National Cancer Institute

Overview of NCI Tobacco Control Research Investments and Partnerships

National Cancer Advisory Board Meeting
February 27, 2014

Michele Bloch, MD, PhD
Chief, Tobacco Control Research Branch
Behavioral Research Program
Division of Cancer Control and Population Sciences

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

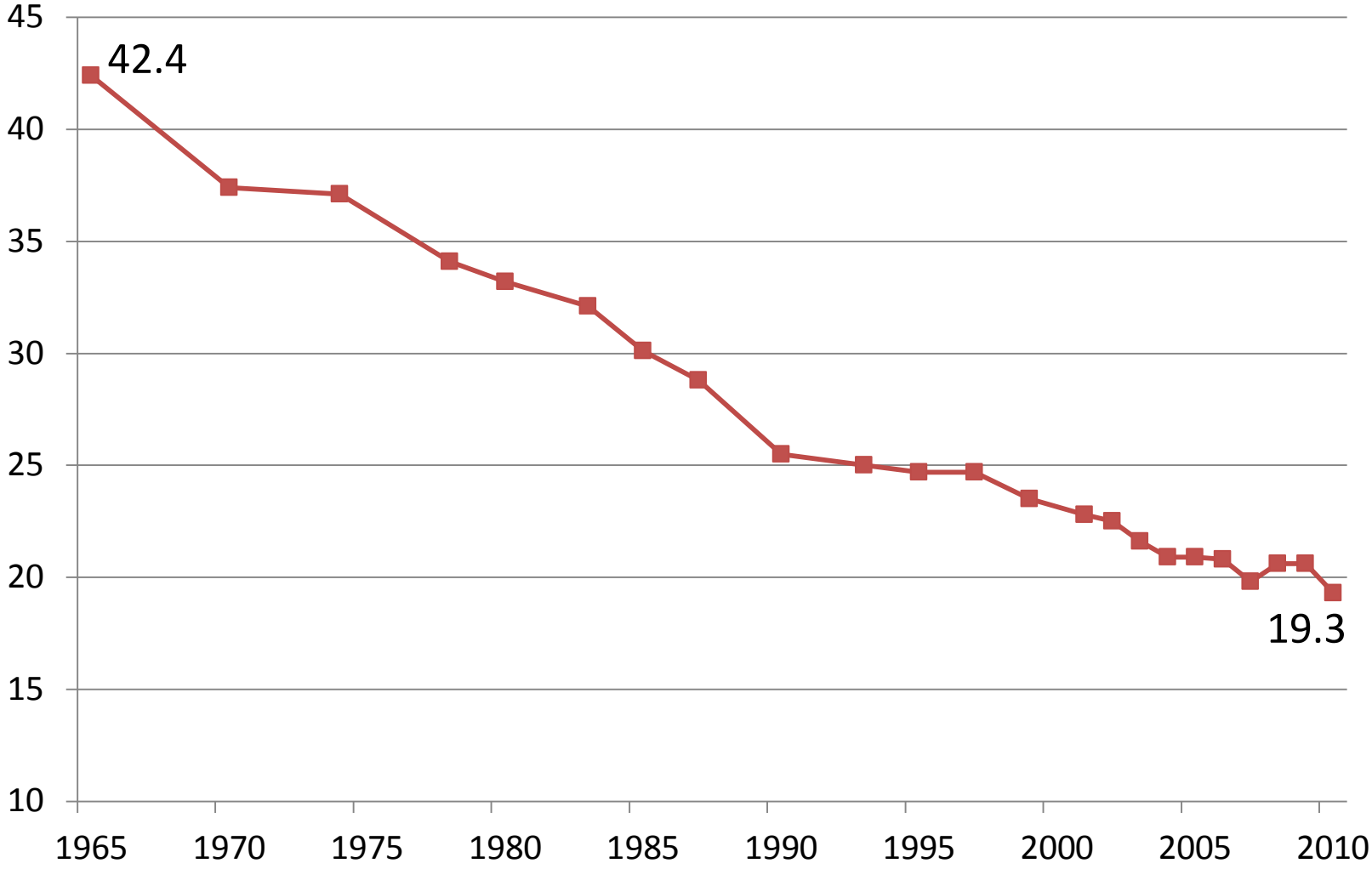
Tobacco Control: A 20th Century Success Story

CVS Vows to Quit Selling Tobacco Products

By STEPHANIE STROM FEB. 5, 2014

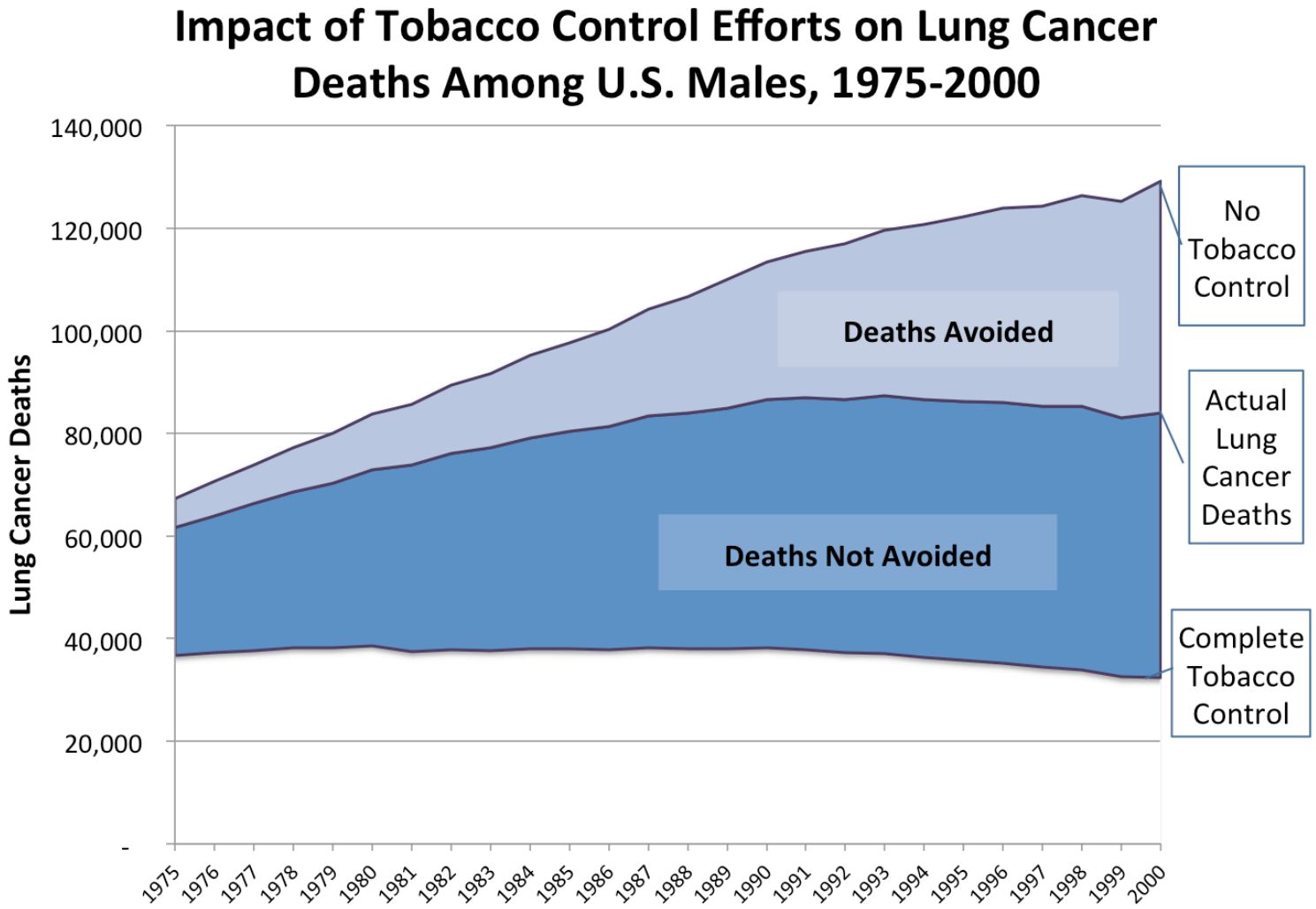
The cigarette display at a CVS in Manhattan. The chain expects to lose $2 billion a year in sales, a small dent in its $123 billion in overall sales. Carlo Allegri/Reuters

Tobacco Control: A 20th Century Success Story



Source: National Health Interview Survey

Lung Cancer Deaths Averted, 1975-2000



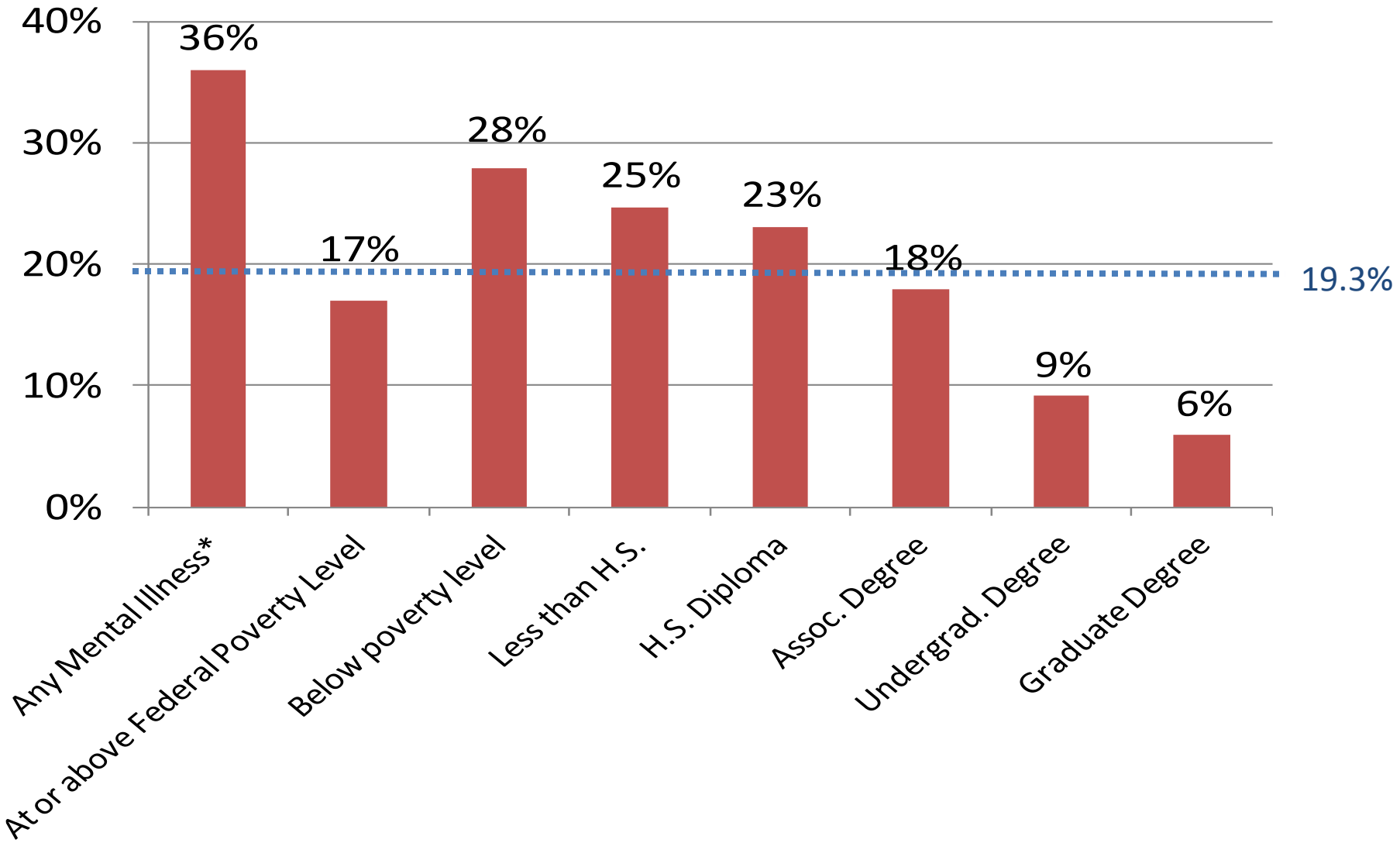
Source: Moolgavkar SH, et al. JNCI J Natl Cancer Inst 2012;104:541-548.

Premature Deaths Averted, 1964-2012

- Between 1964-2012, tobacco control was associated with avoidance of 8 million premature deaths and an extended mean life span of 19 to 20 years.
- Smoking-attributable mortality occurred in approximately 17.7 million others.
- “No other behavior comes close to contributing so heavily to the nation’s mortality burden.”
- “Tobacco control has been a great public health success but requires continued efforts to eliminate tobacco-related morbidity and mortality.“

Source: Holford TR, et al. (2014). Tobacco control and the reduction in smoking-related premature deaths in the United States, 1964-2012. *JAMA*, *311*(2), 164-171.

U.S. Adult Smoking Prevalence, 2012



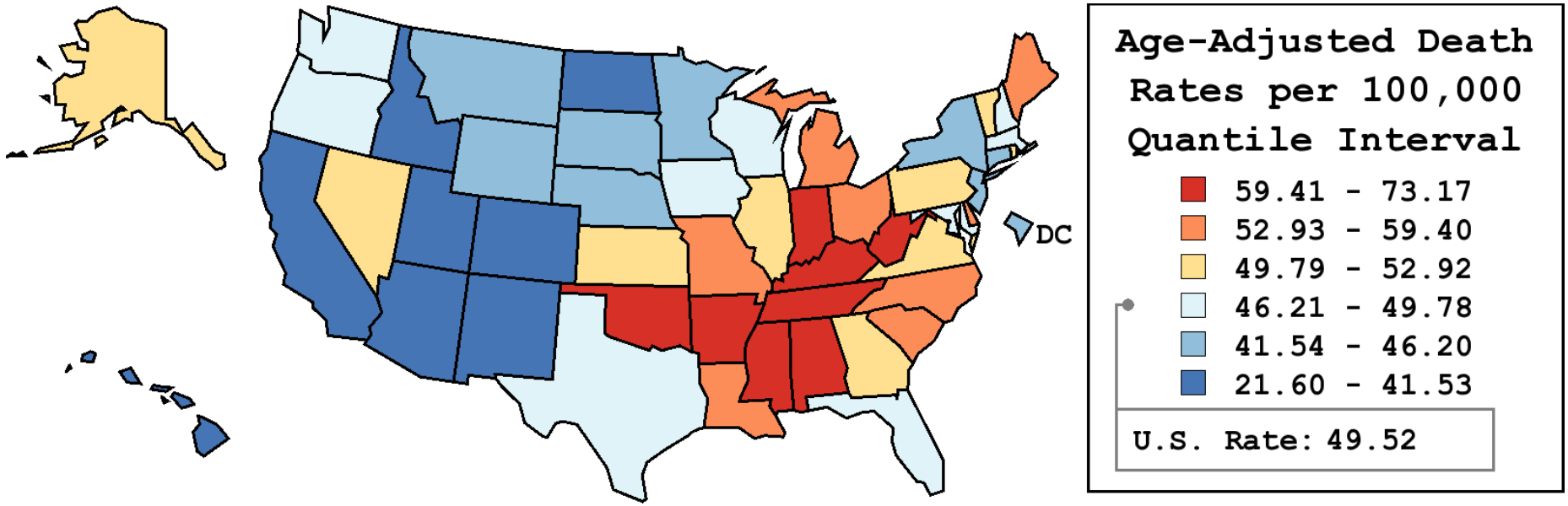
Source: National Health Interview Survey 2012; *National Survey on Drug Use and Health

U.S. Adult Smoking Prevalence by State

Source: Behavioral Risk Factor Surveillance System (BRFSS), 2010

Lung and Bronchus Cancer Death Rates, U.S. States

Age-Adjusted Death Rates By State, All Races, 2006-2010



Source: Howlader N, et al. SEER Cancer Statistics Review, 1975-2010, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2010/, based on November 2012 SEER data submission, posted to the SEER web site, April 2013.

Tobacco Control: A Global Challenge

- Global tobacco mortality is growing and shifting to the developing world
- Today
  - Annual global tobacco mortality: 6 million deaths
  - Evenly distributed between developed and developing nations
- By 2030
  - Annual global tobacco mortality: 8 million deaths
  - >80% of deaths expected in developing world
- 20th century: 100 million deaths
- 21st century: 1 billion deaths

Source: WHO Report on the Global Tobacco Epidemic, 2013

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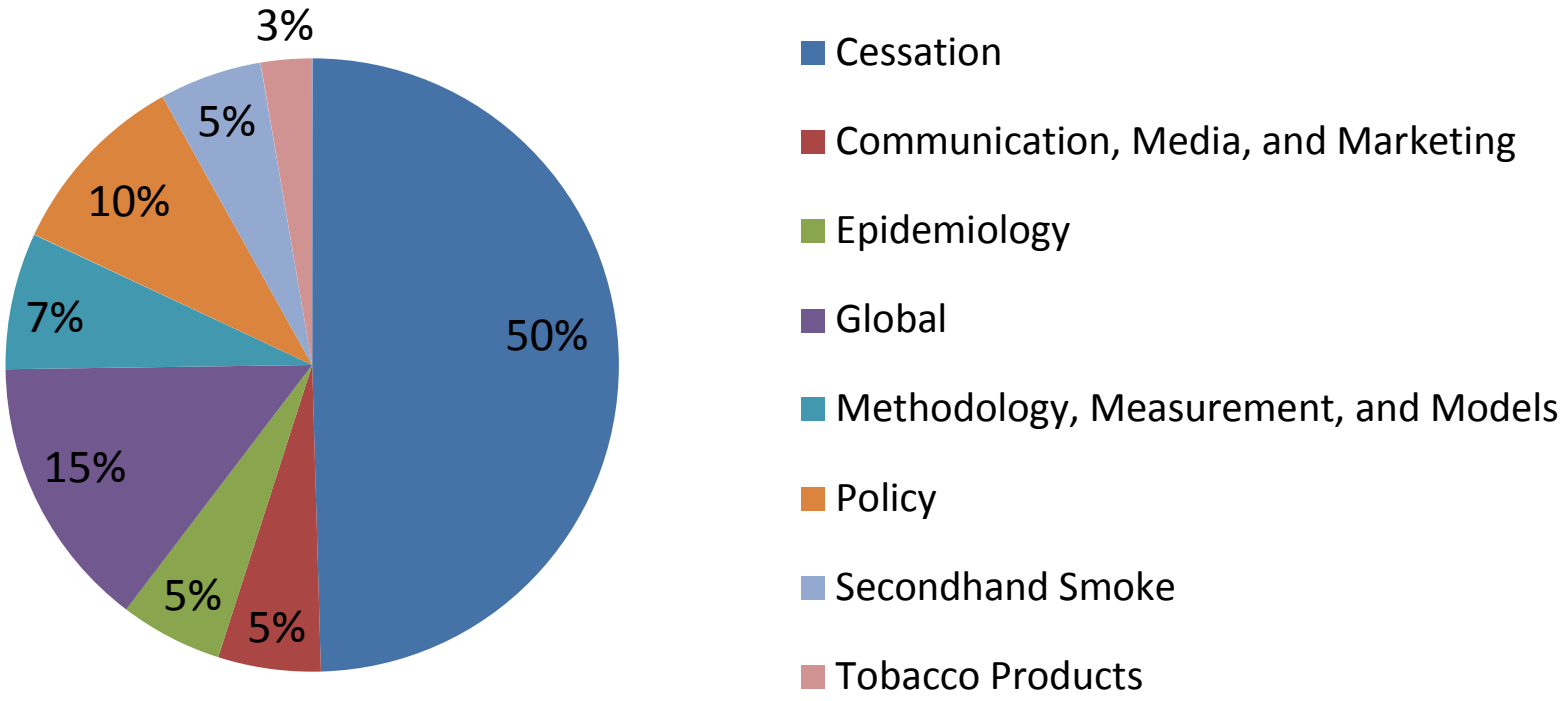
Overview of NCI Tobacco Control Research Branch Research Portfolio

NCI's Tobacco Control Research Portfolio

- FY 2013 portfolio: 111 grants
- FY 2013 dollars: $59,616,673



NCI-FDA Tobacco Regulatory Science Portfolio

Fiscal Year	Total Awards	Total Dollars
FY10	3	$529,081
FY11	1	$711,942
FY12	23	$16,907,989
FY13	33	$39,879,357

FY2013 includes $26 million to create 7 Tobacco Centers of Regulatory Science (TCORS)

Selected Tobacco Research Initiatives

- Improving effectiveness of smoking cessation interventions and programs in low income adult populations
- Measures and determinants of smokeless tobacco use, prevention, and cessation
- International tobacco and health research and capacity building

State and Community Tobacco Control Policy and Media Research

PI Name Organization	Project Title
Chaloupka, Frank University of Illinois at Chicago	Monitoring and Assessing the Impact of Tax and Price Policies on US Tobacco Use
Emery, Sherry University of Illinois at Chicago	Tobacco Control in a Rapidly Changing Media Environment
Farrelly, Matthew Research Triangle Institute	Coordinating Center for the Advancement of Tobacco Control Research and Practice
Kegler, Michelle Emory University	Brief Interventions to Create Smoke-Free Home Policies in Low-Income Households
Leischow, Scott Mayo Clinic Arizona	Networks Among Tribal Organizations for Clean Air Policies (NATO CAP)
Ling, Pamela UCSF	Countering Young Adult Tobacco Marketing in Bars
Ribisl, Kurt UNC	Maximizing state & local policies to restrict tobacco marketing at point of sale
Zhu, Shu-Hong UCSD	Nonsmokers and Tobacco Control Norms: Population Surveys and Intervention Studies

"Nonsmokers and tobacco control norms"

- Hypothesis: Nonsmokers hold the key to increasing population cessation and can be mobilized to help smokers quit.
- Aims:
  - Examine attitudes of smokers and nonsmokers towards tobacco use and tobacco control measures.
  - Conduct a randomized trial among smoking households comparing an intervention that targets nonsmokers with one that targets smokers.
  - Compare a tobacco cessation media intervention designed to target nonsmokers with a traditional campaign.

Source: U01CA154280, Shu-Hong Zhu, University of California San Diego

SCTC
State and Community Tobacco Control Research

Research on Vulnerable Populations

PI Name Organization	Project Title
Toll, Benjamin Yale University	Advancing tobacco and cancer control: Reducing alcohol use to promote smoking cessation
Brooks, Daniel Boston University	Health advocates as a vehicle to improve treatment for smokers in public housing
Winickoff, Jonathan Mass General	Changing pediatric office systems nationally to address parental tobacco use
Patten, Christi Mayo Clinic Rochester	Community intervention to reduce tobacco use among pregnant Alaska Native women

“Standardization of methods to measure waterpipe smoke emissions and exposure”

- 100 million waterpipe smokers worldwide; use increasing in U.S., and Europe.
- Perceived as more socially acceptable and less hazardous than cigarettes.
- Unlike cigarettes, waterpipe smoking:
  - Two combustion products (tobacco and heat source)
  - Tobacco more heavily flavored
  - Passage through water
  - Wide variation in operating conditions and components
- Research aims: Develop standardized protocol for measuring waterpipe smoke emissions. Use the standardized method to study variability in human smoking topography and properties of waterpipe smoke.

Source: R01CA133149, Pamela Clark, University of Maryland

“Visual Media Influences on Adolescent Smoking Behavior”

Research Accomplishments:

- Developed methods to quantify youth’s exposure to depictions of smoking in movies; methods widely adopted by researchers worldwide.
- Produced body of evidence documenting a causal link between youth exposure to “movie smoking” and youth tobacco use.
- Study methods extended to other cancer risk behaviors, including alcohol, fast food, and risky sexual behaviors.
- Study methods extended to apply to other media exposures (e.g., marketing of tobacco, alcohol, and fast food).

Source: R01CA077026, James Sargent, Dartmouth College, Department of Pediatrics

Tobacco Control Monograph Series

NCI Monograph 19: The Role of the Media in Promoting and Reducing Tobacco Use (2008)

- "The total weight of evidence from cross-sectional, longitudinal, and experimental studies indicates a causal relationship between exposure to depictions of smoking in movies and youth smoking initiation."

Other Recently Published Volumes

- Phenotypes and Endophenotypes: Foundations for Genetic Studies of Nicotine Use and Dependence
- Greater Than the Sum: Systems Thinking in Tobacco Control

“Tobacco companies, public policy and global health”

- Globalization: intensified interconnectedness of societies worldwide, through closer and denser economic, social, technological and environment linkages.
- Economic globalization is driven by increasing number and scope of trade and investment agreements, and other factors.
- Goal: Understand the “dual and dynamic relationship” between the tobacco industry and economic globalization.
  - How tobacco industry adapts to an increasingly global economy, via organizational restructuring, market strategies, engagement in legal/illicit trade.
  - How tobacco industry seeks to shape and influence global economy, via trade and investment agreements and regulatory policy.
  - Derive lessons for strengthening global health governance to protect and promote public health.

Source: R01CA091021, Kelley Lee, Simon Fraser University

Tobacco Research in DCEG

- **Provide contemporary/international risk estimates:**
  - Incident cancer in DCEG case-control and cohort studies
  - Total and cause-specific mortality in NCI Cohort Consortium
  - Lung cancer prediction models for CT screening
  - Effect modification between tobacco and other cancer risk factors
- **Improve assessment of smoking patterns:**
  - Time to first cigarette
  - Lifetime trajectory of cigarette smoking
  - Risks of light and intermittent smoking
- **Characterize carcinogenic mechanisms:**
  - Genetic and epigenetic features
  - Oral and fecal microbiome
  - Systemic inflammatory biomarkers and metabolomics

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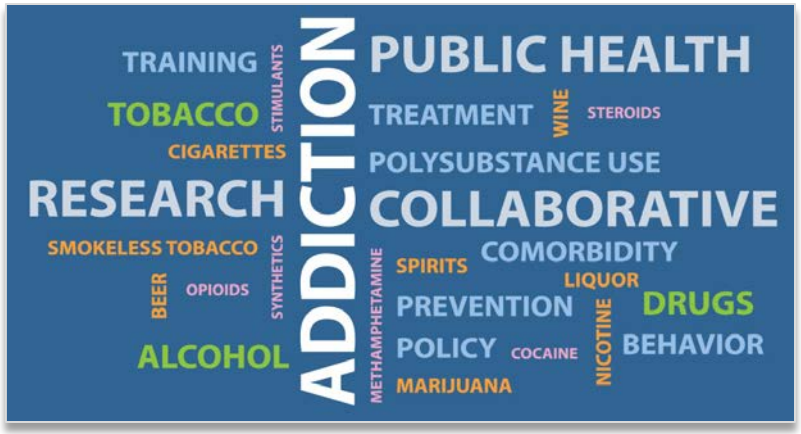
Overview of NCI Partnerships

Collaborative Research on Addiction at NIH (CRAN)

- NIAAA, NIDA, and NCI
- Integrate resources and expertise to advance substance use, abuse and addiction science research and public health outcomes



- Current FOA - Using Social Media to Understand and Address Substance Use and Addiction

Source: http://addictionresearch.nih.gov/

NIH-FDA Research Partnership

Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI) | National Institutes of Health | U.S. Department of Health and Human Services

NIH National Institutes of Health
Office of Disease Prevention

@NIHprevents
ODP Email Updates

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Office of Disease Prevention
STRATEGIC PLAN

ODP Home > Tobacco Regulatory Research

Tobacco Regulatory Science Program (TRSP)

Located in the NIH Office of Disease Prevention (ODP), the Tobacco Regulatory Science Program (TRSP) coordinates the trans-NIH collaborative effort with the Food and Drug Administration's (FDA) Center for Tobacco Products (CTP) to conduct research to support its regulatory activities over tobacco products.

With the passage of the 2009 Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act), the FDA acquired the authority to regulate the manufacture, marketing, and distribution of tobacco products in order to protect public health. Within the framework of the Tobacco Control Act, the NIH and FDA formed an interagency partnership to foster tobacco regulatory research. The NIH has the infrastructure for the solicitation, review, and management of research, and several NIH Institutes and Centers have long supported tobacco-related research as part of their missions. The FDA has expertise in tobacco regulatory science and the authority and resources to support research responsive to FDA's regulatory authority. NIH biomedical, behavioral and social sciences research supported via funding from FDA will provide the scientific evidence needed to better inform FDA's regulatory authorities.

About the FSPTCA
Provisions of the Law and Center for Tobacco Products Information

Research Priorities
Research topic areas and projects

Research Portfolio
NIH-FDA Grants and contracts

Funding Opportunities
Current funding announcements and application instructions

What's New

- Tobacco Control Regulatory Research
  PAR-12-267 (R01)
  - Notice of Change in Expiration Date of PAR-12-267 Tobacco Control Regulatory Research (R01) (NOT-OD-13-056) National Institutes of Health Food and Drug Administration

  PAR-12-268 (R03)
  - Notice of Change in Expiration Date of PAR-12-268 Tobacco Control Regulatory Research (R03) (NOT-OD-13-057) National Institutes of Health Food and Drug Administration

  PAR-12-266 (R21)
  - Notice of Change in Expiration Date of PAR-12-266 Tobacco Control Regulatory Research (R21) (NOT-OD-13-055) National Institutes of Health Food and Drug Administration

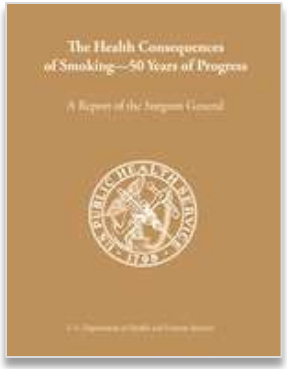
  Frequently Asked Questions

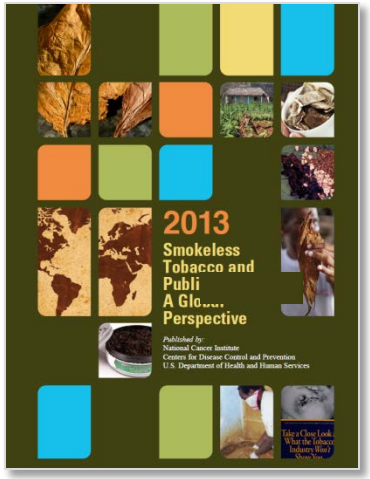
Questions?
Contact the TRSP

Source: http://prevention.nih.gov/tobacco/default.aspx

Collaboration with CDC

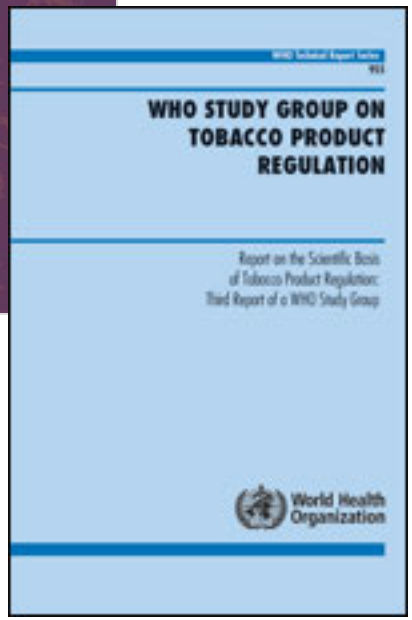
- The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General (2014)
- Smokeless Tobacco and Public Health: A Global Perspective (to be released 2014)
- NIH-CDC Workshop on Tobacco and Reproductive Health (January 2014)





Collaboration with World Health Organization

- WHO Recommendations for the Prevention and Management of Tobacco Use and Second-Hand Smoke Exposure in Pregnancy
- WHO Study Group on Tobacco Product Regulation (TobReg)
- NCI-WHO Monograph, The Economics of Tobacco and Tobacco Control (to be released in 2015)



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Future Research Directions

Cancer Treatment Setting

- Surgeon General's Report, conclusions for cancer patients and survivors:
  - Quitting smoking improves prognosis.
  - Cigarette smoking increases all cause mortality and cancer-specific mortality; increases risk for second primary cancers caused by smoking.
  - Evidence *suggests* a casual relationship between smoking and risk of recurrence, poorer response to treatment, and increased treatment related toxicity.
- Research needs related to tobacco use in cancer patients
- NCI-AACR Task Force

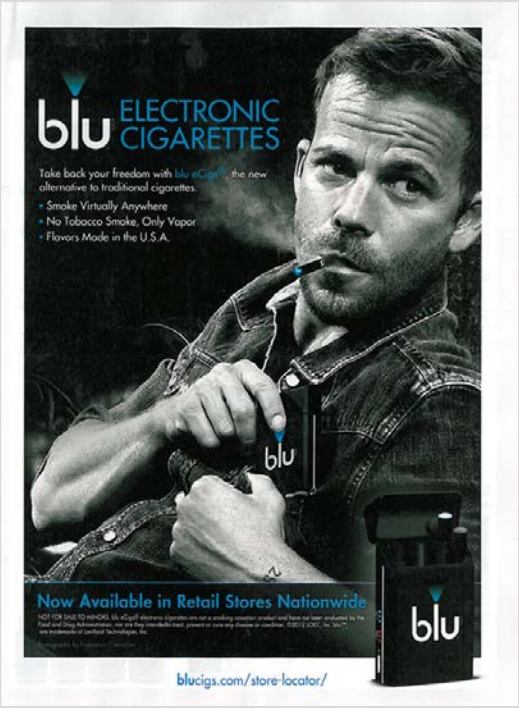
Source: 50th Anniversary Surgeon General's Report of Smoking, 2014

Understanding Diverse Tobacco Products

Improving Cessation *and* Prevention

Key Challenges

- Adolescents and young adults are uniquely susceptible to tobacco use
- Declines in youth prevalence, slowed or stalled
- Proliferation of new products, potential for dual use
- Changing media, new industry marketing strategies
- Interplay between tobacco, alcohol, and illicit drug use



States: Laboratory For Change

The New York Times

October 30, 2013

New York Raising Age to Buy Cigarettes to 21

By ANEMONA HARTOCOLLIS

Buying cigarettes in New York City is about to become a lot harder for young people, as lawmakers on Wednesday adopted the strictest limits on tobacco purchases of any major American c

The legal age for buying tobacco, in
and which Mayor Michael R. Bloom

The proposal provoked some prote
mature enough to decide whether t
people from becoming addicted in t

"This is literally legislation that will

In pushing the bill, city officials said
youth smoking rate in the city has
2001, it has recently stalled.

Besides raising the age to buy cigar
tobacco taxes, a prohibition on disc

The new law is a capstone to more
toughest antismoking policies in the

In one concession to the cigarette i
they were doing it because they ha
lodged a First Amendment challeng

The smoking age is 18 in most of th
Island. Needham, Mass., a suburb of Boston, raised the smoking age to 21 in 2005.

Marijuana sales commence in Colorado for recreational use

By Niraj Chokshi, Published: January 1

DENVER — At 8 a.m. New Year's Day, in an industrial area a few miles from downtown Denver, a former Marine named Sean Azzariti walked into a giant store and bought a bag of weed. Legally. To smoke just for fun, if he's so inclined.

Azzariti's transaction — 3.5 grams of Bubba Kush for $40 and some pot-laced chocolate truffles for an additional $9.28 — was the first in the state's grand experiment in legalizing marijuana for recreational use.

The first-in-the-nation law was greeted with long lines at retailers and a lot of "Rocky Mountain High" jokes. But beyond the buzz, the measure represented the institution of a major new public policy in America — one that opponents fear will turn the state into a dangerous land of debauchery and that backers hope sets a nationwide precedent.

If Colorado is able to successfully legalize marijuana without causing a social backlash, the tourism, tax and other considerations are likely to compel several other states to quickly follow suit.

Backers say enough signatures have been collected to put legalization before voters this year in Alaska. Oregon would probably come next, and by 2016, they hope to see measures on the ballot in six other states: Arizona, California, Maine, Massachusetts, Montana and Nevada. Supporters are also hopeful that lawmakers will push for legalization in Delaware, Hawaii, Maryland, New Hampshire, Rhode Island and Vermont.

Global Laboratory of Tobacco Control

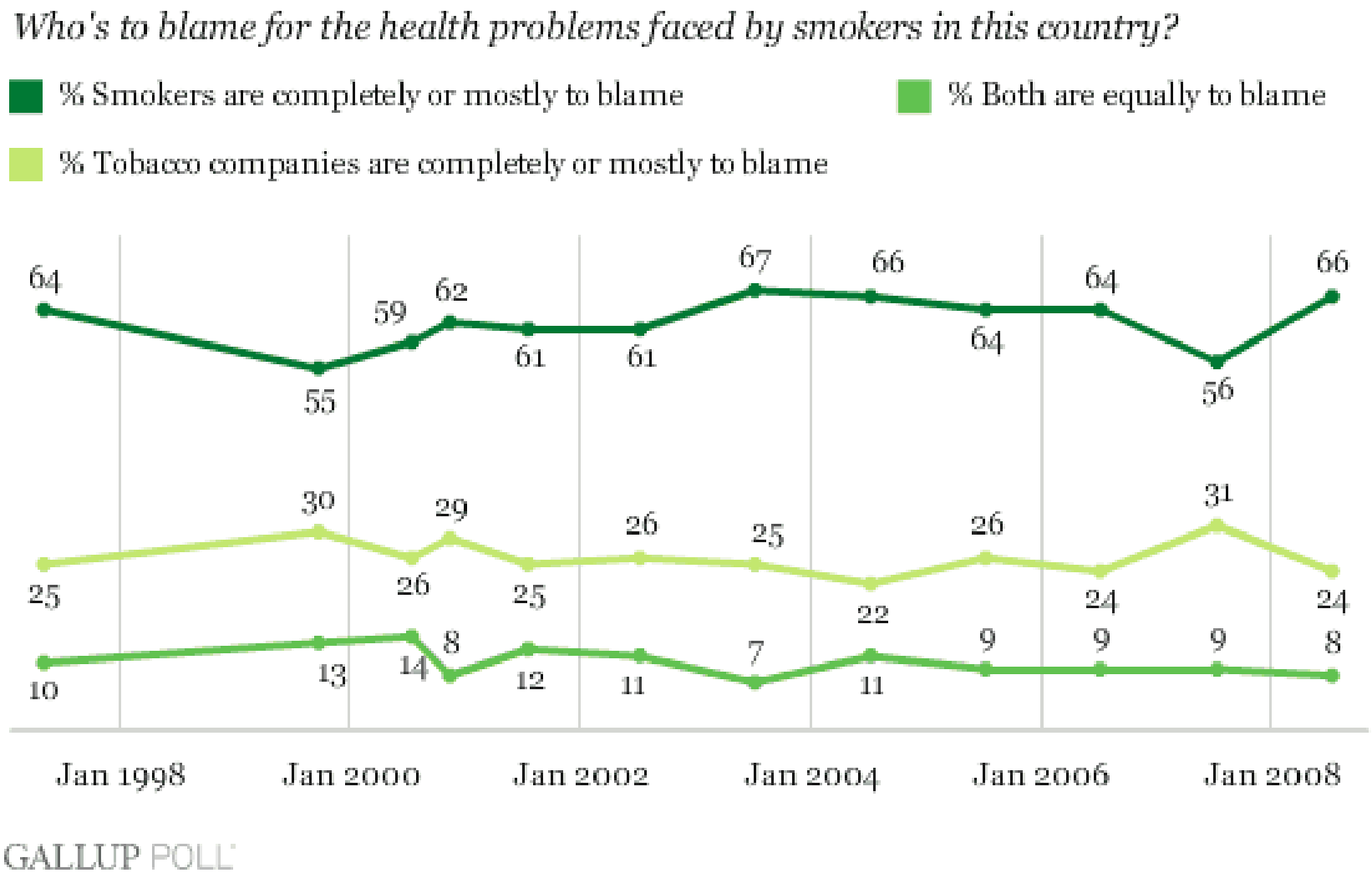
FCTC
WHO FRAMEWORK CONVENTION
ON TOBACCO CONTROL

Parties to the WHO Framework Convention on Tobacco Control

After its adoption by the 56th World Health Assembly in May 2003, the WHO Framework Convention on Tobacco Control (WHO FCTC) was open for signature until 29 June 2004. 168 States signed the WHO FCTC during this period expressing their willingness to become a Party to the Convention. Countries wishing to become a Party, but that did not sign the Convention by 29 June 2004, may do so by means of accession, which is a one-step process equivalent to ratification.

In accordance with Article 36 of the WHO FCTC, the Convention entered into force on 27 February 2005, 90 days after the fortieth State had acceded to, ratified, accepted, or approved it. It is deposited at the United Nations Headquarters in New York and remains open to Members of the World Health Organization (WHO) and States that are not Members of the WHO but are members of the United Nations as well as regional economic integration organizations.

The Public Blames the Smoker



Source: http://www.gallup.com/poll/109129/most-americans-consider-smoking-very-harmful.aspx

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Thank You. Questions?

"When did the industry target <u>you</u> for smoking?"

Source: The New Yorker Collection