The Surgeon Generals’ Reports: Fifty Years of Impact and Progress

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SCIENTIFIC RETREAT ON TOBACCO RELATED RESEARCH
“Making Tobacco History: Accelerating Efforts to Reduce Harm Caused by Tobacco”
South Carolina Clinical and Translational Research Institute,
Medical University of South Carolina
Charleston, October 30, 2014
POP QUIZ!

Who is the current Surgeon General?
Today’s Surgeon General

Boris D. Lushniak, MD, MPH
Acting Surgeon General
July 2013-current

- Oversees the U.S. Public Health Service Commissioned Corps (USPHS) and the Civilian Volunteer Medical Reserve Corps
- Principal adviser to the Secretary of Health and Human Services on public health and scientific issues
- The Affordable Care Act 2010 designated the Surgeon General as Chair of the National Prevention Council
- Nominated by the U.S. President with advice and consent of the Senate for a 4-year term of office
- Nominated Dr. Vivek Hallegere Murthy
The Surgeon General has determined that cigarette smoking is dangerous to your health.
Just Published

SURGEON GENERAL’S WARNING:
HOW POLITICS CRIPPLED THE NATION’S DOCTOR | MIKE STOBBE

Well-researched, engagingly written.
JILL CENTER, Senior Health Policy Analyst
50 years in 1 hour!
BEFORE 1964
1950: Key Case-Control Studies

- Morton Levin publishes a study linking smoking and lung cancer in *JAMA*

- Ernst L. Wynder and Evarts A. Graham publish study in *JAMA* in which 96.5% of lung cancer patients interviewed were smokers

- Richard Doll and Bradford Hill publish study in *BMJ* finding that heavy smokers are 50 times more likely to get lung cancer; follow-up in 1954
That so many diseases - major and minor - should be related to smoking is one of the most astonishing findings of medical research in this century; less astonishing perhaps than the fact that so many people have ignored it.
1953-1954: The Evidence Mounts

Experimental Proving of the CANCER CAUSING EFFECT OF TOBACCO

Ernest L. Wynder, G. S. Horn, R. C. Hammond, A. Lloyd, and J. E. F. Horn

THE RELATIONSHIP BETWEEN TOBACCO CONSUMPTION AND CANCER

BRITISH MEDICAL JOURNAL
LONDON SATURDAY JUNE 26 1954

Ratio between observed and expected deaths

Non-smokers

Smokers of 1-14 g/day

Smokers of 15-24 g/day

Smokers of 25 or more g/day

LUNG CANCER

Hammond and Horn. JAMA 1954;155:1316-28
Industry Tactics

A Frank Statement to Cigarette Smokers

 "We accept an interest in people's health as a basic responsibility, paramount to every other consideration in our business."

 "We believe the products we make are not injurious to health."

 "We always have and always will cooperate closely with those whose task it is to safeguard the public health."
Leroy Edgar Burney, MD, MPH*
US Surgeon General, 1956-1961

*MPH degree awarded in 1932 by The Johns Hopkins University School of Hygiene and Public Health

Photo courtesy of the Allan Chesney Medical Archives
Burney's Two Statements

**STATEMENT BY SURGEON GENERAL LEROY E. BURNLEY**

Excessive Cigarette Smoking

The Public Health Service is, of course, concerned with broad factors which substantially affect the health of the American people. The Service also has a responsibility to bring health facts to the attention of the profession and the public.

In June 1956, units of the Public Health Service joined with two private voluntary health organizations to establish a scientific study group to appraise the available data on smoking and health. We have now received the report of this Study Group, and other recent data, including the report of Dr. E. C. Hammond and Dr. Daniel Horn on June 5 to the American Medical Association in New York.

In the light of these studies, it is clear that there is an increasing and convincing body of evidence that excessive cigarette smoking is one of the causative factors in lung cancer. The Study Group, consisting of 32 independent studies, reported that lung cancer occurs much more frequently among cigarette smokers than among nonsmokers, and there is a direct relationship between the incidence of lung cancer and the amount smoked. This finding was reinforced by the more recent report by Dr. Hammond and Dr. Horn.

Many independent studies thus confirmed beyond reasonable doubt that there is a high degree of statistical association between lung cancer and heavy and prolonged cigarette smoking.

Such evidence, of course, is largely epidemiological in nature. It should be noted, however, that many important public health advances in the past have been developed upon the basis of statistical and epidemiological information. The Study Group also reported that in laboratory studies on animals at least five independent investigators have produced malignant cancers by tobacco smoke condensates. It also reported that biological changes similar to those which take place in the genesis of cancer have been observed in the lungs of heavy smokers. Thus, some laboratory and histological data provide additional evidence to support the concept that excessive smoking is one of the causative factors in the increasing incidence of lung cancer.

At the same time, it is clear that heavy and prolonged cigarette smoking is not the only cause of lung cancer. Lung cancer occurs among nonsmokers, and the incidence of lung cancer among various population groups does not always coincide with the amount of cigarette smoking consumed.

The precise nature of the factors in heavy and prolonged cigarette smoking which can cause lung cancer is not known. The Public Health Service supports the recommendation of the Study Group that more research is needed to identify, isolate, and try to eliminate the factors in excessive cigarette smoking which can cause cancer.

The Service also supports the recommendation that more research is needed into the role of pollution and other factors which may also be causative of lung cancer in man. To help disseminate the facts, the Public Health Service is sending copies of this statement, the Study Group report, and the report of Dr. Hammond and Dr. Horn to state health officers and to the American Medical Association, with the request that they consider distributing copies to local health officers, medical societies, and other groups.

While there are naturally differences of opinion in interpreting the data on lung cancer and cigarette smoking, the Public Health Service feels the weight of the evidence is increasingly pointing in one direction: that excessive smoking is one of the causative factors in lung cancer.

The Service notes that the Study Group found that more study is needed to determine the varying and significance of any statistical association between smoking and heart disease. The Study Group reported that in combining biologic and clinical observations, that smoking per se is one of the causative factors in heart disease. Although the report by Dr. Hammond and Dr. Horn has since provided additional data on this subject, the Service feels that more statistical and histological data are needed to establish a definite position on this matter.

**SPECIAL ARTICLE**

SMOKING AND LUNG CANCER

A STATEMENT OF THE PUBLIC HEALTH SERVICE

Leroey E. Burnley, M.D., Washington, D.C.

Lemond and Sorgberg—The latest paper in the Massachusetts studies on lung cancer and smoking draws particular attention. The documenting of each case is unusually thorough, covering a wide range of factors. An extensive series of controls was subjected to the same scrutiny. In a series of patients known to have died of lung cancer, four variables showed significant correlation and association: frequent or chronic respiratory conditions, heavy cigarette smoking, heavy consumption of alcohol, and outdoor work. Of these four variables, heavy cigarette smoking was far the strongest relationship to lung cancer. "About four-fifths of the persons with lung cancer were heavy cigarette smokers (more than 0.15 pack a day),...about two-fifths had frequent or chronic respiratory conditions, about one-fifth were engaged in outdoor occupations, and about one-fifth were users of alcohol in excessive amounts."

However, there was criticism of the retrospective (historical) method, undertaken this year, which is highly avoidable bias. The following three studies, recently published, were designed therefore with a prospective (cooperating) approach. Doll and Hill, reported from England, Hammond and Horn, for the American Cancer Society, and Doll and Hill from the National Cancer Institute of the Public Health Service (Fig. 2 and 3).

Doll and Hill—The Doll and Hill study is a continuing analysis of 40,000 British physicians. Among each physician 30 years of age and over, in the initial four and one-half years of observation, 5,764 deaths have occurred, including 144 from lung cancer. Deaths from lung cancer increased steadily with increasing amounts smoked, for non-smokers the age-adjusted death rate was 7 per 100,000 of this population, for light smokers, 47 per 100,000; for moderate smokers, 56 per 100,000; for heavy smokers (more than 25 cigarettes daily), 166. Giving up smoking reversed the susceptibility of an smoker to subsequent development of lung cancer. The decrease was greatest in those who had given up the habit for a decade or more and also continued to smoke more than 25 cigarettes daily from the beginning of the study had a mortality from lung
“...there is an increasing and consistent body of evidence that excessive cigarette smoking is one of the causative factors in lung cancer.”

- Leroy E. Burney

Yale University scientist and cancer researcher Harry S. Greene said he was so unsure of any relationship between smoking and cancer that he would continue to smoke until ‘tobacco companies cease manufacturing their product.’
March, 1962 Royal College of Physicians’ Report

Royal College of Physicians’ Report on Smoking and Health concludes:

“Several serious diseases, in particular lung cancer, affect smokers more often than non-smokers. Cigarette smokers have the greatest risk of dying from these diseases, and the risk is greater for the heavier smokers.”
1964
POP QUIZ!

In 1964, the overall prevalence of smoking in adults in the US was:

a) 64%
b) 43%
c) 50%
d) 30%
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012

- U.S. entry into WWI
- Great Depression begins
- 1964 Surgeon General’s report on smoking and health
- Reassurance campaign begins
- Broadcast ad ban
- Federal cigarette tax doubles
- Nonsmokers’ rights movement begins
- Synar Amendment enacted
- Cigarette price drop
- Nicotine medications available over-the-counter
- Tobacco Control Act
- FDA proposed rule
- Master Settlement Agreement
- Family Smoking Prevention
- 2006 Surgeon General’s report on secondhand smoke (an update)
- 2006 Surgeon General’s report on secondhand smoke
- Federal $1.01 tax increase
1964 Surgeon General’s Report
Meeting at the National Library of Medicine on the campus of the National Institutes of Health in Bethesda, Maryland, from November 1962 through January 1964, the committee reviewed more than 7,000 scientific articles with the help of over 150 consultants.

Terry issued the commission's report on January 11, 1964, choosing a Saturday to minimize the effect on the stock market and to maximize coverage in the Sunday papers.

As Terry remembered the event, two decades later, the report "hit the country like a bombshell. It was front page news and a lead story on every radio and television station in the United States and many abroad."

Surgeon General’s Committee on Smoking and Health 1963

“Three of the members smoked cigarettes, and two others smoked pipes or cigars. Terry, himself a smoker, served as the nominal Chairman of the group, but it was agreed that he would not participate in any of its deliberations or conclusions.”
Statement on Methods

• “A plan was adopted at the first meeting…”
• “…a major general requirement was that of making the information available…”
• “…made decisions or judgments at three levels…”: 1) validity of a publication or report; 2) validity of interpretations and conclusions of authors; and 3) conclusions of the committee.
• Criteria for causal inference
Causal Criteria

Statistical methods cannot establish proof of a causal relationship in an association. The causal significance of an association is a matter of judgment which goes beyond any statement of statistical probability. To judge or evaluate the causal significance of the association between the attribute or agent and the disease, or effect upon health, a number of criteria must be utilized, no one of which is an all-sufficient basis for judgment. These criteria include:

a) The consistency of the association
b) The strength of the association
c) The specificity of the association
d) The temporal relationship of the association
e) The coherence of the association
### Table 2. Expected and observed deaths for smokers of cigarettes only and mortality ratios in seven prospective studies

<table>
<thead>
<tr>
<th>Underlying cause of death</th>
<th>Expected deaths</th>
<th>Observed deaths</th>
<th>Mortality ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer of lung (162-3)</td>
<td>170.3</td>
<td>1,833</td>
<td>10.8</td>
</tr>
<tr>
<td>Bronchitis and emphysema (502, 521.1)</td>
<td>89.6</td>
<td>546</td>
<td>6.1</td>
</tr>
<tr>
<td>Cancer of larynx (161)</td>
<td>14.0</td>
<td>75</td>
<td>5.4</td>
</tr>
<tr>
<td>Oral cancer (140-8)</td>
<td>37.0</td>
<td>152</td>
<td>4.1</td>
</tr>
<tr>
<td>Cancer of esophagus (150)</td>
<td>33.7</td>
<td>113</td>
<td>3.4</td>
</tr>
<tr>
<td>Stomach and duodenal ulcers (540, 541)</td>
<td>105.1</td>
<td>294</td>
<td>2.8</td>
</tr>
<tr>
<td>Other circulatory diseases (451-68)</td>
<td>254.0</td>
<td>649</td>
<td>2.6</td>
</tr>
<tr>
<td>Cirrhosis of liver (581)</td>
<td>169.2</td>
<td>379</td>
<td>2.2</td>
</tr>
<tr>
<td>Cancer of bladder (181)</td>
<td>111.6</td>
<td>216</td>
<td>1.9</td>
</tr>
<tr>
<td>Coronary artery disease (420)</td>
<td>6,430.7</td>
<td>11,177</td>
<td>1.7</td>
</tr>
<tr>
<td>Other heart diseases (421-2, 430-4)</td>
<td>526.0</td>
<td>868</td>
<td>1.7</td>
</tr>
<tr>
<td>Hypertensive heart (440-3)</td>
<td>400.2</td>
<td>631</td>
<td>1.5</td>
</tr>
<tr>
<td>General arteriosclerosis (450)</td>
<td>210.7</td>
<td>310</td>
<td>1.5</td>
</tr>
<tr>
<td>Cancer of kidney (180)</td>
<td>79.0</td>
<td>120</td>
<td>1.5</td>
</tr>
<tr>
<td>All causes 1</td>
<td>15,653.9</td>
<td>23,223</td>
<td>1.68</td>
</tr>
</tbody>
</table>

1 Abridged from Table 25, Chapter 8, Mortality.
2 International Statistical Classification numbers in parentheses.
3 Includes all other causes of death as well as those listed above.

Source: USDHEW 1964
Smoking and Mortality, reconstructed in 2014

### A  Death from Any Cause

<table>
<thead>
<tr>
<th>Study</th>
<th>Weight (fixed)</th>
<th>Weight (random)</th>
<th>Incidence Rate Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Doctors</td>
<td>7.5</td>
<td>14.8</td>
<td>1.44 (1.32–1.56)</td>
</tr>
<tr>
<td>Men in 9 States</td>
<td>19.6</td>
<td>18.5</td>
<td>1.70 (1.61–1.79)</td>
</tr>
<tr>
<td>U.S. Veterans</td>
<td>40.2</td>
<td>20.1</td>
<td>1.79 (1.73–1.86)</td>
</tr>
<tr>
<td>California Occupational</td>
<td>1.0</td>
<td>4.6</td>
<td>1.78 (1.41–2.25)</td>
</tr>
<tr>
<td>California Legion</td>
<td>1.6</td>
<td>6.6</td>
<td>1.58 (1.32–1.90)</td>
</tr>
<tr>
<td>Canadian Veterans</td>
<td>14.6</td>
<td>17.6</td>
<td>1.65 (1.56–1.76)</td>
</tr>
<tr>
<td>Men in 25 States</td>
<td>15.6</td>
<td>17.8</td>
<td>1.63 (1.54–1.73)</td>
</tr>
<tr>
<td>Fixed-effects model</td>
<td>100.0</td>
<td>—</td>
<td>1.69 (1.66–1.73)</td>
</tr>
<tr>
<td>Random-effects model</td>
<td>—</td>
<td>100.0</td>
<td>1.65 (1.56–1.75)</td>
</tr>
</tbody>
</table>

Source: Schumacher et al. NEJM 2014;370(2):186-8
Key Findings

• Cigarette smoking is causally related to lung cancer in men; the magnitude of the effect of cigarette smoking far outweighs all other factors. The data for women, though less extensive, point in the same direction.

• Cigarette smoking is the most important of the causes of chronic bronchitis in the United States, and increases the risk of dying from chronic bronchitis.

• Male cigarette smokers have a higher death rate from coronary artery disease than non-smoking males, but it is not clear that the association has causal significance.

• Cigarette smoking is associated with a 70 percent increase in the age-specific death rates of males, and to a lesser extent with increased death rates of females. The total number of excess deaths causally related to cigarette smoking in the U.S. population cannot be accurately estimated. In view of the continuing and mounting evidence from many sources, it is the judgment of the Committee that cigarette smoking contributes substantially to mortality from certain specific diseases and to the overall death rate.

The Committee’s judgment in brief:
Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action.
CIGARETTE SALES CONTINUE TO RISE

Earnings Increase in Face of a Decade of Reports Indicting Smoking

By ALEXANDER R. HAMMER

NEW HAVEN, Conn., Jan. 11 (AP)—Dr. Harry S. Greene of Yale University is one scientist who is not convinced there is an association between smoking and lung cancer.

The Government has only statistics, the chairman of Yale’s department of pathology said tonight, “and a statistical association has to be interpreted.”

It might show cause and effect or it might show happenstance,” he said.

“But the results must be subjected to a laboratory test. They’ve been doing that for 15 years and have come up with absolutely nothing.”

Confessions of a lack of will power and sheer defiance were among the most frequent reactions yesterday to the Federal report finding the use of cigarettes a peril to health.

There were exceptions. “The report frightens me...” “It scares the hell out of me...” “I’m through...” “I guess I’ll cut down...” were some of the minority reports.

Many of those interviewed refused to give their names and said they considered the matter of smoking a private affair.

Underlying the responses of many was the unstated certainty that, after all, the odds were really against that popular pack of cigarettes a day for 20 years.

Joseph Bernard of Manhattan said that he, too, had tried to stop smoking several times. “It’s a difficult habit to break, but I might try again,” he said, reaching into his pocket for one of the 40 cigarettes a day he smokes.

An unidentified working girl smiled proudly and said she had stopped smoking for six hours after reading the report.

The manager of a tobacco shop at 46th Street and Broadway, Edwin Shelansky, said that “so far, the talk of cancer hasn’t cut our business at all.”

He said he expected a temporary drop in business.

Mr. Shelansky said he smoked both a pipe and cigarettes and would continue.

Norman Clark of Elmhurst, Queens, said the report didn’t frighten him.

“Everybody needs a certain amount of pleasure,” he said, “and smoking is a little pleasure I think I’ll continue.”

Four Packs a Day

REPORT: Dr. Luther Terry, the tuberculosis specialist, said that at least 3.1 billion cigars, up 135 million from the year before. Last year Americans consumed 60.5 million pounds of smoking tobacco—nearly 8.4 million pounds of chewing tobacco and more than 32.5 million pounds of snuff.

Of the $8 billion spent on tobacco products last year, $3.3 billion went for Federal, state and local government excise taxes.
INDUSTRY READY TO AID RESEARCH

Smoking Study Is Belittled by Carolina Governor

By J. H. CARMICAL

The tobacco industry's reaction to the report on smoking and health was that it would cooperate toward resolving the question of the relationship of tobacco to health.

In the cigarette-manufacturing division of the industry, for example, the sentiment seemed to be that much further research is needed on smoking and health and that the Government report is not conclusive.

Dr. Clarence Cook Little, scientific director of the Tobacco Industry Research Committee, has told Surgeon General Luther L. Terry and the American Medical Association that his organ-

SMOKING REPORT SPLITS CONGRESS; ACTION DEMANDED

One Side Presses for Quick Measures Against Perils Cited in Federal Study

TOBACCO STATES UNITE

Call for More Research—F.T.C. Expected to Order Displays of Warning

By MARJORIE HUNTER

Special to The New York Times

WASHINGTON, Jan. 12—Congressional battle lines began forming today over the Government committee report declaring cigarette smoking to be a health hazard.
January 14, 1964

Cigarette Shares Close Mixed Despite U.S. Report on Smoking

By VARTANIG G. VARTAN

The New York Stock Exchange, whose rules forbid smoking on the trading floor, saw cigarette stocks withstand heavy selling pressure yesterday while cigar issues made good gains. It was the stock market's first chance to assess the Surgeon General's report issued Saturday on the effects of smoking.

"I'm cutting down," declared one brokerage-house salesman. "I only smoked three cigarettes today and they weren't mine."

But most Wall Streeters said they did not plan to change their smoking habits. "I won't quit unless my wife harps at me," one broker said.

The market saw leading cigarette issues open lower after short delays as selling orders accumulated over the weekend reached the trading floor.

Cigar stocks, on the other hand, moved up. Cigar smoking received a relatively clean bill of health in the long-awaited report. The snapback was swift for cigarette issues. After their depressed opening, many of these
SMOKING REPORT IS A BEST SELLER

‘Hottest Item Now Going’ at Government Bookstore

Special to The New York Times

WASHINGTON, Jan. 15 — A Government official said today that the report on smoking was "the hottest item now going" at the Government Printing Office’s retail bookstore.

"It’s about as hot as anything I’ve seen in a long time," said Carper W. Buckley, Superintendent of Documents for the Printing Office.

The report, "Smoking and Health," went on sale at the bookstore yesterday. Within hours, nearly 10,000 copies had been sold.

Government printing presses are still turning out copies of the 387-page book. Of the first press run of 240,000 copies, thousands have been distributed free to members of Congress, Government agencies, tobacco interests and national publications.

About 200,000 copies will be sent free to all medical doctors and osteopaths, as part of the Public Health Service’s campaign to alert the medical profession to the health hazards of cigarette smoking.

The report, prepared by the Surgeon General’s Advisory Committee, was released Saturday. The 10-man committee said that heavy smoking decreased life expectancy.

Mr. Buckley said the demand for the report continued "heavy and steady" today. The present plan, he said, is to make about 50,000 copies available to the public. If the demand warrants it, more copies will be printed.


Topping the Government’s best-seller list is "Infant Care." This booklet has sold more than 12 million copies since it was first published in 1914.
DEBATE OVER SMOKING

Government Is Expected to Mount a Major Drive in Wake of Report, but it Faces Deep Opposition

By EILEEN SHANAHAN
Special to The New York Times
WASHINGTON, Jan. 18 — The smoke of the battle will be a long time clearing away because the battle over smoking has only just begun.

In the week since the issuance of the special Government-sponsored study of smoking and health, one thing has become entirely clear: The United States Government is going to undertake a considerable and coordinated effort to persuade and help the American people to stop smoking cigarettes.

The Government's decision to act, and act promptly, stemmed from the unequivocal findings of the smoking report to the Surgeon General. That report found that cigarette smoking causes lung cancer and other respiratory ailments and that smokers, especially cigarette smokers, have higher death rates from a variety of diseases than non-smokers.

area men is simple and straightforward: Many people, workers and managers in many industries, have a stake in continued cigarette consumption — the chemical, paper, aluminum, trucking, advertising, vending machine, newspaper, magazine, radio and television industries, and the million and a half retail stores whose tobacco counters attract customers who often linger to buy other things as well. With those who have a direct economic interest in thwarting any anti-smoking campaign is the general American disposition not to scare easily, to re-
first and most dramatic step has come from the Federal Trade Commission, which today proposed that rigid new rules be established to govern the content of cigarette advertising.

A warning of the dangers of smoking to health would be required on every cigarette pack and in every ad, under the proposed rules. In addition claims about the superiority of one brand over another so far as health is concerned would be barred unless proved in advance.

The new advertising rules will not go into effect until after public hearings in March, and may be modified. But the commission claims the law does not require it to follow the suggestions of the cigarette industry or anyone else before putting its proposals into effect. It has general statutory authority to protect the public from misleading advertising.

Other developments will come more slowly although the Gov-
KEY REPORTS SINCE 1964
U.S. adult per-capita cigarette consumption, 1900-2012 and SGRs 1964-2014

[Graph showing the number of cigarettes consumed per capita from 1964 to 2014 with publication years and health consequences reports listed vertically.]
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012

- 1964 Surgeon General’s report on smoking and health
- Broadcast ad ban
- Nonsmokers’ rights movement begins
- Federal cigarette tax doubles
- 1986 Surgeon General’s report on secondhand smoke
- Cigarette price drop
- FDA proposed rule
- 2006 Surgeon General’s report on secondhand smoke (an update)
- Federal $1.01 tax increase
- Synar Amendment enacted
- Nicotine medications available over-the-counter
- Master Settlement Agreement
- Family Smoking Prevention and Tobacco Control Act

Key events:
- U.S. entry into WWI
- Great Depression begins
- 1987: Surgeon General’s report on secondhand smoke

Graph showing number of cigarettes consumed per capita from 1900 to 2012, with key events marked along the timeline.
The 1972 Surgeon General’s Report

First to comment on secondhand smoke: “Tobacco Smoke Pollution”

Jesse L. Steinfeld, MD
Surgeon General, 1969-1973

Source: National Library of Medicine and US Public Health Service
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012
The 1979 Surgeon General’s Report

- **15th Anniversary Report**
- Presented most comprehensive review of health effects of smoking ever published, and first Surgeon General’s report to carefully examine behavioral, pharmacologic, and social factors influencing smoking.
- **Also first report to consider role of adult and youth education in promoting nonsmoking.**
- First report to review health consequences of smokeless tobacco.
- Many new sections, including one identifying smoking as “one of the primary causes of drug interactions in humans” (p. 12-22)
- Also first report to use term “involuntary smoking”
POP QUIZ!

In what year did the Surgeon General identify passive/involuntary smoking as a cause of lung cancer in nonsmokers?

a) 1972
b) 1986
c) 1990
d) 2006
e) 2014
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012
The House of Koop-1986

Bill Lynn (OSH), Dave Burns (Senior Editor), and Don Shopland (OSH)—Part of the 1986 SG Report team – in front of Dr. Koop’s house on the NIH campus.

Source: Jon Samet’s personal collection
The 1986 Surgeon General’s Report

“Involuntary smoking is a cause of disease, including lung cancer, in healthy nonsmokers.”

C. Everett Koop, MD, DSc
Surgeon General, 1982-89
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012
The 1988 Surgeon General’s Report

Major Conclusions

1. Cigarettes and other forms of tobacco are addicting.

2. Nicotine is the drug in tobacco that causes addiction.

3. The pharmacologic and behavioral processes that determine tobacco addiction are similar to those that determine addiction to drugs such as heroin and cocaine.

Jack Henningfield
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012
The 2000 Surgeon General’s Report

- First report to offer a composite review of the various methods used to reduce and prevent tobacco use.
- Evaluates each of the five major approaches to reducing tobacco use:
  - Educational
  - Clinical
  - Regulatory
  - Economic
  - Comprehensive programs
The Release of the 2004 U. S. Surgeon General’s Report

“I hope this Report will inform, galvanize, and inspire our nation, states, and communities to reduce the terrible toll of smoking and to secure a healthy future for America.”

Richard H. Carmona, MD, MPH, FACS
Surgeon General, 2002-2006
The 2004 SGR: It Takes a Village....
A four-level hierarchy for classifying the strength of causal inferences based on available evidence:

A. Evidence is **sufficient** to infer a causal relationship.

B. Evidence is **suggestive but not sufficient** to infer a causal relationship.

C. Evidence is **inadequate** to infer the presence or absence of a causal relationship (which encompasses evidence that is sparse, of poor quality, or conflicting).

D. Evidence is **suggestive of no causal relationship**.
1. Smoking harms nearly every organ of the body, causing many diseases and reducing the health of smokers in general.

2. Quitting smoking has immediate as well as long-term benefits, reducing risks for diseases caused by smoking and improving health in general.

3. Smoking cigarettes with lower machine-measured yields of tar and nicotine provides no clear benefit to health.

4. The list of diseases caused by smoking has been expanded to include abdominal aortic aneurysm, acute myeloid leukemia, cataract, cervical cancer, kidney cancer, pancreatic cancer, pneumonia, periodontitis, and stomach cancer.

Source: U.S. Surgeon General's Report, 2004
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012

The Health Consequences of Involuntary Exposure to Tobacco Smoke
A Report of the Surgeon General

Department of Health and Human Services
The 2006 Surgeon General’s Report

The Surgeon General’s Report that we are releasing today, *The Health Consequences of Involuntary Exposure to Tobacco Smoke*, documents beyond any doubt that secondhand smoke harms people’s health. In the course of the past 20 years, the scientific community has reached consensus on this point.”

Vice Admiral Richard H. Carmona, M.D., M.P.H, FACS, U.S. Surgeon General
U.S. Department of Health and Human Services, June 27, 2006
The 2006 SGR: The Release, June 27, 2006
Conclusions: 2006 Report

1. Secondhand smoke causes premature death and disease in children and in adults who do not smoke.

2. Children exposed to secondhand smoke are at increased risk for sudden infant death syndrome (SIDS), acute respiratory infections, ear problems, and more severe asthma (smoking by parents causes respiratory symptoms and slows lung growth in their children).

3. Exposure of adults to secondhand smoke has immediate adverse effects on the cardiovascular system and causes coronary heart disease and lung cancer.
Conclusions: 2006 Report

4. The scientific evidence indicates that there is no risk-free level of exposure to secondhand smoke.

5. Many millions of Americans, both children and adults, are still exposed to secondhand smoke in their homes and workplaces, despite substantial progress in tobacco control.

6. Eliminating smoking in indoor spaces fully protects nonsmokers from exposure to secondhand smoke (separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot eliminate exposure of nonsmokers to secondhand smoke).
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012
'These studies are inconclusive—so far we've only succeeded in giving cancer and heart disease to laboratory humans.'
SGR 2010: Major conclusions

The scientific evidence supports the following major conclusions:

1. The evidence on the mechanisms by which smoking causes disease indicates that there is no risk-free level of exposure to tobacco smoke.

2. Inhaling the complex chemical mixture of combustion compounds in tobacco smoke causes adverse health outcomes, particularly cancer and cardiovascular and pulmonary diseases, through mechanisms that include DNA damage, inflammation, and oxidative stress.

3. Through multiple defined mechanisms, the risk and severity of many adverse health outcomes caused by smoking are directly related to the duration and level of exposure to tobacco smoke.

4. Sustained use and long-term exposures to tobacco smoke are due to the powerfully addicting effects of tobacco products, which are mediated by diverse actions of nicotine and perhaps other compounds, at multiple types of nicotinic receptors in the brain.

5. Low levels of exposure, including exposures to secondhand tobacco smoke, lead to a rapid and sharp increase in endothelial dysfunction and inflammation, which are implicated in acute cardiovascular events and thrombosis.

6. There is insufficient evidence that product modification strategies to lower emissions of specific toxicants in tobacco smoke reduce risk for the major adverse health outcomes.
2010 Surgeon General's Report
Press Conference,
December 9, 2011,
National Press Club in
Washington, DC

Regina M. Benjamin, MD, MBA
Surgeon General, 2009-2013
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012
Understanding youth and young adults’ tobacco use: The 2012 Report of the U.S. Surgeon General

- Reviews health consequences of tobacco use by young people
- Examines social, environmental, advertising, & marketing influences
- Evidence for prevention & reduction of youth tobacco use
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2012

- U.S. entry into WWI
- U.S. entry into WWII
- Great Depression begins
- Reassurance campaign begins
- Confluence of evidence linking smoking and cancer
- Broadcast ad ban
- Federal cigarette tax doubles
- Nonsmokers’ rights movement begins
- Fairness Doctrine messages on broadcast media
- 1964 Surgeon General’s report on smoking and health
- 1986 Surgeon General’s report on secondhand smoke
- 2006 Surgeon General’s report on secondhand smoke (an update)
- Cigarette price drop
- FDA proposed rule
- Federal $1.01 tax increase

2014
The SGR 2014 Team
Available at: http://youtu.be/yr_HID2IUUU
ENOUGH IS ENOUGH!!!

Click for clip of press conference:
http://youtu.be/yr_HID2IUUU?t=31m38s
Conclusion #1: The century-long epidemic of cigarette smoking has caused an enormous avoidable public health tragedy. Since the first Surgeon General’s report in 1964 more than 20 million premature deaths can be attributed to cigarette smoking.
Conclusion #2: The tobacco epidemic was initiated and has been sustained by the aggressive strategies of the tobacco industry, which has deliberately misled the public on the risks of smoking cigarettes.
Conclusions #3-6:

Since the 1964 Surgeon General’s report, cigarette smoking has been causally linked to diseases of nearly all organs of the body, to diminished health status, and to harm to the fetus. Even 50 years after the first Surgeon General’s report, research continues to newly identify diseases caused by smoking, including such common diseases as diabetes mellitus, rheumatoid arthritis, and colorectal cancer.

Exposure secondhand tobacco smoke has been causally linked to cancer, respiratory, and cardiovascular diseases, and to adverse effects on the health of infants and children.

The disease risks from smoking by women have risen sharply over the last 50 years and are now equal to those for men for lung cancer, chronic obstructive pulmonary disease, and cardiovascular diseases.

In addition to causing multiple diseases, cigarette smoking has many other adverse effects on the body, such as causing inflammation and impairing immune function.
Active Smoking

Cancers

- Oropharynx
- Larynx
- Esophagus
- Trachea, bronchus, and lung
- Acute myeloid leukemia
- Stomach
- Liver
- Pancreas
- Kidney and ureter
- Cervix
- Bladder
- Colorectal

Chronic Diseases

- Stroke
- Blindness, cataracts, age-related macular degeneration
- Congenital defects—maternal smoking: orofacial clefts
- Periodontitis
- Aortic aneurism, early abdominal aortic atherosclerosis in young adults
- Coronary heart disease
- Pneumonia
- Atherosclerotic peripheral vascular disease
- Chronic obstructive pulmonary disease, tuberculosis, asthma, and other respiratory effects
- Diabetes
  - Reproductive effects in women (including reduced fertility)
  - Hip fractures
  - Ectopic pregnancy
- Male sexual function—erectile dysfunction
- Rheumatoid arthritis
- Immune function
  - Overall diminished health

Source: USDHHS 2014
POP QUIZ!

Passive smoking causes which of the following?

a) Breast cancer
b) Impotence
c) Stroke
d) Tuberculosis
Passive Smoking

**Children**
- Middle ear disease
- Respiratory symptoms, impaired lung function
- Lower respiratory illness
- Sudden infant death syndrome

**Adults**
- Stroke
- Nasal irritation
- Lung cancer
- Coronary heart disease
- Reproductive effects in women: low birth weight

Source: USDHHS 2014
Conclusions #7-9:
Although cigarette smoking has declined significantly since 1964, very large disparities in tobacco use remain across groups defined by race, ethnicity, educational level, and socioeconomic status and across regions of the country.

Since the 1964 Surgeon General’s report, comprehensive tobacco control programs and policies have been proven effective for controlling tobacco use. Further gains can be made with the full, forceful, and sustained use of these measures.

The burden of death and disease from tobacco use in the United States is overwhelmingly caused by cigarettes and other combusted tobacco products; rapid elimination of their use will dramatically reduce this burden.
Chapter Conclusions:

1. Together, experience since 1964 and results from models exploring future scenarios of tobacco control indicate that the decline in tobacco use over coming decades will not be sufficiently rapid to meet targets. The goal of ending the tragic burden of avoidable disease and premature death will not be met quickly enough without additional action.

2. Evidence-based tobacco control interventions that are effective continue to be underutilized and implemented at far below funding levels recommended by the Centers for Disease Control and Prevention. Implementing tobacco control policies and programs as recommended by Ending the Tobacco Epidemic: A Tobacco Control Strategic Plan by the U.S. Department of Health and Human Services and the Ending the Tobacco Problem: A Blueprint for the Nation by the Institute of Medicine on a sustained basis at high intensity would accelerate the decline of tobacco use in youth and adults, and also accelerate progress toward the goal of ending the tobacco epidemic.

3. New “end game” strategies have been proposed with the goal of eliminating tobacco smoking. Some of these strategies may prove useful for the United States, particularly reduction of the nicotine content of tobacco products and greater restrictions on sales (including bans on entire categories of tobacco products).
Key policy messages:

• Counteracting industry marketing by sustaining high impact national media campaigns like the CDC’s Tips from Former Smokers campaign and FDA’s youth prevention campaigns at a high frequency level and exposure for 12 months a year for a decade or more;

• Raising the average excise cigarette taxes to prevent youth from starting smoking and encouraging smokers to quit;

• Fulfilling the opportunity of the Affordable Care Act to provide access to barrier-free proven tobacco use cessation treatment including counseling and medication to all smokers, especially those with significant mental and physical comorbidities;

• Expanding smoking cessation for all smokers in primary and specialty care settings by having health care providers and systems examine how they can establish a strong standard of care for these effective treatments;

• Effective implementation of FDA’s authority for tobacco product regulation in order to reduce tobacco product addictiveness and harmfulness;

• Expanding tobacco control and prevention research efforts to increase understanding of the ever changing tobacco control landscape;

• Fully funding comprehensive statewide tobacco control programs at CDC recommended levels; and

• Extending comprehensive smokefree indoor protections to 100% of the U.S. population.
Looking Ahead: Chapter 16

- Rapid reduction of combustible products
- Reduction of nicotine content in cigarettes
- Role of non-combustible products
  - Under Tobacco Control Act
  - Individual harm reduction vs. Population risk
- Using all strategies better and in concert
LET’S MAKE THE NEXT GENERATION
TOBACCO-FREE
Your Guide to the 50th Anniversary Surgeon General’s Report on Smoking and Health
THE NEXT 50 YEARS

IF WE COULD HELP EVERY SMOKER TO QUIT SMOKING AND KEEP YOUNG PEOPLE FROM STARTING IN THE FIRST PLACE, THE RESULTS WOULD BE STAGGERING.

1/2 MILLION PREMATURE DEATHS could be prevented every year.

AT LEAST $130 BILLION in direct medical costs for adults could be saved every year.

AT LEAST 88 MILLION AMERICANS who continue to be exposed to the dangerous chemicals in secondhand smoke could breathe freely.

5.6 MILLION CHILDREN alive today who ultimately will die early because of smoking could live to a normal life expectancy.

MORE THAN 16 MILLION PEOPLE already have at least one disease from smoking. We could prevent that number from growing more.

1 OUT OF 3 CANCER DEATHS in this country could be prevented.

AT LEAST $156 BILLION in losses to our economy—caused when people get sick and die early from smoking—could be prevented.

Saving Millions of Lives

There are many ways to reduce smoking rates quickly and dramatically. Among the strategies proven to work are:

- Affordable smoking cessation treatments that are easily available to people who want to quit;
- Comprehensive smokefree and tobacco-free policies in public places that protect nonsmokers and make smoking the exception rather than the norm;
- Higher prices on cigarettes and other tobacco products that discourage young people from starting in the first place and that encourage adult smokers to quit;
- Continued mass media campaigns that inform people of the dangers of smoking and tell them about resources to help them quit; and
- State and community programs that help integrate tobacco control into medical, retail, education, and public health environments that reach groups of people who might not otherwise be exposed to tobacco control initiatives.

Despite all our progress, there is more work to be done. Every day 3,200 youth under 18 smoke their first cigarette, and another 2,100 youth and young adults who have been occasional smokers become daily smokers.
List of Smoking-Related Illnesses Grows Significantly in U.S. Report

By SABRINA TAVERNISE

WASHINGTON — In a broad review of scientific literature, the nation's top doctor has concluded that cigarette smoking — long known to cause lung cancer and heart disease — also causes diabetes, colorectal and liver cancers, erectile dysfunction and ectopic pregnancy.

In a report to the nation to be released on Friday, the acting surgeon general, Dr. Boris D. Lushniak, significantly expanded the list of illnesses that cigarette smoking has been scientifically proved to cause.

The other health problems the report names are vision loss, tuberculosis, rheumatoid arthritis, impaired immune function and cleft palates in children of women who smoke.

Smoking has been known to be associated with these illnesses, but the report was the first time the federal government concluded that smoking causes them.

The finding does not mean that smoking causes all cases of the health problems and diseases listed in the report, but that some of the cases would not have happened without smoking. The surgeon general has added to the list of smoking-related diseases before: Bladder cancer was added in 1980 and cervical cancer in 2004.

The report is not legally binding, but is broadly held as a standard for scientific evidence among researchers and policy makers.

Experts not involved in writing the report said the findings were comprehensive summary of the most current scientific evidence, and while they might not be surprising to researchers, they were intended to inform the public as well as doctors and other medical professionals about the newest proven risks of smoking.

"I thought the science was very well done and up to date," said Dr. Robert Wallace, a professor of epidemiology and internal medicine at the University of Iowa, who helped review the report.

The report comes 50 years after the pivotal 1964 surgeon general's report in which the government concluded for the first time that smoking caused lung cancer. That report was credited with starting to change public attitudes toward smoking, which has declined sharply. In 1965, about 43 percent of adults were smokers; in 2012, about 18 percent were.

But that decline has slowed in recent years, and the new report calls for stronger action in combating smoking. Smoking is the largest cause of premature death in the country, killing more than 400,000 people a year. The report notes that far more Americans have died prematurely from cigarette smoking than in all the wars ever fought by the United States.

The report concluded that the evidence was insufficient to say that smoking caused prostate cancer. The evidence was suggestive, but not definite, that smoking causes breast cancer.

Smoking is the largest cause of premature death in the United States.

cause of these cancers," said Neal Freedman, an epidemiologist at the National Cancer Institute.

He pointed out that the surgeon general last looked at the effect of smoking on liver cancer in 2004, and found the evidence only suggestive. Since then, 90 new studies have been published allowing the surgeon general to conclude smoking is a cause.

The report also finds that the risks of lung cancer are far higher today than in past decades, even though smokers today consume fewer cigarettes. In 1950, women who smoked were 2.7 times as likely as women who never smoked to develop lung cancer, and by 2010, the additional risk had jumped nearly tenfold. For men, the risk doubled over the same period. The report said changes in cigarettes' design, namely to the filter, contributed to the increased deadliness.

"It is stunning that the risk of a premature death from smoking is greater than it was 50 years ago," said Matthew Myers, head of the Campaign for Tobacco-Free Kids, an advocacy group.
Cigarettes Tied to More Deaths, Types of Illness


By MIKE ESTERL
Updated Jan. 17, 2014 12:01 a.m. ET

Cigarettes are deadlier and linked to more diseases than previously thought, according to a new report from the U.S. surgeon general being released 50 years after the government first warned that smoking kills.

In the report to be released Friday, the nation's top doctor warned that smoking is linked to the deaths of about 480,000 Americans annually. That's a substantial increase over the government's previous estimate of 443,000 deaths, despite the fact that fewer Americans are lighting up and those who do smoke are lighting up less often.

Cigarettes are a causal factor in 10 diseases and conditions they hadn't previously been definitively linked to, including diabetes, colorectal cancer, arthritis and erectile dysfunction, the report said—bringing the total number to more than 30.

In 1964, a landmark surgeon general report pinpointed smoking as a cause of lung and laryngeal cancers as well as bronchitis. That report precipitated health warnings on cigarette packs, advertising bans and other regulations. Since then, such restrictions have contributed to a decline in U.S. smoking rates, though the pace has slowed in recent years. An estimated 18.1% of U.S. adults, or 42 million people, smoked in 2012, down from 42% in 1965.

Friday's report suggests the design and composition of today's cigarette is more dangerous than the 1950s equivalent because of the introduction of ventilated filters and rising levels of cancer-causing chemicals in recent decades. Cigarettes with ventilated filters were initially marketed as safer, though smokers tend to cover up the filters and inhale more deeply, pushing toxins farther into the lungs.

"I think they are more harmful today. We're certainly worried," Surgeon General Boris Lushniak said in an interview.
Surgeon general urges new resolve to end smoking as landmark report turns 50
Surgeon General’s Report on Tobacco Has a New Target: E-Cigarettes

They’re popular, but public health agencies have yet to rule on whether they’re a safe alternative to traditional cigarettes.

By Alexandra Sifferlin @acsifferlin | Jan. 17, 2014 | 23 Comments

Fifty years after the first Surgeon General’s report on tobacco in 1964, the latest report highlights improvements in American’s smoking habits, as well as a potentially new hazard for Americans’ health.

Smoking cigarettes kills about half a million Americans every year, and 16 million Americans are living with smoking-related health problems. These are costing the nation more than $289 billion each year in medical care and related costs.

The report acknowledged a new way of smoking — with electronic cigarettes or e-cigarettes, which are tobacco products with lower nicotine levels. More young people are using these products; the number of middle school and high school students who use e-cigarettes doubled from 2011 to 2012.

MORE: The Future of Smoking

“We need to monitor patterns of use of an increasingly wide array of tobacco products across all of the diverse segments of our society, particularly because the tobacco industry continues to introduce and market new products that establish and maintain nicotine addiction,” Dr. Thomas R. Frieden, the director of the CDC writes in the foreword of the report.
The cigarette industry

Running out of puff

Big tobacco firms are maintaining their poise, but quietly wheezing

Jan 25th 2014 | From the print edition

“CIGARETTE smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action.” It was 50 years ago this month that America's surgeon-general sounded that warning, marking the beginning of the end of cigarette manufacturing—and of smoking itself—as a respectable activity. Some 20m Americans have died from the habit since then. But advertising restrictions, smoking bans and stigma have had their effect: the proportion of American adults who smoke has dropped from 43% to 18%; smoking rates among teenagers are at a record low. In many other countries the trends are similar.

The current surgeon-general, Boris Lushniak, marked the half-century with a report on January 17th, declaring smoking even deadlier than previously thought. He added diabetes, colorectal cancer and other ailments to the list of ills it causes, and promised “end-game strategies” to stamp out cigarettes altogether.

Were that to happen America's three big tobacco firms, Altria, Reynolds and Lorillard, could be snuffed out, too. Public-health officials plot the same fate for multinationals that supply other markets. The hit list includes Philip Morris International (PMI), which along with Altria makes Marlboro, the top-selling global brand; Japan Tobacco; and British American Tobacco and Imperial Tobacco of Britain.
Looking Ahead: Now

- Are we at a “tipping point”?
  - FDA regulatory and public health activities.
  - E-cigarettes and other potential harm reduction products.
  - Some of the “epidemics” are ending, but others are not.
Pushing for the “End Game”

• What is the “End Game”?  
  – The end of use of combustible products?  
  – The end of nicotine addiction?

• How will we get there?  
  – “Smokefree generations”  
  – “Sinking lid”  
  – “Smoking licenses”
## Endgame proposals

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
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<th>Access</th>
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<tbody>
<tr>
<td>Minimising the harm from nicotine use: finding the right regulatory framework</td>
<td>Ron Borland</td>
<td><em>Tob Control</em> 2013; 22:i6-i9 doi: 10.1136/tobaccocontrol-2012-050843</td>
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<td>Reducing the nicotine content to make cigarettes less addictive</td>
<td>Neal L Benowitz, Jack E Henningfield</td>
<td><em>Tob Control</em> 2013; 22:i14-i17 doi: 10.1136/tobaccocontrol-2012-050860</td>
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<td>The tobacco-free generation proposal</td>
<td>A J Berrick</td>
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<td>OPEN ACCESS</td>
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POP QUIZ!

What is the world’s largest tobacco company?

a) Philip Morris
b) British American Tobacco
c) Japan Tobacco
d) China National Tobacco Corporation
Tobacco company profits, 2010

Value in billions (USD), 2010

Tobacco Company Profits

In 2010 the combined profits of the six leading tobacco companies was $35 billion. This was equal to the combined profits of Coca-Cola, Microsoft, and McDonald's in 2010.

- **Altria/Philip Morris USA**
  - Revenue: $24.4b
  - Profit: $3.9b

- **Imperial Tobacco**
  - Revenue: $16.0b
  - Profit: $1.5b

- **British American Tobacco**
  - Revenue: $67.7b
  - Profit: $65.9b

- **Japan Tobacco International**
  - Revenue: $91.7b
  - Profit: $58.1b

- **Philip Morris International**
  - Revenue: $80b
  - Profit: $4.2b

- **China National Tobacco Corporation**
  - Revenue: $90b
  - Profit: $2.0b
Global Action: FCTC and MPOWER
Conference Declaration
Towards a tobacco-free world

We, the participants of this conference:

R e c o g n i z e the enormous adverse impact of the tobacco epidemic, globally and particularly in low-and middle income countries and the need to hasten tobacco control efforts across the world.

O b s e r v e that despite effective, evidence-based tobacco control policies, reduction in smoking prevalence in developed countries has started to slow down and use of smoked and smokeless tobacco continues to increase in many low-and middle income countries.

I d e n t i f y the tobacco epidemic as a global threat to equitable social and economic development and recognize the need to integrate tobacco control into the global discourse on the post-2015 sustainable development goals.

E m p h a s i z e that multi-sectoral integration, inter-agency coordination and wide ranging partnerships remain central to fighting the tobacco epidemic and countering the tobacco industry interference.

E x p r e s s concern about the debilitating nature of tobacco farming, production and manufacturing, associated human rights violations and call for policies to support transition from tobacco to other livelihoods.

O u r V i s i o n: To make the 21st Century the last period in history where any harm is caused to humans by tobacco.

O u r v i e w of The 'Endgame' A composite of strategies to reduce or contain the prevalence of tobacco use to less than 5%, which is a tipping point of de-normalisation, at which countries are enabled to further completely eliminate all forms of tobacco consumption.
Adult per-capita cigarette consumption and major smoking and health events, US, 1900-2064

- U.S. entry into WWII
- Confluence of evidence linking smoking and cancer
- Reassurance campaign begins
- Broadcast ad ban
- Nonsmokers' rights movement begins
- Federal cigarette tax doubles
- Fairness Doctrine messages on broadcast media
- 1964 Surgeon General's report on smoking and health
- Synar Amendment enacted
- Nicotine medications available over-the-counter
- Master Settlement Agreement
- Family Smoking Prevention and Tobacco Control Act
- Cigarette price drop
- FDA proposed rule
- 2006 Surgeon General's report on secondhand smoke (an update)
- Federal $1.01 tax increase
- E-cigs
The Health Consequences of Smoking: 100 Years of ?????

A Report of the Surgeon General

U.S. Department of Health and Human Services