Nurses Role in Treating Tobacco Use in the Primary Care Setting

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Presenter Discloser Information

Dr. Janie Heath,
Nurses Role in Treating Tobacco Use in the Primary Care Setting

Financial Discloser:
~Pfizer National Speaker Bureau
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~NIH Grant for Tobacco Cessation Interventions among African American Families

Unlabeled / Unapproved Drug Use Disclosure:
None. All medications discussed are FDA approved for tobacco cessation
Objectives

- Identify the importance of integrating tobacco cessation in DAILY practice
- Recognize bio-behavioral & pharmacotherapy strategies in treating nicotine dependence
- Identify essential resources for integrating tobacco cessation in DAILY practice

VISIT: www.nurses4tobaccocontrol.org
STATE-SPECIFIC PREVALENCE of SMOKING among ADULTS, 2009

NY = 18.0%; $4.35

NTL AVERAGE of SMOKERS = 20.6%
NTL AVERAGE of Cigarette TAX = $1.45

CA = 12.9%; $0.87

KY = 25.6%; $0.60
U.S. Preventable Causes of Death


COMPOUNDS in TOBACCO SMOKE

An estimated 4,800 **TOXINS** in tobacco smoke plus 11 proven human carcinogens

**Gases (~500 isolated)**
- Carbon monoxide
- Hydrogen cyanide
- Ammonia
- Benzene
- Formaldehyde

**Particles (~3,500 isolated)**
- Nicotine
- Nitrosamines
- Lead
- Cadmium
- Polonium-210
Marketing Strategy: “Light and Ultra-Light” Cigarettes

The difference between Marlboro and Marlboro Lights...

15mg tar, 1.1 mg nicotine  
10mg tar, 0.8 mg nicotine

an extra row of ventilation holes

Image courtesy of Mayo Clinic Nicotine Dependence Center - Research Program / Dr. Richard D. Hurt

The Marlboro and Marlboro Lights logos are registered trademarks of Philip Morris USA.
The Safer Cigarette – NOT!

Unveiling the SMOKING gun about “Safe Cigarettes”!

Medical expenditures (1998)
- Ambulatory care, $27.2 billion
- Hospital care, $17.1 billion
- Nursing home, $19.4 billion
- Prescription drugs, $6.4 billion
- Other care, $5.4 billion

Societal costs: $7.18 per pack

Annual lost productivity costs (1995–1999)
- Men, $55.4 billion
- Women, $26.5 billion

FINANCIAL IMPACT of SMOKING

Buying cigarettes every day for 50 years @ $4.32 per pack
Money banked monthly, earning 4% interest

Dollars lost, in thousands

- $251,725
- $503,451
- $755,177

Packs per day
ANNUAL U.S. DEATHS ATTRIBUTABLE to SMOKING, 1997–2001

<table>
<thead>
<tr>
<th>Disease</th>
<th>Deaths</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular diseases</td>
<td>137,979</td>
<td>32%</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>123,836</td>
<td>28%</td>
</tr>
<tr>
<td>Respiratory diseases</td>
<td>101,454</td>
<td>23%</td>
</tr>
<tr>
<td>Second-hand smoke*</td>
<td>38,112</td>
<td>9%</td>
</tr>
<tr>
<td>Cancers other than lung</td>
<td>34,693</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>1,828</td>
<td>&lt;1%</td>
</tr>
<tr>
<td><strong>TOTAL: 437,902 deaths annually</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* In 2005, it was estimated that nearly 50,000 persons died due to second-hand smoke exposure.

QUITTING: HEALTH BENEFITS

Time Since Quit Date

- 2 weeks to 3 months
  - Lung cilia regain normal function
  - Ability to clear lungs of mucus increases
  - Coughing, fatigue, shortness of breath decrease

- 1 year
  - Risk of stroke is reduced to that of people who have never smoked

- 5 years
  - Risk of CHD is similar to that of people who have never smoked

- 10 years
  - Lung cancer death rate drops to half that of a continuing smoker
  - Risk of cancer of mouth, throat, esophagus, bladder, kidney, pancreas decrease

- After 15 years
  - Risk of CHD is similar to that of people who have never smoked

- Excess risk of CHD decreases to half that of a continuing smoker
- Circulation improves, walking becomes easier
- Lung function increases up to 30%
CIGARETTES

- Most common form of tobacco used in U.S.
- 360 billion cigarettes consumed in 2007
  - 3.2% less than in 2006
- Per-capita consumption was 1,691 in 2006
SMOKELESS TOBACCO

Chewing tobacco
- Looseleaf
- Plug
- Twist

Snuff
- Moist
- Dry

The Copenhagen and Skoal logos are registered trademarks of U.S. Smokeless Tobacco Company, and Red Man is a registered trademark of Swedish Match.
Other Tobacco Products

CIGARS

KRETEKS / CLOVE CIGARETTES
Other Tobacco Products

BIDIS

HOOKAH PIPE,
POTENTIALLY REDUCED-EXPOSURE PRODUCTS (PREPs)
Breaking the NICOTINE DEPENDENCE Cycle at ANY age!

A COMPREHENSIVE APPROACH = A Successful Framework for Quitting

The PHYSICAL
- Automatic learned behavior with cigarettes
- Role of cigarettes in life—pleasure, stress, social
- Physical addiction of cravings & withdrawals

The EMOTIONAL

The BEHAVIOR

Adapted from Legacy’s GSD&M Presentation 12/5/03
Nicotine enters brain

Dopamine release

Stimulation of nicotine receptors

Within 7 – 11 seconds

“…I feel good…”

Prefrontal cortex

Nucleus accumbens

Ventral tegmental area

Nicotine enters brain

DOPAMINE REWARD PATHWAY
NICOTINE BEHAVIORAL EFFECTS: Do the Math!

- An individual smokes 1 pack per day x 20 yrs
- 20 cigarettes / pack
- 10 puffs / cigarette
- = ?? puffs / day

**THAT’s 200 HITS of NICOTINE per DAY**

- Now Multiply that # by days / year
  - 73,000
- THEN multiply that number by years smoking!
  - 1.4 million

- **YIKES! No wonder it is SO difficult to QUIT**-
- Average attempts = 7-10 per smoker’s lifetime
Most symptoms peak 24–48 hr after quitting and subside within 2–4 weeks.
NEUROCHEMICAL and RELATED EFFECTS of NICOTINE

- **Dopamine** ➞ Pleasure, appetite suppression
- **Norepinephrine** ➞ Arousal, appetite suppression
- **Acetylcholine** ➞ Arousal, cognitive enhancement
- **Glutamate** ➞ Learning, memory enhancement
- **Serotonin** ➞ Mood modulation, appetite suppression
- **β-Endorphin** ➞ Reduction of anxiety and tension
- **GABA** ➞ Reduction of anxiety and tension

The 5 A’s

- **ASK**
- **ADVISE**
- **ASSESS**
- **ASSIST**
- **ARRANGE**

**IF time does not allow…** do 3 A’s and REFER

**USE THE START FRAMEWORK**

Follow UP

ASSESSING NICOTINE DEPENDENCE

- How soon after you wake up do you smoke your first cigarette
- Do you find it difficult to refrain from smoking in restricted areas
- Which cigarette do you hate to give up most
- How many cigarettes do you smoke per day
- Do you smoke more frequently during the first hours after waking
- Do you smoke if you are so ill that you are in bed most of the day

**Fagerström Test for Nicotine Dependence (FTND)**

Scores range from 0 to 10; a score of greater than 5 indicates substantial dependence

THIS IS A CHRONIC DZ & NEEDS TO BE ASSESSED AS SUCH
Application of the Transtheoretical Model of Change for Smoking Cessation

Over time most patients, cycle into and out of the different stages. Most smokers require 7 – 10 quit attempts before quitting for good.

- Precontemplation
- Contemplation
- Preparation
- Action
- Maintenance
- Not ready to quit: Use 5 Rs
  - Relevance
  - Risks
  - Rewards
  - Roadblocks
  - Repetition
- Not thinking about it
- Thinking about it, not ready
- In quit process or recent quitter
- Former tobacco user
- Relapse Prevention
Brief interventions have been shown to be effective.

In the absence of time or expertise:

- Ask, advise, and refer to other resources, such as local programs or the toll-free quitline 1-800-QUIT-NOW.

This brief intervention can be achieved in 30 seconds.
Application of the START Framework

**ASK**, **ADVISE**, **ASSESS**, **ASSIST**, **ARRANGE**

**SET** quit date and design individualized plan

**TRIGGERS** identified to help prevent relapse: Assess (1) motivation to quit 0 – 10 scale, (2) confidence to quit 0 – 10 scale, (3) tobacco log, and (4) buddy system/social support

**ASSIST** to change behavior/routine: Counsel (1) changing routine (consider tea vs coffee; consider doodle with pencil/carrot sticks/straws), (2) coping with stress (consider exercise/relaxation technique), (3) dealing with cravings and WITHDRAWALS (consider 4 Ds- deep breathe, drink water, do something, delay 5-10 minutes), (4) saying daily affirmations and (5) recommending pharmacotherapy

**REMOVE** all tobacco products (and smells) for QUIT day – home, car, work

**TREAT** self on QUIT day – facial, manicure, dental cleaning

Modified from Fiore, et al., 2008 Clinical Practice Guidelines Update Treating Tobacco Use & Dependence
FDA APPROVALS: SMOKING CESSATION

- 1984: Rx nicotine gum; OTC, 1996
- 1991: Rx transdermal nicotine patch; OTC, 1996
- 1996: Rx nicotine nasal spray
- 1997: Rx bupropion SR
- 1997: Rx nicotine inhaler
- 2002: OTC nicotine lozenge
- 2006: Rx varenicline
LONG-TERM (≥6 month) QUIT RATES for AVAILABLE CESSATION MEDICATIONS

<table>
<thead>
<tr>
<th>Medication</th>
<th>Percent quit</th>
<th>Active drug</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotine gum</td>
<td>18.0</td>
<td>11.3</td>
<td></td>
</tr>
<tr>
<td>Nicotine patch</td>
<td>15.8</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td>Nicotine lozenge</td>
<td>16.1</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>Nicotine nasal spray</td>
<td>23.9</td>
<td>11.8</td>
<td></td>
</tr>
<tr>
<td>Nicotine inhaler</td>
<td>17.1</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>Bupropion</td>
<td>19.0</td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td>Varenicline</td>
<td>20.2</td>
<td>11.2</td>
<td></td>
</tr>
</tbody>
</table>

NRT: Rationale for Use

- Reduces physical withdrawal from nicotine
- Allows patient to focus on behavioral and psychological aspects of tobacco cessation

NRT APPROXIMATELY DOUBLES QUIT RATES.

PLASMA NICOTINE CONCENTRATIONS for NICOTINE-CONTAINING PRODUCTS

- **Cigarette**
- **Moist snuff**
- **Nasal spray**
- **Inhaler**
- **Lozenge (2mg)**
- **Gum (2mg)**
- **Patch**

The graph shows the plasma nicotine concentrations (mcg/l) over time (minutes) for different nicotine-containing products. The x-axis represents time in minutes, ranging from 0 to 60, and the y-axis represents plasma nicotine concentration in mcg/l, ranging from 0 to 25.
NRT Precautions

- Patients with underlying cardiovascular disease
  - Recent myocardial infarction (within past 2 weeks)
  - Serious arrhythmias
  - Serious or worsening angina

- Patients with other underlying conditions
  - Active temporomandibular joint disease (gum only)
  - Pregnancy-Category D
  - Lactation

NRT products may be appropriate for these patients if they are under medical supervision.

OTC Nicotine Patch: Dosing TIPS

May bathe/swim
Do NOT cut
Rotate sites
Remove @ HS if sleep disorder

> 10 cigs / day = higher dose
≤ 10 cigs / day = lower dose/no dose
OTC Nicotine Gum: Dosing TIPS

pH sensitive: no food/beverage 15 min AC, during, and 15 min PC

Chew slow & park when taste/tingling occur—repeat @ least 20 minutes

>25 cigs/ day = higher dose
< 25 cigs/day = lower dose
OTC Nicotine Lozenge: Dosing TIPS

pH sensitive:
no food/beverage
15 min AC, during, and 15 min PC

Dissolve slow & do not bite/chew—occasionally rotate @ least 20 minutes

1st Cig in a.m. < 30 min = higher dose
1st Cig in a.m. > 30 min = lower dose
Rx Nicotine Nasal Spray

Best for high dependence
Rx Nicotine Inhaler

Best for high dependence
• Combination Therapy Recommended
  • NRT Patch plus
  • Bolus with Gum or Lozenge for breakthrough cravings/withdrawal
  • OR bolus with NRT Spray or Inhaler if HIGHLY depended

CONTRAINDICATIONS
- Patients with a seizure disorder
- Patients taking Wellbutrin, Wellbutrin SR, Wellbutrin XL
- MAO inhibitors in preceding 14 days
- Patients with a current or prior diagnosis of anorexia or bulimia nervosa
- Patients undergoing abrupt discontinuation of alcohol or sedatives (including benzodiazepines)

PRECAUTIONS
- Patients with a history of seizure
- Patients with a history of cranial trauma
- Patients taking medications that lower the seizure threshold (antipsychotics, antidepressants, theophylline, systemic steroids)
- Patients with severe hepatic cirrhosis
- Pregnancy Category C

ZYBAN™ (Bupropion SR)

Dosing: 150mg q d x 3 days; then 150mg BID

Must Start 2 Weeks PRIOR To QUIT Date

BEST practice = Use as combination therapy with NRT plus counseling
Chantix™ (varenicline):  
A Highly Selective $\alpha 4\beta 2$ Receptor Partial Agonist

**Nicotine**

- Nucleus accumbens (nAcc)
- Ventral tegmental area (VTA)

**Chantix**

- Nucleus accumbens (nAcc)
- Ventral tegmental area (VTA)

Binding of nicotine at the $\alpha 4\beta 2$ nicotinic receptor in the Ventral Tegmental Area (VTA) is believed to cause release of dopamine at the Nucleus Accumbens (nAcc)

Chantix is an $\alpha 4\beta 2$ nicotinic receptor partial agonist, a compound with dual agonist and antagonist activities. This is believed to result in both a lesser amount of dopamine release from the VTA at the nAcc as well as the prevention of nicotine binding at the $\alpha 4\beta 2$ receptors

CHANTIX™ (Varenicline)

Dosage Adjustment for Renal Impairment

Evaluate for PMH Disorders PRIOR to Starting Medication

Take AFTER eating and with FULL glass of water

TITRATE UP x 7 days while still smoking:

- 0.5 mg q d x 3 days
- THEN 0.5 mg BID x 4 days

STOP SMOKING Day #8
And start 1.0 mg BID x 3-6 mths
## COMPARATIVE DAILY COSTS of PHARMACOTHERAPY

### Average $/pack of cigarettes, $4.32

<table>
<thead>
<tr>
<th></th>
<th>Gum</th>
<th>Lozenge</th>
<th>Patch</th>
<th>Inhaler</th>
<th>Nasal spray</th>
<th>Bupropion SR</th>
<th>Varenicline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade</td>
<td>$6.58</td>
<td>$5.26</td>
<td>$3.89</td>
<td>$5.29</td>
<td>$3.72</td>
<td>$7.40</td>
<td>$4.75</td>
</tr>
<tr>
<td>Generic</td>
<td>$3.28</td>
<td>$3.66</td>
<td>$1.90</td>
<td>-</td>
<td>-</td>
<td>$3.62</td>
<td>-</td>
</tr>
</tbody>
</table>
**EFFECTS of MULTIPLE FOLLOW UP ENCOUNTERS**

<table>
<thead>
<tr>
<th>Number of sessions</th>
<th>Estimated quit rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1</td>
<td>12.4%</td>
</tr>
<tr>
<td>2 to 3</td>
<td>16.3%</td>
</tr>
<tr>
<td>4 to 8</td>
<td>20.9%</td>
</tr>
<tr>
<td>More than 8</td>
<td>24.7%</td>
</tr>
</tbody>
</table>

* 5 months (or more) post-cessation

*Provide assistance throughout the quit attempt.*

The NUMBER of CLINICIANS CAN MAKE a DIFFERENCE, too

Compared to smokers who receive assistance from no clinicians, smokers who receive assistance from two or more clinicians are 2.4–2.5 times as likely to quit successfully for 5 or more months.

$n = 37$ studies

The RESPONSIBILITY of HEALTH PROFESSIONALS

It is inconsistent to provide health care and—at the same time—remain silent (or inactive) about a major health risk.

REMEMBER, tobacco dependence is a CHRONIC DZ, we need to treat it as such!
Help Make a DIFFERENCE

Use the 5 As and SAVE a Life Today

1-800-QUIT NOW or NY Quitline
1-866-NY-QUITS – 1-866-697-8487
Thank You…

Majority of Slides and References Provided by
Rx for Change: Clinician Assistant Tobacco Cessation
Available at http://rxforchange.ucsf.edu
And Nurses for Tobacco Control
Available at http://nurses4tobaccocontrol.org

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