Tobacco Epidemic: Historical Lessons

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Cigarettes cause one in six deaths in the United States. An estimated 390,000 people died in 1985 from complications of cigarette smoking, far more than died of any other preventable cause of death. The epidemic of death from smoking can be traced from the rise in cigarette consumption, which began in the second decade of this century.

Over the past generation, there have been dramatic changes in the patterns of cigarette consumption. Overall rates of nicotine dependence have fallen markedly among better educated groups, and since 1977, new users of cigarettes (i.e., teenagers) are more likely to be female, reversing the male predominance always observed previously. The poor, less educated, and minority groups have not experienced the same degree of reduction in smoking rates as have the White upper classes, and the burden of disease from cigarettes increasingly falls on these targeted consumer groups.

Peto has estimated that cigarettes cause two and a half million deaths per year worldwide. More than five trillion cigarettes are produced each year, and production is rising faster than the population at 2.1% per year. Tragically, developing countries are now recapitulating the West's experience with the scourge.

Tobacco was unknown to Europeans prior to Columbus' voyages of discovery. Amerindians cultivated tobacco and developed the major ways of consuming the herb that are in use today: cigars, cigarettes, chewing tobacco, and pipes. Spanish and Portuguese sailors took the plant with them on voyages of exploration and trade so that well before the beginning of the eighteenth century, tobacco was grown around the world.

For the most part, European governments set up lucrative state-run monopolies to manage tobacco. The wealthy French tobacco monopoly helped finance the American Revolution.

John Rolfe introduced Nicotiana tabacum to the Jamestown colony in Virginia from the Spanish Main in 1612.4 Virginia leaf found a ready market in England, and this crop became the economic base for Britain's southern colonies in North America. The commodity has remained a major cash crop throughout the history of the republic.

Until 1884, cigarette manufacture was labor intensive. A good roller could produce 2,500 to 3,000 cigarettes in a day. Factories employing Russian immigrants and women in New York and in Richmond, Virginia, dominated the market, and cigarettes were a relatively expensive, upper-class luxury.

James Bonsack of Virginia had developed a machine by 1881 to manufacture cigarettes, but it was not perfected. James Buchanan “Buck” Duke contracted with Bonsack in 1883 to give his company preferential licenses in exchange for further developmental work on the machine. Today, a machine that churns out 8,000 cigarettes per minute is commonplace in cigarette factories around the world, and machines capable of producing 10,000 per minute are coming on-line.

With the mechanization of cigarette manufacture, prices fell, and the industry became capital intensive. Duke had a preferred access to the means of production, and he was able to coerce his competitors into becoming part of the American Tobacco Company. By the 1890s, cigarette
manufacturing had become a monopoly in the United States. It remained so until 1911 when it was dismantled into the oligopoly so familiar today.

Mechanization also led to excess manufacturing capacity. This, in turn, put pressure on the manufacturers to expand the market for cigarettes. An identical need for market expansion exists today for American cigarette manufacturers, although this time the excess capacity had resulted from declining domestic cigarette consumption.

Tobacco chewing was the major form of tobacco consumption prior to the development and spread of the match, and remained dominant through the early twentieth century. Pipes and cigars need to be relit frequently because the burning tobacco tends to extinguish itself when left unattended. Because of the need for a convenient source of flame, smoking was only convenient near an established fire until the match was perfected.

The development of efficient rail transportation throughout the United States by the end of the nineteenth century made it possible to rapidly distribute a perishable product made at a single location throughout the nation. Similarly, railroads made it easier for factories to utilize raw materials from distant locations in greater quantity.

Advertising and promotion were key to successful, national marketing of cigarettes in the post-Civil War era. The cigarette card was originally a utilitarian object to stiffen a cigarette pack. Under the leadership of Major Lewis Ginter, the Richmond-based firm of Alan and Ginter developed the cigarette card into a striking array of "puzzles, maps, pictures of boats, flags, actors and actresses in numbered sets". These early efforts foreshadow the promotions used in cigarette marketing today, such as Philip Morris' give-away in early 1989 of a compact disc of popular music with the purchase of three packs of Parliaments.

Richard Joshua Reynolds founded his tobacco company in Winston, North Carolina, in 1874 for the manufacture of plug tobacco. Reynolds was an innovator throughout his career. For example, he was the first to sweeten his products with saccharine in 1891. The chemical could sweeten flue-cured tobacco to the levels characteristic of brands that used Burley leaf without making the flue-cured product soggy. Furthermore, the resulting product had a longer shelf life as it was less apt to become moldy.

Although Reynolds made several small brands for smoking in the 1890s (including one packaged with cigarette papers), these products were secondary and seem to have been mostly a means to use scrap left over from plug tobacco manufacture. The company's first major, national smoking tobacco brand was introduced in 1907.

The Tobacco Trust was dismantled in 1911. Reynolds, whose company had been incorporated into the Trust in 1899, was then free to expand his product line in direct competition with American Tobacco. Reynolds began to make cigarettes. At the time, there was no dominant formula for cigarettes. Various products included cigarettes made of Turkish (Oriental) leaf, flue-cured leaf, blends of these two, and uncased (unflavored) Burley tobacco. Reynolds imitated the Turkish and flue-cured varieties in several brands launched in 1913 (e.g., Reyno, Osman, and Red Kamel), but he also devised a completely novel formula for Camel cigarettes.

Camel's packaging boasted of a "Turkish and Domestic Blend." Turkish tobacco provided desirable flavor and aroma characteristics, while cased Burley tobacco added flavor, and flue-cured tobacco working in combination with the sugared Burley produced a smoke with a mildness (low pH) characteristic of flue-cured brands, which facilitated inhalation. Maryland tobacco was added to the blend in 1916 to improve the cigarette's burning qualities.

George Washington Hill of the American Tobacco Company later credited Reynolds with revolutionizing the cigarette industry. The novel formula, which has become known as the American blend, was an immediate success. Aggressive pricing, the elimination of premiums, and imaginative advertising combined to propel Camel to phenomenal increases in sales in a short period of time. By 1919, during a period of rapid growth in the industry, a phenomenal 38.7% of all cigarettes manufactured in the country were Camels.

The American Tobacco Company responded in short order with a Camel-style cigarette called Lucky Strike, and Liggett and Myers reformulated Chesterfield to meet the upstart competition. Each company came to concentrate on a single national brand, and premiums were dropped in favor of more efficient mass advertising. The pattern established over 70 years ago persisted until
very recently when there was a return to a multitude of brands and brand extensions combined with a huge increase in promotional activities at the expense of spending on conventional advertising.8

In 1900,9 per capita consumption was only 54 cigarettes per person per year. A sharp inflection is evident at the time Camels were introduced, and this dramatic rise continued with seldom a pause through the end of the World War II. The decline seen during the Depression years was associated with an increase in the use of roll-your-own tobaccos. A reduction in consumption in the early 1950s was triggered by an article in Reader's Digest that summarized emerging knowledge about cigarettes and lung cancer.10 The cigarette manufacturers successfully dealt with their public relations problems (but not the public health problems they had created), and cigarette consumption resumed its rise into the 1960s, peaking at 4,345 cigarettes per adult in 1963.

A brief downward inflection in 1964 was associated with the publication of the first Surgeon General's Report. Although the cigarette manufacturers were given a veto of the composition of the committee, the industry still found the conclusions unacceptable. The industry made a successful, albeit brief, recovery from the fallout over the 1964 report, but consumption began to slide again in the late 1960s. This corresponded exactly with the counter-advertising campaigns aired on television under the Fairness Doctrine from 1967-1970. At their peak, the counter-ads were allotted only a third of the airtime given over to cigarette advertising. When the ban on broadcast cigarette advertising was imposed on January 2, 1971, the counter-ads were forced off the air as well, and cigarette consumption immediately began to rise again.

Per capita cigarette consumption has fallen every year since 1973; the decline is presently about two per cent per year. Overall prevalence of cigarette smoking has fallen from 52.6% among men (peak year 1955) and 34.1% among women (peak year 1965) to 31.7% for men and 26.8% for women in 1987.11

Cigarette manufacturers have employed two complementary strategies to deal with the public relations problems resulting from the massive evidence that their products are highly addictive and frequently fatal to their customers. The defensive strategy has been the development of an aggressive lobbying organization, epitomized by the Tobacco Institute, and the support of research on health effects through an industry-controlled committee formed in 1954. Industry supported research has often documented serious health consequences of smoking, but the sponsors have been just as unwilling to publicly accept adverse conclusions by their own scientists as they have the conclusions of the U.S. Public Health Service.

The offensive strategy the industry has used to deal with its public relations problem has been the production and marketing of products designed to appear safe. Filter cigarette brands were heavily promoted during the 1950s: While only accounting for 0.6% of the market in 1950, 50.9% of all cigarettes sold in 1960 had filters, and today, filters command about 95% of the market.11 These products were often marketed with overt health claims.

By the mid-1960s, the charm of filters had begun to wane, especially since it was increasingly obvious that these devices were not actually safe. The emphasis next turned to "low tar" brands. These brands, too, were pushed with appeals to health concerns.

The charm of low-tar products has been short-lived, however, as evidence mounts that people can readily compensate for lower nicotine deliveries by taking deeper inhalations, smoking more cigarettes, and by blocking ventilation holes in filters.13 The low-tar cigarettes did not reverse the decline in cigarette sales like the filter revolution did in the 1950s. Accordingly, alternative means for sustaining nicotine dependence have recently been sought.

The most visible of these efforts has been that of the R.J. Reynolds Company with its ill-fated, so-called "smokeless cigarette named Premier.14 On February 28, 1989, Reynolds withdrew Premier from test markets, citing poor sales.15 The company had lost an estimated $300 million on the new venture.

Several more modest innovations have also recently come to market that are aimed at promoting acceptance of smoking by nonsmokers, one of which was cigarettes that produce less visible side-stream smoke. The first cigarette of this sort was a product named Passport. Utilizing a
specially treated cigarette paper to reduce visible smoke emissions, it was test marketed in Canada by Rothmans in 1985. Passport was withdrawn from the test market after scientists at the American Health Foundation observed that side-stream smoke from the cigarette contained increased levels of nitrosamines compared to conventional cigarettes.  

The tobacco industry has responded to substantial evidence of harm with a variety of defensive and offensive public relations gimmicks. It is safe to predict that the industry will continue to come up with still more inventive ways to promote denial that smoking is harmful both to those who smoke as well as to those around the smoker.

As cigarette consumption declines in this country, the domestic production of cigarettes is actually rising. The export trade is booming because of the opening up of important Asian markets to foreign, largely American and British, cigarettes. Pressure from the United States government has forced Japan, South Korea, and Taiwan to drop restrictions on foreign cigarette imports, and this has resulted in dramatic shifts in the epidemiology of cigarette use in these countries. In Asia, smoking has been uncommon among women, but advertising now targets women as well as adolescents. New forms of promotion and aggressive use of old forms are creating new markets for cigarettes in these countries.

Throughout South Asia, the American flag is evident as red and white stripes forming the background for Winston advertisements. In Taiwan, the only valid ticket of admission for a 1988 rock concert was five empty packs of Winston. In Malaysia, the government does not permit cigarette advertising on television as a public health measure. Instead, tobacco companies promote goods and services, such as fishing gear and travel agencies that use the themes, logos, and music associated with cigarette brands. In Kuala Lumpur, for example, Marlboro Country is a travel agency, and its television and billboard ads have a nearly identical appearance to cigarette ads.

Thailand is the current target of attack by American cigarette interests. The United States trade representative has been petitioned to pressure the Thai government to relax cigarette import restrictions while the smuggling of foreign brands into the country has become intense. American and British brands are widely advertised in Thailand although they are not legally available. The multinational cigarette companies have pointed out to the government that a large amount of tax revenue is being lost because black market cigarettes are not subject to excise tax.

Blonde tobaccos were not grown in most of the world until recent decades. Before that, locally grown, dark tobaccos supplied most local markets. Blonde varieties have transformed many national tobacco markets, promoting a change in taste to milder, more easily inhalable smoking blends. The multinational companies, particularly British American Tobacco, have actively encouraged this switch in local agriculture with the lure of making tobacco an export commodity. One consequence of this is that American, British, and Japanese cigarette companies have become better positioned to enter these markets in competition with local brands by using their more sophisticated formulas based on Virginia tobacco (flue-cured) and the American blend, supported by high-powered advertising.

Flue-cured tobacco cultivation requires a large amount of energy for curing the tobacco. In most developing countries, the energy is supplied by wood, and this, in turn, contributes to deforestation. An acre of tobacco requires more than an acre of wood fuel each year for curing. The actual extent of this problem has not been well defined, although it certainly bears careful examination.

Overall, worldwide cigarette consumption doubled between 1960 and 1986. Despite declines in the United States and Northern Europe, the industry is still growing overall, and tobacco continues to be a sound investment to the extent that companies have markets in developing countries. Already, except for Papua New Guinea and Vietnam, the leading causes of death in South Asia are cancer and heart disease. Several observers have pointed out parallels between the current tobacco trade and the nineteenth century trade of British opium from India to China. This aggressive expansion of the market for nicotine has been called the new opium way. Far more deaths are being caused by legal American tobacco exports than are caused by cocaine illegally imported into the United States.

As the tobacco epidemic comes somewhat under control in the United States, that victory will only
have been worthwhile if the epidemic is not merely transferred to other parts of the world. Unfortunately, tobacco use continues to rise elsewhere, aided and abetted by a sophisticated, wealthy, and powerful drug cartel based in New York and London.

Even with the substantial progress that has been made toward controlling the tobacco epidemic, an enormous task remains both here and abroad. The cultural history of tobacco combined with the political and economic power of the industry make this epic disease problem especially fascinating and challenging. Tobacco use can be controlled, but this will be accomplished only through a multidisciplinary attack around the world by people of good will acting both as individuals and through multiple public, private, and voluntary agencies. A thoughtful consideration of the history of this epidemic is essential preparation for the task ahead.

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References

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