Nicotine addiction, tobacco use and cessation strategies for people with mental illness and living in poverty

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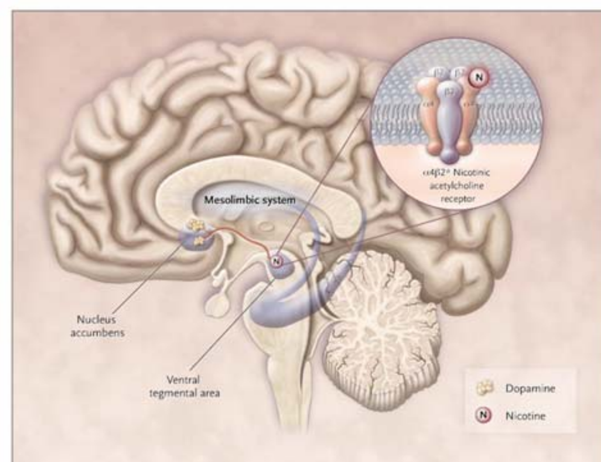
Financial Disclosures:

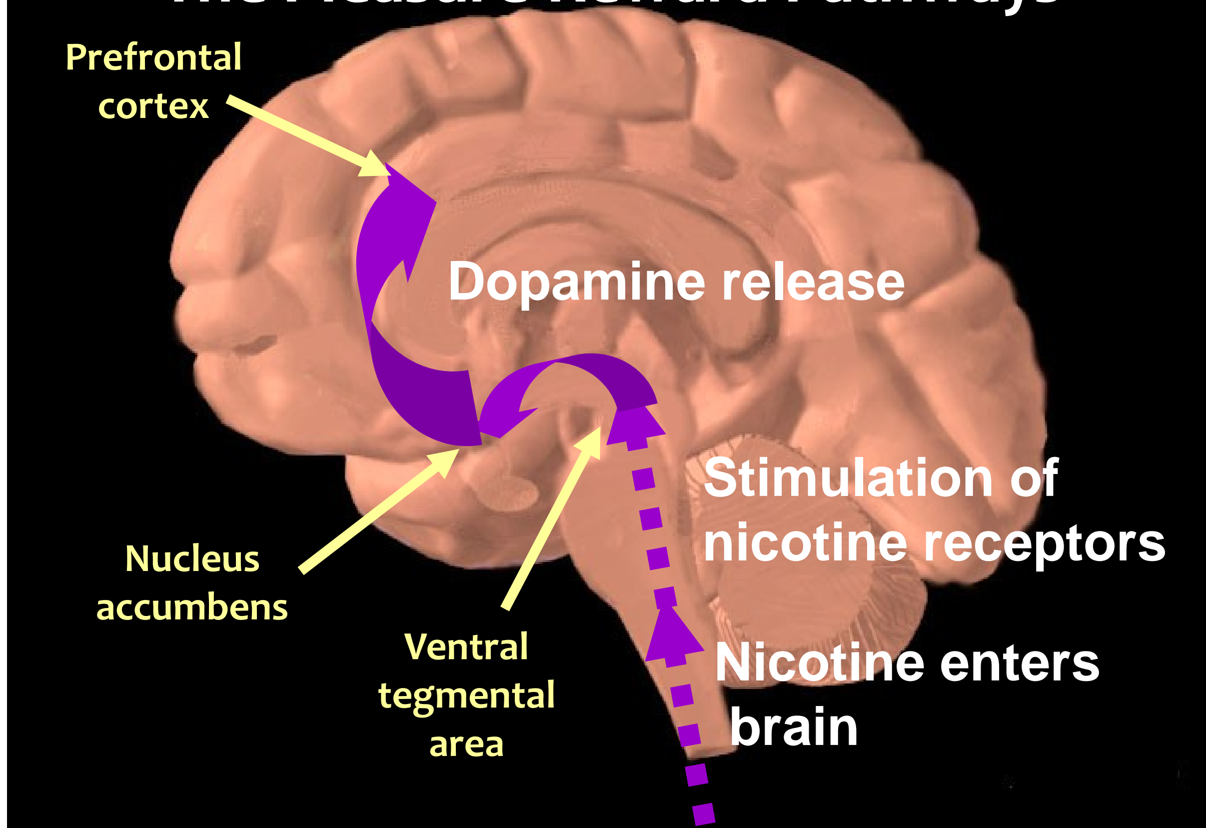
- Principal Investigator on US Federal and State research awards:
  - NHLBI R01, NIMH R01, NIDA P50 Component, TRDRP Pilot CARA
- Ad hoc consultant with Pfizer
- Expert witness in litigation against tobacco companies

AGENDA

- Science of nicotine addiction
- Prevalence of smoking among those with mental illness and those living in poverty
- Tobacco use mortality and morbidity
- Integrating cessation with person-centered health care
- State policy implications

Nicotine Addiction





NEUROCHEMICAL and RELATED EFFECTS of NICOTINE

NICOTINE

	Neurochemical		Effect
➔	**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

Benowitz. (2008). *Clin Pharmacol Ther* 83:531–541.

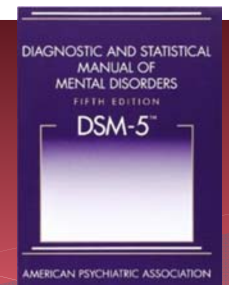
NICOTINE: WITHDRAWAL EFFECTS

- Irritability/frustration/anger
- Anxiety
- Difficulty concentrating
- Restlessness/impatience
- Depressed mood/depression
- Insomnia
- Impaired performance
- Increased appetite/weight gain
- Cravings

Most symptoms manifest within the first 1–2 days, peak within the first week, and subside within 2–4 weeks.

Hughes. (2007). *Nicotine Tob Res* 9:315–327.

DSM-V TOBACCO USE DISORDERS



Alignment of nicotine criteria with those for other substances

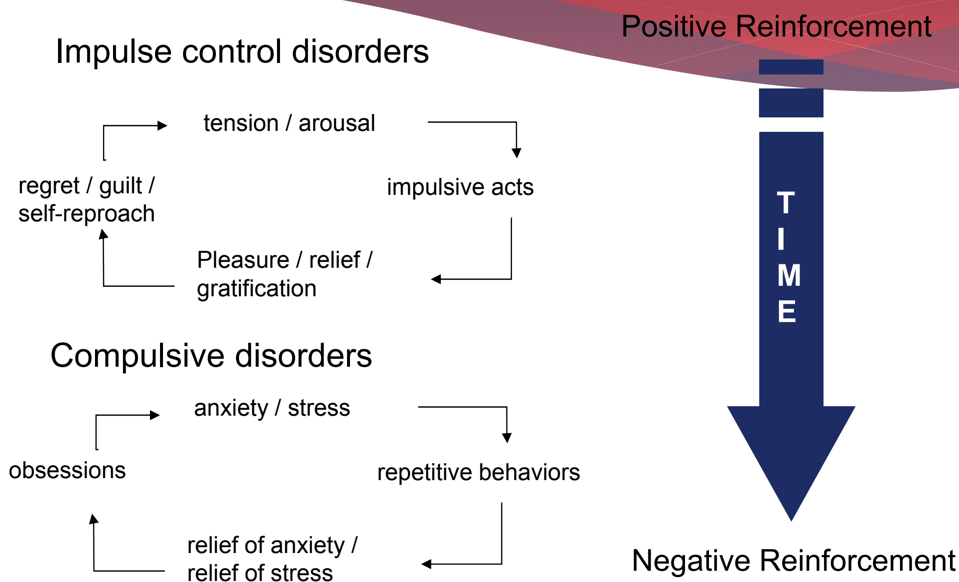
	DSM-IV Abuse[a]		DSM-IV Dependence[b]		DSM-5 Substance Use Disorders[c]	
Hazardous use	X	≥1 criterion	–		X	≥2 criteria
Social/interpersonal problems related to use	X		–		X	
Neglected major roles to use	X		–		X	
Legal problems	X		–		–	
Withdrawal[d]	–		X	≥3 criteria	X	
Tolerance	–		X		X	
Used larger amounts/longer	–		X		X	
Repeated attempts to quit/control use	–		X		X	
Much time spent using	–		X		X	
Physical/psychological problems related to use	–		X		X	
Activities given up to use	–		X		X	
Craving	–		–		X	

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

MODEL of ADDICTION



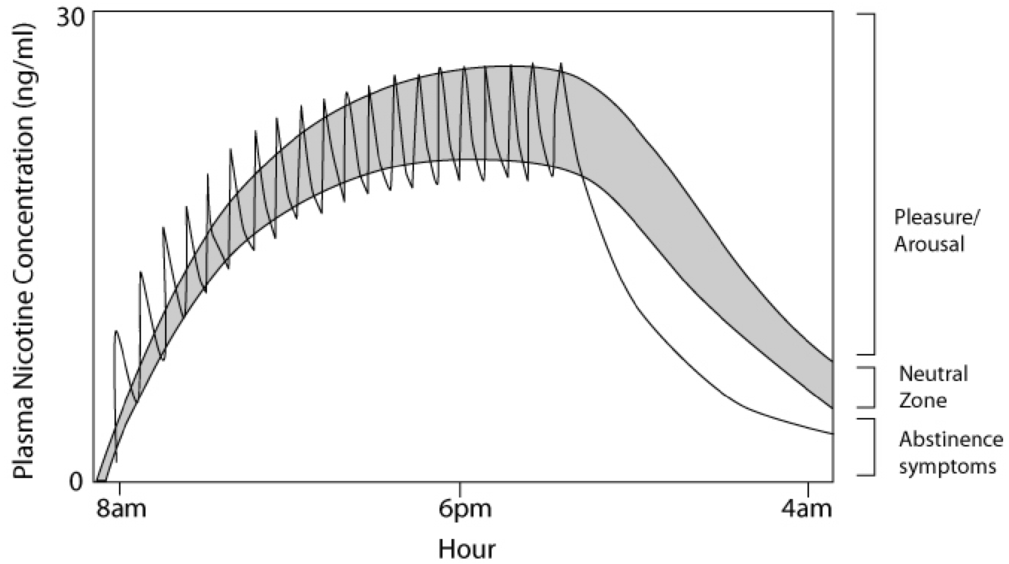
Positive Reinforcement

TIME

Negative Reinforcement

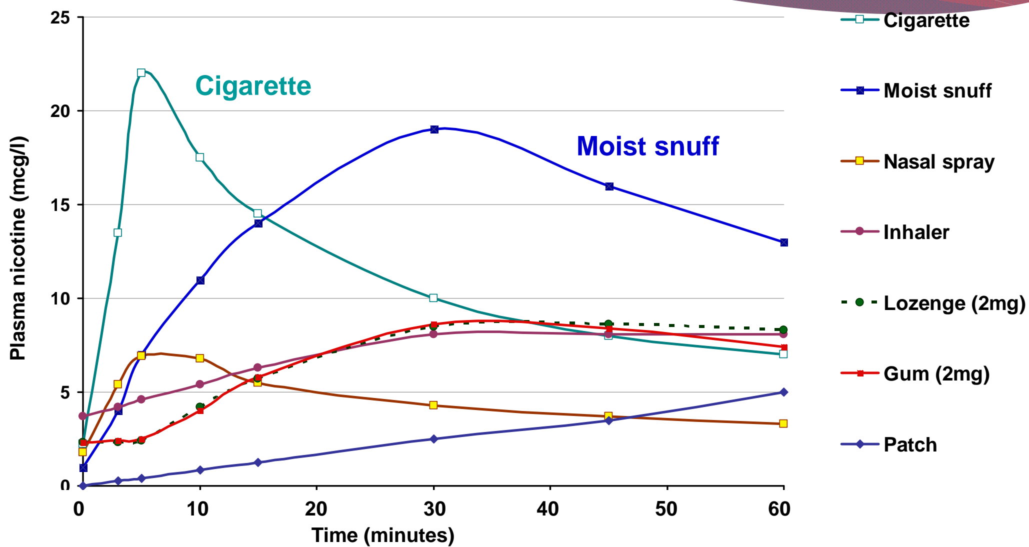
Source: GF Koob et al. (2004) *Neuroscience and Biobehavioral Reviews*

The Nicotine Cycle



Reprinted with permission. Benowitz. (1992). *Med Clin N Am* 2:415–437.

PLASMA NICOTINE CONCENTRATIONS for NICOTINE-CONTAINING PRODUCTS



TOBACCO DEPENDENCE: A 2-PART PROBLEM

Treating Tobacco Use And Dependence

CLINICAL PRACTICE GUIDELINE
2008 UPDATE

Tobacco Dependence

Physiologic **Behavioral**

Physiologic	Behavioral
The addiction to nicotine	The habit of using tobacco
Medications for cessation	Behavior change program

Treatment should address the physiologic **and** the behavioral aspects of dependence.

SMOKING as a HEALTH DISPARITY ISSUE in Mental Health and Substance Use Disorder Populations

“My doctor told me I’m too stressed out to quit smoking…. Well, 43 years later, I’m still stressed and I’m still smoking.”
-- Woman diagnosed with severe depression

DEATH of a 56-YEAR-OLD MAN with SERIOUS MENTAL ILLNESS

- A 56-year-old, gay-identified Caucasian man
- >15 psychiatric hospitalizations over a 10-year span
- Severe depressive symptoms, suicidal ideation, and auditory hallucinations criticizing him and/or commanding him to commit suicide
- Tested positive for stimulants
- Diagnosed with schizoaffective disorder, major depression with or without psychotic features, posttraumatic stress disorder, and polysubstance or stimulant dependence

Prochaska, Schane et al. (2008). Am J Psychiatry

DEATH of a 56-YEAR-OLD MAN with SERIOUS MENTAL ILLNESS

- Smoked 2 packs of cigarettes per day for 25 years
- 10 attempts to quit smoking, 2 in the past year
  - Each attempt was unassisted, without clinical support or use of FDA-approved cessation medications
- Longest period of being tobacco-free was 7 days
- No advice to quit smoking in the past year by a mental health or general medical provider

Died 20 years prematurely from complications of pulmonary emphysema due to smoking

SMOKING & MENTAL ILLNESS: A HEALTH DISPARITY ISSUE

- Elevated prevalence of use
- Targeted marketing by the industry
- Serious health consequences
- Significant costs & social isolation
- Enabling environments
- Lower access to treatment
- Inadequate research base

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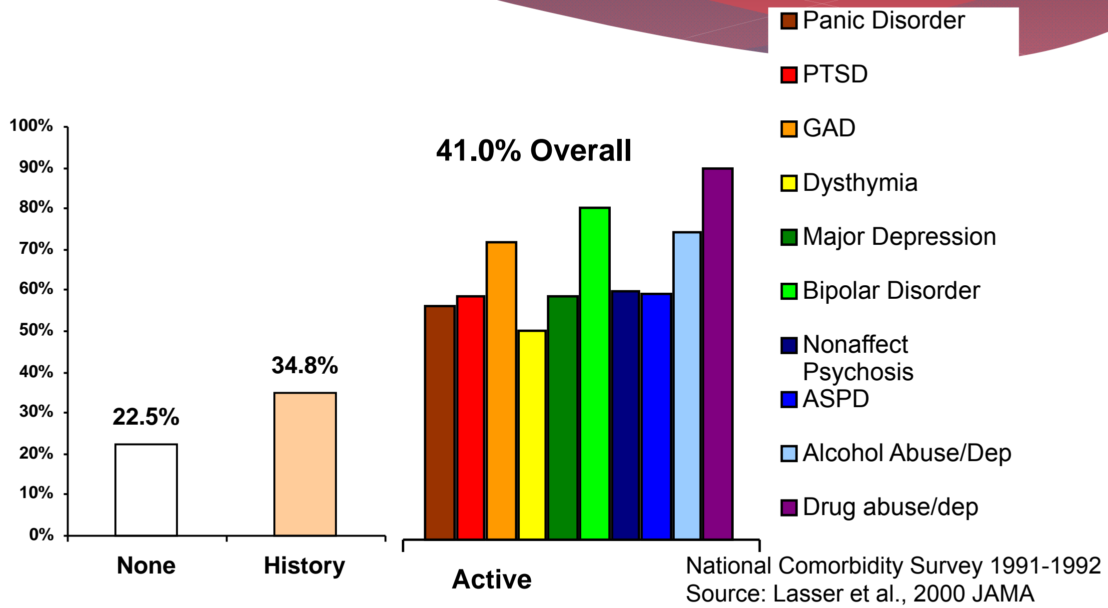
“90% of People with Schizophrenia Smoke”
“60%

- 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

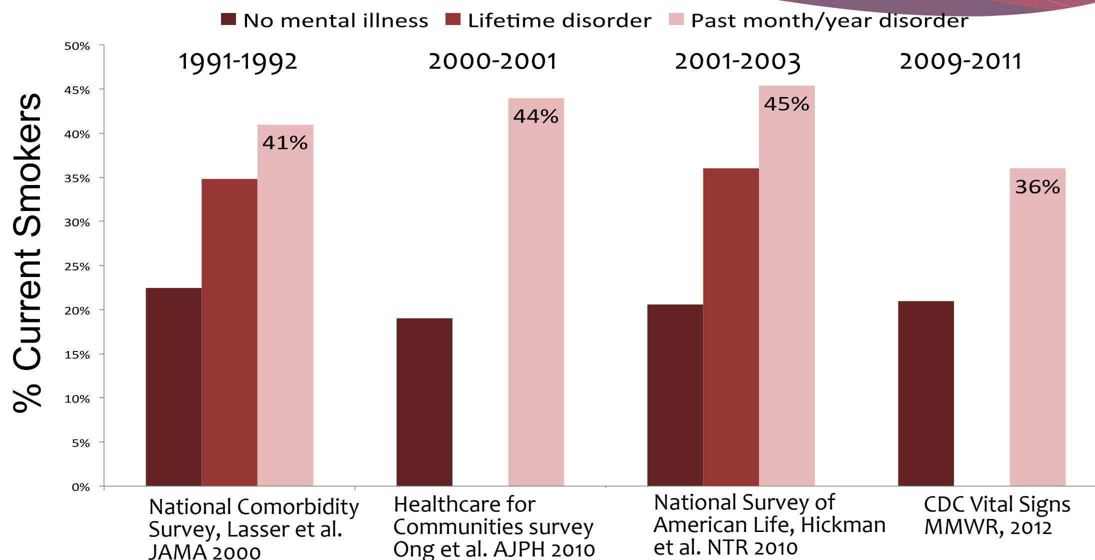
Chapman et al. (2009) Australian & New Zealand Journal of Psychiatry

SMOKING PREVALENCE by PSYCHIATRIC DIAGNOSIS

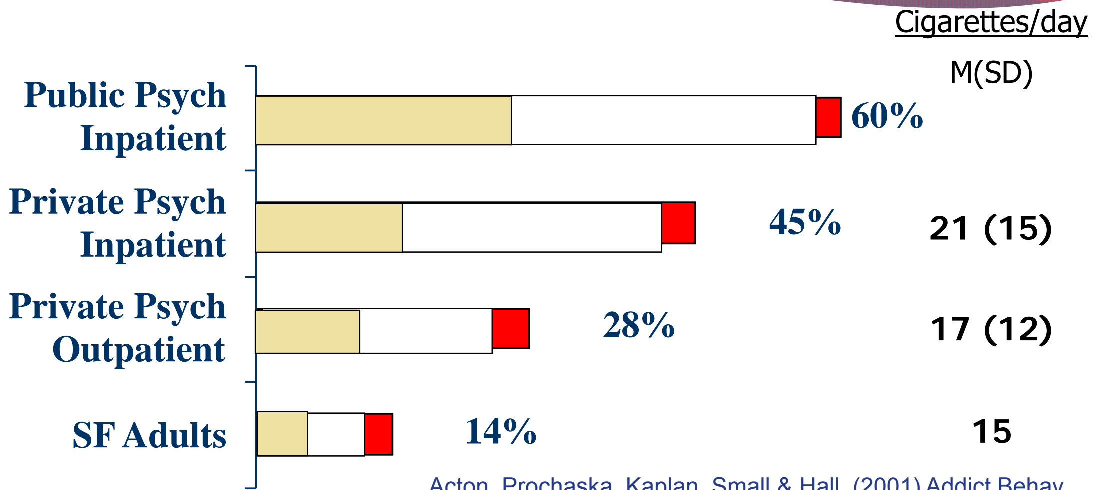


National Comorbidity Survey 1991-1992
Source: Lasser et al., 2000 JAMA

SMOKING & MENTAL ILLNESS: PREVALENCE over TIME

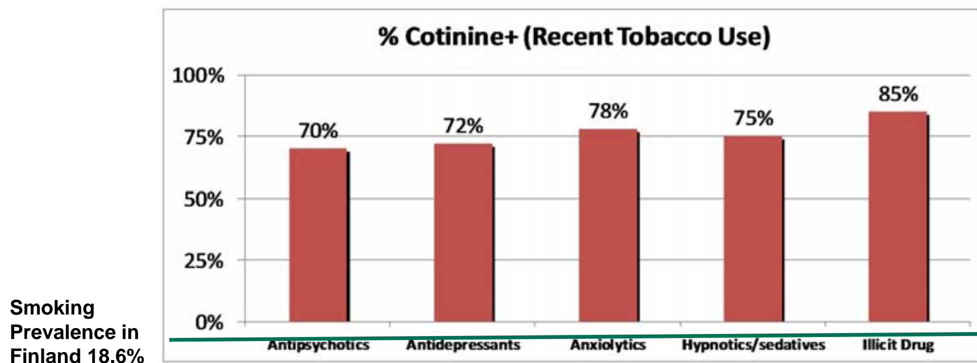


SMOKING in PSYCHIATRY: ADULTS in SAN FRANCISCO, CA



Acton, Prochaska, Kaplan, Small & Hall. (2001) Addict Behav
Benowitz, Schultz, Haller, et al. (2010) Am J Epi
Prochaska, Gill, & Hall. (2004) Psychiatric Services

POST-MORTEM STUDY with YOUNG ADULTS in FINLAND (N=1623)

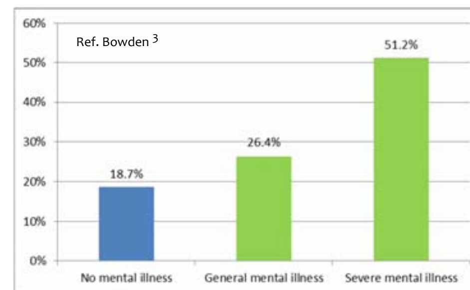


Launiainen et al. (2011) NTR

SMOKING PREVALENCE by MENTAL HEALTH in AUSTRALIA

› 1 in 3 people with mental illness smokes (32%) [1]

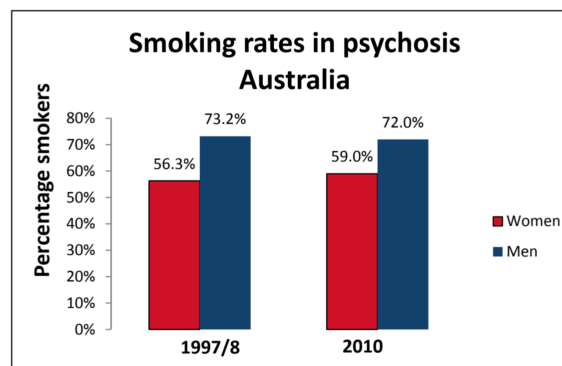
- Twice as likely to smoke as those without mental illness (16%) [1]
- Smoking rates increase with severity of mental illness [2,3]
  - Depression: 36%
  - Bipolar disorder: 61%
  - Schizophrenia: 70%



1. Australian National Survey of Mental Health and Wellbeing. ABS 2008 2. Cooper J. Aust NZ J Psych 2012 3. AIHW. National Drug Strategy Household Surveys 3. Bowden J. ANZJ Psych 2011

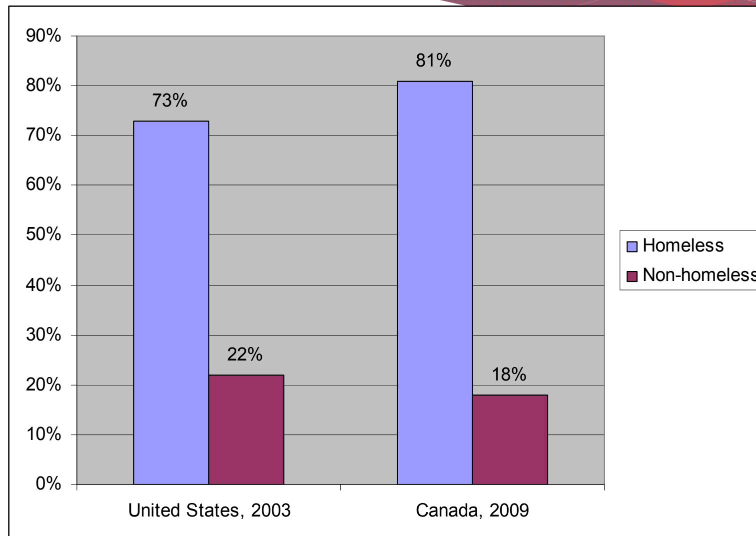
SMOKING RATES in PSYCHOSIS: AUSTRALIA (1977/8-2010)

- No change in smoking prevalence among those with psychosis from 1997/8 to 2010 [1,2]



1. Jablensky A. Aust NZ J Psych 2000 2. Cooper J. Aust NZ J Psych 2012

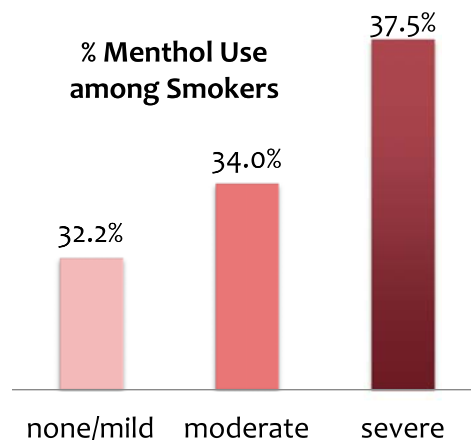
SMOKING by HOUSING STATUS



Data sources: U.S. Centers for Disease Control, Health Canada, Baggett (2010), Torchalla (2011)

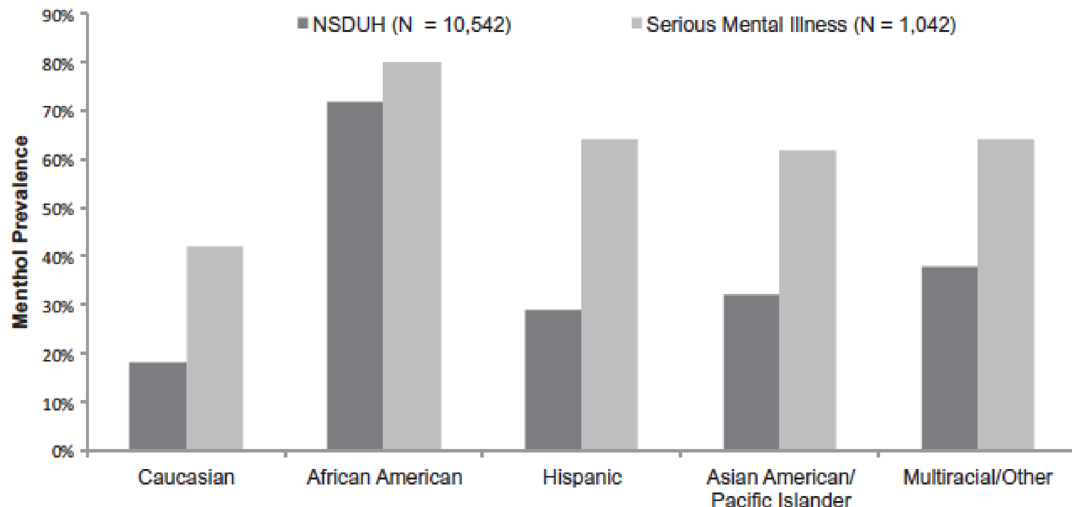
Menthol Use & Serious Mental Distress: National Sample

- 2008-2009 National Survey on Drug Use and Health (NSDUH)
- 24,157 adult smokers
- Severe psychological distress associated with menthol use: adj-OR = 1.23, p=0.02
  - Controlling for sociodemographic factors: ethnicity, SES, gender, age, education, marital, health insurance, cpd



Hickman, Delucchi, Prochaska (2014) Tobacco Control

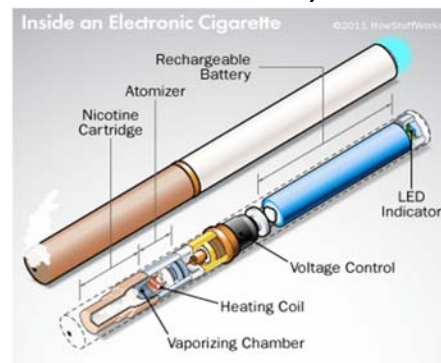
Menthol Smoking: US vs. Psychiatric Sample (N=1042)



Young-Wolff et al. (in press) NTR

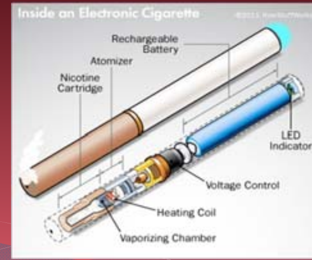
WHAT ABOUT E-CIGARETTES?
(vape pens, e-hookahs, hookah pens)

- Cigarette-shaped device consisting of a battery and a cartridge containing an atomizer to heat a solution, often with nicotine



By January 2014 there were 466 brands (each with its own website) and 7764 unique flavors (Zhu, 2014)

E-CIGARETTES, VAPE PENS, E-HOOKAHS



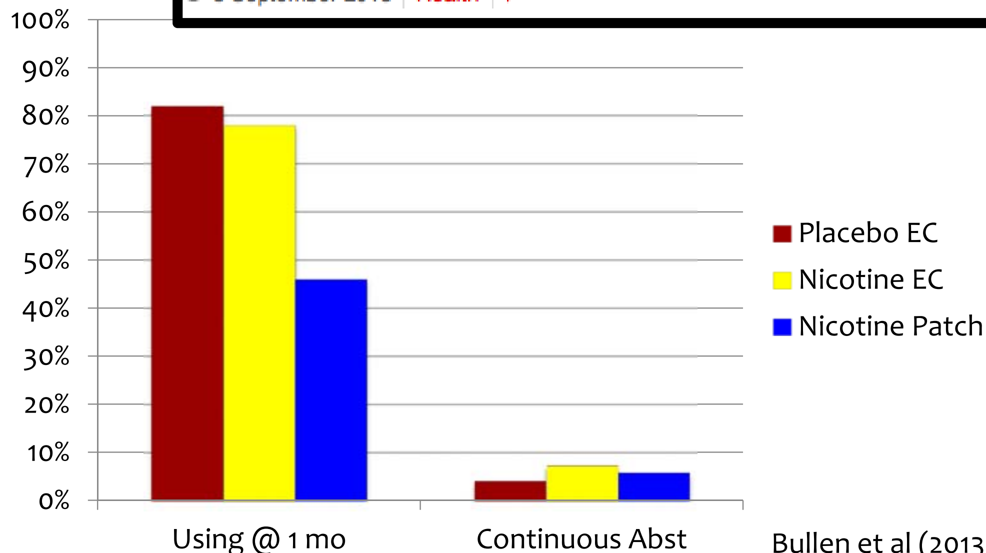
- Rapidly expanding market, est $1.7 billion in sales
- Market growth appears to coincide with declines in use of traditional cessation pharmacotherapies
- Not shown to be effective for quitting smoking
- Dual use is common
- Re-normalizing smoking behavior
- Attractive to youth (flavors, colors, marketing)
- Perceived as a nontoxic inhaled nicotine delivery device
- Not currently regulated, > 450 products on market

Do |

E-cigarettes 'as effective' as nicotine patches

By James Gallagher
Health and science reporter, BBC News

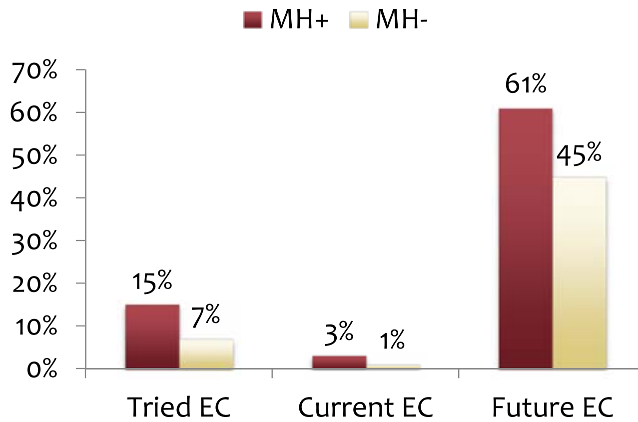
8 September 2013 | Health |



Bullen et al (2013) Lancet

E-CIGARETTES and MENTAL HEALTH

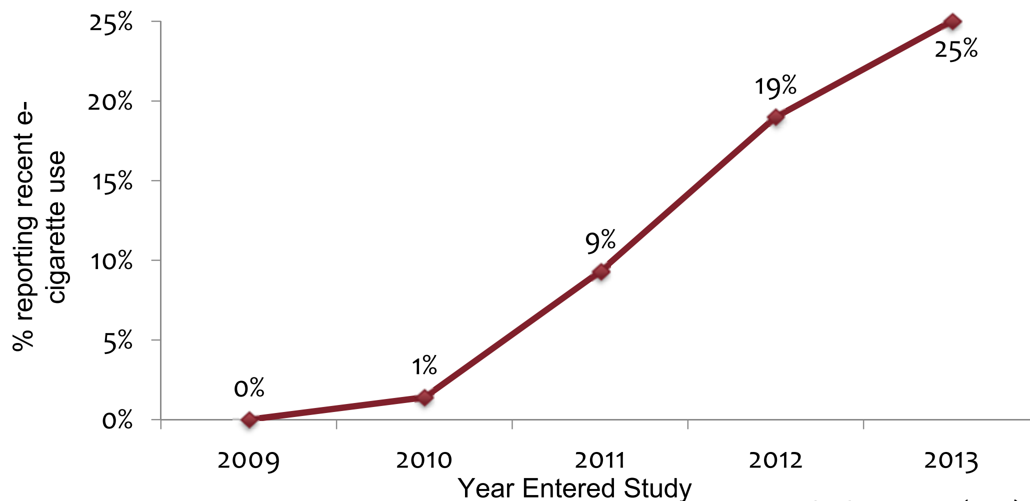
- N=10,041
- 28% of current smokers self-reported mental health conditions vs. 13% of non-smokers



Cummins et al. (2014) *Tobacco Control*

E-CIG USE: SMOKERS with SERIOUS MENTAL ILLNESS (N=956)

Growth in Reported E-cig Use by Year of Study Enrollment



Prochaska & Grana (2014) PLOS ONE

PREDICTORS of E-CIG USE

* **Later year of enrollment**: OR=29.2 (95% CI 10.5 - 80.7)
* **Younger age** (18-25): OR =2.6 (1.2 - 5.7)
* **nonHispanic** vs. Hispanic: OR=4.0 (1.8 - 8.9)
* **Preparation** vs. precontemplation: OR=2.7 (1.4 - 5.2)

NS: gender, race, employment status, hospital site, study condition, psychiatric or substance use diagnosis, mental health severity, time to 1st AM cig, cigs/day

Prochaska & Grana (2014) PLOS ONE

E-CIG USE & SMOKING (N=956)

* **Not more likely to be tobacco abstinent** @ follow-up:
  * 21% for EC users and 19% for non-EC users, p=.726
* **Not more likely to reduce cigarettes/day** @ follow-up:
  * ≥50% reduction in cigarettes/day (cpd)
    * EC (51%) vs. non-EC users (51%), p=.978
  * Median reduction in cpd: 7.1 (EC) vs. 6.6 (non-EC), p=.730
  * CPD at latest FU: 10.0 (EC) vs. 10.1 (non-EC), p=.915
* **All smoking outcomes NS by EC use** in adjusted models

Prochaska & Grana (2014) PLOS ONE

SMOKING & MENTAL ILLNESS: A HEALTH DISPARITY ISSUE

- Elevated prevalence of use
- **Targeted marketing by the industry**
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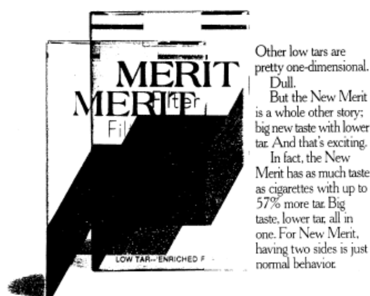
MAJOR TARGET MARKET

Schizophrenic.



The New Merit. We've got flavor down to a science.

SURGEON GENERAL'S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.

2040270976

dacy.library.ucsf.edu/tid/grz74e00/pdf

- Estimates that 44% to 46% of cigarettes consumed in US by smokers with psychiatric or addictive disorders (Lasser, 2000; Grant, 2002)
- 175 billion cigarettes and **$39 billion** in annual tobacco sales (USDA, 2004)

Project SCUM
1995-1997

* RJ Reynolds' SubCulture Urban Marketing Campaign for
  * Gay people in the Castro and "street people" in the Tenderloin
  * Noted the high incidence of smoking and drugs in these subcultures

- Plan was to introduce Camel cigarettes into less traditional retail outlets, like "head shops"
- Eventually changed the campaign to Project Sourdough

ECs for Jails/Prisons

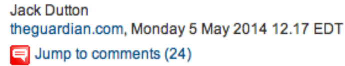
theguardian

News | US | World | Sports | Comment | Culture | Business | Money

Life & style > Health & wellbeing

Are e-cigarettes good for your mental health?

Patients with mental health problems are far more likely than others to become dependent on cigarettes. Can 'vaping' reduce symptoms without the risks?

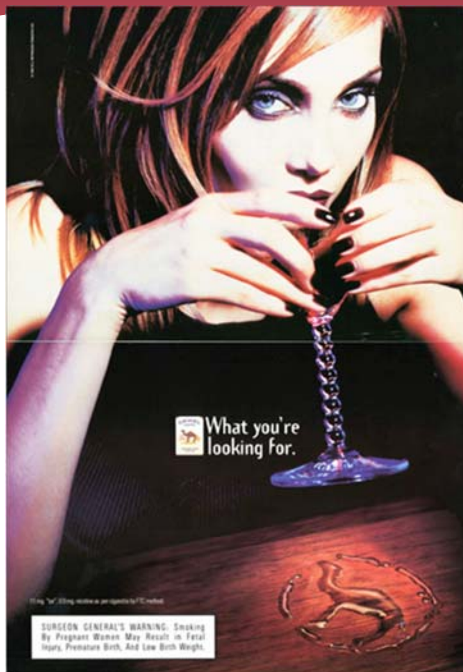


Jack Dutton
theguardian.com, Monday 5 May 2014 12.17 EDT
Jump to comments (24)

Ninety per cent of people with schizophrenia are already smokers. Could e-cigarettes help them? Photograph: Peter Macdiarmid/Getty Images

"Giving psychiatric patients access to e-cigarettes, particularly on closed wards, is definitely something to consider."

PAIRED with ALCOHOL USE



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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

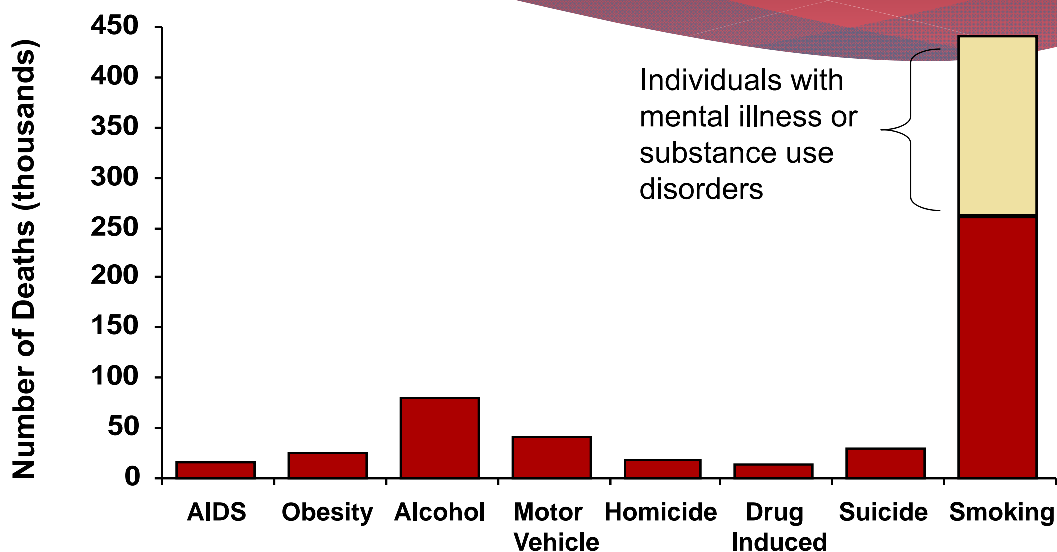
HEALTH CONSEQUENCES of SMOKING

- Cancers
  - Acute myeloid leukemia
  - Bladder and kidney
  - Cervical
  - Esophageal
  - Gastric
  - Laryngeal
  - Lung
  - Oral cavity and pharyngeal
  - Pancreatic
- Pulmonary diseases
  - Acute (e.g., pneumonia)
  - Chronic (e.g., COPD)
  - Tuberculosis

- Cardiovascular diseases
  - Abdominal aortic aneurysm
  - Coronary heart disease
  - Cerebrovascular disease
  - Peripheral arterial disease
  - Sudden death
  - Heart failure
- Reproductive effects
  - Reduced fertility in women
  - Poor pregnancy outcomes
  - Infant mortality
- Other effects: type 2 diabetes, peptic ulcer, cataract, osteoporosis, periodontitis, poor surgical outcomes (occlusion of bypass grafts & stents)

USDHHS. (2014). *A Report of the Surgeon General.*

COMPARATIVE CAUSES of ANNUAL DEATHS in the UNITED STATES

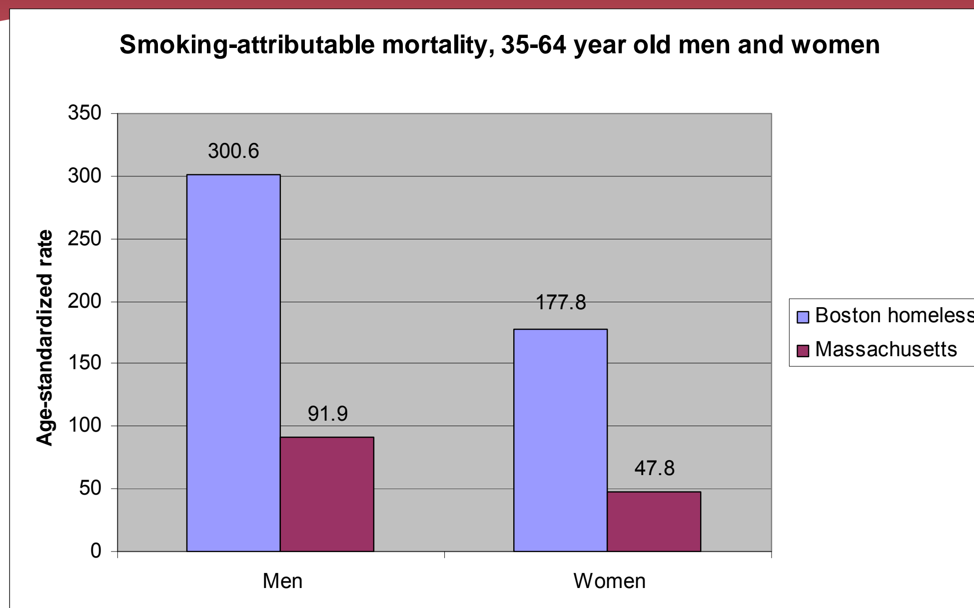


Source: CDC

TOBACCO KILLS

* Individuals with mental illness die, on average, 25 years prematurely (Colton & Manderscheid, 2006)
  * elevated risk for respiratory and cardiovascular diseases and cancer, compared to age-matched controls (Brown et al., 2000; Bruce et al., 1994; Dalton et al., 2002; Himelhoch et al., 2004; Lichtermann et al., 2001; Sokal, 2004)

SMOKING KILLS HOMELESS PEOPLE



Baggett et al. (2015) AJPH

SECONDHAND SMOKE

- Secondhand smoke (SHS) causes premature death and disease in nonsmokers:
  - Immediate adverse effects on the CV system – same effects as active smoking
  - Increased risk for heart disease & lung cancer
  - Bans on smoking in public places reduce exposure to SHS and reduce heart attacks

There is no safe level of secondhand smoke

USDHHS. (2006). *The Health Consequences of Involuntary Exposure to Tobacco Smoke: Report of the Surgeon General.*

Institute of Medicine. Secondhand Smoke Exposure and Cardiovascular Effects : Making Sense of the Evidence. Exposure. Washington, D.C.: The National Academies Press; 2010.

SMOKING & MENTAL ILLNESS: A HEALTH DISPARITY ISSUE

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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., 2005)
- 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

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ENABLING ENVIRONMENTS

A PRIMER FOR PSYCHOTHERAPISTS

BEHAVIOR DURING THE INTERVIEW 39

Should the therapist smoke during the interview? Why not? It will help drain the small amount of undischarged tension which is always present during an interview, and it contributes to the naturalness of his behavior.

1951

Re: Research Proposal for July/83 – June/84
"Tobacco Smoking As a Coping Mechanism in Psychiatric Patients: Psychological, Behavioral and Physiological Investigations"
Phase I

These 3 studies, plus the remaining 3 planned for next year promise to bear fruitful findings. It is particularly interesting that the psychiatrists, who are medical professionals, are very aware of the role of tobacco use in patients and are very interested in these studies. If tobacco can be shown to be an efficient form of "self-medication" for these patients then this would be significant bonus for the tobacco industry.

RJR-MACDONALD INC. Research and Development

Dr. Knott has been sponsored by CTMC for some years. Up to last year his own salary was paid by us - so he was totally dependent on CTMC funding. He became, however, a permanent member of the Royal Ottawa Hospital in 1984, and since then we only support the cost of his assistants.

The latest request is addressing the problems that restriction on smoking in the workplace or elsewhere may have on inducing stress on the smoker. Once again he seems to be looking at this from our point of view.

Department of Health, Education, and Welfare
National Institute of Mental Health
Washington, DC
August 4, **1980**

Our

Mr. G. H. Long
R. J. Reynolds Tobacco Company
Winston Salem, North Carolina 27102

Dear Mr. Long:

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.

Over the years the Hospital provided tobacco and occasionally cigarettes for these patients. Many became strongly addicted and in fact look upon smoking as their greatest (and often their only) pleasure.

Recent changes in Department of Human Services regulations and their enforcement abruptly terminated the Hospital's practice of providing a modest number of cigarettes to these patients who have no funds with which to purchase their own. Of our 240 patients, approximately 100 are in this category. The result has been nicotine withdrawal (which can be very unpleasant) and the loss of one of the greatest pleasures for patients who have very few, if any, alternatives. Many of the staff have been providing patients with cigarettes out of their own pocket, but this gets

I am therefore requesting a donation of approximately 5,000 cigarettes a week (8 per day for each of the 100 patients without funds).

Sincerely yours,

E. Fuller Torrey, M.D.
Medical Director
A. P. Noyes Division

MAR 25 1991 KW

COPY

LAW OFFICES OF
DOYLE & NELSON
150 CAPITOL STREET
P.O. BOX 2709
AUGUSTA, MAINE 04338-2709

JON R. DOYLE
CRAIG H. NELSON

DOUGLAS F. JENNINGS
MICHAEL C. MILLER
ELIZABETH A. McCULLUM

MAILING ADDRESS
P.O. BOX 2709
TELEPHONE
207-622-6124
800-698-4864
FAX
207-623-1358

March 21, 1991

file Maine

Lawrence Tilton
Tilton's Log Cabin
P.O. Box 657
Skowhegan, ME 04976

Dear Larry:

This letter is to inform you that the smoking in restaurants bill (L.D. 603) is now set for hearing on Wednesday, April 3, 1991, at 9:30 a.m. at the Elks Lodge in Augusta. In fact, the following smoking bills also have been set for hearing on that day:

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

3. LD 542 - An Act to Ban Smoking in Laundromats

4. LD 603 - An Act to Amend the Laws Concerning Smoking in Restaurants

5. LD 1134 - An Act to Protect Citizens from the Effects of Environmental Tobacco Smoke

With the above bills all scheduled on one day, it is difficult to know exactly when each of them will be reached. It is vital that you, or a representative, attend the hearing to speak on the legislation and we would appreciate it if you would either give me a call or my paralegal, Susan Mitchell.

Thank you.

Kind regards,

JON R. DOYLE

JRD/tlm
cc: Kent Wald

50760 1208

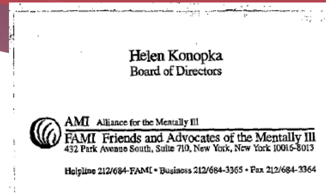
HOSPITAL SMOKING BAN EXEMPTION for MENTAL HEALTH

THE WALL STREET JOURNAL TUESDAY, OCTOBER 11, 1994

Mental Patients Fight to Smoke When They Are in the Hospital

"It's one of the very very few pleasures that schizophrenics and people with major depression have," says Helen Konopka, a 71-year-old retired New York teacher who organized a tidal wave of letters and petitions to the Joint Commission. She says

Ms. Konopka's crusade is backed by the National Alliance for the Mentally Ill, an influential advocacy group of patients and their families. The group says it hasn't had any contact with the tobacco industry.


Helen Konopka
Board of Directors

AMI Alliance for the Mentally Ill
FAMI Friends and Advocates of the Mentally Ill
432 Park Avenue South, Suite 710, New York, New York 10016-8013

Helpline 212/684-FAMI • Business 212/684-3365 • Fax 212/684-3364

@ Philip Morris:
FAMI is fighting the City, HHC and Bellevue Hospital bureaucracy.
The patients in the psychiatric inpatient units, emergency units and admissions units need a discrete smoking area and not be forced to go Cold Turkey.
Helen Konopka

The New York Times
SUNDAY, FEBRUARY 19, 1995

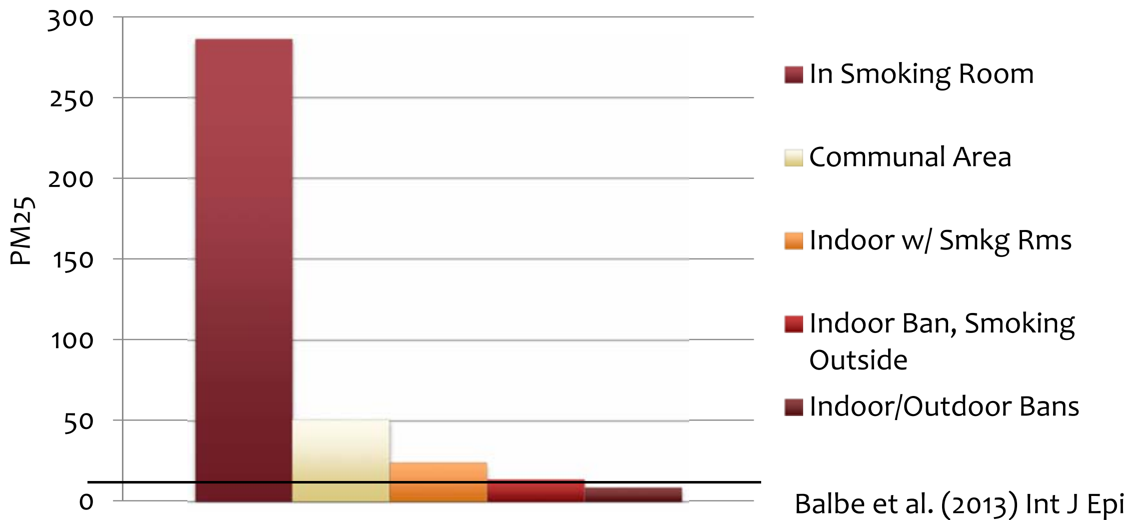
JCAHO ultimately "yielded to massive pressure from mental patients and their families, relaxing a policy that called on hospitals to ban smoking."

NY TIMES COMMENTING
FEB 2013

- *…Seem arrogant and cruel to take that [smoking breaks] away. If you were incarcerated in one of these institutions, you might not see it as a problem to shave 5-10 years off your sentence.*
- *let's see: these people are in a sense terminally ill. there is no cure for their mental disease. they will not have enjoyable, productive, creative lives. so their cigarettes should be witheld so they can live LONGER?*

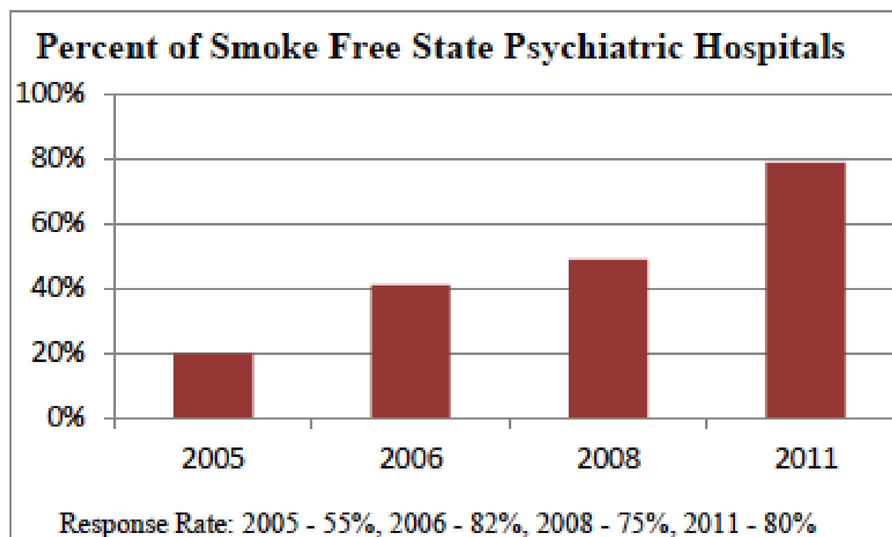
Secondhand Smoke in Mental Healthcare Settings

$PM_{2.5}$ of 10 µg/m³ is the lowest level at which total cardiopulmonary and lung cancer mortality has been shown to increase in response to long-term exposure (WHO)



Balbe et al. (2013) Int J Epi

TOBACCO BANS & STATE PSYCHIATRIC HOSPITALS (2005-2011)



NASMHPD Surveys 2005-2011

SMOKING BAN ≠ TREATMENT

* Langley Porter, 100% smokefree since 1988
* **N=100 smokers**
* **70%** used NRT during hospitalization
* **1** patient had tobacco on their treatment plan
* **2** were advised to quit smoking
* **3** received a DSM-IV diagnosis of Nicotine Dependence or Withdrawal
* **4** were provided NRT at discharge

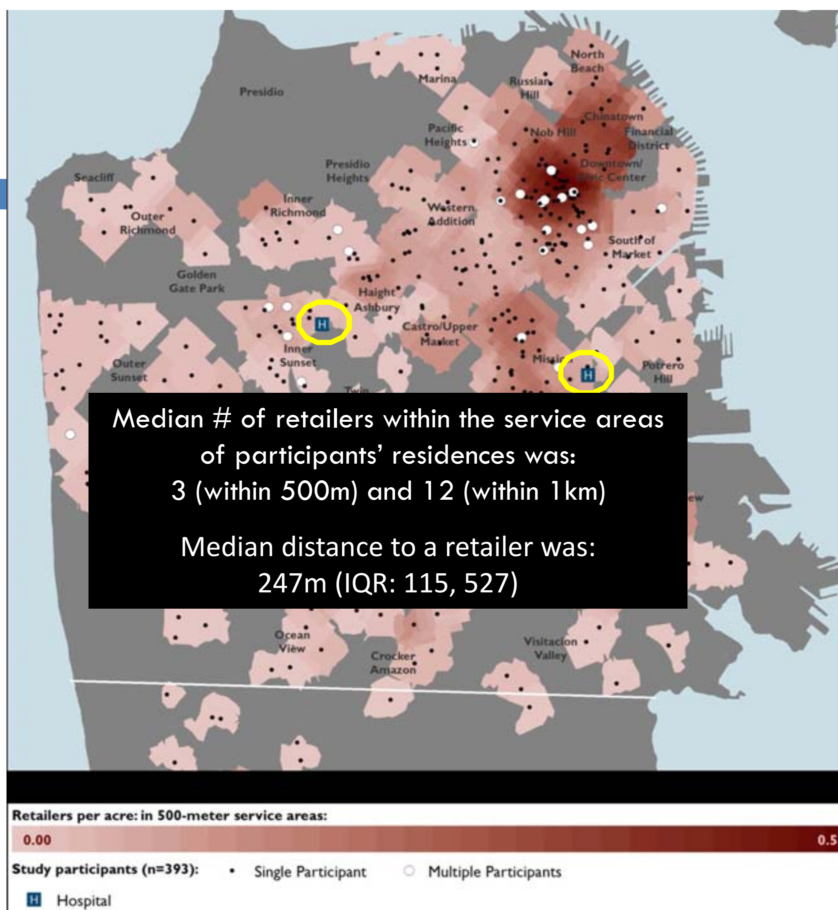
Prochaska, Fletcher, Hall & Hall (2006). Am J Addictions

RETURN to SMOKING: SMOKE-FREE ACUTE PSYCH HOSPITAL

Prochaska, Fletcher, Hall & Hall (2006). Am J Addictions

RESIDENTIAL EXPOSURES

Tobacco retailer density near persons with Serious Mental Illness living in SF Bay Area – 2xs more dense than average



Young-Wolf, Henriksen, Delucchi & Prochaska (in press). AJPH

TOBACCO RETAILERS & MH

- Retailer density associated with greater:
  - Psychosis 500m: $B = 2.9$, $p < .01$; 1km: B = 2.5, $p = .01$
  - Self-harm 500m: $B = 2.6$, $p = .01$; 1km: $B = 2.1$, $p = .03$
  - Interpersonal problems 500m: $B = 2.0$, $p = .04$
  - Nicotine dependence 500m: $B = 3.0$, $p < .01$; 1km: B= 2.5, $p = .01$
- Retailer density associated with lower:
  - Self-efficacy 500m: $B = -2.1$, $p = .01$; 1km: $B = -2.3$, $p = .03$
  - Motivation/Stage of Change: PC vs. C[1], P[2]

  [1]500m: $OR = 1.5$, $p = .04$; 1km: $B = 2.1$, $p < .01$

  [2]1km: $B = 2.0$, $p = .02$
- Proximity x Sex interaction ($B = 2.8$, $p = .01$)
  - Living closer associated with greater nicotine dependence for men ($r = .12$, $p < .01$) but not women ($r = -.03$, $p = .45$)

SMOKING & MENTAL ILLNESS: A HEALTH DISPARITY ISSUE

* Elevated prevalence of use
* Targeted marketing by the industry
* Serious health consequences
* Significant costs & social isolation
* Enabling environments
* **Lower access to treatment**
* Inadequate research base

2006 AAMC PRACTICE SURVEY: PSYCHIATRISTS

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

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

SMOKERS with BIPOLAR DISORDER: ONLINE SURVEY (N=685)

- Few reported a psychiatrist (27%), therapist (18%), or case manager (6%) ever advised them to quit smoking

Several reported ***discouragement to quit*** from mental health providers

Prochaska, Reyes, Schroeder, et al. (2011). Bipolar Disorders

SMOKING & MENTAL ILLNESS: A HEALTH DISPARITY ISSUE

- Elevated prevalence of use
- Targeted marketing by the industry
- Significant health consequences
- Significant costs & social isolation
- Enabling & stigma
- Smokier environments
- Lower access to treatment
- **Inadequate research base**

US TOBACCO TREATMENT CLINICAL PRACTICE GUIDELINES

- Literature base of more than 8,700 research articles
- < 30 randomized clinical trials treating tobacco dependence in smokers with mental illness or addictive disorders

Fiore et al. (2008). *Treating Tobacco Use and Dependence: 2008 Update.*

SMOKING & MENTAL ILLNESS Addressing Myths and Barriers

Top Barriers to Treating Tobacco 2006 AAMC Survey with 701 Psychiatrists

- 89% -- Patients not motivated to quit
- 83% -- More acute problems to address
- 80% -- Few cessation programs available
- 75% -- Patients usually fail to quit
- 72% -- Other practice priorities
- 65% -- Staff are unfamiliar with tobacco treatments
- 61% -- Limited time with patients
- 58% -- Lack of provider knowledge in tobacco cessation

Top Barriers to Treating Tobacco 2006 AAMC Survey with 701 Psychiatrists

- **89% -- Patients not motivated to quit**
- 83% -- More acute problems to address
- 80% -- Few cessation programs available
- 75% -- Patients usually fail to quit
- 72% -- Other practice priorities
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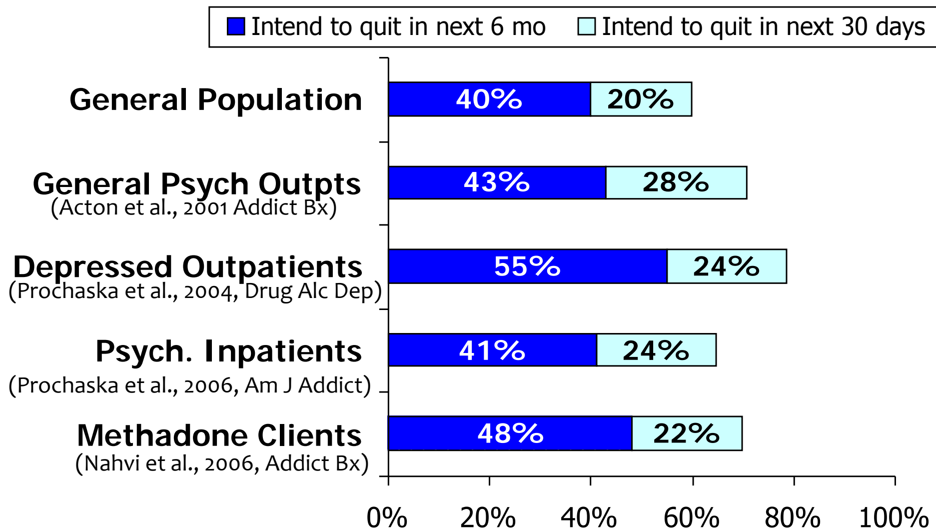
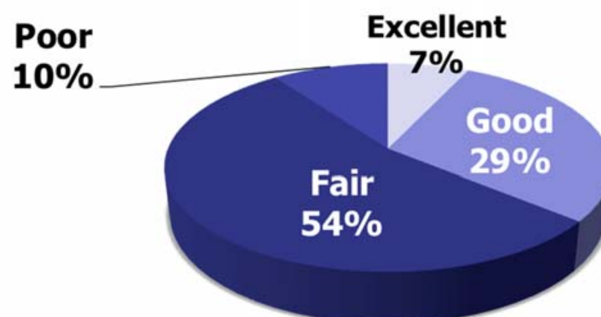
Just as Ready to Quit Smoking as the General Population



* No relationship between psychiatric symptom severity and readiness to quit

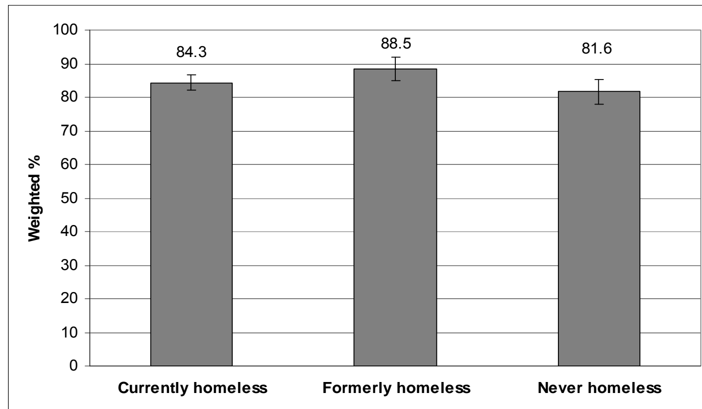
Quitting & MH Symptoms

Meta-analysis found quitting smoking is associated with long term reductions in depression, anxiety, and stress and improved positive mood states and quality of life, including among those with poor mental health. (Taylor et al., 2013 BMJ)



DESIRE to QUIT

* Interest in cessation programs is not significantly different from among low-income smokers seen in community health centers



Baggett, *Addiction* (2013)

ADDRESSING MYTHS & BARRIERS

- *Individuals with mental illness are just as motivated to quit smoking as the general population*

- **83% -- More acute problems to address**
- 80% -- Few cessation programs available
- 75% -- Patients usually fail to quit
- **72% -- Other practice priorities**
- 65% -- Staff are unfamiliar with tobacco treatments
- 61% -- Limited time with patients
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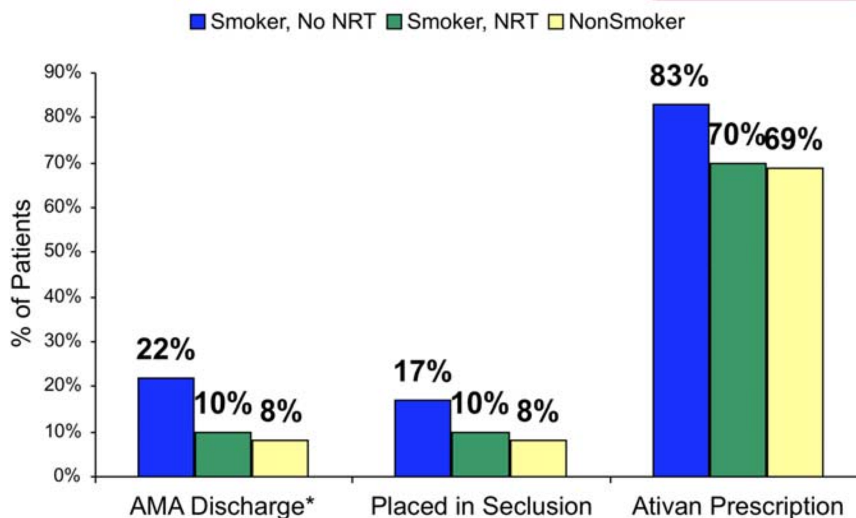
TOBACCO USE is an ACUTE TREATMENT ISSUE

* Smoking is predictive of future suicidal behavior
  * independent of depressive symptoms, prior suicidal acts, & other substance use (Breslau et al., 2005; Oquendo et al., 2004, Potkin et al., 2003).
* Poorer outcomes among patients with schizophrenia who smoke
  * Greater psychiatric symptoms, more frequent hospitalizations, higher medication doses (Dalack & Glassman, 1993; Desai et al., 2001; Ziedonis et al., 1994)

TOBACCO USE is ASSOCIATED with GREATER AMA RATES



Prochaska, Gill, & Hall. (2004) Psychiatric Services

PHARMACOKINETIC DRUG INTERACTIONS with SMOKING

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

* Caffeine
* Clozapine
* Fluvoxamine
* Haloperidol
* Olanzapine
* Phenothiazines
* Propanolol
* Tertiary TCAs
* Other medications: estradiol, naproxen, riluzole, ropinirole, tacrine, theophyline, verapamil, r-warfarin (less active), zolmitriptan

Smoking cessation may reverse the effect.

ADDRESSING MYTHS & BARRIERS

- *Individuals with mental illness are just as motivated to quit smoking as the general population*
- *Tobacco use is a leading cause of death for those with mental illness & smoking adversely impacts treatment*

- **80% -- Few cessation programs available**
- 75% -- Patients usually fail to quit
- 65% -- Staff are unfamiliar with tobacco treatments
- **61% -- Limited time with patients**
- 58% -- Lack of provider knowledge in tobacco cessation

TOBACCO TREATMENT GUIDELINES

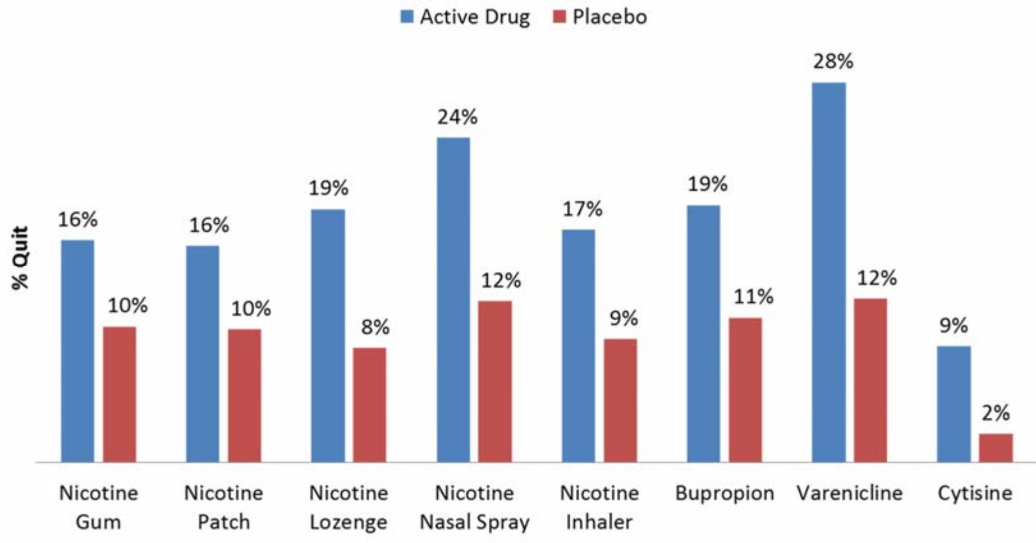
* All patients ought to be screened for tobacco use, advised to quit, and offered intervention
* All patients should be offered pharmacological treatment for quitting smoking, unless contraindicated
* There is a dose response relationship with the amount of contact provided

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

TOBACCO TREATMENTS with DEMONSTRATED EFFICACY

* Physician advice
* Formal smoking cessation programs
  * Individual counseling
  * Telephone and web counseling:
    * 1-800-QUIT-NOW
    * www.smokefree.gov
  * Group programs
* NRT, bupropion, varenicline
* With evidence, but not approved: clonidine, nortriptyline, cytisine

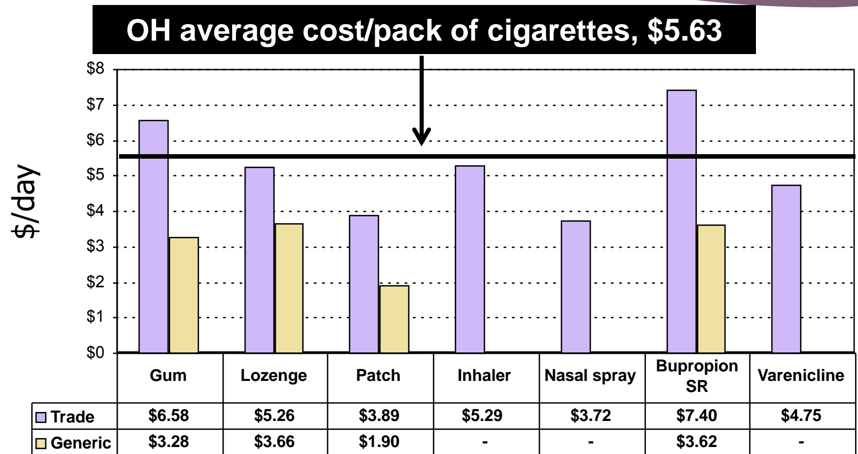
LONG-TERM (≥6 month) QUIT RATES for AVAILABLE CESSATION MEDICATIONS



Data adapted from *Cochrane Database Systematic Reviews* by Cahill et al. 2012*;* Stead et al. 2012.; and Hughes et al. 2007

COMPARATIVE DAILY COSTS of PHARMACOTHERAPY

OH average cost/pack of cigarettes, $5.63



	Gum	Lozenge	Patch	Inhaler	Nasal spray	Bupropion SR	Varenicline
Trade	$6.58	$5.26	$3.89	$5.29	$3.72	$7.40	$4.75
Generic	$3.28	$3.66	$1.90	-	-	$3.62	-

Cessation medication coverage via Medicare Part D and recommendations of the Affordable Care Act, when prescribed by a physician

ASK, ADVISE, REFER… to a quitline

- Referring patients to a toll-free quit line is simple and easily integrated into routine patient care
- Takes < 5 minutes
- Toll-free cessation counseling and many states over pharmacotherapy

Tel 800 QUIT NOW

CA QUITLINE

- Nearly 1 in 4 callers met criteria for current major depression
- At 2-months, those with depression much less likely to be quit (**19%**) than callers without depression (28%)
- *What are the unique challenges?*
- *How can we reach, engage, & best help smokers with current mental illness?*

Hebert et al. (2011) Am J Prev Med

VA TeleQuitMH COORDINATION PROGRAM EVALUATION

- EMR electronic consult
- Program marketing to providers
- Proactive outreach
- Medication coordination
- Self-help materials
- Smoking cessation counseling
  - VA
  - Quitline w/ warm transfers
- Follow-up

Participating Sites:
NY Harbor HCS, NY/NJ
Bronx VAMC, NY/NJ
NJ HCS, NJ
Bedford VAMC, MA
White River Junction VAMC, VT/NH
Providence VAMC, RI

Rogers et al. (2013). Addict Sci Clin Practice (Study protocol)

ADDRESSING MYTHS & BARRIERS

- *Individuals with mental illness are just as motivated to quit smoking as the general population*
- *Tobacco use is a leading cause of death for those with mental illness & smoking adversely impacts treatment*
- *Number of treatments are available including the quitline*
- **75% -- Patients usually fail to quit**
- 65% -- Staff are unfamiliar with tobacco treatments
- 58% -- Lack of provider knowledge in tobacco cessation

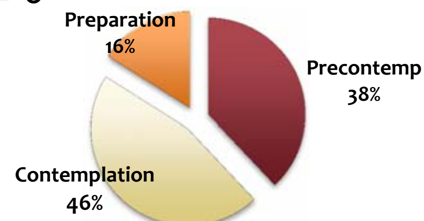
TREATING TOBACCO USE in INPATIENT PSYCHIATRY

- 100% smoke-free unit
- Stage-tailored expert system, stage-tailored manual, 10 wk nicotine patch vs. Usual care
- 224 patients enrolled
- Full range of psychiatric diagnoses
- 79% recruitment rate
- 81% retention at 18 months

Prochaska et al., 2014, Am J Pub Health

SAMPLE (N=224)

- Dx: 47% unipolar depression, 25% bipolar depression, 15% schizophrenia spectrum, 13% other
- 88% involuntarily admitted
  - Suicidal (75%), homicidal (2%), gravely disabled (10%)
- Functioning (SF12): mental health (M=28±13)
  physical health (M=49±13)
- Length of hospitalization, M = 7 days ± 6
- Regular smoker M = 20 years (±14)
- Cigarettes/day M = 19 (±13)
- 75% smoked $\leq$ 30 min of waking



Intervention Components

Stage-tailored Expert System
@ Intake, 3 & 6 months

Stage-tailored Manual

Counseling Session
15 to 30-minutes

10 weeks Nicotine Patch

RESEARCH AND PRACTICE

Efficacy of Initiating Tobacco Dependence Treatment in Inpatient Psychiatry: A Randomized Controlled Trial

Judith J. Prochaska, PhD, MPH, Stephen E. Hall, MD, Kevin Delucchi, PhD, and Sharon M. Hall, PhD

Objectives. We evaluated the efficacy of a motivational tobacco cessation treatment combined with nicotine replacement relative to usual care initiated in inpatient psychiatry.

Methods. We randomized participants (n = 224; 79% recruitment rate) recruited from a locked acute psychiatry unit with a 100% smoking ban to intervention or usual care. Prior to hospitalization, participants averaged 19 (SD = 12) cigarettes per day; only 16% intended to quit smoking in the next 30 days.

Results. Verified smoking 7-day point prevalence abstinence was significantly higher for intervention than usual care at month 3 (13.9% vs 3.2%), 6 (14.4% vs 6.5%), 12 (19.4% vs 10.9%), and 18 (20.0% vs 7.7%; odds ratio [OR] = 3.15; 95% confidence interval [CI] = 1.22, 8.14; $P = .018$; retention > 80%). Psychiatric measures did not predict abstinence; measures of motivation and tobacco dependence did. The usual care group had a significantly greater likelihood than the intervention group of psychiatric rehospitalization (adjusted OR = 1.92; 95% CI = 1.06, 3.49).

Conclusions. The findings support initiation of motivationally tailored tobacco cessation treatment during acute psychiatric hospitalization. Psychiatric severity did not moderate treatment efficacy, and cessation treatment appeared to decrease rehospitalization risk, perhaps by providing broader therapeutic benefit. (*Am J Public Health.* Published online ahead of print August 15, 2013: e1–e9. doi:10.2105/AJPH.2013.301403)

Tobacco use among persons with mental illness is 2 to 4 times as great as among the general US population, with costly and deadly consequences.[1–3] Persons with serious mental illness have an average life expectancy 25 years shorter than in the general population; the chief causes of death are chronic tobacco-related diseases such as cardiovascular disease, lung disease, and cancer.[4] Annually, 200 000 of the 435 000 deaths in the United States attributed to smoking are believed to be among individuals with mental illness or addictive disorders.[5]

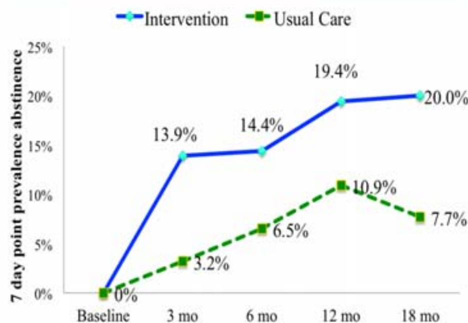
Despite the significant health effects, smoking remains ignored or—even worse—encouraged in mental health settings.[6,7] A minority of patients with mental illness report that a mental health provider has advised them to quit smoking, and some report active discouragement of quitting.[8,9] Staff at some psychiatric hospitals still smoke with patients, rationalized as effective for building clinician–client rapport.[10]

Since 1993, US hospitals have banned tobacco use under mandate of the Joint Commission on the Accreditation of Healthcare Organizations.[11] In response to outcries from patient advocacy groups, however, the commission permitted an exception for inpatient psychiatry; similar policy exemptions have been granted to psychiatric facilities in Europe and Australia.[12–14] Nearly 20 years later, more than half of state inpatient psychiatry units in the United States permit smoking, and half sell cigarettes to patients.[15] Even among hospitals

patients.[18] Yet fewer than 2 dozen randomized clinical trials have treated smoking in persons with current mental illness,[19] and the only published randomized trial examining inpatient psychiatry for initiating tobacco treatment was conducted with adolescents. The intervention group increased in motivation to quit, but the treatment effect on abstinence was not significant.[20] The American Psychiatric Association identifies psychiatric hospitalizations as an ideal opportunity to treat tobacco dependence.[21] Hospital-based tobacco treatment tri-

increase following treatment of tobacco use. Tobacco treatment trials with smokers with clinical depression, posttraumatic stress disorder, and schizophrenia, however, have demonstrated no adverse effect of treating tobacco dependence or of quitting smoking on mental health recovery.[24–29]

Research has not examined the impact of treating tobacco dependence during an acute psychiatric hospitalization on mental health recovery. Patients for whom inpatient psychiatric care is deemed necessary typically present



OR=3.15, p=0.018 for condition in a GEE-based logistic regression

Significantly greater rehospitalization rate for UC (140) than Tx (94), p=0.036

Highly cost-effective: **$428 per QALY***

* Barnett et al. (in press). J Clinical Psychiatry

IMPACT on MENTAL HEALTH SERVICE UTILIZATION

* 46% psychiatric re-hospitalization rate
  * State data: 44% psychiatric re-hospitalization rate
* 234 Re-hospitalizations:
  * Unrelated to quit status
  * Related to African American race, psychosis symptoms at baseline, prior psych hospitalizations, unstable housing, & study condition ($p=.036$)
    * Usual care = 140 vs. Treatment = 94

MODEL PREDICTING REHOSPITALIZATION

Parameter	OR (95% CI)
Condition (usual care)	**1·92 (1·06, 3·49)**
Race (African American)	3·04 (0·97, 9·58)
Psychotic Symptoms (BASIS-24)	**1·43 (1·09, 1·89)**
Education in years	1·06 (0·97, 1·16)
Unstably housed	**2·09 (1·12, 3·92)**
Quit during 18-month trial	0·56 (0·28, 1·14)
Psychiatric Hospitalization History	
First hospitalization (reference)	
1 to 2 prior hospitalizations	1·60 (0·70, 3·63)
3 to 7 prior hospitalizations	2·13 (0·95, 4·77)
8+ prior hospitalizations	**3·21 (1·37, 7·54)**

URBAN PUBLIC HOSPITAL: INPATIENT PSYCHIATRY

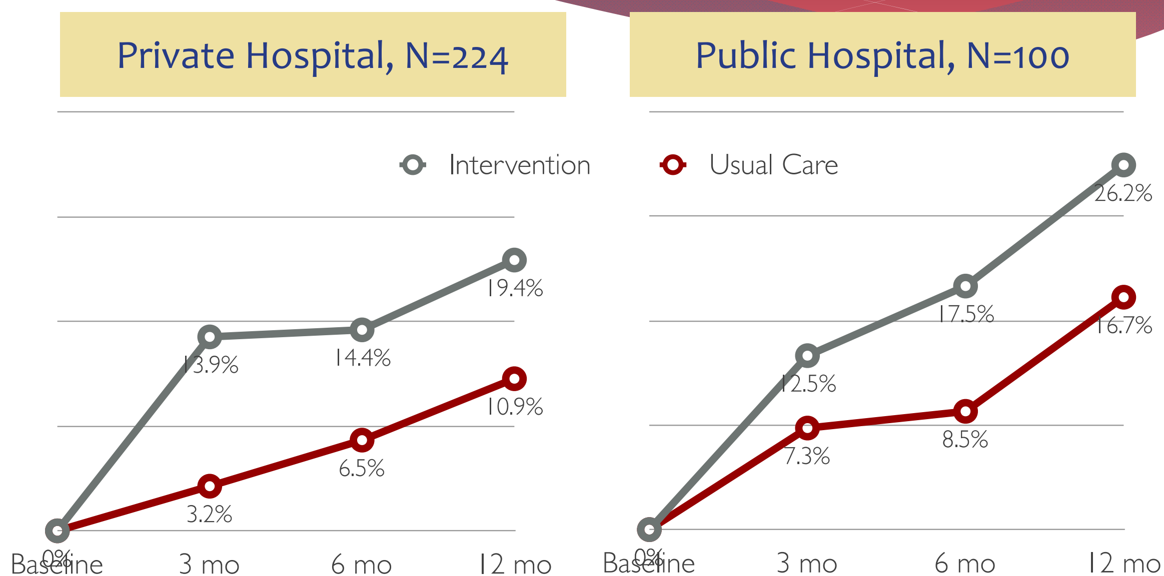
	LPPI	SFGH
N	224	100
Recruitment Rate	79%	71%
Age in years	40 (14)	40 (11)
Female	40%	35%
Ethnicity		
White	63%	**44%**
African American	9%	**27%**
Hispanic	5%	**9%**
Asian American	7%	**11%**
Multiethnic/other	16%	**9%**
Education in years	14 (3)	13 (3)
Income <$20,000	60%	**81%**
Homeless	5%	**39%**
Private/self-pay	53%	**1%**

Hickman et al. (in press)
Nicotine & Tobacco Research

Replication Study in County Hospital

Private Hospital, N=224

Public Hospital, N=100



TREATING TOBACCO DEPENDENCE in DEPRESSED SMOKERS

322 depressed smokers recruited from four outpatient psychiatry clinics

Stepped Care Intervention

Stage-based expert system counseling

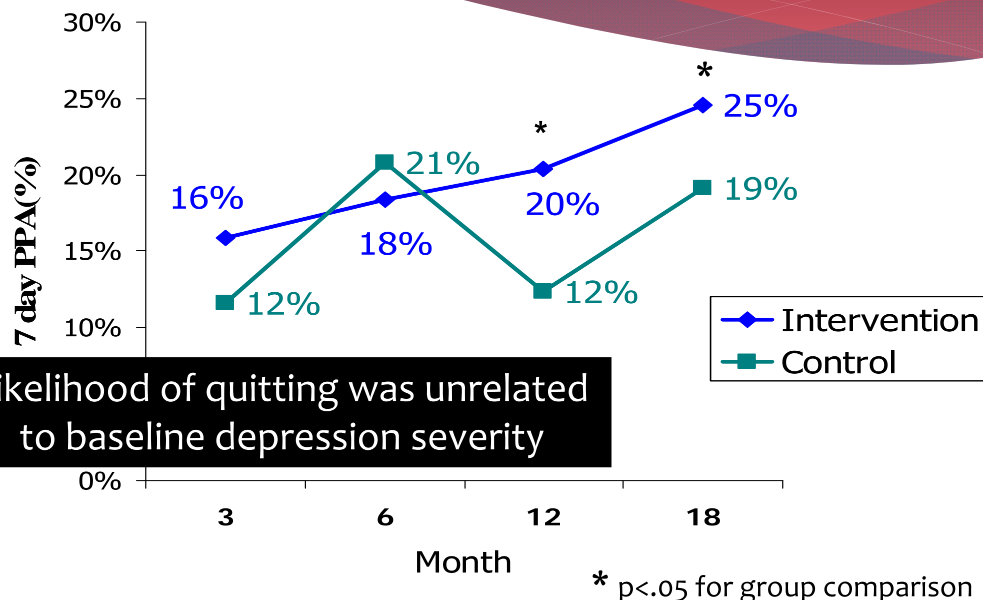
Nicotine patch

6 session individual counseling

Brief Contact Control

Hall et al., 2006. Am J Public Health

ABSTINENCE RATES by TREATMENT CONDITION



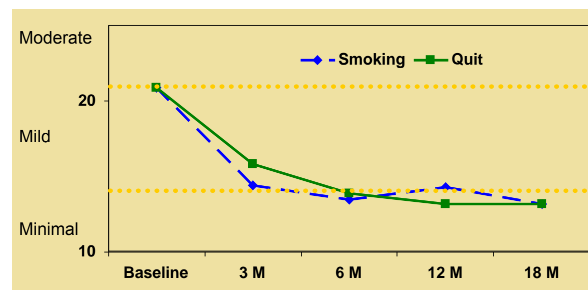
Likelihood of quitting was unrelated to baseline depression severity

* p<.05 for group comparison

DEPRESSION & QUITTING SMOKING

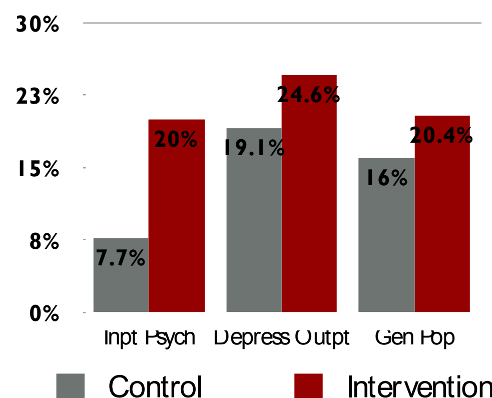
- No increase in suicidality
  - Quit: 0% vs Smoking: 1-4%
- No increase in hospitalization
  - Quit: 0-1% vs. Smoking: 2-3%
- Comparable improvement in emotional problems
- No difference in use of THC, stimulants, opiates
- Less alcohol use among those who quit smoking

Prochaska et al., 2008,
Am J Public Health



TREATING DEPRESSED OUTPATIENTS & PSYCHIATRIC INPATIENTS

- Efficacious for smokers with clinical depression (N=322)
- Efficacious for smokers hospitalized for severe mental illness (N=224)
- Comparable quitting to general population
- No harm to mental health recovery
- Comparable effects in a diverse sample (N=100)



Hall et al. (2006) AJPH; Prochaska et al. (2008) AJPH

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 1x a week for 5 weeks + 1 follow-up
  * Bupropion, nicotine patch, gum, spray
* Usual care (UC): referral to VA quit smoking 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

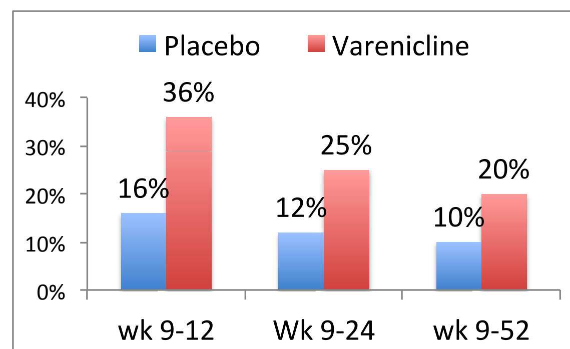
INTEGRATING TOBACCO TREATMENT within PTSD SERVICES

- Multi-site RCT with 943 clients from 10 VA Medical Centers, train-the-trainer model
- Integrated care (IC) vs. Usual care (UC)
- Cessation outcomes: **2-fold increase in quitting**
  - 18-mo 7 day PPA: IC 18.2% vs. UC 10.8%
- Strongest predictor of tx effect: # of counseling sessions received
- Quitting had no detriment on PTSD symptoms

McFall et al. (2010) JAMA

VARENICLINE USE in SMOKERS with DEPRESSION

- 525 adults smokers with stably treated or past depression
- Significant treatment effects at all time points ($p \leq .001$)
- NS difference in suicidal ideation or worsening
- Most frequent AE:
  - Nausea in 27%
- 2 deaths in varenicline group during non-tx phase



Anthenelli et al. (2013) Arch Intern Med

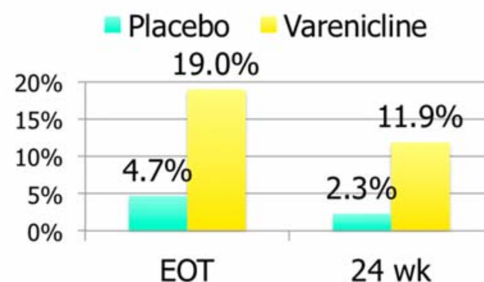
VARENICLINE USE in SMOKERS with SCHIZOPHRENIA

- 12wk open label trial, N=112 stable outpatients
  - 28-day continuous abstinence = **34%**
  - Improved psychiatric, depressive & NW sxs
    - Pachas, Cather, Pratt et al. 2012 J Dual Diag

- 12 wk RCT

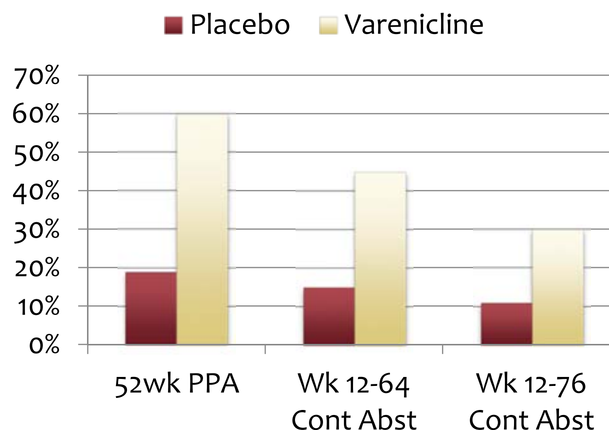
N=127 stable outpatients
varenicline was well tolerated
no evidence of sx exacerbation

Williams et al. (2012) J Clin Psychiatry



VARENICLINE for RELAPSE PREV in SCHIZOPHRENIA & BIPOLAR

- N = 87 participants
- 2+ wks cont abst @ wk 12 of open treatment
- Randomized to CBT with varenicline vs. placebo from wks 12-52
- Followed to wk 76
- Significant all time pts



Evins et al. (2014) JAMA

2 META-ANALYSES of BUPROPRION FOR QUITTING SMOKING in PERSONS with SCHIZOPHRENIA

- 6 RCTs, N = 260 total (19 – 59)
- EOT: RR = 2.57 (95% CI 1.35, 4.88)
- 6 mo FU: RR = 2.78 (95% CI 1.02, 7.58)
- Gen Pop: RR = 1.69 (95% CI 1.53, 1.85)

Tsoi et al. (2010) Cochrane Lib; Banham & Gilbody (2010) Addiction

Bupropion for quitting smoking found to be well tolerated in patients with schizophrenia who are stabilized on an adequate antipsychotic regime

FDA BOXED WARNINGS

- On July 1, 2009, varenicline and bupropion received Boxed Warnings concerning the risk of serious neuropsychiatric symptoms:
  - *Patients should be advised to stop taking varenicline or bupropion and to contact a health-care provider immediately if they experience agitation, depressed mood, and any changes in behavior that are not typical of nicotine withdrawal, or if they experience suicidal thoughts or behavior.*

Cochrane Network Meta-Analysis: Serious Adverse Events

- 21 Bupropion studies (n=7859):
  - Event rates for any SAE: 2.5% for bupropion, 2.2% for placebo
    - Neuropsych event rate: 0.8% (B) and 0.9% (P)
  - **No excess** of neuropsychiatric (RR 0.88; 95% CI 0.31 to 2.50)
- 14 Varenicline trials (n=6333):
  - Event rates for any SAE: 2.1% for varenicline, 2.0% for placebo
    - Neuropsych event rate: 0.15% (V) and 0.21% (P)
  - **No excess** of neuropsychiatric (RR 0.53; 95% CI 0.17 to 1.67)

Cahill et al., 2013 Cochrane Review

Meta-Analysis: Varenicline & Neuropsychiatric Adverse Events

Thomas et al. 2015 BMJ

- 39 trials, N=10,761 participants
- Relative to placebo, **no increased** risk of:
  - Suicide or attempted suicide: OR=1.67 (.33, 8.57)
  - Suicidal ideation: OR=0.58 (.28, 1.20)
  - Depression: OR=0.96 (0.75, 1.22)
  - Irritability: OR=0.98 (.81, 1.17)
  - Aggression: OR=0.91 (.52, 1.59)
  - Death: OR=1.05 (.47, 2.38)
- **Increased risk** of sleep disorders (1.63, 1.29-2.07), insomnia (1.56, 1.36-1.78), abnormal dreams (2.39, 2.05, 2.77), and fatigue (1.28, 1.06-1.55)
- **Decreased risk** of anxiety (0.75, .61-.93)

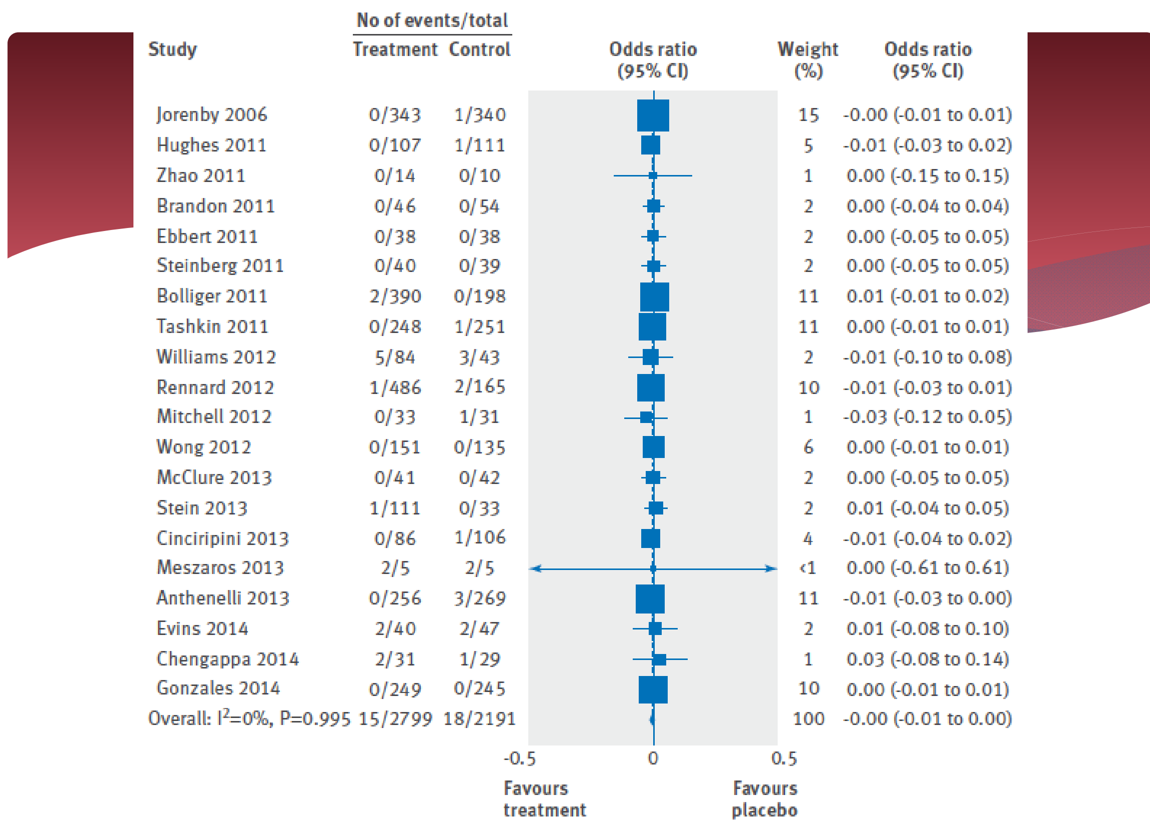


Fig 3 | Forest plot of risk of suicidal ideation events (Mantel-Haenszel risk difference) associated with varenicline use in 20 placebo controlled randomised trials

Observational Studies: Varenicline & Neuropsychiatric Adverse Effects

Study	Sample	Outcome	Group/Analyses	Compare	Effect
Meyer et al. 2013	Var: 19,933 NRT: 15,867	NPS hospital. (prim diag) in 30 days	New user, propensity score (PS) matched	V vs. NRT	1.14 (0.56-2.34)
		NPS hospital. (any diag) in 30 days	New user, PS-matched	V vs. NRT	0.79 (0.50-1.24)
		NPS outpt visits	New user, PS-matched		**0.71 (0.60-0.84)**
Pasternak et al. 2013	Var:17,935 Bup:17,935	NPS ER visit or hosp. in 30 days	New user, PS-matched	V vs. Bup	0.85 (0.55-1.30)
Thomas et al. 2013	Var:31,260 NRT:81,545	Suicide or nonfatal self-harm in 90 days	New user, adjusted models	V vs. NRT	0.88 (0.52-1.49)
		Start antidepressants in 90 days (no prior)	New user, adjusted models	V vs. NRT	**0.75 (0.65-0.87)**

SUMMARY: TOBACCO TREATMENT in SMOKERS with MENTAL ILLNESS

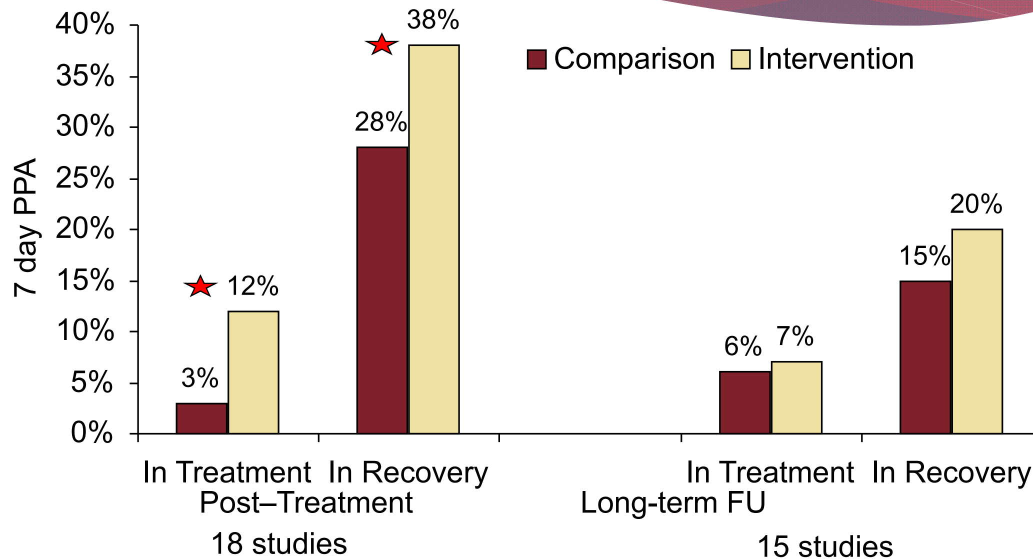
- Support for currently available interventions
  - Treatments matched to motivation
  - NRT, bupropion, varenicline
- Tobacco treatment does not appear to harm mental health recovery
- Integration into mental health treatment settings increases receipt of care and abstinence rates

TOBACCO CESSATION DURING ADDICTIONS TREATMENT or RECOVERY

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

Prochaska, Delucchi & Hall (2004) JCCP

OVERALL SMOKING CESSATION RATES



DOES QUITTING SMOKING 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

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

PRICE SENSITIVITY

* Smoking by individuals with substance abuse or mental disorders was significantly **sensitive to cigarette prices**:
  * 10% increase in price associated with 18% decline in smoking participation
* Limitations:
  * Cross-sectional (cannot prove causation)
  * Quantity of use not available
  * Data from 2001 to 2002

Ong et al. (2010) AJPH

Smoking Bans in Restaurants & Bars

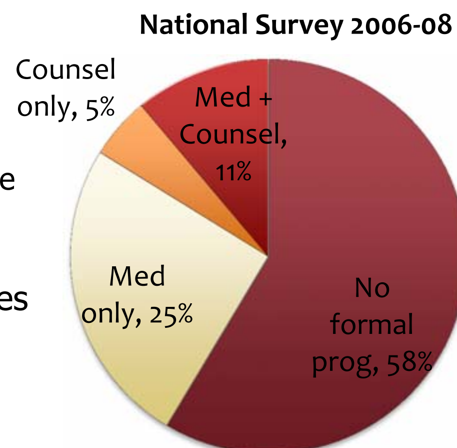
* **Statewide smoking bans in restaurants and bars associated with quitting smoking:**
  * 6% decline among men with an alcohol use disorder
  * 10% decline among women with an anxiety disorder
  * No effect for smokers with mood disorders

Smith, Young-Wolff, et al. (2014) NTR

TOBACCO BANS in DRUG TREATMENT PROGRAMS

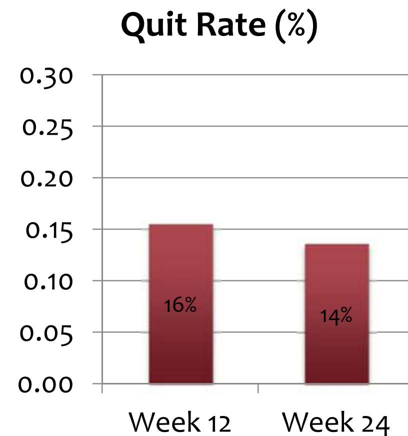
* National survey of drug treatment programs
  * 2006-08: 897 surveyed, 86% screened for tobacco use, 42% provided treatment
  * 2009-2010 follow-up: problems with discontinuing services:
    * Staff disinterest, inadequate staff skills, time demands, and having a less medically-oriented treatment approach
* 2008 NY State mandated addiction tx facilities ban tobacco & offer cessation treatment
  * **Increased screening & cessation treatment practices**

National Survey 2006-08



ADDICTION among the UNHOUSED

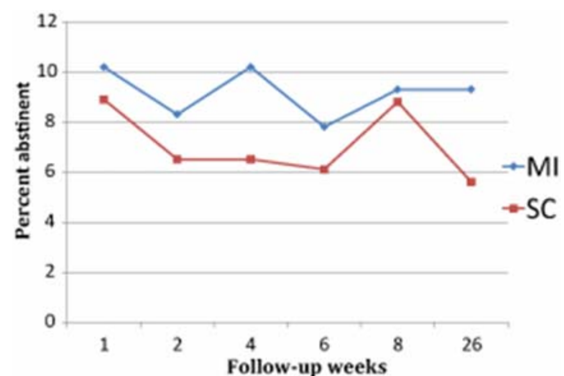
* N=58 homeless smokers in NYC
* 12-wk program combining group motivational interviewing (MI) + CBT and pharmacotherapy
* Ave of 7 sessions attended
* 67% used 1+ cessation med
* 75% completed 12-wk EOT survey
* CO-verified abstinence: 12 & 24 wks



Shelley et al., (2010) Am J Health Behavior

RCT: TREATING TOBACCO in the UNHOUSED

* Tested efficacy of MI + NRT patch
* 430 homeless in Minneapolis/St. Paul, MN
* Six sessions of MI (15-20 min)
  * Smoking cessation
  * Adherence to NRT
- Great interest in treatment
- NS treatment effect size



Okuyemi et al., (2013) Addiction

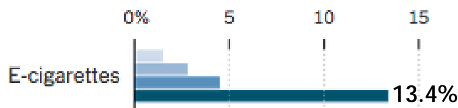
Adolescents & Tobacco

Gateway In?

In 2013, >263,000 youth who had never smoked a cigarette used an e-cigarette

	0%	5	10	15
E-cigarettes				13.4%

In 2014, e-cigarette use tripled:
- **2.4 million** US youth used e-cigs



4.6 million US youth continue to be exposed to nicotine

TOBACCO TREATMENT in TEENS

* 48 published RCT with adolescents (Sussman, 2006)
* No unequivocal successes
* Promising Approaches:
  * Stage-based treatments
  * Cognitive behavioral strategies
  * Multicomponent treatments
* Nicotine patch well tolerated, safe, and rarely abused among adolescents (Hyland, 2005; Killen, 2004)

HOSPITAL SMOKING BAN & TEEN ADDICTION TREATMENT

* Chart review
* Sole adolescent hospital-based addictions tx program in northern two thirds of British Columbia, Canada
* Mar 2001-Dec 2005, partial to full to partial ban
* Total smoking ban no effect on adolescent smokers:
  * Seeking treatment at the facility
  * Completing treatment

Callaghan et al. (2007) J Subst Ab Tx

TREATING TOBACCO with YOUTH in INPATIENT PSYCHIATRY

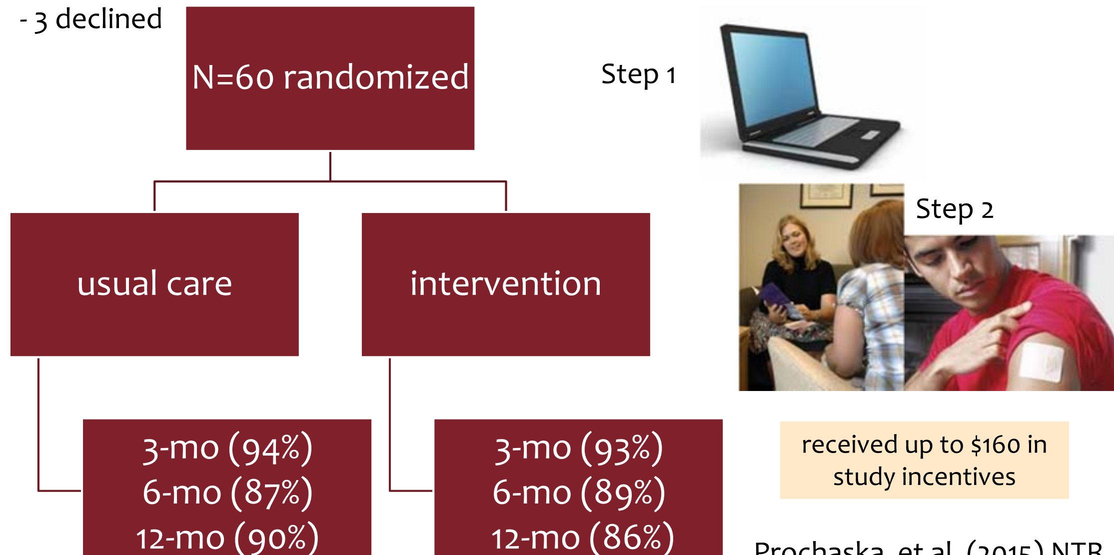
- Randomized trial of motivational interviewing (MI) vs. brief advice for smoking cessation
  - Two 45-min sessions and offered 8 weeks NRT
- 191 youth age 13-17 from inpatient psychiatry
- No advantage of MI in smoking outcomes
- MI more likely to increase self-efficacy and intention to change in those with low intention

Brown et al. (2003) Tobacco Control

SPARK STUDY: RCT

Recruited from 17 MH settings in SF Bay Area, 110 screened

- 47 ineligible: *lifetime cigarettes < 100, age > 25, lack of contact information, plans to relocate out of area, not in MH treatment*
- 3 declined



Prochaska et al. (2015) NTR

TREATMENT ADAPTATIONS

- Adapted computer images and tailored feedback
  - e.g., reference to school, parents, peers, clubs/sports
- 12-wk CBT cessation manual (Brown et al., 2003)
  - attended to peer relationships, family influences, and the co-use of alcohol and illicit drugs
- Young adult counselors

Prochaska, Fromont et al. (2013) NTR

Sample Descriptives

	Boys	Girls
	n = 29	*n* = 31
Age (years)	19.7 (3.0)	19.3 (2.9)
Ethnicity		
Caucasian	41.4%	38.7%
Hispanic	24.1%	9.7%
African American	6.9%	9.7%
Asian American	10.3%	3.2%
Multiracial/other	17.3%	38.7%
Education (years)	11.2 (3.1)	11.9 (2.1)
Past month # days with mental health visits	8.5 (8.9)	8.5 (8.0)
Lifetime psychiatric hospitalization	51.7%	71.0%
Trauma exposed	58.6%	67.7%
Depression/internalizing scale *z*-score	−0.23 (.96)	0.21 (.96)
Hears or sees things others do not	13.8%	27.6%
Past month substance use		
Alcohol	58.6%	58.1%
Marijuana	51.7%	32.3%
Other illicit drug	17.2%	25.8%
Past 30 days treated for alcohol or drugs	6.9%	16.7%
History of drug overdose	13.8%	35.5%

Smoking Characteristics

	Boys	Girls
	n = 29	n = 31
Age first tried smoking	12.9 (3.2)	13.7 (2.6)
Years smoking regularly (years)	4.0 (2.6)	3.1 (1.7)
Daily smoker	51.7%	48.4%
Cigarettes/day	8.2 (5.7)	6.2 (5.8)
$ spent past month on tobacco (median, IQR)	$30 (10, 60)	$25 (10, 64)
Use of tobacco products other than cigarettes*	62.1%	19.4%
Smoke within 30 min of waking	34.5%	41.9%
Smoking stage of change	55.2%	48.4%
Precontemplation	27.6%	45.2%
Contemplation	17.2%	6.5%
Preparation		
Past year 24-hr quit attempt	48.3%	60.0%
Thoughts about abstinence		
Desire to quit	5.8 (2.5)	4.5 (2.7)
Perceived success with quitting	4.9 (2.8)	4.3 (2.4)
Anticipated difficulty staying quit	6.9 (2.9)	6.5 (2.3)
No goal to quit	27.6%	19.4%
Parent smokes	48.3%	44.8%
Home is smoke-free	41.4%	58.1%
3 or more of 5 closest friends smoke*	75.9%	48.4%

Note. IQR, interquartile range.
*$p \leq .05$ for test of difference by gender.

RESULTS

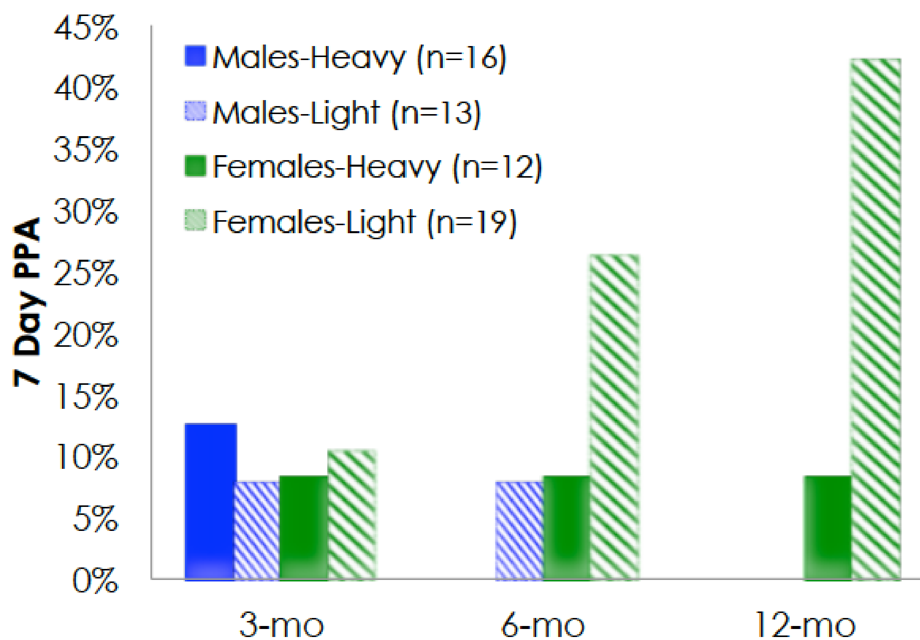
- 47% reduced cigarettes/day from baseline
  - 20% reduced cpd by 50%+
- 80% made a 24-hr quit attempt
- Abstinence at 3, 6, 12-mo fu
  - 11%, 13%, 17% (missing=missing)
  - 10%, 12%, 15% (missing=smoking)
- No difference by treatment group
  - all p-values > 0.300

PREDICTORS of 12-MO ABSTINENCE

- **Gender**: AOR = 8.9, 95% CI = 1.8, 44.4
- **Heaviness of smoking***: AOR = 4.5, 95% CI = 1.0, 21.0
- Condition (p=.477), use of other tobacco products (p=.722), # close friends who smoke (p=.086), hearing voices (p=.760), depression/internalizing symptoms (p=.655), trauma exposure (p=.693), and residing at home (p=.933) all NS
  - Entry did not influence strength of associations of gender and heaviness of smoking with abstinence

*Median split at 7+ cpd vs. < 7 cpd

Results, missing=smoking



THOUGHTS about ABSTINENCE

- From baseline to 12-months:
  - **Girls increased in desire to quit** (M = 2.0, SD = 3.3) more than boys (M = 0.3, SD = 2.8) ($p = .033$, $F(1,59) = 4.78$)
- Baseline heaviness of smoking unrelated to thoughts about abstinence, mental health indices, and exposure to parent and peer smoking (all $p > .40$)

CONCLUSIONS

- Adolescent/young adult smokers with mental illness complex group to engage and effectively treat for tobacco use
  - Particularly heavier smokers and boys
- Girls increased in desire to quit
- Girls and lighter smokers quit with minimal support
  - All 9 girls who were quit at 12 mo were residing at home with parents, suggestive of a supportive parenting effect
- Future research: engaging young smokers into cessation programs with larger sample sizes to identify the determinants of gender differences

TREATING TOBACCO with YOUTH in ADDICTIONS TREATMENT

* Randomized, controlled trial of 54 youth age 13-18 in outpatient substance abuse treatment
* 6-session Smoking Reduction and Cessation (SRC) vs. waitlist control
* More teens in the SRC group reported cessation attempts and abstinence at all time points (3 mo FU significant)
* Tobacco cessation intervention appeared to enhance substance abuse treatment outcomes

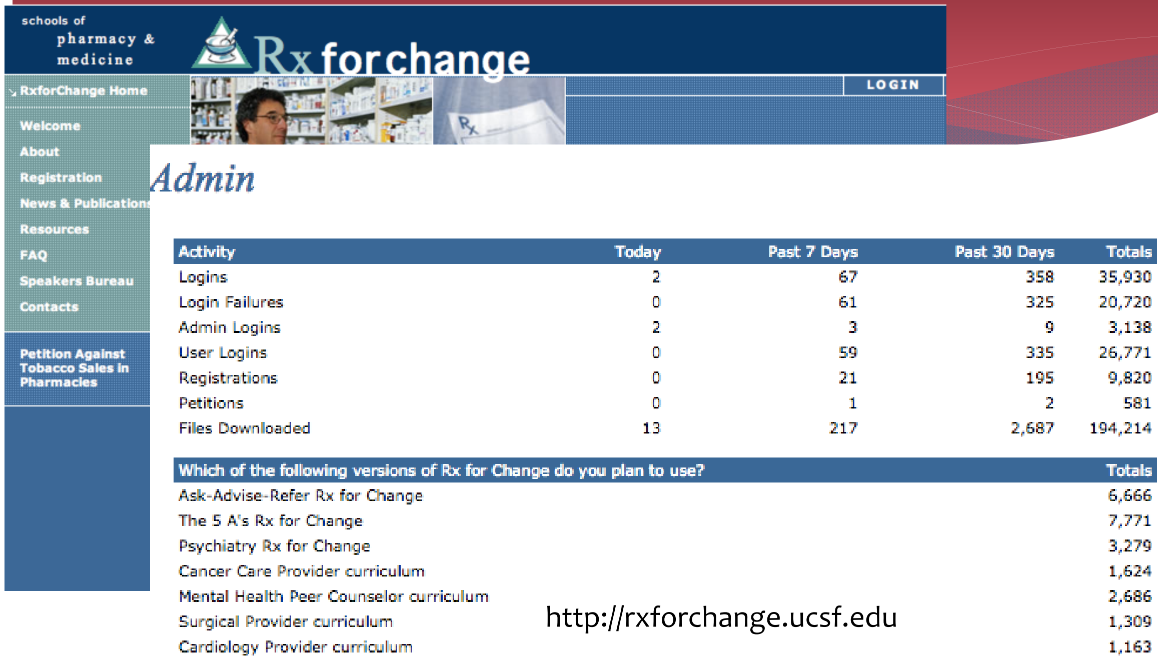
(Myers & Brown, 2005; Myers & Prochaska, 2008)

ADDRESSING MYTHS & BARRIERS

- *Individuals with mental illness are just as motivated to quit smoking as the general population*
- *Tobacco use is a leading cause of death for those with mental illness & smoking adversely impacts treatment*
- *Number of treatments are available including the quitline*
- *Smokers with mental illness can quit*

- **65% -- Staff are unfamiliar with tobacco treatments**
- **58% -- Lack of provider knowledge**

PSYCHIATRY RX for CHANGE



Admin

Activity	Today	Past 7 Days	Past 30 Days	Totals
Logins	2	67	358	35,930
Login Failures	0	61	325	20,720
Admin Logins	2	3	9	3,138
User Logins	0	59	335	26,771
Registrations	0	21	195	9,820
Petitions	0	1	2	581
Files Downloaded	13	217	2,687	194,214

Which of the following versions of Rx for Change do you plan to use?	Totals
Ask-Advise-Refer Rx for Change	6,666
The 5 A's Rx for Change	7,771
Psychiatry Rx for Change	3,279
Cancer Care Provider curriculum	1,624
Mental Health Peer Counselor curriculum	2,686
Surgical Provider curriculum	1,309
Cardiology Provider curriculum	1,163

http://rxforchange.ucsf.edu

DISSEMINATION: WESTERN US

* 28 PROGRAMS REPRESENTED (45 faculty)
  * California: 16 (24)
  * Washington: 4 (7)
  * Arizona: 2 (4)
  * Colorado: 2 (4)
  * Nevada: 1 (2)
  * New Mexico: 1 (2)
  * Utah: 1 (1)
  * Hawaii: 1 (1)

A national effort to increase surveillance, research, and treatment is needed.

Williams et al. (2013) AJPH

THINK GLOBALLY, ACT LOCALLY

TOBACCO-FREE

A tobacco-free agency is a treatment setting that has policies, training, assessments, and services in place to protect clients and staff from secondhand smoke exposure and smoking cues and is aimed at supporting client and staff efforts to quit smoking and live life tobacco-free. Successful agency attention to tobacco control requires:

1. Written policy **banning tobacco** (and e-cigarettes) from agency setting
2. Written policy requiring **zero evidence** of tobacco use for staff at work
3. **Training of staff** in the treatment of tobacco dependence
4. Availability of **cessation treatment for staff** who smoke
5. **Assessment** of client tobacco use (and e-cigarettes) with documentation
6. Tobacco **treatment planning** for all smokers to include FDA-approved cessation **pharmacotherapy**, such as NRT and **cessation support**
7. **Referrals** for cessation treatment, such as the state quitline

AGENCY READINESS

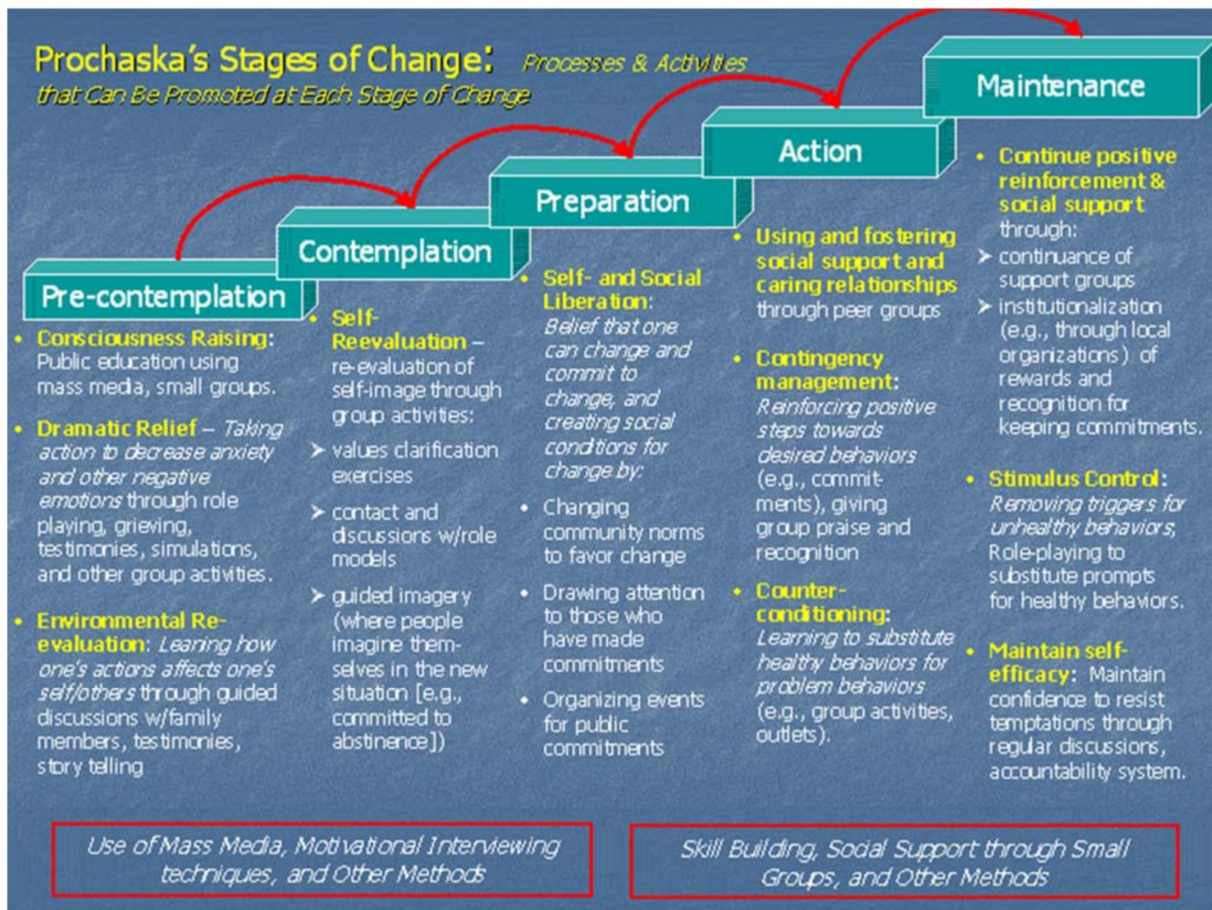
In your opinion, has your agency done what it can to be a tobacco-free agency?

- ❑ No, and it does not intend to within the next 6 months.
- ❑ No, but it intends to within the next 6 months.
- ❑ No, but it intends to within the next 30 days.
- ❑ Yes, it has, but for less than 6 months.
- ❑ Yes, it has for more than 6 months.

STAFF READINESS

Given your role at the agency, have you done what you can to get involved in making your agency tobacco-free?

- ❑ No, and I do not intend to within the next 6 months.
- ❑ No, but I intend to within the next 6 months.
- ❑ No, but I intend to within the next 30 days.
- ❑ Yes, I have, but for less than 6 months.
- ❑ Yes, I have for more than 6 months.



ADDRESSING MYTHS & BARRIERS

- Individuals with mental illness are **just as motivated to quit** smoking as the general population
- Tobacco use is a **leading cause of death** for those with mental illness & smoking adversely impacts treatment
- **Treatments are available**, including the quitline
- Smokers with mental illness **can quit**
- MH providers are interested in training to treat tobacco dependence and **training improves practice & systems**

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

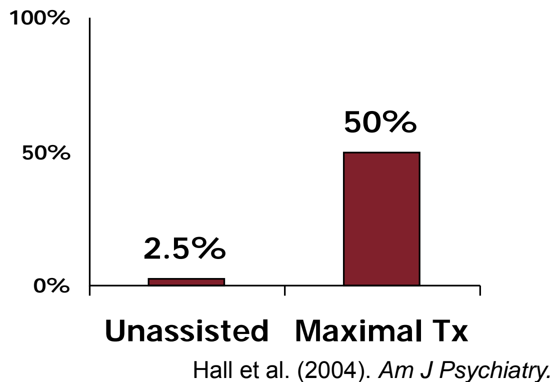
TOBACCO TREATMENTS with DEMONSTRATED EFFICACY

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

TOBACCO TREATMENTS LACKING EVIDENCE of EFFICACY

- SSRIs and SNRI
- Anxiolytics:
  - Sedative, hypnotics, buspirone
- Homeopathic treatments
- E-cigarettes
- Herbal supplements
- Lobeline
- Massage therapy
- Acupuncture
- Hypnotherapy
- Nicotine Anonymous

SET REALISTIC EXPECTATIONS



Hall et al. (2004). *Am J Psychiatry.*

- *It's a learning process. Reframe success!*
  - Most people make multiple quit attempts before they are successful.
  - Longer prior quit attempts predict future success.

MH EX-SMOKERS' CESSATION ADVICE

"Smoking not only destroys your health, it creates an addiction, which can complicate emotional stability."

"There is likely to be physical agitation. Walk or do something to "spend" your energy."

"I never realized until I quit that the nicotine was what made me anxious and the addiction kept me feeling like it was the only way to cope."

"Discover why smoking calms you and then find something that will come close to that effect, in a good way."

"A routine benefits a person with mental illness who wants to quit smoking."

"Keep a quit journal."

"Avoid alcohol at all costs."

"Stay away from negative people and fellow smokers until you feel stronger."

"Don't think of it as losing a friend, think of it as gaining your freedom."

MAKE a COMMITMENT…

Address tobacco use with all patients.

At a minimum, commit to incorporating brief tobacco interventions as part of routine patient care:

Ask, Advise, and Refer.

Become an advocate for smoke-free hospitals and clinics, agencies, workplaces, and public places.

'CIGARETTES ARE MY GREATEST ENEMY'

- Statewide social marketing campaign in California by Billy DeFrank Lesbian and Gay Community Center, the Center OC, and the American Legacy Foundation
- Real-life triumphs over adversities to quit smoking

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