EPIDEMIOLOGY & IMPACT of TOBACCO USE in PEOPLE with MENTAL ILLNESS

TOBACCO USE in PSYCHIATRIC POPULATIONS

- Nicotine dependence – most prevalent substance use disorder among psychiatric patients
  - Smoking rates are 2 to 4 x’s that of the general population (Hughes, 1993; Poirier, 2002)
- Persons with mental illness comprise 44% to 46% of the US tobacco market (Lasser et al., 2000; Grant et al., 2004)
  - 175 billion cigarettes and $39 billion in annual sales (USDA, 2004)

Nicotine dependence – most prevalent substance use disorder among psychiatric patients

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SMOKING RATE by PSYCHIATRIC HISTORY

Graph provided by the Centers for Disease Control and Prevention. 1955 Current Population Survey; 1965–2007 NHIS. Estimates since 1992 include some-day smoking.


Graph provided by the Centers for Disease Control and Prevention. 1955 Current Population Survey; 1965–2007 NHIS. Estimates since 1992 include some-day smoking.

70% want to quit

SMOKING in CALIFORNIA

- A meta-analysis of 42 studies on tobacco smoking among schizophrenia subjects found an average smoking prevalence of 62% (range=14-88%)
- Studies reporting higher smoking rates were more commonly cited in the research literature
  - A 10% increase in reported smoking prevalence was associated with a 61% increase in citation rate
- This bias was mirrored on the Internet

“90% of Schizophrenics Smoke”

Acton, Prochaska, Kaplan, Small & Hall. (2001) Addict Behav


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PREVALENCE of SMOKING by INSURANCE STATUS
U.S. ADULTS AGE 18-64, 2007

17% Privately insured
33% Medicaid
26% Other
32% Uninsured

WHY ADDRESS TOBACCO USE in PSYCHIATRIC POPULATIONS?
Prevent Death
Improve Health
Optimize Psychiatric Medication Effects
Reduce Isolation
Patient $ Savings
Tax revenues

HEALTH RISKS of CHRONIC TOBACCO USE
- Cardiovascular disease
- Lung Disease
- Cancers
- Delayed healing & recovery after surgery
- Dyslipidemia
- Hypertension
- Macular degeneration
- Cataract
- Osteoporosis
- Periodontal disease
- Sexual dysfunction
- Reduced fertility in women
- Poor pregnancy outcomes
- SIDS, child asthma

TOBACCO KILLS PEOPLE with MENTAL ILLNESS
- Dying, on average, 25 years prematurely (Colton & Manderscheid, 2006)
- At greater risk of dying from CVD, respiratory illnesses, and cancer, than people without mental illness (e.g., Dalton et al., 2002; Himelhoch et al., 2004; Lichtermann et al., 2001)
- Tobacco use predicts future suicidal behavior
  - independent of depressive symptoms, prior suicidal acts, and other substance use (Breslau et al., 2005; Oquendo et al., 2004)
- Tobacco-related diseases account for 50% of deaths among individuals treated for alcohol dependence (Hurt et al., 1996)
- Death rate 4-x greater for cigarette smoking vs. nonsmoking long-term drug abusers (Heer, 1994)
- Health consequences of tobacco and other drug use synergistic: 50% greater than sum of each individually (Bren & Burge, 1998)

SMOKING and SUBSTANCE USE
- Reduced cortical gray matter (GM) volumes and densities in the bilateral prefrontal cortex
- Smaller left anterior cingulate volumes
- Lower GM densities in the right cerebellum
- Increased brain atrophy
- Diminished neurocognitive performance

YOUR BRAIN on TOBACCO
- Abnormal decline in cognitive functioning
- Increased risk of various forms of dementia, in particular Alzheimer’s disease

References: Brody et al., 2004; Gazdzinski et al., 2008; Launer et al., 1999; Merchant et al., 1999; Ott et al., 1998, 2004; Razani et al., 2004
COMPARATIVE CAUSES of ANNUAL DEATHS in the UNITED STATES

<table>
<thead>
<tr>
<th>Cause</th>
<th>Number of Deaths (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>18</td>
</tr>
<tr>
<td>Obesity</td>
<td>125</td>
</tr>
<tr>
<td>Alcohol</td>
<td>150</td>
</tr>
<tr>
<td>Motor Vehicle</td>
<td>225</td>
</tr>
<tr>
<td>Homicide</td>
<td>300</td>
</tr>
<tr>
<td>Drug Induced</td>
<td>350</td>
</tr>
<tr>
<td>Suicide</td>
<td>400</td>
</tr>
<tr>
<td>Smoking</td>
<td>450</td>
</tr>
</tbody>
</table>

Source: CDC

COMPOUNDS in TOBACCO SMOKE

An estimated 4,800 compounds in tobacco smoke

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

Particles (~3,500 isolated)
- Nicotine
- Nitrosamines
- Lead
- Cadmium
- Polonium-210
- Arsenic

11 proven human carcinogens

“LIGHT” CIGARETTES

The difference between Marlboro and Marlboro Lights...

an extra row of ventilation holes

“NO SAFE” LEVEL of SMOKING

- Smoking even 1 to 4 cigarettes a day nearly triples the risk of death from heart disease.
- Smokers who consume fewer cigarettes can reduce their risk of lung cancer, but still face a much larger risk of premature death or disability compared with people who quit.

Source: Godtfredsen et al. (2005) JAMA, Bjartveit et al. (2005) Tobacco Control

QUITTING: HEALTH BENEFITS

Circulation improves, walking becomes easier
Lung function increases up to 30%
Excess risk of CHD decreases to half that of a continuing smoker
Lung cancer death rate drops to half that of a continuing smoker
Risk of stroke is reduced to that of people who have never smoked
Risk of CHD is similar to that of people who have never smoked

YEARS of SURVIVAL GAINED RELATIVE to CONTINUED SMOKING

Source: DH Taylor et al., 2002 American Journal of Public Health

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TOBACCO IMPACTS TREATMENT

Hospitalized smokers twice as likely to leave AMA, if withdrawal not treated with nicotine replacement

% of Patients

10% 22%

AHA Discharge* Placed in Seclusion Alvan Prescripion

70% 83%


TOBACCO USE ISOLATES and is COSTLY

- 75% of psychiatric patients who smoke report smoking most or all of their cigarettes while alone (Prochaska et al., 2006).
- Median of $142.40 per month spent on cigarettes among an outpatient sample of smokers with schizophrenia (Steinberg et al., 2004)
- 27% of their monthly incomes

FINANCIAL IMPACT of SMOKING

Buying cigarettes every day for 50 years @ $3.75/pack for generic or $5.25/pack for brand name. Money banked monthly, earning 5.5% interest

Packs per day

1 1.5 2

Hundreds of thousands of dollars lost

$1,004,196

$502,098

$753,147


Medical expenditures (1998)

Hospital care, $17.1 billion

Prescription drugs, $6.4 billion

Other care, $5.4 billion

Ambulatory care, $27.2 billion

Nursing home, $19.4 billion

Explicit costs:

Men, $61.9 billion

Women, $30.5 billion

Societal costs: $7.65 per pack

Annual lost productivity costs (1997–2001)

Billions of dollars

EPIDEMIOLOGY of TOBACCO USE: SUMMARY

- Smoking rates are 2 to 4 times higher than that of the general population.
- Tobacco use adversely effects psychiatric treatment.
- Lifetime financial costs of buying cigarettes can exceed $1 million for a heavy smoker.
- At any age, there are major health benefits to quitting smoking.

PSYCHIATRIC MEDICATION INTERACTIONS with SMOKING

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PHARMACOKINETIC DRUG INTERACTIONS with SMOKING

Drugs that may have a decreased effect due to induction of CYP1A2:

- Caffeine
- Clozapine (Clozaril™)
- Fluvoxamine (Luvox™)
- Haloperidol (Haldol™)
- Olanzapine (Zyprexa™)
- Phenothiazines (Thorazine, Trilafon, Prolixin, etc.)
- Propranolol
- Tertiary TCAs / cyclobenzaprine (Flexarex™)
- Thiothixene (Navane™)
- Other medications: estradiol, mexiletine, naproxen, phenacetin, riluzole, ropinirole, tacrine, theophyline, verapamil, r-warfarin (less active), zolmitriptan

Smoking cessation will reverse these effects.

GOOD PSYCHIATRIC CARE ≠ TOBACCO

It is antithetical to provide patients with cigarettes as a form of reinforcement for taking their psychiatric medications.

TOBACCO CESSATION can be a cost effective component of MENTAL HEALTH TREATMENT

CASE REPORTS of MEDICATION INTOXICATION FOLLOWING CESSATION

- Patients treated with CYP1A2 substrate antipsychotics should regularly be monitored with regard to their smoking consumption in order to adjust doses in cases of a reduction or increase in smoking.
- Tobacco and cannabis smoking cessation can lead to intoxication with clozapine or olanzapine.

DRUG INTERACTIONS with SMOKING: SUMMARY

Clinicians should be aware of their patients’ smoking status:

- Clinically significant interactions result not from nicotine but from the combustion products of tobacco smoke.
- Constituents in tobacco smoke (e.g., polycyclic aromatic hydrocarbons; PAHs) may enhance the metabolism of other drugs, resulting in a reduced pharmacologic response.
- Smoking might adversely affect the clinical response to the treatment of a wide variety of conditions.

FACTORS ASSOCIATED with TOBACCO USE & MENTAL ILLNESS

WHY do INDIVIDUALS with MENTAL ILLNESS SMOKE?

Smoking in adolescence is associated with psychiatric disorders in adulthood, including: panic disorder, GAD and agoraphobia, depression and suicidal behavior, substance use disorders, and schizophrenia (Breslau et al., 2004; Weiser et al., 2004; Goodman, 2000; Johnson et al., 2000)

Active psychiatric disorders are associated with daily smoking and progression to nicotine dependence (Breslau et al., 2004).

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FACTORS ASSOCIATED with TOBACCO USE in the MENTALLY ILL

Biologic & Pharmacologic
- Genetic predisposition
- Alleviation of withdrawal
- Pleasure effects
- Weight control

Psychological/Behavioral
- Conditioning effects
- Coping tool
- Social interactions
- Boredom

Systemic & Treatment
- Use of cigarettes for reinforcement
- Failure to treat

NEUROCHEMICAL and RELATED EFFECTS of NICOTINE

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

BIOLOGY of NICOTINE ADDICTION: ROLE of DOPAMINE

Nicotine stimulates dopamine release

Nicotine addiction is not just a bad habit.

Discontinuation leads to withdrawal symptoms.

DOPAMINE REWARD PATHWAY

Chronic Smoking Effects


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**State of Nicotine Withdrawal**

- Dysphoric or depressed mood
- Insomnia and fatigue
- Irritability/frustration/anger
- Anxiety or nervousness
- Difficulty concentrating
- Impaired task performance
- Increased appetite/weight gain
- Restlessness and impatience
- Cravings*

Most symptoms peak 24–48 hr after quitting and subside within 2–4 weeks.

*T not considered a withdrawal symptom by DSM IV criteria.

**NICOTINE ADDICTION CYCLE**

- Pleasures/Annual
- Nicotine/Cessation
- Symptoms:
  - Dysphoric or depressed mood
  - Insomnia and fatigue
  - Irritability/frustration/anger
  - Anxiety or nervousness
  - Difficulty concentrating
  - Impaired task performance
  - Increased appetite/weight gain
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**WHAT is ADDICTION?**

“Compulsive drug use, without medical purpose, in the face of negative consequences”

Alan I. Leshner, Ph.D.
Former Director, National Institute on Drug Abuse
National Institutes of Health

**GENETIC EFFECTS on NICOTINE METABOLISM**

- Nicotine
- Cotinine
- Nicotine-glucuronide
- Cotinine-glucuronide
- Trans-3'-hydroxycotinine
- Trans-3'-hydroxycotinine-gluconate
- Cotinine-glucuronide
- Cotinine-glucuronide
- Cotinine-glucuronide
- Cotinine-glucuronide

**MODEL of ADDICTION**

- Impulse control disorders
- Compulsive disorders
- Positive Reinforcement
- Negative Reinforcement

Source: GF Koob et al. (2004) Neuroscience and Biobehavioral Reviews
DSM-IV TOBACCO USE DISORDERS

Nicotine Withdrawal
- Daily use of nicotine
- Abrupt cessation/reduction followed within 24 hrs by 4+:
  1. Depressed mood
  2. Insomnia
  3. Irritability
  4. Anxiety
  5. Difficulty concentrating
  6. Decreased HR
  7. Increased appetite
- Clinically significant impairment
- Not due to GMC

Nicotine Dependence
- Maladaptive pattern of use with significant impairment manifested by 3+ in 12 mos:
  1. Tolerance
  2. Withdrawal
  3. Use
  4. Unsuccessful efforts to stop
  5. Time investment
  6. Loss of important activities
  7. Continued use despite knowledge of physical or psychological problems

SYSTEMIC and TREATMENT FACTORS

PSYCHIATRISTS in PRACTICE
(Himelhoch & Daumit, 2003)

- 1992-96 Nat'l Ambulatory Medical Care Survey
  - 23% of psychiatric visits dropped from analysis because patient smoking status unknown
  - For patients identified as smokers (N=1610)
    - Cessation counseling offered at 12% of visits
    - Nicotine Dependence not diagnosed at any visit
    - Nicotine replacement therapy never prescribed

2005 AAMC PRACTICE SURVEY: 801 PSYCHIATRISTS

- 62% Ask about tobacco
- 44% Assess readiness to quit
- 62% Advise cessation
- Assist:
  - NRT (23%), other Rx (20%)
  - Cessation materials (13%)
- 14% Arrange follow up
- 11% Refer to others

Psychiatrists the least likely to address tobacco use with their patients relative to other specialties (family medicine, internal medicine, OB/GYN)

PSYCHIATRY RESIDENTS’ (N=105) ENGAGEMENT in the 5-As

- Never or Rarely
- Sometimes
- Often or Always

Source: Prochaska, Fromont et al., 2005 Acad Psychiatry
2008 American Psychiatric Nurses Association Survey

- 85% Ask about tobacco
- 61% Refer patients for tobacco cessation
- Only 29% of respondents’ agencies offer tobacco cessation treatment

Legacy Tobacco Documents

- Digital online library
- 10+ million documents (50+ million pages) from the major tobacco companies
- Related to their advertising, manufacturing, marketing, sales, and scientific research activities
  http://legacy.library.ucsf.edu

Tobacco Documents

I am writing to request a donation of cigarettes for long-term psychiatric patients, because of recent changes in the DHHS regulations, Saint Elizabeth Hospital can no longer purchase cigarettes for them. I am therefore requesting a donation of approximately 5,000 cigarettes a week (8 per day for each of the 100 patients without funds).

Department of Health, Education, and Welfare
National Institute of Mental Health
Washington, DC
August 6, 1980

I am writing to request a donation of cigarettes for long-term psychiatric patients, because of recent changes in the DHHS regulations, Saint Elizabeth Hospital can no longer purchase cigarettes for them. I am therefore requesting a donation of approximately 5,000 cigarettes a week (8 per day for each of the 100 patients without funds).

1950s-1980s: Beliefs that patients with schizophrenia, who smoke at high rates, immune to cancer


TOBACCO INDUSTRY’S INTERESTS

1960s–1970s: TI funded research on psychosomatic causes of cancer
- Proposed those who denied or repressed grief were more likely to develop cancer than those who expressed emotion
- “longterm schizophrenics, outwardly calm, have no capacity for the repression of significant emotional events and no need to contain emotional conflict.”
- Ultimately came under scrutiny for its “scientific integrity”

1964 & 1997: TI denied funding of 2 proposals to examine high rates of cancer in smokers with mental illness
- 1964 proposal “denied in principle but referred to the study group on the psychophysiological aspects of smoking,” “For working over.”
- Questioned “whether some other kind of use could profitably be made of his data collection methods.”

TOBACCO INDUSTRY’S INTERESTS

1964 & 1997: TI denied funding of 2 proposals to examine high rates of cancer in smokers with mental illness
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Tobacco industry documents indicate the author received funding from CTR and PM from at least 1977-1994 and contributed to papers conceived by PM.

Nicotine: helping those who help themselves?  
Closing & tabulation 45 July 1996

It's no secret that smokers are addicted to their habits, but what might be surprising are the reasons behind the addiction — could it be for self-medication?

Many people who use tobacco, including smokers, do so because of some potential therapeutic benefit they receive, such as to relieve depression, schizophrenia or pain. While this

Addiction or self-help?

LD 463 - An Act to Exempt Substance Abuse and Psychiatric Patients from the Prohibition against Smoking in Hospitals

JCAHO ultimately “yielded to massive pressure from mental patients and their families, relaxing a policy that called on hospitals to ban smoking.”

HOSPITAL SMOKING BANS

Mental Patients Fight to Smoke When They Are in the Hospital

The New York Times

April 19, 1985

Steven & William Corp.
Mr. John Peer
P.O. Box 2393
Louisville, Ky. 40223

Dear Mr. Peer:

The Board of Directors of Schizophrenia Foundation, Ky., Inc., and the staff at Wellspring House extend their deep gratitude to you for your participation in our first Annual dinner honoring Kentucky’s legislators.

We felt the event was a success financially as well as educationally. Many in our community had for the first time an opportunity to work with Wellspring House for the well-being of young schizophrenics and for Louisville.

We also felt our honored guests, Kentucky’s legislators, were duly educated and impressed.

We are presently working with Seven Counties Services and the Mental Health Association and within a few weeks will send you a report on the progress of our plane. Without your support we would be making no such plans. For this, again, our thanks.

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CONTRIBUTING FACTORS: SUMMARY

- Tobacco products are effective delivery systems for the highly addictive drug nicotine.
- Nicotine activates the dopamine reward pathway in the brain, which reinforces continued tobacco use.
- Nicotine dependence and withdrawal are DSM-IV psychiatric disorders.
- Tobacco dependence involves biological, psychological, social, systemic and treatment factors requiring a long-term multifaceted treatment approach.

TOBACCO DEPENDENCE: A 2-PART PROBLEM

<table>
<thead>
<tr>
<th>Physiological</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>The addiction to nicotine</td>
<td>The habit of using tobacco</td>
</tr>
<tr>
<td>Treatment</td>
<td>Treatment</td>
</tr>
<tr>
<td>Medications for cessation</td>
<td>Behavior change program</td>
</tr>
</tbody>
</table>

Treatment should address the physiological and the behavioral aspects of dependence.
RECOMMENDATIONS to TREAT TOBACCO USE in PSYCHIATRY

In terms of lives saved, quality of life, and cost-efficacy, treating smoking is considered the most important activity a clinician can do.

-- John Hughes, MD
Professor of Psychiatry
University of Vermont

TOBACCO TREATMENT GUIDELINES

- All patients ought to be screened for tobacco use, advised to quit, and offered intervention
- All patients should be offered pharmacological treatment for quitting smoking, unless contraindicated
- There is a dose response relationship with the amount of contact provided

American Psychiatric Association, 2006; U.S. Public Health Service, 2008

EFFECTS of CLINICIAN INTERVENTIONS

With help from a clinician, the odds of quitting approximately doubles.

<table>
<thead>
<tr>
<th>Type of Clinician</th>
<th>Estimated abstinence at 5+ months</th>
</tr>
</thead>
<tbody>
<tr>
<td>No clinician</td>
<td>1.0</td>
</tr>
<tr>
<td>Self-help material</td>
<td>1.1</td>
</tr>
<tr>
<td>Nonphysician clinician</td>
<td>1.7</td>
</tr>
<tr>
<td>Physician clinician</td>
<td>2.2</td>
</tr>
</tbody>
</table>

n = 29 studies

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


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.

<table>
<thead>
<tr>
<th>Type of Clinician</th>
<th>Estimated abstinence rate at 5+ months</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1.0</td>
</tr>
<tr>
<td>One</td>
<td>1.8 (1.5,2.2)</td>
</tr>
<tr>
<td>Two</td>
<td>2.5 (1.9,3.4)</td>
</tr>
<tr>
<td>Three or more</td>
<td>2.4 (2.1,3.4)</td>
</tr>
</tbody>
</table>

n = 37 studies


DOSE RESPONSE RELATIONSHIP of FOLLOW UP CARE

<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) postcessation


WHY MENTAL HEALTH PROVIDERS?

- Often the clinician for whom contact is the most frequent and who knows the patient best
- Able to combine psychopharmacological and behavioral/counseling treatment
- Trained in substance abuse treatment
- Able to identify and address any changes in psychiatric symptoms during the quit attempt

Failure to address tobacco use tacitly implies that quitting is not important or that the patient is not worth helping.

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The FIVE A’s: **ASK**

- Ask about tobacco use
  - “Do you ever smoke or use any type of tobacco?”
  - “I take time to ask all of my patients about tobacco use—because it’s important.”

Tobacco use is included in the intake assessment and needs to be documented for every patient.

---

The FIVE A’s: **ADVISE**

- Advise tobacco users to quit (clear, strong, personalized, sensitive)
  - “Quitting smoking is the most important thing you can do to protect your health now and in the future.”
  - “I have training to help my patients quit, and when you are ready, I can work with you to design a specialized treatment plan.”

52% of psychiatric patients who smoke report never having been advised to quit by a mental healthcare provider (Prochaska et al., 2005)

---

The FIVE A’s: **ASSESS**

- Assess readiness to make a quit attempt

Preparation
- 30 days
- 6 months
- +6 months

Not Ready to Quit
- Quit date
- -30 days
- +6 months

Ready to Quit
- Preparation
- Ready to Quit

---

**ASSIST: TAILOR TREATMENT to PATIENTS’ READINESS to QUIT**

- Does the patient now use tobacco?
  - Yes
  - No

- Is the patient now ready to quit?
  - Yes
  - No

- Did the patient once use tobacco?
  - Yes
  - No

- Encourage abstinence

ASSIST: Not Ready to QUIT

Not thinking about quitting in the next month

- May not be aware of the need to quit
- Struggling with ambivalence about change
- Not ready to change, yet
- Pros of tobacco use outweigh the cons
- May have been advised to forgo quitting
- May have had bad prior experiences with quitting

GOAL: Start thinking about quitting

RAISING AWARENESS: TOBACCO USE MOOD LOG

- Use the Mood Log to raise patients’ awareness of their tobacco use
- For each day, patient should record # of cigarettes smoked, # of pleasant activities, and provide a mood rating.
- Review log sheets with patient to identify relationship between smoking, activities / isolation, and mood

Is patient’s tobacco use associated with isolation and poorer mood?

SUMMARY: PATIENTS NOT yet READY to QUIT

- Clinician goals include –
  - Building rapport
  - Planting a seed to move patient forward
  - Opening a door to facilitate further counseling
  - Helping patients become more aware of their smoking behavior
  - Providing education and establishing yourself as a resource

CASE 1: Vera

- 48 year old divorced woman
- Dual diagnosis treatment facility
- Bipolar disorder, alcohol dependence, h/c crack cocaine dependence
- Smokes 1.5 packs/day
- “I’ll likely die with a cigarette in my mouth”

ASSIST: TAILOR TREATMENT to PATIENTS’ READINESS to QUIT

- Does the patient now use tobacco?
- Is the patient now ready to quit?
- Did the patient once use tobacco?

Promote motivation

Provide treatment

Prevent relapse*

Encourage continued abstinence

*Relapse prevention interventions not necessary if patient has not used tobacco for many years and is not at risk for re-initiation.

ASSIST: Ready to Quit

READY TO QUIT in NEXT 30 DAYS

- Patients are aware of the need to, and the benefits of, making the behavioral change
- Getting ready to take action

GOAL: Achieve cessation

STRATEGIES for PATIENTS READY to QUIT

Key Questions to Ask:

- Why do you want to quit now?
- How confident are you that you’ll be able to quit?
- Have you quit in the past? What worked for you then?
- What are key triggers for you with smoking?
- How do stress and your mood play into your smoking?
- Who can support you with quitting?
- What concerns do you have about quitting? (withdrawal symptoms, weight gain, coping with stress)
- How can we work together to manage your anxiety (or other psychiatric symptoms) during the quitting process?

STRATEGIES for PATIENTS READY to QUIT

DOs

- Discuss and develop coping strategies
- Offer pharmacological treatment, unless contraindicated
- Set a quit date!
- Schedule follow up visit

COPING with QUITTING

Cognitive strategies

- Review of commitment to quitting
- Distractive thinking
- Positive self-talks
- Relaxation through imagery
- Mental rehearsal and visualization

Examples:

- Thinking about cigarettes doesn’t mean you have to smoke one.
  - “Thinking about something doesn’t mean you have to do it.”
  - Tell yourself “It’s just a thought,” or “I am in control.”
  - Say the word STOP! out loud, or visualize a stop sign.
- When you have a craving, remind yourself that:
  - “The urge for a cigarette will only go away if I don’t smoke.”
  - As soon as you get up in the morning, look in the mirror and say to yourself
  - “I am proud that I made it through another day without smoking.”

COPING with QUITTING (cont’d)

Behavioral strategies

- Control your environment
  - Smoke-free home and workplace
  - Alter or remove cues to tobacco use
  - Modify behaviors that you associate with tobacco: when, what, where, how, with whom
  - Actively avoid trigger situations
- Substitutes for smoking
  - Water, chewing gum or hard candies (oral substitute)
  - Take a walk, diaphragmatic breathing, self-massage
  - Rely on social support
  - Actively work to alleviate withdrawal symptoms
STRESS MANAGEMENT

**The Myths**

- Smoking gets rid of all my stress
- I can't relax without a cigarette

**The Facts**

- There will always be stress in one's life
- There are many ways to relax without a cigarette

Smokers confuse the relief of withdrawal with the feeling of relaxation

**STRESS MANAGEMENT SUGGESTIONS:**

Deep breathing, shifting focus, taking a break

---

SOCIAL SUPPORT for QUITTING

- Key ingredients for successful quitting:
  - Social support as part of treatment (intra-treatment)
  - Social support outside of treatment (extra-treatment)

**PATIENTS SHOULD BE ADVISED TO:**

- Ask family, friends, and coworkers for support – ask them not to smoke around you and not to leave cigarettes out
- Get individual, group, or telephone counseling

Patients who receive social support and encouragement are more successful in quitting

---

The FIVE A’s: **ARRANGE**

- **ARRANGE** follow-up care
  - Follow-up in person or via phone within 1 to 3 days after quit attempt
  - Congratulate success
  - Address lapses “let a slip slide”
  - Assess pharmacotherapy use and problems

---

CASE 6: Mr. Brooks

- 58 year old divorced male, unemployed
- PTSD clinic at Veteran’s Hospital
- PTSD, h/o polysubstance abuse, chronic pain
- Smokes 1.5 packs per day
-Interested in quitting

---

**ASSIST:** TAILOR TREATMENT to PATIENTS’ READINESS to QUIT

**ASSIST:** RECENT QUITTER

**ACTIVELY TRYING to QUIT for GOOD**

- Patients have quit using tobacco sometime in the past 6 months and are taking steps to increase their success
- Withdrawal symptoms occur
- At high risk for relapse

**GOAL:** Remain tobacco-free for at least 6 months

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STRATEGIES for RECENT QUITTERS

**DOs**
- Praise progress - solicit commitment to quit for good
- Evaluate current quit attempt:
  - Status of attempt
  - "Slips" or relapse
  - Medication use, plans for discontinuation
- Ask about social support
- Identify temptations and triggers for relapse
  - Negative affect, smokers, eating, alcohol, cravings, stress
- Encourage healthful alternative behaviors to replace tobacco use
- Offer tips for relapse prevention

RELAPSE PREVENTION for LONG-TERM QUITTERS

**Goal:** To support lasting changes in thoughts and behaviors around quitting smoking
- Congratulate success!
- Highlight continued benefits of abstinence
- Identify ongoing sources of social support
- Assess prolonged withdrawal symptoms:
  - Add or combine pharmacotherapy agents or extend use of pharmacotherapy
- Address reduced motivation or feelings of deprivation
  - Reassure these feelings are common and will pass with time
  - Encourage engagement in rewarding activities
  - Probe for lapses

SMOKING CESSATION & WEIGHT GAIN

- Weight gain a major impediment to quitting smoking, particularly among women
- Average weight gain: men=6 lbs, women=8 lbs
- Major weight gain (> 28 lbs) occurred in < 15%
- Risk factors for post-cessation weight gain
  - African American race, younger age (< 55 yrs), heavier smokers (> 15 cigarettes/day)
  - At baseline smokers weigh less than nonsmokers, they weigh nearly the same after quitting

ADDRESSING CONCERNS about POSTCESSATION WEIGHT GAIN

- Discourage strict dieting while quitting
  - Recommend physical activity (e.g., walking, biking)
  - Encourage a healthy diet, planned meals, & high-fiber foods
  - Increase water intake
  - Chew sugarless gum
  - Select nonfood rewards
- Maintain patient on pharmacotherapy shown to delay weight gain
- Refer patient to a specialist or program

ASSIST: TAILOR TREATMENT to PATIENTS’ READINESS to QUIT

- Does the patient now use tobacco?
  - Yes/No
- Is the patient now ready to quit?
  - Yes/No
  - Promote motivation
  - Provide treatment
- Did the patient once use tobacco?
  - Yes/No
  - Prevent relapse*
  - Encourage continued abstinence

*Relapse prevention interventions not necessary if patient has not used tobacco for many years and is not at risk for re-initiation.

READESS TO QUIT: A REVIEW

**Recent Quitter**
- Ready to quit
  - BEHAVIORAL COUNSELING
  - PHARMACOTHERAPY
- Not ready to quit
  - PROMOTE MOTIVATION
  - BEHAVIORAL COUNSELING
  - RELAPSE PREVENTION

INTEGRATING TOBACCO TREATMENT into PSYCHOTHERAPY

Quotes from Psychodynamically Trained Faculty

- "Attention to substance abuse is part of psychotherapy and how we address self-defeating, self-destructive behaviors and examine resistance to change and support change."
- "Ideally, link to the central pathology – ‘When people are depressed they don’t take very good care of themselves. I want to help you take as good care of yourself as possible.’"
- "If the patient says he needs to smoke to deal with psychiatric symptoms I would respond, ‘Wow, you must have a lot of stress and anxiety if you need to take a cancer-causing agent to deal with it; I think we really need to look at your level of stress. It should be a real priority.’"

BRIEF COUNSELING: ASK, ADVISE, REFER

- ASK about tobacco USE
- ADVISE tobacco users to QUIT
- REFER to other resources

BRIEF COUNSELING: ASK, ADVISE, REFER (cont’d)

- Brief interventions have been shown to be effective among smokers without mental illness
- In the absence of time or expertise:
  - Ask, advise, and refer to other resources, such as local group programs or the toll-free quitline 1-800-QUIT-NOW

PHARMACOLOGIC AIDS for QUITTING SMOKING

- Routinely identify tobacco users (ASK)
- Strongly ADVISE patients to quit
- ASSESS stage at each contact
- Tailor intervention messages (ASSIST)
  - Be a good listener
  - Minimal intervention in absence of time for more intensive intervention
  - ARRANGE follow-up
  - Use the referral process, if needed
Medications significantly improve success rates.

* Includes pregnant women, smokeless tobacco users, light smokers, and adolescents.

Recommended treatment is behavioral counseling.

**PHARMACOTHERAPY: OTHER SPECIAL POPULATIONS**

Pharmacotherapy is not recommended for:
- Smokeless tobacco users
  - No FDA indication for smokeless tobacco cessation
- Individuals smoking fewer than 10 cigarettes per day
- Adolescents
  - Nonprescription sales (patch, gum, lozenge) are restricted to adults ≥18 years of age
  - NRT use in minors requires a prescription

Recommended treatment is behavioral counseling.

---

**PHARMACOTHERAPY: USE in PREGNANCY**

- The Clinical Practice Guideline makes no recommendation regarding use of medications in pregnant smokers
  - Insufficient evidence of effectiveness
- Category C: varenicline, bupropion SR
- Category D: prescription formulations of NRT

Because of the serious risks of smoking to the pregnant smoker and the fetus, whenever possible pregnant smokers should be offered person-to-person psychosocial interventions that exceed minimal advice to quit.* (p. 165)

---

**PHARMACOTHERAPY: OTHER SPECIAL POPULATIONS**

- First-Line (FDA Approved)
  - Nicotine Replacement Therapy (NRT)
  - Bupropion (Zyban)
  - Varenicline (Chantix)

- Second-line (evidence-based but not FDA approved)
  - Nortriptyline
  - Clonidine

---

**PLASMA NICOTINE CONCENTRATIONS for NICOTINE-CONTAINING PRODUCTS**

Plasma nicotine (mcg/L)

0                  10                 20                 30                40                 50                60

Time (minutes)

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NRT: RATIONALE for USE

- Reduces physical withdrawal from nicotine
- Eliminates the immediate, reinforcing effects of nicotine that is rapidly absorbed via tobacco smoke
- Allows patient to focus on behavioral and psychological aspects of tobacco cessation

NRT products approximately double quit rates.

NRT: PRECAUTIONS

- Patients with underlying cardiovascular disease
  - Recent myocardial infarction
  - Life-threatening arrhythmias
  - Severe or worsening angina
- Patients with other underlying conditions
  - Active temporomandibular joint disease (gum only)
  - Dermatologic conditions (patch only)
  - Chronic nasal disorders or severe reactive airway disease (nasal spray only)

Minimum age for FDA-approved NRT use: 18 years

TRANSDERMAL NICOTINE PATCH

ADVANTAGES
- The patch provides consistent nicotine levels.
- The patch is easy to use and conceal.
- Fewer compliance issues are associated with the patch.

DI SADVANTAGES
- Patients cannot titrate the dose.
- Allergic reactions to adhesive may occur.
- Taking patch off to sleep may lead to morning nicotine cravings.

TRANSDERMAL NICOTINE PATCH:
DIRECTIONS for USE

- Choose an area of skin on the upper body or upper outer part of the arm
- Make sure skin is clean, dry, hairless, and not irritated
- Apply patch to different area each day
- Do not use same area again for at least 1 week

TRANSDERMAL NICOTINE PATCH:
DIRECTIONS for USE (cont'd)

- Remove patch from protective pouch
- Peel off half of the backing from patch

TRANSDERMAL NICOTINE PATCH:
DIRECTIONS for USE (cont'd)

- Apply adhesive side of patch to skin
- Peel off remaining protective covering
- Press firmly with palm of hand for 10 seconds
- Make sure patch sticks well to skin, especially around edges

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PATIENT EDUCATION: Nicotine Patch

- Water will not harm the nicotine patch if applied correctly; may bathe, swim, shower, or exercise while wearing the patch
- Do not cut patches to adjust dose
  - Nicotine may evaporate from cut edges
  - Patch may be less effective
- Dispose of used patch by folding it onto itself, completely covering adhesive area
  - Keep patches out of reach of children and pets
- Do not remove the patch to smoke

NICOTINE GUM & LOZENGE

ADVANTAGES
- Patients can titrate therapy to manage withdrawal symptoms
- May satisfy oral cravings
- May delay weight gain

DISADVANTAGES
- Gastrointestinal side effects may be bothersome
- Gum may be socially unacceptable and difficult to use with dentures
- Patients must use proper chewing technique to minimize adverse effects

NICOTINE GUM: CHEWING TECHNIQUE SUMMARY

Cheeew slowly
Chew again when peppery taste or tingle fades
Stop chewing at first sign of peppery taste or tingling sensation
Park between cheek & gum

NICOTINE INHALER

Nicotrol Inhaler (Pfizer)

Nicotine inhalation system consists of:
- Mouthpiece
- Cartridge with porous plug containing 10 mg nicotine and 1 mg menthol
- Delivers 4 mg nicotine vapor, absorbed across buccal mucosa

NICOTINE INHALER: SCHEMATIC DIAGRAM


NICOTINE INHALER: DIRECTIONS for USE (cont’d)

- During inhalation, nicotine is vaporized and absorbed across oropharyngeal mucosa
- Inhale into back of throat or puff in short breaths
- Nicotine in cartridges is depleted after about 20 minutes of active puffing
  - Cartridge does not have to be used all at once
  - Open cartridge retains potency for 24 hours
- Mouthpiece is reusable; clean regularly with mild detergent
NICOTINE INHALER: ADD’L PATIENT EDUCATION (cont’d)

- The inhaler may not be as effective in very cold (<59°F) temperatures—delivery of nicotine vapor may be compromised.
- Use the inhaler longer and more often at first to help control cravings (best results are achieved with frequent continuous puffing over 20 minutes).
- Effectiveness of the nicotine inhaler may be reduced by some foods and beverages.

Do NOT eat or drink for 15 minutes BEFORE or while using the nicotine inhaler.

NICOTINE INHALER

ADVANTAGES
- Patients can easily titrate therapy to manage withdrawal symptoms.
- The inhaler mimics hand-to-mouth ritual of smoking.

DISADVANTAGES
- Initial throat or mouth irritation can be bothersome.
- Cartridges should not be stored in very warm conditions or used in very cold conditions.
- Patients with underlying bronchospastic disease must use the inhaler with caution.

NICOTINE NASAL SPRAY

Nicotrol NS (Pfizer)

- Aqueous solution of nicotine in a 10-ml spray bottle.
- Each metered dose actuation delivers 50 mcL spray, 0.5 mg nicotine, ~100 doses/bottle.
- Rapid absorption across nasal mucosa.

NICOTINE NASAL SPRAY: ADDITIONAL PATIENT EDUCATION

What to expect (first week):
- Hot peppery feeling in back of throat or nose
- Sneezing
- Coughing
- Watery eyes
- Runny nose

Side effects should lessen over a few days.
- Regular use during the first week (or prior to quit date) will help develop tolerance to the irritant effects of the spray.
- If side effects do not decrease after a week, contact health care provider.

NICOTINE NASAL SPRAY

ADVANTAGES
- Most rapidly absorbed form of nicotine replacement.
- Patients can easily titrate therapy to rapidly manage withdrawal symptoms.
- Demonstrated use with smokers with schizophrenia.

DISADVANTAGES
- Nasal/throat irritation may be bothersome.
- Dependence can result.
- Patients must wait 5 min before driving or operating heavy machinery.

NRT: REDUCTION of DOSE

- Dose tapering is not required when discontinuing treatment.
- Strategies for discontinuing use:
  - Use lower dose patch/gum/lozenge.
  - Chew gum for 10–15 min instead of 30 min.
  - Reduce the number of pieces used daily.
  - Substitute ordinary chewing gum/lozenge for NRT.

If patients experience significant withdrawal symptoms during tapering or discontinuing NRT, increase the dose and consider extending treatment.

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BUPROPION: MECHANISM OF ACTION

- Atypical antidepressant thought to affect levels of various brain neurotransmitters
  - Dopamine
  - Norepinephrine
- Clinical effects
  - ↓ craving for cigarettes
  - ↓ symptoms of nicotine withdrawal

BUPROPION SR: DOSING for SMOKING CESSATION

Initial treatment
- 150 mg po q AM x 3 days

Then, if tolerated...
- 150 mg po bid x 7–12 weeks

If 300 mg is not well tolerated...
- Reduce dose to 150 mg and reassure that 150 mg dose is still efficacious (Swan et al., 2003)

Patients should begin therapy one week PRIOR to quitting to assure therapeutic plasma levels of drug are achieved when patient is no longer smoking.

BUPROPION: ADDITIONAL PATIENT EDUCATION

- Can be safely used with NRT
- Dose tapering is not necessary when discontinuing treatment
- If no significant progress toward abstinence by 7th week, therapy is unlikely to be effective
  - Discontinue treatment
  - Reevaluate and restart at later date

BUPROPION: CONTRAINDICATIONS and PRECAUTIONS

- History of seizure
- Current or prior eating disorder
- History of cranial trauma, stroke, or neurosurgical intervention
- Treatment with medications that lower the seizure threshold (e.g., antipsychotics, antidepressants, theophylline)
- Treatment with MAOIs in the last 2 weeks
- Abrupt discontinuation of alcohol or sedatives (including benzodiazepines)
- Severe hepatic cirrhosis

BUPROPION SR

ADVANTAGES
- Bupropion SR is easy to use.
- Bupropion SR can be used with NRT.
- Bupropion SR may be beneficial in patients with depression.

DI SADVANTAGES
- Bupropion SR should be avoided in patients with an increased risk for seizures
- Side effect profile:
  - Common: dry mouth, anxiety, insomnia (avoid bedtime dosing)
  - Less Common: tremor, skin rash

Effective for treating smoking regardless of depression history (Cox, 2004) and may decrease the negative symptoms in schizophrenia (George 2002, Ewins 2005).

BUPROPION USE in OTHER PSYCHIATRIC DISORDERS

- Bupropion commonly used for treating ADHD in patients with comorbid substance abuse (off label use)
- Bupropion for smoking cessation found to be well tolerated in patients with schizophrenia who are stabilized on an adequate antipsychotic regime.
- With bipolar disorder, bupropion suggested to have lower risk of activation of hypo/manic state relative to other antidepressants. Consider using a lower dose (150 mg) in selected cases. Monitor closely.
VARENICLINE: MECHANISM of ACTION

- Binds with high affinity and selectivity at $\alpha_4\beta_2$ neuronal nicotinic acetylcholine receptors
- Stimulates low-level agonist activity
- Competitively inhibits binding of nicotine
- Clinical effects
  - ↓ symptoms of nicotine withdrawal
  - Blocks dopaminergic stimulation responsible for reinforcement & reward associated with smoking

VARENICLINE: PHARMACOKINETICS

- Absorption: Virtually complete after oral administration; not affected by food
- Metabolism: Undergoes minimal hepatic metabolism
- Elimination: Primarily renal through glomerular filtration and active tubular secretion; 92% excreted unchanged in urine
- Half-life: 24 hours

VARENICLINE: DOSING

Patients should begin therapy 1 week PRIOR to their quit date. The dose is gradually increased to minimize treatment-related nausea and insomnia.

<table>
<thead>
<tr>
<th>Treatment Day</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 1–3</td>
<td>0.5 mg qd</td>
</tr>
<tr>
<td>Days 4–7</td>
<td>0.5 mg bid</td>
</tr>
<tr>
<td>Day 8 – Week 12</td>
<td>1 mg bid</td>
</tr>
</tbody>
</table>

VARENICLINE: ADDITIONAL PATIENT EDUCATION

- Doses should be taken after eating, with a full glass of water
- Nausea and insomnia are side effects that are usually temporary
  - If symptoms persist, notify your health care provider
- Dose tapering not necessary when discontinuing treatment
- Stop taking varenicline and contact a health-care provider immediately if agitation, depressed mood, suicidal thoughts or changes in behavior are noted

VARENICLINE: SUMMARY

ADVANTAGES
- Varenicline is an oral formulation with twice-a-day dosing.
- Varenicline offers a new mechanism of action for persons who previously failed using other medications.
- Early industry-sponsored trials suggest this agent is superior to bupropion SR.

DISADVANTAGES
- Common side effects:
  - Nausea (in up to 33% of pts)
  - Sleep disturbances (insomnia, abnormal dreams)
  - Constipation
  - Flatulence
  - Vomiting
- Post-marketing surveillance data indicate potential for neuropsychiatric symptoms.

FDA PUBLIC ADVISORY

- Pfizer added warning label to package insert advising patients and caregivers that:
  - the patient should stop taking CHANTIX and contact their healthcare provider immediately if agitation, depressed mood, or changes in behavior that are not typical for them are observed, or if the patient develops suicidal ideation or suicidal thoughts.
- Ongoing investigation
**Varenicline: Precautions**

- Not combined with NRT – increase in side effects including nausea, headache, vomiting, fatigue, etc.
- Not recommended for youth < 18 yrs old
- Dose adjustment may be required in presence of severe renal insufficiency (is removed by hemodialysis)

**Long-Term (≥6 month) Quit Rates for Available Cessation Medications**


**Combination Pharmacotherapy**

- **Combination NRT**
  - Long-acting formulation (patch)
  - Produces relatively constant levels of nicotine
  - **Plus**
  - Short-acting formulation (gum, inhaler, nasal spray)
  - Allows for acute dose titration as needed for nicotine withdrawal symptoms
- **Bupropion SR + Nicotine Patch**

**Extended Treatments**

- **Standard Treatment (ST)**
  - 12 wks: group counseling, NRT, and bupropion
- **Extended Cog-BXL (E-CBT)**
  - ST + 11 individual CBT sessions over 40 weeks
- **Extended NRT (E-NRT)**
  - ST + 40 weeks of nicotine gum availability
- **Extended CBT + NRT**
  - E-CBT + 40 wks NRT

**Treatment Timelines**

- **Bupropion**
  - 150 mg, 300 mg
- **NRT**
  - Patch and consider PRN gum/lozenge
- **NRT + Bupropion**
  - 150 mg, 300 mg
- **Varenicline**
  - 0.5 mg qd, 0.5 mg bid, 1 mg bid

**Varenicline vs. NRT**

- OR: 1.40 (95% CI 0.99, 1.99), NS

*Hall et al., (in press). Addiction*

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**COMPLIANCE IS KEY to QUITTING**

- Promote compliance with prescribed regimens.
- Use according to dosing schedule, NOT as needed.
- Consider telling the patient:
  - “When you use a cessation product it is important to read all the directions thoroughly before using the product. The products work best in alleviating withdrawal symptoms when used correctly, and according to the recommended dosing schedule.”

**NORTRIPTYLINE** (second-line)

**ADVANTAGES**
- Effective treatment for smoking cessation and depression
- Can combine with NRT
- Useful in patients with chronic pain, insomnia, and anxiety
- Inexpensive
- One of the best tolerated TCAs

**DI SADVANTAGES**
- Seizure risk is increased as in all antidepressants
- May require blood level monitoring and EKG
- Dangerous in overdose
- Side-effect profile:
  - Dry mouth, orthostatic hypotension, cardiac arrhythmia, constipation, urinary retention, sexual dysfunction, sedation, etc.

**NORTRIPTYLINE: DOSING for SMOKING CESSATION**

- Begin treatment 4 weeks prior to quit date at 25 mg q HS
- Increase as tolerated by 25 mg per week up to 75 – 100 mg to reach therapeutic blood levels of 50 – 150 ng/ml
- Continue for 7 weeks with a 1-week taper (12 weeks total)

Source: Hughes, Stead & Lancaster (2005). NTR

**CLONIDINE** (second-line)

**ADVANTAGES**
- Inexpensive
- Good for patients who are anxious or have insomnia
- Consider for patients with contraindications to antidepressants
- Consider for patients with hypertension
- Second-line treatment for ADHD and opioid withdrawal

**DI SADVANTAGES**
- Fewer efficacy studies
- Medication interactions
- Side-effect profile:
  - Decreased HR, sedation, orthostatic hypotension, dizziness, dry mouth

**CLONIDINE: DOSING for SMOKING CESSATION**

- Usually in the range of 0.1 – 0.4 mg/day in divided TID or QID or 0.2 mg patch (TTS-2) q week
- Some patients may require more
- Initiate clonidine therapy 48 to 72 hours before quit attempt


**COMPARATIVE DAILY COSTS of PHARMACOTHERAPY**

- **Cigarettes (1 PPD)**: $5.00 in CA
- **Chantix**: $3.48 (generic)
- **Nasal spray**: $2.64 (generic)
- **Bupropion SR**: $2.62 (generic)
- **Patch**: $1.5 (generic)
- **Nortriptyline**: $1.13 (generic)
- **Clonidine**: $0.52 (generic)
- **Inhaler**: $6.07
- **Lozenge**: $5.88


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SUMMARY: TOBACCO TREATMENTS with DEMONSTRATED EFFICACY

- Clinician advice
- Formal smoking cessation programs
  - Individual counseling
  - Web and Telephone counseling:
    - http://www.smokefree.gov
    - 1-800-QUIT-NOW (national toll-free quit line)
- Group programs
- Aversion therapy
- Hypnotherapy
- NRT, bupropion, varenicline, nortriptyline, clonidine

TOBACCO TREATMENTS LACKING EVIDENCE of EFFICACY

- SSRIs and SNRI
- Anxiolytics:
  - Sedative, hypnotics, buspirone
- Homeopathic treatments
- Herbal supplements
- Lobeline
- Massage Therapy
- Acupuncture
- Nicotine Anonymous

SET REALISTIC EXPECTATIONS

- Most quit attempts are not "successful":
  - It's a learning process. Reframe success!
  - Most people make multiple quit attempts before they are successful.
  - Longer prior quit attempts predict future success.

TREATING SPECIAL POPULATIONS

OVERVIEW

- Tobacco Treatment
- Smoking Outcomes
- Co-occurring Disorders
- Integration
- Tobacco Prevention

READINESS to QUIT in SPECIAL POPULATIONS*

<table>
<thead>
<tr>
<th>Population</th>
<th>Intend to quit in next 6 mo</th>
<th>Intend to quit in next 30 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Population</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>General Psych Outpts</td>
<td>43%</td>
<td>28%</td>
</tr>
<tr>
<td>Depressed Outpatients</td>
<td>55%</td>
<td>24%</td>
</tr>
<tr>
<td>Psych. Inpatients</td>
<td>41%</td>
<td>24%</td>
</tr>
<tr>
<td>Methadone Clients</td>
<td>48%</td>
<td>22%</td>
</tr>
</tbody>
</table>

* No relationship between psychiatric symptom severity and readiness to quit.
RESEARCH on TOBACCO & DEPRESSION

- Most of the research has been conducted with people with a history of MDD, in free-standing smoking clinics
  - Greater tobacco abstinence with increased psychological support (Hall et al., 1994; Brown et al., 2001)
  - Individuals with recurrent MDD may be especially helped by CBT—mood management approaches
  - Individuals with a history of MDD may have more difficulty quitting and more severe withdrawal symptoms than those without MDD

TREATING TOBACCO DEPENDENCE in DEPRESSED SMOKERS

- 322 depressed smokers recruited from four outpatient psychiatry clinics
- Stepped Care Intervention
  - Stage-based expert system counseling
  - Nicotine patch
  - 6 session individual counseling

ABSTINENCE RATES by TREATMENT CONDITION

- Intervention
- Control

p < 0.05 for group comparison

DEPRESSION SEVERITY & TOBACCO TREATMENT OUTCOME

- NO RELATIONSHIP
  - Depression severity, as measured by the Beck Depression Inventory-II, was unrelated to participants’ likelihood of quitting smoking
  - Among intervention participants, depression severity was unrelated to their likelihood of accepting cessation counseling and nicotine patch

TREATMENT of PSYCHIATRIC INPATIENTS

- Using the same model...

  - Tobacco cessation treatment initiated during psychiatric hospitalization
    - 224 patients enrolled
    - Full range of psychiatric diagnoses
    - 79% recruitment rate
    - >80% retention at 18 months
    - Efficacy outcomes thru 18 months still being collected (trial will end August 2010)

TREATING SMOKERS with SCHIZOPHRENIA

- Treatments tailored for smokers with schizophrenia no more effective than standard programs (George et al., 2000)

  - Atypical antipsychotics associated with greater cessation than typical antipsychotics
TWO RCTS of TOBACCO TREATMENT in PATIENTS with SCHIZOPHRENIA


Placebo Bupropion Placebo Bupropion

End of Tx 6 mo FU End of Tx 6 mo FU

0% 10% 20% 30% 40% 50% 60%

VARENICLINE USE with INDIVIDUALS with SCHIZOPHRENIA

Evins et al. (2008): Open-label case series reported 13 of 19 patients (68%) with schizophrenia quit smoking at the end of treatment

Two RCTs in process of varenicline use in individuals with schizophrenia (Pfizer & NIDA)

DOES ABSTINENCE from TOBACCO CAUSE RECURRENCE of PSYCHIATRIC DISORDERS?

Case studies suggesting MDE recurrence after quitting smoking among those with a history of depression

Glassman, 2001: MDE recurrence in 6% (n=2) of those smoking vs. 31% (n=13) of those abstinent
- Differential loss to follow-up: 5% (n= 2/44) of quitters missing vs. 39% (n= 22/56) of continued smokers

Tsoh, 2001: N=308, no difference in rate of MDE among abstinent vs. smoking participants
- Difference in rate of MDE by depression history: 10% among those with no MDD history vs. 24% if MDD+ history

Depression is a remitting and relapsing disorder

MENTAL HEALTH OUTCOMES: DEPRESSED SMOKERS TREATED for TOBACCO

Among depressed patients who quit smoking:
- No increase in suicidality
- Quit: 0% vs Smoking: 1-4%
- No increase in psych hospitalization
- Quit: 0-1% vs. Smoking: 2-3%
- Comparable improvement in % of days with emotional problems
- No difference in use of marijuana, stimulants or opiates
- Less alcohol use among those who quit smoking

Prochaska et al., 2008, Am J Public Health

TOBACCO CESSATION & SCHIZOPHRENIA SYMPTOMS

Tobacco abstinence (1-wk) not associated with worsening of:
- attention, verbal learning/memory, working memory, or executive function/inhibition, or clinical symptoms of schizophrenia (Evins et al., 2005)

Bupropion: decreased the negative symptoms of schizophrenia (Evins et al. 2005, George et al. 2002)

Varenicline: no worsening of clinical symptoms and a trend toward improved cognitive function (Evins et al., 2009)

INTEGRATING TOBACCO TREATMENT within PTSD SERVICES

RCT with 66 clients from VA Medical Center

Integrated care (IC)
- Manualized treatment delivered by PTSD clinician and case manager (3-hr training)
- Behavioral counseling once a week for 5 weeks + 1 follow-up
- Bupropion, nicotine patch, gum, spray

Usual care (UC): referral to VA smoking cessation clinic

McFall et al. (2005) Am J Psychiatry
INTEGRATING TOBACCO TREATMENT within PTSD SERVICES

- Cessation Medication Use
  - Integrated Intervention: 94%
  - Usual Care: 64%

- Counseling Sessions Attended
  - Integrated Intervention: M=5.5
  - Usual Care: M=2.6

- At all assessments, the odds of abstinence were 5 times greater for integrated care vs. usual care

McFall et al. (2005) Am J Psychiatry

SUMMARY: TOBACCO TREATMENT in PSYCHIATRIC PATIENTS

- In general, currently available interventions show effectiveness
- Wide range of abstinence rates, with unknown determinants
- Evidence of deleterious effect on psychiatric symptoms or recurrence is weak
- Integration into mental health treatment settings increases abstinence rates

TOBACCO CESSATION DURING ADDICTIONS TREATMENT or RECOVERY

- Meta-analysis of 19 trials
  - 12 in treatment; 7 in recovery
- Findings: Tobacco Cessation
  - In Treatment Studies: Post treatment abstinence rates were intervention=12% vs. control=3%
  - In Recovery Studies: Post treatment abstinence rates were intervention=38% vs. control=22%
  - No significant effect for tobacco cessation at long-term follow-up (≥ 6 months)

Prochaska, Delucchi & Hall (2004) JCCP

TOBACCO CESSATION DURING ADDICTIONS TREATMENT or RECOVERY

- Systematic review of 17 studies
- Smokers with current and past alcohol problems:
  - More nicotine dependent
  - Less likely to quit in their lifetime
  - As able to quit smoking as individuals with no alcohol problems

Hughes & Kalman (2006) Drug Alc Dep

DOES ABSTINENCE from TOBACCO CAUSE RELAPSE to ALCOHOL and ILLICIT DRUGS?

- At > 6 months follow-up, tobacco treatment with individuals in addictions treatment was associated with a 25% increased abstinence from alcohol and illicit drugs (Prochaska et al., 2004).
- Caveat: One well done study (N=499) of concurrent versus delayed treatment reported (Joseph et al., 2004):
  - Comparable smoking abstinence rates at 18 months (12.4% versus 13.7%)
  - Lower 6-month prolonged alcohol abstinence rates among those offered concurrent compared to delayed tobacco cessation treatment; NS at 12 and 18-months

SUMMARY: TOBACCO TREATMENT for SUBSTANCE ABUSING PATIENTS

- In general, currently available interventions show some effectiveness, at least for the short-term
- Range of abstinence rates, with unknown determinants
- Weak evidence of deleterious effect on abstinence from illicit drugs and alcohol
- Disorder specific data may eventually allow better tailoring of treatments

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PREVENTION

Problem of identification and developmental sequence, with a few exceptions:

- ADHD
  - ADHD diagnosed prior to initiation of smoking
  - Smoking rates 2 to 3 times higher for adolescents with vs. without ADHD
  - Adults with childhood history of ADHD may have more difficulty in quitting smoking (Humfleet et al., 2005)

- Children of parents with addiction problems
  - Sons more likely to be recent smokers than the general population (Schukit et al. 2004)

PREVENTION

- Drug Abuse Treatment Settings
  - Prospective study, N=649
  - At 12-month follow-up, 13% of the 395 baseline smokers reported quitting smoking and 12% of the 254 baseline nonsmokers reported starting/relapsing to smoking

Kohn et al. (2003) Drug Alc Dep

"Those who deliver mental health care often pride themselves on treating the whole patient, on seeing the big picture, and on not being bound by financial irrationality or by the biases of their culture; yet many fail to treat nicotine dependence. They forget that when their patient dies of a smoking-related disease, their patient has died of a psychiatric illness they failed to treat."

- John Hughes 1997