Assessing and Treating Tobacco Use

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(Slide 1)

I. Introduction

A. Prevalence of tobacco use **(Slide 2)**[1]

1. ~34 million adult current cigarette smokers in US
2. Smoking rates ↓ -- 21% in 2005 to 14% in 2019
3. More common in men (~15%) than women (~13%)
4. Inversely related to education and income

B. Tobacco use health effects (**Slide 3)**

1. US: ~16 million living w/ smoking-related disease (e.g., emphysema)[2]
2. US: ~480,000 deaths/yr[2]
3. World: ~7 million deaths/yr[3]
4. Smokers die 10 years earlier than non-smokers[4]

C. Quitting and quit attempts **(Slide 4)[5]**

1. 67% adult smokers want to quit
2. >50% try to quit each yr
3. < 8% who try succeed
4. Tx improves success rates[6]

D. This lecture covers: **(Slide 5)**

1. Epidemiology and health effects
2. Assessing tobacco use disorder
3. Treating tobacco use disorder

II. Epidemiology and health effects

A. Smoking rate evolution **(Slide 6)**[7]

1. Varies by geography
   a. Decreasing in western countries (USA 2000: 31%, 2016: 22%)
   b. Remaining stable in some places (Kuwait 2000: 25%, 2016: 23%)
   c. Increasing in developing world (Congo 2000: 6%, 2016: 27%)

B. Current smoking rate differences (**Slide 7)**[1, 9]

1. Race/ethnicity:
   a. American Indian 21%
   b. White 16%
   c. Black 15%
   d. Hispanic 9%
   e. Asian 7%
2. Sexual orientation:
   a. Lesbian/gay/bisexual (LGB) 19%
   b. Heterosexual 14%
3. Insurance status:
   a. Medicaid 25%
   b. Uninsured 23%
   c. Private 11%
4. Mental health:
   a. No diagnosis 16%
   b. Depression/anxiety 34%
   c. Psychosis (hearing voices or believing people plotting) 50%

E. Other tobacco product use **(Slide 8)**[10-13]

1. ↑ # types of products
   a. Complicates assessment of dependence/withdrawal
   b. *May* ↑ youth uptake
   c. *May* ↑ difficulty quitting
2. Prevalence of current Ecig use (2020)
   a. High school students 20%
   b. Middle school students 5%

F. Health effects of smoking (**Slide 9)**[2]

1. > 7,000 compounds in tobacco
2. Smoking causes
    a. 90% of lung cancers
    b. Many other cancer (e.g. Leukemia, bladder, liver, stomach))
    c. Other health problems (e.g. Stroke, emphysema, diabetes)
3. Tar and other constituents primarily responsible for health effects
4. Nicotine primary psychoactive constituent but has minimal health effects

G. Economic consequences of smoking **(Slide 10)**[2]

1. $151 billion lost productivity
2. $133 billion direct medical costs
3. > 60% health costs paid by public funds

III. Assessing tobacco use disorder (**Slide 11)**

A. Tobacco Use Disorder (TUD) criteria – requires 2+ of the following in the same 12 mo (DSM-5; **Slide 12**)[14]

1. Taken in larger amounts/over longer period
2. Persistent desire/unsuccessful efforts to quit or cut down
3. Great deal of time spent obtaining/using tobacco
4. Craving or strong urges
5. Interference with work, school or home
6. Recurrent interpersonal problems due to tobacco use
7. Giving up activities due to tobacco use
8. Recurrent use in physically hazardous situations
9. Continued use despite physical/psychological problems caused by tobacco
10. Tolerance: 1+ of
    a. Markedly increased amounts of tobacco needed for desired effect
    b. Diminished effects with use of same amount
11. Withdrawal: 1+ of
    a. Characteristic withdrawal syndrome (defined below)
    b. Tobacco taken to relieve withdrawal symptoms

B. Tobacco Use Disorder **(Slide 13)**[14]

1. Severity: # of criteria w/in 12 mo

        a. Mild 2-3
        b. Moderate 4-5
        c. Severe 6+
    2. Remission: Time since criteria met
        a. Early: > 3 months & < 12 months
        b. Sustained: > 12 months
        c. Craving is exception

C. Tobacco withdrawal criteria **(Slide 14)**[14]
    1. Time course
        a. Usually begins within 24 hours
        b. Peaks at 2-3 days
        c. Resolves around 2-3 weeks
        d. Uncommon past 1 month
    2. Most common symptoms
        a. Anxiety
        b. Irritability
        c. Difficulty concentrating

E. Other common assessments **(Slide 15)**[15-18]
    1. Pack-years = packs per day x years as regular smoker
    2. Heaviness of smoking index
        a. Cigarettes per day (CPD)
            1'. 1-10 = 0 points
            2'. 11-20 = 1 point
            3'. 21-30 = 2 points
            4'. 31+ = 3 points
        b. Time to first cigarette (TTFC) in AM
            1'. ≤ 5 min= 3 points
            2'. 6-30 = 2 points
            3'. 31-60 = 1 point
            4'. 61+ = 0 points
        c. Scoring
            1'. 0-1 = low dependence
            2'. 2-4 = moderate dependence

3'. 5-6 = high dependence

F. Clinical Case: "Steve" **(Slide 16)**

1. Smokes 15 cigs/day
2. Smoked for 20 years
3. 5 previous quit attempts
4. Never successfully quit for more than 3-4 days
5. Reports a history of depression and heavy alcohol use
6. Presents for treatment saying "My wife told me I have to quit"

IV. Treating tobacco use disorder – General framework (**Slide 17**)

A. Five A's overview (**Slide 18)**[19-20]

1. Ask about use
2. Advise quitting
3. Assess willingness to quit
4. Assist with quitting
5. Arrange follow-up

B. Treatment and Quit Rates **(Slide 19)**[6]

1. Counseling amount
    a. No advice 8%
    b. Minimal (< 3 minutes) 13%
    c. Low-intensity (3-10 minutes) 16%
    d. High-intensity (> 10 minutes) 22%

C. Treatment rationale **(Slide 20)**

1. Pharmacotherapy
    a. ↓ Withdrawal/negative mood
    b. ↓ Nicotine reinforcement
    c. ↓ Weight gain
2. Behavioral Counseling
    a. ↑ motivation
    b. Identify "triggers" and coping plans
    c. Plan quit day
    d. Manage lapses (i.e. "slip" or return to smoking)

V. Pharmacological cessation treatments

A. Overview of pharmacotherapy **(Slide 21)**[6]

1. Nicotine replacement therapy (NRT)
   a. Patch
   b. Gum/lozenge
   c. Inhaler
   d. Nasal spray
2. Non-nicotine agents
   a. Bupropion
   b. Varenicline
3. Combination pharmacotherapy (e.g. Patch + gum)

B. Patch **(Slide 22)**[6, 21-22]

1. Pros
   a. Inexpensive/over-the-counter (OTC)
   b. High compliance
   c. Steady stream of nicotine
2. Cons
   a. Slow onset: 30 min onset/3-9 hours peak[23]
   b. Unable to address “breakthrough” cravings
3. Side effects
   a. Skin irritation (most common)
   b. Nausea
   c. Dizziness
   d. Headache
   e. Insomnia/vivid dreams (remove at night)

C. Gum **(Slide 23)**[6, 24]

1. Pros
   a. Inexpensive/OTC
   b. Fast-acting: ~1 hour peak
   c. Modest compliance
2. Cons
   a. Contraindications: severe jaw pain, other dental problems
   b. Best combined w/patch

3. Side effects
    a. Nausea/Vomiting
    b. Jaw pain
    c. Stomach pain
    d. Dizziness

E. Inhaler **(Slide 24)**
1. Pros
    a. Better mimics smoking
    b. Can self-titrate
2. Cons
    a. Rx required
    b. Expensive
    c. Hard to use
3. Side Effects
    a. Headache
    b. Nausea
    c. Cough
    d. Changes in taste

F. Nasal spray **(Slide 25)**
1. Pros: Fastest increase in blood levels besides smoking[26]
2. Cons
    a. Prescription required
    b. More expensive
    c. Burning/irritation in nasal passages → extremely poor compliance
3. Side effects
    a. Nasal irritation
    b. Throat irritation
    c. Watering eyes
    d. Changes in smell

G. Bupropion **(Slide 26)**
1. Pros
    a. Mild side effects

b. Delays weight gain

2. Cons

a. Black box warning – Increased suicidal ideation

b. Lower efficacy than varenicline as monotherapy

c. Contraindicated: Seizure risk, eating disorders

3. Side effects

a. Anxiety

b. Restlessness

c. Insomnia

d. Seizures (rare)

H. Varenicline **(Slide 27)**[6]

1. Pros

a. Generally well-tolerated

b. Highest monotherapy efficacy

2. Cons

a. Prescription-only

b. Perceived risk of side effects from black box warning[27-30]

a`. Added in 2009 - depression & suicidality

b`. Removed in 2016

c`. EAGLES trial (n = 8114) - no increased risk

d`. Remains controversial

3. Side effects

a. Insomnia

b. Taste changes

c. Mood/cognitive

d. Nausea/vomiting

I. Combination pharmacotherapy **(Slide 28)**[6, 31-36]

1. Multiple studies on combination therapy

a. Patch + gum

b. Patch + bupropion

c. Patch + inhaler

d. Patch + varenicline

2. Patch + gum comparable to varenicline monotherapy
3. Adding NRT to varenicline *may* improve outcomes

J. Comparative efficacy for 6-month abstinence (**Slide 29**)[6,34]
a. Varenicline – 33%
b. Bupropion – 24%
c. NRT – 23-27%
d. Patch + gum – 37%
e. Patch + varenicline – 32% (not directly comparable to other numbers)

VI. Behavioral Cessation Treatments
A. Motivational Interviewing (MI) Basics **(Slide 30)**[37]
1. Increases motivation
2. Goal: Elicit behavior change
3. Mechanism: Explore ambivalence
3. Brief sessions (1-2 visits)

B. 4 Principles of MI **(Slide 31)** [37]
1. Express empathy
a. Accepting attitude
b. Normalize ambivalence (i.e. uncertainty about changing)
c. Reflective listening
2. Develop discrepancy
a. Create cognitive dissonance (i.e. inconsistent thoughts)
b. ↑ Awareness of costs
c. *Patient* presents change reasons
3. Roll with resistance
a. Avoid argument
b. Patient assumed capable/insightful
c. Patient problem-solves
4. Support self-efficacy
a. Emphasize personal responsibility
b. Provide options, patient chooses

C. MI core skills – OARS **(Slide 32)** [37]

1. <u>O</u>pen-Ended Questions
    a. Invite reflection/elaboration
    b. Help understand patient's frame of reference
    c. Example: "How does smoking affect your day-to-day life?"
2. <u>A</u>ffirming
    a. Acknowledge the positive
    b. Increase openness/decrease defensiveness
    c. Example: "It is great how much you have cut down"
3. <u>R</u>eflecting
    a. Interpret and reflect back meaning
    b. Phrase as statement, not question
    c. Example
        1'. Patient – "I'm worried I'll never be able to quit"
        2'. Provider – "You've been trying hard, but have run into roadblocks"
4. <u>S</u>ummarizing
    a. Combined reflection across >1 topics
    b. Example: "It sounds like smoking causes a lot of trouble in your life and you have cut down quite a bit but quitting completely has been challenging."

D. MI specific techniques **(Slide 33)** [37]

1. Evoking change talk
    a. Goal: *Patient* states reasons for change
    b. Provider encourages counter-change argument
    c. Can manifest desire, ability, reason or need for change
    d. Examples: "How important is it for you to cut down on smoking?"
2. Responding to change talk
    a. Ask for elaboration
    b. Affirm/reflect/summarize
3. Responding to counter-change (i.e. sustain) talk
    a. Do not argue/push back
    b. Emphasize autonomy: "Quitting is certainly a choice, no one can make you"
    c. Reframe: "Your spouse must really care to bug you so much about quitting"
    d. Apologize if discord emerges and shift focus
4. Use "importance ruler" to ↑ motivation
    a. "On a scale from 0-10, how important is it to <u>you</u> to quit smoking?"

b. “So why are you at X and not at zero?”

5. Querying extremes to enhance motivation

a. “Suppose things continue on as is. What is the worst that can happen?”

b. “If you were completely successful, how would your life be different?”

E. MI outcome data **(Slide 34)**[38-40]

1. Significantly ↑ smoking abstinence rate
2. Not a panacea
3. Effects *may* be larger for proximal outcomes

a. Accepting referral for treatment

b. Engaging in treatment

c. Making quit attempt

F. Clinical Case: “Steve” **(Slide 35)**

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VII. Conclusions **(Slide 36)**

A. Smoking remains a serious problem

B. Health disparities exist

C. Safe & effective treatments exist

D. Strongest evidence for varenicline monotherapy or patch + gum/lozenge combo

E. Counseling adds significant benefit

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