If the 20th Century was the “Cigarette Century,” What Will the 21st Century Be?

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Presenter Disclosures

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No relationships to disclose.
Overview

- Historical Context
- Tobacco Products
- Consequences of tobacco use
- Patterns of use
- Factors influencing use
- Helping your patients

HISTORICAL CONTEXT
A "HOT" IDEA FOR KOOL cigarettes. Sprightly selling jingles make their debut on the back of the pack. The whole back is then picked up for small space newspaper advertisements. These run four times a week. Three pack-backs are reproduced on each new car card. Lots of identification in little space. KOOLS makes 'Em Up!

1976
ALL OVER AMERICA!
KENT with the MICRONITE FILTER
IS SMOKED BY
MORE SCIENTISTS and EDUCATORS
than any other cigarette!*

The rich pleasures of smoking Kent come from the finest tobacco, and the best and
most effective Kent's famous Micronite Filter.

For good smoking taste, it makes good sense to smoke KENT.

The truth is out:
The wire services recently released a new report that revealed new TRUE Filter Cigarettes
delivered less tar and nicotine than other brands tested...

Note that the truth is out. Shouldn't your brand be TRUE, too?
National Smoker Study:

Merit Science Works!

Low tar MERIT with 'Enriched Flavor' tobacco delivers taste equal to—or better than—leading high tar brands.

MERIT

Of course it's different.

It's cleaner.

Some people say Premier is different. That's not surprising. At one time, filtered and "light" cigarettes were thought to be different as well. Yet, it wasn't long before they became preferred choices among smokers.

Today, Premier offers smokers a whole new choice—a cleaner smoke. Because it's the first cigarette that heats tobacco instead of burning it.

By heating tobacco, Premier changes the very composition of cigarette smoke—substantially reducing most of the combustion compounds found in the smoke of typical burning cigarettes. Those that remain include carbon monoxide. But it's a level so greater than in the best selling "lights".

You get a smoker that tastes like you've never experienced before. But that's all, but not heavy. Because it's almost instantly. Quite simply, it's a smoker that's cleaner for you and everyone around you. Have it once and you'll know the difference you'll enjoy most about Premier.

Premier: The cleaner smoke.

SURGEON GENERAL'S WARNING. Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.
Assessing the Science Base for Tobacco Harm Reduction

Definitions:

1) Harm Avoidance – never using tobacco and never being exposed to ETS

2) Harm Minimization – quitting tobacco use and discontinuing exposure to ETS

2) Harm Reduction – minimizing harms and decreasing morbidity and mortality without completely eliminating tobacco/nicotine use.
TOBACCO PRODUCTS

Small cigars
- Weigh less than or equal to 1.36 grams
- Features common to cigarettes, such as shape, length (70 to 100 mm), and use of filter tips

Large Cigar
- Weigh > 1.36 grams
- Wide variety of cigar products

Cigarillo
- Considered a “large” cigar for taxation purpose

Source: Cristine Delnevo, UMDNJ School of Public Health
Various combusted tobacco products

1. Roll-your-own cigarette made by hand with roll-your-own tobacco
2. Roll-your-own cigarette made in a commercial roll-your-own machine with pipe tobacco
3. Factory-made cigarette
4. Small cigar
5. Filtered large cigar
6. Traditional large cigar

Source: CDC, MMWR;61(30);August 3, 2012; page 568
http://tobaccoproducts.org/index.php/Main_Page
Basic E-cig. Anatomy

**Smoke without fire**
Suck on an e-cigarette and it produces a cloud of nicotine-carrying vapour with none of the toxic by-products of burning tobacco
CONSEQUENCES OF TOBACCO USE

Smoking and Tobacco Smoke Pollution Damage Every Part of the Body

CANCERS
- Larynx
- Oesophagus
- Stomach
- Pancreas
- Kidney and Urinary
- Colon
- Bladder

CHRONIC DISEASES
- Stroke
- Blinding, Cataract
- Pneumonitis
- Acute exacerbation
- Coronary heart disease
- Pneumonia
- Asthma
- Chronic obstructive pulmonary disease (COPD)
- Asthma, and other respiratory effects
- Hip fractures
- Reproductive effects in women including reduced fertility

TOBACCO SMOKE POLLUTION

CHILDREN
- Brain tumors
- Middle ear disease
- Leukemia
- Respiratory symptoms, impaired lung function
- Asthma
- Sudden Infant Death Syndrome (SIDS)
- Leukemia
- Lower respiratory illness

ADULTS
- Lung cancer
- Chronic obstructive pulmonary disease (COPD)
- Chronic obstructive pulmonary disease
- Asthma, impaired lung function
- Reproductive effects in women: Low birth weight, Poor term delivery

Source: Adapted from reference 1

* Evidence of causation suggestive
   Evidence of causation sufficient
Diseases Caused by Smokeless Tobacco Use and Cigars

Smokeless tobacco causes:
✓ Oral, esophageal, and pancreatic cancers
✓ Oral leukoplakia

http://www.cancer.gov/cancertopics/factsheet/Tobacco/smokeless

Cigars cause:
✓ Cancers of the mouth, larynx, and lung
✓ Coronary heart disease
✓ COPD

http://www.cancer.gov/cancertopics/factsheet/Tobacco/cigars

Carcinogens in Tobacco Smoke

<table>
<thead>
<tr>
<th>Chemical Class</th>
<th># cmpds.</th>
<th>Representative carcinogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAH</td>
<td>14</td>
<td>BaP, dibenz[a,h]anthracene</td>
</tr>
<tr>
<td>Nitrosamines</td>
<td>8</td>
<td>NNK, NNN</td>
</tr>
<tr>
<td>Aromatic amines</td>
<td>12</td>
<td>4-aminobiphenyl, 2-naphylamine</td>
</tr>
<tr>
<td>Aldehydes</td>
<td>2</td>
<td>formaldehyde, acetaldehyde</td>
</tr>
<tr>
<td>Phenols</td>
<td>2</td>
<td>catechol</td>
</tr>
<tr>
<td>Volatile hydrocarbons</td>
<td>3</td>
<td>benzene, 1,3-butadiene</td>
</tr>
<tr>
<td>Nitrohydrocarbons</td>
<td>3</td>
<td>nitromethane</td>
</tr>
<tr>
<td>Other organics</td>
<td>8</td>
<td>ethylene oxide, acrylonitrile</td>
</tr>
<tr>
<td>Inorganic compounds</td>
<td>9</td>
<td>cadmium, nickel, polonium-210</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>61</strong></td>
<td></td>
</tr>
</tbody>
</table>

Carcinogens in Unburned Tobacco

<table>
<thead>
<tr>
<th>Chemical class</th>
<th>No. of compounds</th>
<th>Representative carcinogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAH</td>
<td>1</td>
<td>BaP</td>
</tr>
<tr>
<td>Nitrosamines</td>
<td>6</td>
<td>NNK, NNN</td>
</tr>
<tr>
<td>Aldehydes</td>
<td>2</td>
<td>formaldehyde, acetaldehyde</td>
</tr>
<tr>
<td>Inorganic compounds</td>
<td>7</td>
<td>cadmium</td>
</tr>
<tr>
<td>TOTAL</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>


Diseases Caused by Smokeless Tobacco Use and Cigars

Smokeless tobacco causes:
✓ Oral, esophageal, and pancreatic cancers
✓ Oral leukoplakia

Cigars cause:
✓ Cancers of the mouth, larynx, and lung
✓ Coronary heart disease
✓ COPD
### Hookah (water pipes, nargile, shisha)

- Water pipe smoking delivers the addictive drug nicotine
- Due to the mode of smoking—including frequency of puffing, depth of inhalation, and length of the smoking session—hookah smokers may absorb higher concentrations of the toxins found in cigarette smoke.
- A typical 1-hour-long hookah smoking session involves inhaling 100–200 times the volume of smoke inhaled from a single cigarette.
- Hookah smokers are at risk for the same kinds of diseases as are caused by cigarette smoking, including oral cancer, lung cancer, stomach cancer, cancer of the esophagus, reduced lung function, and decreased fertility.

Source: [http://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/hookahs/](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/hookahs/)

### Using a hookah to smoke tobacco poses a serious potential health hazard to smokers and others exposed to the smoke emitted.

- The charcoal used to heat tobacco in the hookah increases the health risks by producing high levels of carbon monoxide, metals, and cancer-causing chemicals.
- Even after it has passed through water, the smoke produced by a hookah contains high levels of toxic compounds, including carbon monoxide, heavy metals, and cancer-causing chemicals.
- Hookah tobacco and smoke contain numerous toxic substances known to cause lung, bladder, and oral cancers.
- Irritation from exposure to tobacco juices increases the risk of developing oral cancers. The irritation by tobacco juice products is likely to be greater among hookah smokers than among pipe or cigar smokers because hookah smoking is typically practiced (with or without inhalation) more often and for longer periods of time.
- **Other Health Effects of Hookah Smoke**
  - Hookah tobacco and smoke contain numerous toxic substances known to cause clogged arteries and heart disease.
  - Infectious diseases may be transmitted by sharing a hookah.
  - Babies born to women who smoked one or more water pipes a day during pregnancy have lower birth weights (were at least 3½ ounces less) than babies born to nonsmokers and are at an increased risk for respiratory diseases.
- **Hookahs and Secondhand Smoke**
  - Secondhand smoke from hookahs poses a serious risk for nonsmokers, particularly because it contains smoke not only from the tobacco but also from the heat source (e.g., charcoal) used in the hookah.

Source: [http://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/hookahs/](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/hookahs/)
Continuum of Risk

Most toxic

- Conventional cigarettes
- Modified tobacco cigarettes
- Cigars
- Cigarette-like delivery devices

Least toxic

- Smokeless tobacco – India, Sudan
- Smokeless Tobacco - USA
- Low nitrosamine smokeless tobacco (Swedish snus)
- Nicotine delivery devices / e-cigarettes (?)
- Cessation

PATTERNS OF USE
Trends in Per Capita Consumption of Various Tobacco Products – United States, 1880-2006

Adult Per Capita Cigarette Consumption and Major Smoking and Health Events – United States, 1900-2010

Source: United States Department of Agriculture; Centers for Disease Control and Prevention; Alcohol and Tobacco Tax and Trade Bureau
Per Capita Consumption of Smokeless, Pipe, and Roll-Your-Own Tobacco Products (in pounds) – 2000-2010

Source: US Department of Treasury; Alcohol and Tobacco Tax and Trade Bureau

Current Use Among U.S. Adults of Various Tobacco Products, by Sex – National Adult Tobacco Survey, 2009-2010

Source: CDC, Office on Smoking and Health
Current Use Among High School Students by Type of Tobacco Product – National Youth Tobacco Survey, 2006

Note: Used tobacco on at least 1 of the 30 days preceding the survey
Source: CDC, Office on Smoking and Health

Trends in cigarette smoking* - United States, 1974-2010

*Before 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes during their lifetime and who reported now smoking every day or some days.

Source: various National Health Interview Surveys from 1974-2010, National Center for Health Statistics, CDC.
Prevalence (%) of cigarette smoking and use of OTPs among US adult males – 1995/96 – 2006/07 TUS-CPS

FACTORS INFLUENCING USE
Epidemiologic Model of Tobacco Control and Nicotine Addiction

Why People Smoke: Simplified

“There are two major reasons people smoke: greed and addiction. Tobacco industry greed and personal addiction caused by their products.”

William Foege: Former CDC Director and Senior Fellow at the Bill & Melinda Gates Foundation
The Vector of Disease

“The cigarette industry has not voluntarily employed its advertising to inform consumers in a consistent and meaningful way about any of the following:

1) the technologies employed in fabricating the products,
2) the constituents added in the manufacturing process,
3) the residues and contaminants that may be present in the combustible column,
4) the constituents of smoke that may be hazardous,
5) the addictiveness of nicotine, or
6) the health risks to which its regular users and their families are inevitably exposed.

Their advertising for low-yield products, instead, has relied on pictures of health and images of intelligence, and has mislead consumers into believing filtered products in general and low-tar products in specific to be safe or safer than other forms without knowing exactly...
The Vector of Disease (3)

Why. This is known among business students as following the Mushroom Model form Consumer Management, with the cynical philosophy, “Keep the consumers in the dark and feed them lots of B.S.”

Source: Pollay and Dewhirst, 2000.

The Vector of Disease (4)

• Convicted of racketeering by the US Department of Justice (RICO)
• Pricing strategies to offset tax increases
• Adapted to MSA restrictions by focusing resources on the retail environment, bar promotions and direct mail marketing
• Undermine PH efforts by resisting the implementation of health promoting programs & policies
• Interfere with scientists who study health effects
• Public relations, including misinformation, youth prevention campaigns, buying credibility
HELPING YOUR PATIENTS

Paradigm for Tobacco Control

- Pro-tobacco Marketing
- Access

- Price/economic
- Smoke-free air
- Counter Marketing
- Cessation activities
- Prevention activities
- Product Regulation
- Product Liability

INDIVIDUAL

TOBACCO ADDICTION

SOCIETY
Assessing the Science Base for Tobacco Harm Reduction

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Continuum of Risk

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Outline of statement to consumers about NRT

1. NRT is one good tool to help you quit smoking. But NRT can’t do all the work for you—you have to help—and it is not the only tool to help you stop smoking.
2. Don’t worry about the safety of using NRT to stop smoking: NRT is a safe alternative to cigarettes for smokers.
3. Do be cautious about using NRT while pregnant.
4. NRT is less addictive than cigarettes and it is not creating a new addiction.
5. Stop using NRT only when you feel very sure you can stay off cigarettes.
6. If the amounts of NRT you are taking do not help you stop smoking, talk with your health care provider about using (1) more NRT, (2) more than one type of NRT at the same time, (3) other smoking cessation medicines at the same time, or (4) telephone or in person advice on quitting tips.
7. If NRT helps you stop smoking, but you go back to smoking when you stop using NRT, you should seriously think about using NRT again the next time you try to stop smoking.

Source: Kozlowski, Giovino et al., Addictive Behaviors 2007;32:2140-2150

Outline of statement to consumers about NTR

8. Make sure you are using the gum or lozenge in the best way:
   • Park the gum between your teeth for 2–3 min between chews—fast chewing doesn’t allow the nicotine to be absorbed from the lining of the mouth and can cause nausea.
   • Don’t drink anything (including coffee, orange juice, beer, wine, or sodas) for at least 15 min before and nothing while using nicotine gum or lozenge, so your mouth can absorb the nicotine.
   • Make sure you get the right amount of nicotine — people who smoke more than 10 cigarettes per day should use a 4 mg piece of gum or lozenge.
9. Make sure you are using the patch in the best way:
   • If you can’t stop having a few cigarettes while using the patch, it is best to keep the patch on. Don’t let a few slips with cigarettes stop you from using the patch to quit smoking.
   • You may need to add nicotine gum or lozenges to help get over the hump or you may need to use more than one patch at a time. Talk to your healthcare provider about this.
10. If the price of NRT is a concern, try to find “store brand” (generic) NRT products which are often cheaper than the brand name products.
11. Do whatever it takes to get the job done—it is not a weakness to use medicine to stop smoking.

Source: Kozlowski, Giovino et al., Addictive Behaviors 2007;32:2140-2150
Take-Away Messages

• Tobacco products other than cigarettes are growing in popularity.
• There are safety concerns with all tobacco products and all nicotine-delivery devices.
• While there is a continuum of risk, differences have not be definitively quantified.
• Only NRT is approved for use in cessation.
• FDA is reviewing regulatory options.
• Beware the vector!

Evaluation and Course Credit

The NY State Cessation Center Collaborative Conference Call is now offering an electronic format to submit your evaluation and CME/Course Credit Form. This online form is accessed by clicking on the link below or by copying the link and putting it in your internet browser.

https://www.surveymonkey.com/s/TCNYConfCall

The paper evaluation and course credit form is also available on the NYS Smokers’ Quitline site, http://www.nysmokefree.com/confcalls/default.aspx, to be downloaded, completed and submitted via fax to (518) 891-6159.

Please choose one method, electronic or fax, to submit your forms.

Evaluation and Course Credit forms have to be submitted by January 16, 2013 in order to receive credit/certificate.