Premier, there is still nothing to stop cigarette companies from controlling the contents of their products at will. RJR's newest innovation, Eclipse – known as "son of Premier" – is also quite unlike the conventional cigarette of old, as you can see.

(Slide: Dissected Eclipse)

The company currently is marketing the product as a “safer” cigarette, without any independent peer-reviewed evidence to substantiate its claims. In fact, a new scientific study reports that Eclipse exposes the smoker to greater amounts of several cancer-causing chemicals than conventional cigarettes that were already on the market. And RJR, again, has manipulated the nicotine delivery to ensure that the user remains hooked.

(Slide: Cause-Effect)

So, clearly any regulatory action that is taken in the future must focus on tobacco manufacturers’ manipulation of nicotine, for nicotine is the industry’s lifeblood. And nicotine addiction is, as I have tried to illustrate, the root cause of the modern lung cancer epidemic.

Unfortunately, we can’t stem the lung cancer epidemic only with smoking cessation and treatment, for that attacks the symptom, not the cause. We must also do what we can to prevent the damage in the first place. And to do that, we need to attack the vector of the disease - to use a medical analogy. Nicotine-containing cigarettes may be the pathogen, but for 90 percent of all lung cancer cases the vector is the tobacco industry - just as the mosquito is the vector of malaria. So it is essential that we focus some of our efforts on combating the vector through political involvement.

While most of our efforts here are targeted toward Lansing and our local governments, I want to share a little secret that I learned when I worked in Congress. Every time a member of Congress receives a letter from a constituent, they regard that letter as representing the view of approximately 250 people in their district. That’s the rule of thumb they apply on Capitol Hill. I assume that our state and local representatives make similar calculations. So our collective influence can be significant.

With that in mind, I’ll leave you with this parting thought. As that well-known philosopher, “Anonymous,” once said, in a call to action that has long inspired me and which you are welcome to make your own:

(Slide: Mosquito quote)

“If you think you’re too small to be effective, you’ve never been in bed with a mosquito.”