Thank You to All of Our Conference Supporters
Overview

1. What are Electronic Nicotine Delivery Systems (ENDS)?
2. Who is Using ENDS?
3. What are the Health Effects of ENDS?
4. What are some ENDS Policy Options?
MAJOR 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.”

- Since 1964, over 20 million Americans died because of smoking, including:
  - 2.5 million nonsmokers
  - 108,000 babies
  - 86,000 residential fires
  - 6.58 million from cancers
  - 7.8 million from CVD & metabolic diseases
  - 3.8 million from pulmonary diseases
Smoking Costs Us More

- Annual deaths attributable to smoking, adults 35+: >480,000

- Annual costs attributable to smoking: Now >$289 billion
  - >$130 billion for direct medical care of adults
  - >$150 billion for lost productivity due to premature death

- More than 16 million people have ≥1 smoking-related disease

Current cigarette smoking among adults aged ≥18 years, by sex — U.S., 1955-2014

Note: Estimates since 1992 include some-day smoking.
Sources: 1955 data from Current Population Survey (CPS); 1965-2011 data from National Health Interview Survey (NHIS)
Lung Cancer Risks Increasing

- Between 1959-2010 cigarette consumption declined, but lung cancer risks:
  - Doubled for male smokers
  - Increased 10x for female smokers
  - Did not change for nonsmokers

Possible contributing factors:

- Ventilated filters
- Increased levels of chemicals
Tobacco Industry is Outspending Prevention Efforts 19:1

- State Tobacco Revenue: $25 billion
- Federal Cigarette Tax Revenues: $15.6 billion
- Tobacco Industry Marketing & Promotion Spending: $8.8 billion
- CDC Recommended Level: $3.3 billion
- State Tobacco Program Budgets: $0.5 billion

Tobacco Products

- Smokeless
- Snus
- Bidis
- Kreteks
- Cigarettes
- Cigars, Cigarillos, Little Cigars
- Pipes
- Hookah
- Dissolvables
- ENDS
Bidis are small, thin, hand-rolled cigarettes imported to the United States, primarily from India and other Southeast Asian countries. They comprise tobacco wrapped in a tendu or temburni leaf and may be secured with a colorful string at one or both ends. Bidis can be flavored (e.g., chocolate, cherry, mango) or unflavored.1,2

Kreteks—sometimes referred to as clove cigarettes—are imported from Indonesia and typically contain a mixture of tobacco, cloves, and other additives.

Bidis and kreteks have higher concentrations of nicotine, tar, and carbon monoxide than conventional cigarettes sold in the United States.
What are Electronic Nicotine Delivery Systems (ENDS)?
Electronic Nicotine Delivery Systems (ENDS)

- E-Cigarettes
- E-Cigars
- E-Pipes
- E-Hookahs
- Hookah Pens
- Vape Pens

At least 450 Brands
Types of ENDS Products

- **MINI E-CIG**
- **MID-SIZED**
- **MODIFIED**

Smaller/Fixed — Larger/Customizable
Anatomy of an E-Cigarette

- **Battery** (power source)
- **Liquid Cartridge** (holds a liquid nicotine, propylene glycol, and/or glycerin solution)
- **Atomizer** (heats the solution)

User inhales aerosol
Emissions from ENDS

Mainstream (Exhaled) Aerosol

- 2013: >$80 million
- 2014: >$115 million

Marked Increases in the Sale of ENDS (2012-2013)

- In convenience stores, dollar sales increased:
  - 320.8% for disposable e-cigarettes
  - 72.4% for starter kits
  - 82% for cartridges

- In food, drug, and mass merchandisers, dollar sales increased:
  - 49.5% for disposable e-cigarettes
  - 89.4% for starter kits
  - 126.2% for cartridges

Who is Using ENDS?
Ever Use of E-cigarettes among U.S. Adults, by Cigarette Smoking Status, Styles, 2010-2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Cigarette Smoker</th>
<th>Former Cigarette Smoker</th>
<th>Never Cigarette Smoker</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>9.8</td>
<td>2.5</td>
<td>1.3</td>
</tr>
<tr>
<td>2011</td>
<td>10.2</td>
<td>2.5</td>
<td>1.3</td>
</tr>
<tr>
<td>2012</td>
<td>14.7</td>
<td>12.4</td>
<td>1.2</td>
</tr>
<tr>
<td>2013</td>
<td>19.8</td>
<td>16.2</td>
<td>1.2</td>
</tr>
<tr>
<td>2014</td>
<td>36.5</td>
<td>9.6</td>
<td>1.2</td>
</tr>
</tbody>
</table>

"Cutting Back" is Not Enough

<table>
<thead>
<tr>
<th>Risks for Dual Users of Cigarettes and E-Cigs</th>
<th>Benefits of Completely Quitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Smoking just 1-4 cigarettes per day doubles risk of dying from heart disease</td>
<td>▪ Heart disease risk cut in half 1 year after quitting</td>
</tr>
<tr>
<td>▪ Heavy smokers who reduce cigarette use by half still have very high risk for early death</td>
<td>▪ This risk continues to drop over time</td>
</tr>
<tr>
<td></td>
<td>▪ Quitting at age 50 cuts your risk in half for early death from a smoking-related disease</td>
</tr>
</tbody>
</table>

**Sources:** Bjartveit K, Tverdal A. *Health Consequences of Smoking 1-4 Cigarettes per Day.* Tobacco Control 2005; 14(5):315-20.
Current (Past 30 Day) Use of E-cigarettes among U.S. Middle and High School Students, 2011-2014

<table>
<thead>
<tr>
<th>Year</th>
<th>High School</th>
<th>Middle School</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1.5</td>
<td>0.6</td>
</tr>
<tr>
<td>2012</td>
<td>2.8</td>
<td>1.1</td>
</tr>
<tr>
<td>2013</td>
<td>4.5</td>
<td>1.1</td>
</tr>
<tr>
<td>2014</td>
<td>13.4</td>
<td>3.9</td>
</tr>
<tr>
<td>2015</td>
<td>16.0</td>
<td>5.3</td>
</tr>
</tbody>
</table>

E-cigarettes and Nonsmoking Youth

- From 2011-2013, the number of “never smoking” youth who used an e-cigarette increased three-fold.

- The intention to smoke conventional cigarettes was also higher among e-cigarette users.

Among Youth, E-cigarette Use May Lead to Conventional Cigarette Use

- High school students who had never smoked but reported ever using e-cigarettes at baseline were 2.7 times more likely to start using combustible tobacco after 1 year compared with high school students who never used e-cigarettes.

- U.S. adolescents and young adults who had never smoked but used e-cigarettes at baseline were 8.3 times more likely to progress to cigarette smoking after 1 year than nonusers of e-cigarettes.

What Factors Lead to Youth Smoking?

- Exposure to ads
- Youth-resonating themes
- Low prices/price promotions
- Ease of access
- Youth-appealing flavors
- Health claims
- Ease of product use

ENDS Marketing Uses Traditional Tactics

1940’s / 1950’s

2010’s

Source: www.tobaccodocuments.org.
ENDS Marketing Uses Traditional Tactics

Source: Blu Ecigs; NJOY Partners.
Text on patch:
"I wear it because I'm a 69-year old basketball player. And I plan on being an 80-year old basketball player."

Marketing for ENDS

Sources: Sports Illustrated; Blu eCigs; NJOY.
E-cigarette Advertising Expenditures and E-cigarette Use Among Middle and High School Students, 2011-2014

What are the Health Effects of ENDS?
ENDS Potential for Harm if:

- Leads to initiation of combustible tobacco use among non-smokers, particularly children.
- Leads to relapse among former smokers.
- Diminishes the chances that a smoker will quit.
- Discourages smokers from using proven quit methods.
- Exposes children, pregnant women, and non-users to secondhand aerosol.
- Glamorizes or renormalizes tobacco use.
- Results in poisonings among users or non-users.
Harmful and Potentially Harmful Ingredients in ENDS Aerosol

- Heavy Metals
- Nicotine
- Fine Particulate
- Other Compounds
- Volatile Organic Compound
Nicotine Poses Unique Dangers to the Developing Human

- Nicotine is toxic to developing fetuses and impairs fetal brain and lung development.
- Poisonings occur among users via ingestion of nicotine liquid, absorption through skin, and inhalation.
- Nicotine use while adolescent brain is developing can disrupt brain circuit formation.

ENDS can be Modified to Accommodate Other Psychoactive Substances

"I was on the train from New York to Baltimore and I enjoyed the pen the whole way there and back with no one noticing," said one life-long marijuana user who asked not to be identified. "I absolutely was thinking 'This is not bad at all.'"
Is there a potential benefit for ENDS?

Under certain circumstances:

- Complete long term substitution by established smokers
- Assist in rapid transition to a society with little or no use of combustible products
- Short-term use if shown to produce successful and permanent cessation of combustible products
What are Some ENDS Policy Options?
Tobacco Control Works:

MAJOR CONCLUSION #8

“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.”

- Since 1964 tobacco control:
  - Prevented over 8 million early deaths
  - Saved 157 million life years
Public Health Actions to Address E-cigarettes

**Federal Regulation**

*Family Smoking Prevention and Tobacco Control Act*
- Signed into law on June 22, 2009
- Granted FDA the authority to regulate tobacco products
- Enhances the ability to intensify policy to reduce tobacco industry influence
  - Manufacturing
  - Marketing
  - Sale

**State, Local, Tribal**

*Potential Sub-National Action:*
- Including e-cigarettes in smokefree indoor air policies
- Restricting youth access to e-cigarettes in retail settings
- Licensing retailers
- Establishing specific package requirements
- Setting price policies
Evidence-Based Interventions are Key: Protect Clean Indoor Air Standards

- ENDS aerosol is not “harmless water vapor.”

- ENDS aerosol contains nicotine, as well as additional toxins, and is not as safe as clean air.

- Clean air—free of smoke and ENDS aerosol—protects the health of bystanders, prevents tobacco use initiation among youth, and encourages complete smoking cessation.
The Food and Drug Administration is banning the sale of electronic cigarettes to minors as part of a broad set of regulations the agency finalized Wednesday.

With the rules that were more than two years in the making, the agency is expanding its authority over e-cigarettes, cigars and hookah tobacco, in much the same way it already regulates traditional cigarettes.

In addition to barring sales of tobacco products and e-cigarettes to people under age 18, the FDA would impose other restrictions, including:
- A requirement that e-cigarettes carry warnings that they contain nicotine, which is addictive
- A prohibition on distribution of free samples
- A ban on selling e-cigarettes in vending machines unless they are in secure places that never admit young people
Summary

✓ Youth and adult ENDS use is increasing rapidly.
✓ Youth use of nicotine or tobacco in any form is dangerous.
✓ Adults must quit smoking cigarettes completely to realize potential benefits of ENDS.

Policy Approaches

✓ No marketing or sales to kids
✓ Clean air is the standard
✓ Pedal to the metal on combustible tobacco