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
Tobacco Control: A 20th Century Success Story

20,679* Physicians say “LUCKIES are less irritating” “It’s toasted” Your Throat Protection against irritation against cough

This is a tobacco-free facility and campus. Smoking and the use of tobacco products is strictly prohibited.

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 $5 billion a year in sales, a small dent in its $125 billion in overall sales. Carol Allegretti/Reuters
Tobacco Control: A 20th Century Success Story

Source: National Health Interview Survey
Lung Cancer Deaths Averted, 1975-2000

Impact of Tobacco Control Efforts on Lung Cancer Deaths Among U.S. Males, 1975-2000

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.”

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

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

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

<table>
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<tr>
<th>Fiscal Year</th>
<th>Total Awards</th>
<th>Total Dollars</th>
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<tr>
<td>FY10</td>
<td>3</td>
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<tr>
<td>FY11</td>
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<td>FY12</td>
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<td>FY13</td>
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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

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

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

Collaboration with CDC

• 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)
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

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
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 city.

The legal age for buying tobacco, in New York City, which Mayor Michael R. Bloomberg signed into law on Tuesday, is now 21, up from 18.

“The proposal provoked some protests from smokers who are not yet mature enough to decide whether they want to start or continue smoking, and some from people who are becoming addicted in their teens,” Mr. Bloomberg said.

“This is literally legislation that will save lives,” he added.

In pushing the bill, city officials said that, since 2001, when the smoking rate in the city was 11.7 percent, it has dropped to 9.4 percent.

Besides raising the age to buy cigarettes, the city has imposed high tobacco taxes, a prohibition on discounting and new restrictions on tobacco sales.

The new law is a capstone to more than a decade of antismoking policies in the city.

In one concession to the cigarette industry, the law does not apply to cigarettes sold at convenience stores, supermarkets and other retail outlets.

The smoking age is 18 in most of the country, although New York and Hawaii, as well as the District of Columbia and a number of other localities, have raised the legal age.

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.
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

Who's to blame for the health problems faced by smokers in this country?

- % Smokers are completely or mostly to blame
- % Both are equally to blame
- % Tobacco companies are completely or mostly to blame

Source: http://www.gallup.com/poll/109129/most-americans-consider-smoking-very-harmful.aspx
“When did the industry target you for smoking?”