Evidence-Based Practice for Tobacco Treatment

Alena Williams, MSW, CTTS-M
Tobacco Treatment Specialist
MHealthy Tobacco Consultation Service
Medicine Medicine
Objectives

- Review evidence-based treatment options for effective tobacco treatment interventions
- Summarize appropriate tobacco cessation pharmacotherapy
- Review tobacco treatment implementation
“Cigarette smoke....

Is the chief, single, avoidable cause of death in our society and the most important public health issue of our time.”

C. Everett Koop, M.D., former U.S. Surgeon General
Clinician Interventions

- At least 70% of people who use tobacco products in the U.S. see a physician each year
  - Approximately 42,000 lives could be saved, if physicians would advise 90% of people who smoke to quit, and offer them medication or other assistance
  - Tobacco cessation more than doubles when evidence-based interventions are utilized
  - All patients should be screened for tobacco and nicotine use, with special emphasis on certain high-risk populations
Clinician Interventions

Compared to patients who receive no assistance from a clinician, patients who receive assistance are 1.7 to 2.2 times as likely to quit successfully for 5 or more months.

The PHS Guideline provides evidence for three major strategies for intervening with patients in the clinical setting:

- **Counseling**
  - Routine, brief interventions with all patients
  - More intensive behavioral counseling, including telephone counseling
- **Pharmacological support**
- **Systems support**
The 5A’s Model for Treating Tobacco Use and Dependence

- **Ask** about tobacco use every visit
- **Advise** to quit
- **Assess** willingness to make a quit attempt
- **Assist** in quit attempt
- **Arrange** follow-up
5As: Ask

Ask about tobacco use every visit

**Suggested Dialogue**

Do you ever smoke or use other types of tobacco or nicotine, such as e-cigarettes?

Condition X often is caused or worsened by exposure to tobacco smoke. Do you, or does someone in your household smoke?

Medication X often is used for conditions linked with or caused by smoking. Do you, or does someone in your household smoke?
Advise to quit

Suggested Dialogue
As your physician, I must tell you that the most important thing you can do for your health is to quit tobacco.

Prior to imparting advice, consider asking the patient for permission to do so – e.g., “May I tell you why this concerns me?” [then elaborate on patient-specific concerns]
5As: Assess

Assess willingness to make a quit attempt

**Suggested Dialogue**

What are your thoughts about quitting? Might you consider quitting sometime in the next month?

Are you willing to try to quit at this time?
5As: Assess

- **5R’s**
  - **Relevance** - importance of quitting, personal health issues, finding that “teachable moment”
  - **Risks** - consequences of not quitting
  - **Rewards** - benefits of quitting
  - **Roadblocks** - identify and manage barriers
  - **Repetition** - repeat every visit until ready to try
5As: Assist

- Assist in make a quit attempt
  - Intervention can by brief or intense
    - the longer the person-to-person contact, overall contact, number of visits, the more successful the treatment outcomes
    - In 3-to10-minutes, a clinician can provide a counseling session that can significantly impact quit success

- Develop a quit plan
  - Set a quit date
  - Review past quit attempts
  - Anticipate challenges (withdrawal symptoms)
  - Remove tobacco products
  - Tobacco and Alcohol
  - Counseling
5As: Assist

- Assess Tobacco Use
- Discuss Key Issues
- Facilitate Quitting Process
- Evaluate the Quit Attempt
Tobacco Use History

- Age started
- How did you start
- Amount per day
  - Lifetime
  - Current
- Brand (Menthol)
- Other tobacco products
- What do they like about it
Prior Quit Attempts

- Number of attempts
- Time and timing: Why then?
- Specifics on longest and most recent
- Pharmacotherapy
- Other methods like groups, acupuncture
- Withdrawal symptoms
- Reason for relapse
Tobacco Dependence

Fagerstrom Test for Nicotine Dependence

1. How soon after you wake up do you smoke your first cigarette?
   Within 5 minutes   (3 points)
   5 to 30 minutes   (2 points)
   31 to 60 minutes  (1 point)
   After 60 minutes  (0 points)

2. Do you find it difficult not to smoke in places where you shouldn’t, such as in church or school, in a movie, at the library, on a bus, in court or in a hospital?
   Yes   (1 point)
   No    (0 points)

3. Which cigarette would you most hate to give up; which cigarette do you treasure the most?
   The first one in the morning (1 point)
   Any other one              (0 points)

4. How many cigarettes do you smoke each day?
   10 or fewer    (0 points)
   11 to 20       (1 point)
   21 to 30       (2 points)
   31 or more     (3 points)

5. Do you smoke more during the first few hours after waking up than during the rest of the day?
   Yes   (1 point)
   No    (0 points)

6. Do you still smoke if you are so sick that you are in bed most of the day, or if you have a cold or the flu and have trouble breathing?
   Yes   (1 point)
   No    (0 points)

Scoring: 7 to 10 points = highly dependent; 4 to 6 points = moderately dependent; less than 4 points = minimally dependent.
5As: Arrange

Arrange follow-up to prevent relapse

- Risk of relapse is highest within the first 2 weeks
- If use occurs discuss the circumstances surrounding the relapse and attempt to elicit a recommitment to quitting
- Relapse should be viewed as a part of the chronic nature of tobacco dependence and not a sign of personal failure
- Reassure that it may take multiple attempts to successfully quit and with each relapse the patient learns more about what to do in the next attempt
The PHS Guideline provides evidence for three major strategies for intervening with patients in the clinical setting:

- **Counseling**
  - Routine, brief interventions with all patients
  - More intensive behavioral counseling, including telephone counseling

- **Pharmacological support**

- **Systems support**
Pharmacotherapy

“Clinicians should encourage all patients attempting to quit to use effective medications for tobacco dependence treatment, except where contraindicated or for specific populations* for which there is insufficient evidence of effectiveness.”

*Includes pregnant women, smokeless tobacco users, light smokers, and adolescents.
The Who and Why of Pharmacotherapy for Smoking

- WHO? All smokers of $\geq 10$ cigarettes per day who are trying to quit, except in the presence of special circumstances
- WHY? Use of pharmacotherapy doubles long term quit rates
- Pharmacotherapy + counseling increases success
## First Line Mediations

<table>
<thead>
<tr>
<th>Nicotine Replacement</th>
<th>Non-nicotine</th>
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<tbody>
<tr>
<td>Patch</td>
<td>Bupropion SR</td>
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<tr>
<td>Gum</td>
<td>Varenicline</td>
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<tr>
<td>Lozenge</td>
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<tr>
<td>Inhaler</td>
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<tr>
<td>Nasal Spray</td>
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</table>
Transdermal Nicotine Patch

Available: 21 mg, 14 mg, 7 mg

❑ Pros:
  ▪ Once-daily dosing
  ▪ Can be used in combination with other agents; delivers consistent nicotine levels over 24 hours

❑ Cons:
  ▪ Cannot be titrated to acutely manage withdrawal symptoms
  ▪ Not recommended for use with dermatologic conditions
Nicotine Gum

Available: 2 mg, 4 mg; various flavor

- **Pros:**
  - Oral substitute for tobacco
  - Can be titrated to manage withdrawal symptoms
  - Can be used in combination with other agents to manage situational urges

- **Cons:**
  - Need for frequent dosing can compromise adherence
  - Might be problematic with significant dental work
  - Proper chewing technique is necessary for gum
  - Gum chewing might not be acceptable/desirable
Nicotine Lozenge

Available: 2 mg, 4 mg; various flavors

 Pros:
  ▪ Oral substitute for tobacco
  ▪ Can be titrated to manage withdrawal symptoms
  ▪ Can be used in combination with other agents to manage situational urges

 Cons:
  ▪ Need for frequent dosing can compromise adherence
  ▪ Might be problematic with significant dental work
**Nicotine Inhaler**

**Available:** 10 mg nicotine and 1 mg menthol/cartilage; delivers 4 mg nicotine vapor

**Pros:**
- Patients can easily titrate the therapy to manage withdrawal symptoms
- The inhaler mimics the hand-to-mouth ritual of smoking

**Cons:**
- Need for frequent dosing can compromise compliance.
- Initial throat or mouth irritation can be bothersome.
- Patients with underlying bronchospastic disease must use the inhaler with caution.
Nicotine Spray

Available: 10-ml spray bottle, 0.5mg nicotine/dose, 100 doses/bottle

Pros:
- Patients can easily titrate therapy to rapidly manage withdrawal symptoms

Cons:
- Need for frequent dosing can compromise compliance.
- Nasal/throat irritation may be bothersome,
- Higher dependence potential.
- Patient with chronic nasal disorders or serve reactive airway disease should not
Bupropion SR

Available: 150 mg tablets

- **Pros:**
  - Twice-daily dosing
  - Might be beneficial in patients with depression
  - Can be used in combination with NRT

- **Cons:**
  - Seizure risk is increased
  - Several contraindications and precautions
  - Patients must be monitored for potential
Varenclline (Chantix)

Available: 0.5 and 1.0mg tablets

- **Pros:**
  - Twice-daily dosing
  - Offers a different mechanism of action

- **Cons:**
  - Should be taken with food or full glass of water
  - Patients must be monitored for potential neuropsychiatric symptoms
NRT Precautions

- Immediate post-heart attack
- Uncontrolled cardiac arrhythmias
- Severe or worsening angina
- Pregnancy
- Children and adolescents
LONG-TERM (≥6 month) QUIT RATES

Selecting Pharmacotherapy: The Science and the Art

The Science:

- Studies to date suggest nearly equivalent effectiveness of all first line medications
- Studies needed to directly compare effectiveness

The Art:

- Using detailed knowledge of basic pharmacology, clinical studies, and patient factors to choose the optimum medication
Plasma Nicotine Concentrations

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

- Do you prefer a prescription or non-prescription medication?
- Would it be a challenge for you to take a medication frequently throughout the day, e.g., a minimum of 9 times?
  - With the exception of the nicotine patch, all NRT formulations require frequent dosing throughout the day.
  - If patient is unable to adhere to the recommended dosing, these products should be ruled out as monotherapy, because they will be ineffective.
## Combination Therapy

### Multiple Treatment Comparison Meta-Analysis

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Odds ratio (95% credible interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotine patch vs Placebo</td>
<td>1.9 (1.7, 2.1)</td>
</tr>
<tr>
<td>Nicotine gum vs Placebo</td>
<td>1.7 (1.5, 1.9)</td>
</tr>
<tr>
<td>Other NRT* vs Placebo</td>
<td>2.0 (1.8, 2.4)</td>
</tr>
<tr>
<td>Combination NRT vs Placebo</td>
<td>2.7 (2.1, 3.7)</td>
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</table>

*Includes nicotine nasal spray, lozenge and inhaler

Cahill et al. (2013). Cochrane Database Syst Rev 5:CD009329
Case #1: Sarah

- Sarah, 52yo female with HTN, schizophrenia, anxiety and depression
- Disabled and unemployed
- Current medications:
  - Cymbalta
  - Hydroxyzine
  - Abilify
  - Thiothixane
  - Benzatropine
  - Naroxen
  - Lisinoprol
- Wants to quit in the next month; joined a 7-week how-to-quit-class at a local mental health agency (where she sees her psychiatrist and therapist)
Case #1: Sarah

- Tobacco use history
  - 1ppd x 40yrs

- Quit History
  - Number of Quit Attempts=“too many to know”
  - Quit Aides
    - Chantix
    - Patches
    - Wellbutrin
    - Tapering
    - Cold Turkey
Summary, Case #1: Sarah

Sarah, 52yo, female with HTN, schizophrenia, anxiety and depression, enrolled in a group program and interested in using medication(s) for this quit attempt.

Key points to consider for medication selection:

- Failed prior quit attempts with monotherapy
- Cost of medication/Insurance coverage
- Psychiatric Co-morbidities
POC, Case #1: Sarah

- **Cognitive/Behavioral**
  - 7-week Cessation Class
    - Quit date during week 5

- **Pharmacological Strategies**
  - Combination NRT
    - 21mg nicotine patch + nicotine inhaler
Outcome, Case #1: Sarah

- Quit on Quit Date
  - combination pharmacotherapy (21mg nicotine patch and nicotine inhaler PRN)
    - 3 month step-down plan
  - DBT Treatment
    - Coping skills
    - CBT for mood management
    - Mindfulness Training

- Follow-up
  - 1 month: 0 self-reported slips
  - monotherapy: nicotine inhaler
Case #2: James

- James, 38yo male with anxiety, sleep apnea, and GERD.
- Paramedic
- **Current medications:**
  - Trazodone
  - Klonopin
  - Effexor
  - Prilosec
  - Wellbutrin
- Wants to quit, quit date unknown
Case #2: James

- Tobacco use history
  - Current: 40 little cigars/day x 5 years
  - Previous: 1ppd x 18 yrs

- Quit History
  - Number of Quit Attempts = 5
  - Quit Aides
    - Chantix
    - Nicotine patch
    - Cold Turkey
Summary, Case #2: James

James, 38yo male with anxiety, sleep apnea, and GERD and is interested in using medication(s) for this quit attempt

Key points to consider for medication selection:

- Failed prior quit attempts with monotherapy
- Medication Adherence
- High-level of anxiety
POC, Case #2: James

- Cognitive/Behavioral Strategies
  - Psychiatrist
  - 1:1 Tobacco Treatment
    - Pack tracker
    - Trial Quit Date

- Pharmacological Strategies
  - Combination therapy
    - Wellbutrin SR+10mg Nicotine Inhaler+4mg nicotine lozenge
Outcome, Case #2: James

- Quit on Trial Quit Date
  - combination pharmacotherapy (Wellbutrin SR+10mg Nicotine Inhaler+4mg nicotine lozenge)

- Follow-up
  - 1 month: 1 self-reported slips
  - long-term pharmacotherapy
Case Study #3: Jordan

- Jordan, 25yo male with no PMH
- Graduate student
- Current medications: None
- Wants to quit in the next year
Case #3: Jordan

- **Tobacco use history**
  - Current: Daily e-cigarette use, 1 tin of chew tobacco/week, hookah 1 time/week
  - Former: 1ppd x 7 years, ½ tin of chew/tobacco/day, hookah 5 times/week
  - Started daily cigarette smoking at 13 yo.

- **Quit History**
  - Number of Quit Attempts=2
  - Quit Aides
    - Combination therapy (21mg nicotine patch + 4mg nicotine gum)
Summary, Case #3: Jordan

Jordan, 25 yo male with no PMH

Key points to consider for medication selection:

- Severity of Dependence
- Psychological Concerns
- Environmental/Cultural Factors
POC, Case #3: Jordan

- **Cognitive/Behavioral**
  - Referral for anxiety management
  - Telephonic 1:1 Tobacco Treatment

- **Pharmacological Strategies**
  - High-dose combination NRT
    - 42mg (2-21mg nicotine patches) + nicotine inhaler
Outcome, Case #3: Jordan

- Reduced tobacco consumption
  - Quit: chew tobacco and hookah
  - Continues to utilize e-cigarette

- Follow-up
  - 1 month: reduced e-cigarette use to weekends
  - Weekly psychotherapy for anxiety
  - Discontinued inhaler
    - Recommended Wellbutrin, Nicotine gum or lozenge
Tobacco Treatment Resources

- MHealthy Tobacco Consultation Service
  - www.mhealthy.umich.edu/tobacco
- Michigan Tobacco Quitline
  - www.michigan.quitlogix.org
  - 1-800-QUIT-NOW
- Association for the Treatment of Tobacco Use and Dependence (ATTUD)
  - www.attud.org
- UCSF
  - Rx for Change
    - www.rxforchange.ucsf.edu
  - Smoking Cessation Leadership Center
    - www.smokingcessationleadership.ucsf.edu
MHealthy Tobacco Consultation Service
P: (734) 998-6222
E: quitsmoking@med.umich.edu
www.mhealthy.umich.edu/tobacco