Strategies for Promoting Cessation

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Section A

Benefits of Cessation
Smoking: A Chronic Disease

Pre-Contemplation → Contemplation → Action → Relapse → Pre-Contemplation

Long-Term Success → Short term success → Relapse

Benefits of Cessation

- Smoking cessation has major and immediate health benefits for men and women of all ages. Benefits apply to persons with and without smoking-related disease.
- Former smokers live longer than continuing smokers.
- Smoking cessation decreases the risk of lung cancer, other cancers, heart attack, stroke, and chronic lung disease.
- Women who stop smoking before or during the first three to four months of pregnancy reduce their risk of having a low birth weight baby to that of women who never smoked.
- The health benefits of smoking cessation far exceed any risks from the average five-pound (2.3-kg) weight gain or any adverse psychological effects that may follow quitting.
Benefits of Cessation

- **Stroke** risk is reduced to that of a person who never smoked after five to ten years of not smoking.
- **Cancers of the mouth, throat, and esophagus** risks are halved five years after quitting.
- **Cancer of the larynx** risk is reduced after quitting.
- **Coronary heart disease** risk is cut by half one year after quitting and is nearly the same as someone who never smoked 15 years after quitting.
- **COPD** risk of death is reduced after you quit.
**Benefits of Cessation**

- **Lung cancer** risk drops by as much as half 10 years after quitting
- **Ulcer** risk drops after quitting
- **Bladder cancer** risk is halved a few years after quitting
- **Peripheral artery disease** goes down after quitting
- **Cervical cancer** risk is reduced a few years after quitting
- **Low birth weight baby** risk drops to normal if you quit before pregnancy or during your first trimester
Data from California shows that at one-time, a 1% reduction in absolute prevalence of smoking produces the following:

- Substantial short-run savings, both in terms of events avoided and dollars saved
- Reduced number of heart attacks and strokes are resulting in an immediate savings of ± $26 million

A seven-year program that reduced smoking prevalence by 1% per year would result in the following:

- ±15,521 fewer hospitalizations for heart attacks and ±9,261 fewer hospitalizations for strokes, resulting in a total savings of $3.20 ± 0.59 billion in short-term medical costs (1)
Based on an average cost of 3.25 per pack. By quitting smoking a pack a day the average smoker saves about $1400 a year plus indirect costs related to health costs.

<table>
<thead>
<tr>
<th>Packs/Day</th>
<th>Cost/Month</th>
<th>Cost/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$98.50</td>
<td>$1,182.00</td>
</tr>
<tr>
<td>1.5</td>
<td>$148.00</td>
<td>$1,773.00</td>
</tr>
<tr>
<td>2</td>
<td>$197.00</td>
<td>$2,364.00</td>
</tr>
</tbody>
</table>
Smoking cessation has been called the “gold standard” of healthcare cost effectiveness

- Produced by additional years of life at costs well below those a wide range of other healthcare interventions

Average of ~$2,600 per year of life

- Cost-effective when compared with cholesterol treatment (a routine intervention which costs nearly 40 times as much to treat a year)
Smoking cessation is associated with increased work attendance
   - Absenteeism is decreased among former smokers as compared to current smokers

Workplace productivity is increased
   - Productivity among former smokers increases over time (1-4 years) toward values seen among people who have never smoked
Barriers to Smoking Cessation

- Depression
- Addiction
- Misinformation
- Cost of Therapy
- Access to Health Care
Section B

Strategies for Smoking Cessation
Population Strategies

- Policy approach
  - Price increase
  - Ban smoking in public places
- Warning labels
- Media campaigns
- Quit incentives, quit-lines, internet, self-help materials
A supportive environment is needed to encourage smokers to quit
- Higher tobacco taxes
- Advertising bans
- Smoke-free public
Smoke-Free Places

- Smoke-free places—very effective in promoting smoking cessation
- Totally smoke-free workplaces are associated with reductions in prevalence of smoking of 3.8% (95% confidence interval 2.8% to 4.7%) and 3.1 (2.4 to 3.8) fewer cigarettes smoked per day per continuing smoker
- If all workplaces became smoke-free, consumption per capita in the entire population would drop by 4.5% in the U.S. and 7.6% in the United Kingdom
- Study showed smoke-free places to be nine times more cost-effective per new nonsmoker than free NRT programs


Several countries (Canada, Australia, Brazil) have introduced new warning labels with color images and messages encouraging smokers to quit.

In several countries warning labels take over 50% of the pack’s size.
Mass media plays a key role in reaching large numbers of people directly with cessation messages that influence knowledge, attitudes, and behaviors.
Self-Help Materials

- Simply distributing materials to the general population does NOT increase cessation rates

  - “Standard self-help materials may increase quit rates compared to no intervention, but the effect is likely to be small. We failed to find evidence that they have an additional benefit when used alongside other interventions such as advice from a health care professional, or nicotine replacement therapy. There is evidence that materials that are tailored for individual smokers are more effective.”

- The Cochrane database of systematic reviews of smoking cessation (http://www.cochrane.org/cochrane/revabstr/TOBACCOAbstractIndex.htm)

- Personalizing materials to the individual appears to have an effect

- Increasing the intensity of self-help interventions via telephone counseling increases quit rates
Introducing QuitAssist

QuitAssist is an information resource sponsored by Philip Morris USA. It’s designed to help you connect with a wealth of expert quitting information available – usually for free – from government agencies, universities, and respected nonprofit organizations. This QuitAssist guide points the way to programs, telephone quitlines, websites, guides, and more that can help you find your own path to success.

You can also read this guide at QuitAssist Online. Log on through www.philipmorrisusa.com

From there, you can link directly to dozens of resources to help you move ahead and leave cigarettes behind.

If you decide to quit smoking...

A guide to resources and information that can help you succeed

Adapted from: http://www.philipmorrisusa.com/en/quitassist/index_flash.asp accessed 3/21/06
Low-cost, popular, easily accessible, and effective
Reach groups who have difficulty accessing mainstream smoking-cessation services
Can be complemented by quit smoking sites on the internet
Key adjuvant treatment for NRT and/or physician advice
Ireland: Impact of SHS Restrictions

- Ireland became the first country to go smokefree in all public places and workplaces, including restaurants and pubs, on March 29, 2004.

- Quitline and smoking ban attributed to 33% decline in prevalence.

- 7,000 smokers (33% of callers) quit in first six-months of quitline.

- Of those who quit, 39% said that the Smoke-Free at Work legislation had a significant or important bearing on their decision.
“Welcome to Norway. The only thing we smoke here is salmon.”

Norway extended its existing smoke-free legislation to include bars and restaurants from June 1, 2004.
NO significant drop in daily smoking since ban
- WHY?
Law only expanded strong existing workplace bans to restaurants and bars
Cigarettes cost over $9 a pack
Prevalence is about 26%
Has Norway hit rock bottom?
Quit and Win is a cost-effective, evidence-based, smoking-cessation method

Quit and Win is associated with cessation rates of approximately 20%
Successful Example: Australia

Australia

■ The world’s most expensive cigarettes, 2nd to Hong Kong
■ Among the world’s most prominent health warnings on cigarette packs
■ A total ban on all advertising and promotion of cigarettes
■ National campaigns for tobacco control

Image source:
Successful Example: Australia

- Quitlines provide advice and support to smokers
- Extensive advocacy, via news media
- Legislation prohibiting smoking in buildings, public transport, and restaurants
- Widespread adoption of smoke-free homes (71.5% of homes are smoke free)
- Litigation against tobacco companies
Section C

Individual Cessation Strategies
Individual Cessation Strategies

Nicoderm CQ
Stop Smoking Aid
Nicotine transdermal system

Zyban Tablets

Nicorette
Stop smoking Aid
Nicotine polacrilex gum
Mayo Clinic Recommendations

- Make treatment a public health priority
- Make treatment available
- Assess and monitor tobacco use and provide proven treatments
- Health professionals should set an example for peers and patients by ceasing tobacco use
- Fund effective treatment
- Motivate tobacco users to quit
- Monitor and regulate tobacco processing, marketing, and sales
- Develop new treatments
The U.S. Preventive Services Task Force (USPSTF) approaches are effective in increasing the proportion of smokers who successfully quit smoking and remain abstinent after one year:

- Brief smoking cessation interventions
- Screening
- Brief behavioral counseling (less than three minutes)

Ask, advise, assist, and treat, always . . .

- Pharmacotherapy delivered in primary care settings
Physician’s Role

- Strong dose-response relationship between counseling intensity and cessation success
- Many different providers are effective in increasing smoking cessation rates
- Treatments are effective across diverse populations
- Practical counseling is associated with significant increases in cessation rates
### Proven Effective in General Population

#### Current and Potential Impact of Population-Based Smoking Cessation Interventions

<table>
<thead>
<tr>
<th>Cessation Attempt</th>
<th>Former, 3+ months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Advised by physician to quit</td>
<td>1.6</td>
</tr>
<tr>
<td>Total Work Ban</td>
<td>1.09</td>
</tr>
</tbody>
</table>

Behavioral therapy ranges in complexity from simple advice, offered by a physician or other health care provider, to much more extensive therapy offered by counselors or specialized smoking-cessation clinics.

The following three types are more effective:
- Practical counseling
- Social support as part of treatment
- Social support arranged outside of treatment
Special Population: Pregnant Women

- The USPSTF strongly recommends that clinicians screen all pregnant women for tobacco use and provide specific counseling to those who smoke.
Advances have increased cessation rates in the last 40 years

The development of novel and more effective medication for smoking cessation is crucial to treat nicotine dependence.
A combination of psychosocial interventions and pharmacological interventions is superior to no treatment or to psychosocial interventions alone.
Pharmacotherapy

- Evidence based pharmacotherapy
  - Nicotine-replacement therapy (NRT)
  - Zyban

- Doubles the probability of long-term success

- Behavioral treatment substantially increases success of pharmacotherapy
Nicotine Replacement Therapy (NRT)

- Over the counter
  - Nicotine patch
  - Nicotine gum

- By prescription
  - Nicotine spray
  - Nicotine inhaler
  - Nicotine lozenges
- Zyban
- FDA approved
- Prescription only
- Use in combination with NRT
- Doubles long-term abstinence rates
Clonidine/Nortriptyline

- Not FDA approved
- Prescription only
- Increase abstinence rates when compared to placebo
- Has significant side effects

Image source: [http://byrd.senate.gov/pills.jpg](http://byrd.senate.gov/pills.jpg) accessed 3/21/06
Smoking cessation programs during hospitalization address withdrawal symptoms and increase the effectiveness of smoking cessation efforts.
Section D

Smoking Cessation Outcomes
Measures of Smoking Cessation Outcomes

- Self-report
  - Point prevalence abstinence—percentage of former smokers not smoking at a particular point in time
  - Continuous abstinence—percentage of former smokers not smoking since some critical event
  - Prolonged abstinence—former smokers continuously abstinent for a prolonged period of time
  - Or . . .
  - Cessation attempts—smokers who tried to quit for 24 hours during the past 12 months
  - Cessation success—former smokers of three or more months/smokers one year prior to survey
National Health Interview Survey (NHIS)

- Monitoring health behaviors of U.S population
- NHIS is one of the major data collection systems
- Nationally representative sample
- Includes cigarette smoking among other behaviors
NHIS Cigarette Smoking Questions

- Lifetime cigarette smoking status
  - “Smoked 100 cigarettes in entire life”

- Current cigarette smoking status

- Number of cigarettes smoked per day

- Age of initiation

- Quit attempts
  - Stopped for more than one day in the past year
NHIS: U.S. Smoking Trends

Number (in Millions) of Adults 18 Years of Age and Older
Who Were Current, Former, or Never Smokers, United States, 1965–2000

Data source: National Health Interview Surveys
http://www.cdc.gov/tobacco/research_data/adults_prev/adstat2.htm
accessed 3/21/06
Percent distribution of age of smoking initiation among all adult current smokers: United States, 1999–2001

- Less than 16 years: 30.9%
- 16-17 years: 24.2%
- 18-20 years: 26.4%
- 21 years and over: 18.5%

NOTE: Estimates are age-adjusted to the 2000 U.S. standard population.
Source: http://www.cdc.gov/nchs/nhis.htm
accessed 3/21/06
## Percentage of Tobacco Use at Home and Work

**Estimates of the Percentage of the 18+ Population Living in Households in which Cigarette Smoking Is Not Allowed and Working in Environments in Which Smoking Is Not Allowed.**

<table>
<thead>
<tr>
<th></th>
<th>Smoking not allowed at home* (%)</th>
<th>Population Size (thousands)</th>
<th>Sample Size</th>
<th>Smoking not allowed at work** (%)</th>
<th>Population Size (thousands)</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>61.1</td>
<td>195,777</td>
<td>174,189</td>
<td>68.9</td>
<td>94,727</td>
<td>81,602</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>60.0</td>
<td>93,631</td>
<td>74,809</td>
<td>63.5</td>
<td>44,463</td>
<td>33,733</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>62.1</td>
<td>102,146</td>
<td>99,380</td>
<td>73.7</td>
<td>50,264</td>
<td>47,869</td>
</tr>
<tr>
<td><strong>Region:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>59.4</td>
<td>37,767</td>
<td>35,626</td>
<td>72.3</td>
<td>18,241</td>
<td>16,866</td>
</tr>
<tr>
<td>Midwest</td>
<td>54.4</td>
<td>45,361</td>
<td>42,573</td>
<td>65.4</td>
<td>23,547</td>
<td>21,365</td>
</tr>
<tr>
<td>South</td>
<td>59.7</td>
<td>69,302</td>
<td>53,658</td>
<td>66.5</td>
<td>32,856</td>
<td>24,288</td>
</tr>
<tr>
<td>West</td>
<td>71.8</td>
<td>43,347</td>
<td>42,332</td>
<td>73.9</td>
<td>20,084</td>
<td>19,083</td>
</tr>
<tr>
<td><strong>Race/Ethnicity:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>59.5</td>
<td>144,640</td>
<td>138,676</td>
<td>69.5</td>
<td>69,617</td>
<td>64,610</td>
</tr>
<tr>
<td>Black</td>
<td>57.1</td>
<td>22,442</td>
<td>15,500</td>
<td>68.8</td>
<td>11,263</td>
<td>7,414</td>
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<tr>
<td>Hispanic</td>
<td>73.6</td>
<td>19,954</td>
<td>13,119</td>
<td>64.3</td>
<td>9,226</td>
<td>6,060</td>
</tr>
<tr>
<td>Other</td>
<td>69.6</td>
<td>8,741</td>
<td>6,894</td>
<td>69.0</td>
<td>4,622</td>
<td>3,518</td>
</tr>
</tbody>
</table>

*Based on question: “Which statement best describes the rules about smoking in your home: No one is allowed to smoke anywhere, smoking is permitted in some places or at some times, or smoking is permitted anywhere.”

### Attitudes about Smoking

<table>
<thead>
<tr>
<th>Public area:</th>
<th>Total (%)</th>
<th>Male (%)</th>
<th>Female (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurants</td>
<td>51.9</td>
<td>48.9</td>
<td>54.6</td>
</tr>
<tr>
<td>Hospitals</td>
<td>83.0</td>
<td>81.2</td>
<td>84.7</td>
</tr>
<tr>
<td>Indoor work areas</td>
<td>68.2</td>
<td>63.4</td>
<td>72.5</td>
</tr>
<tr>
<td>Bars and cocktail lounges</td>
<td>29.8</td>
<td>27.1</td>
<td>32.3</td>
</tr>
<tr>
<td>Indoor sporting events</td>
<td>71.7</td>
<td>67.8</td>
<td>75.2</td>
</tr>
<tr>
<td>Indoor shopping malls</td>
<td>69.4</td>
<td>66.0</td>
<td>72.5</td>
</tr>
<tr>
<td><strong>Population size</strong> (thousands)</td>
<td>191,095</td>
<td>91,770</td>
<td>99,325</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>169,732</td>
<td>73,218</td>
<td>96,514</td>
</tr>
</tbody>
</table>

### Cessation Activity

Those smoking everyday one year previously who at the time of the TUS-CPS interview --

<table>
<thead>
<tr>
<th>Had any cessation activity in the past year, including quitting* (%)</th>
<th>Had quit smoking for 3+ months* (%)</th>
<th>Population Size (thousands)</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>36.6</td>
<td>5.0</td>
<td>31,569</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>36.2</td>
<td>5.0</td>
<td>16,874</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>37.0</td>
<td>5.0</td>
<td>14,695</td>
</tr>
</tbody>
</table>

**Region:**
- Northeast: 37.9 4.9 6,088 5,993
- Midwest: 35.5 4.5 8,065 7,532
- South: 34.9 4.6 11,847 9,665
- West: 40.4 6.6 5,570 6,094

**Race/Ethnicity:**
- White: 36.0 5.2 25,332 24,740
- Black: 39.4 4.0 3,472 2,433
- Hispanic: 38.4 4.7 1,748 1,205
- Other: 37.3 4.4 1,017 906

**Age:**
- 25-44: 38.5 4.5 17,331 15,467
- 45-64: 34.6 5.2 11,413 10,845
- 65+: 32.8 7.2 2,824 2,972

**Education**
- <12 years: 31.9 4.1 6,243 5,612
- 12 years: 35.1 4.4 13,133 12,341
- 13-15 years: 40.2 5.6 8,365 7,866
- 16+ years: 41.4 7.2 3,828 3,465

*See text preceding table for definitions of quitting behavior.

Multivariate Logistic Regression Analysis of Cessation Measures:

Comparing Smoke-Free Workers with Lesser Restrictions, Current Daily Smokers One Year Prior to Survey, Ages 25–64 years

Cotinine

- A major metabolite of nicotine and can be measured in different body fluids (blood, saliva, or urine) as a biomarker of exposure to inhaled or ingested nicotine
- People who do smoke will have a cotinine level of ten or higher in their blood and a typical smoker has levels of 150 to 450 units (levels in urine are ten times higher)
Measures of Carbon Monoxide

Biochemical

- CO
- Shows the amount of carbon monoxide (ppm CO) in breath, which is an indirect, non-evasive measure of blood carboxyhaemoglobin (%COHb)
  - 0–10 ppm—non-smoker
  - 11–20 ppm—light smoker
  - 21–100 ppm—heavy smoker
Issues to Consider

- Powerful interventions that affect only a few individuals will have little impact on disease rates.

- Weaker interventions that impact large numbers will have important and cumulative effects on disease rates.