



# **Smoking and Mental Illness – Break the Connection: What Every Prescriber Needs to Know!**

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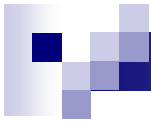
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## Disclosure Statement – Greg A. Miller

**I have no real or perceived vested interests that relate to this presentation nor do we have any relationships with pharmaceutical companies, and/or other corporations whose products or services are related to pertinent therapeutic areas.**



## Disclosure Statement – Jill M. Williams, MD

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# Objectives

1. Describe the prevalence and reasons for tobacco use among people with serious mental illness (SMI).
2. Explain the neurobiology of nicotine dependence among people with SMI.
3. Examine psychiatric medications that are impacted by smoking.
4. Review the tobacco dependence treatment medications available to help clients deal with cravings and withdrawal.
5. Discuss reasons that psychiatrists and psychiatric prescribers are best prepared to assist their clients with tobacco dependence.



# Why should we become involved?


- Saves lives
- Saves healthcare dollars
- Improves productivity
- Nicotine Dependence is a DSM-IV Disorder
- Disproportionate in the mental health population
- Tobacco dependence and mental illness are co-occurring disorders
- Behavioral practitioners practice psycho-social treatments
- Tobacco interferes with psychiatric medications
- Consistent with wellness and recovery approaches
- Reimbursement for treatment is improving

Williams and Zeidonis, 2006



# Tobacco Dependence and Mental Health Care

- Traditionally permissive attitude
  - Tobacco has traditionally been a reward in mental health settings
  - Management incentive on Inpatient units
- Nicotine Dependence: most common substance abuse disorder among individuals with schizophrenia



# Improved Substance Abuse Recovery Rates

- Quitters 3 x as likely not to use cocaine as their peers who smoke. Frosch et al, 2000
- Alcoholics more likely to maintain long term abstinence. Bobo et al, 1987; 1989 Sees & Clark, 1993
- Alcoholics who quit were less likely to relapse to drinking MA Med Society, 1997
- Strong Associations between tobacco & opiate and cocaine use Frosch et al 2000



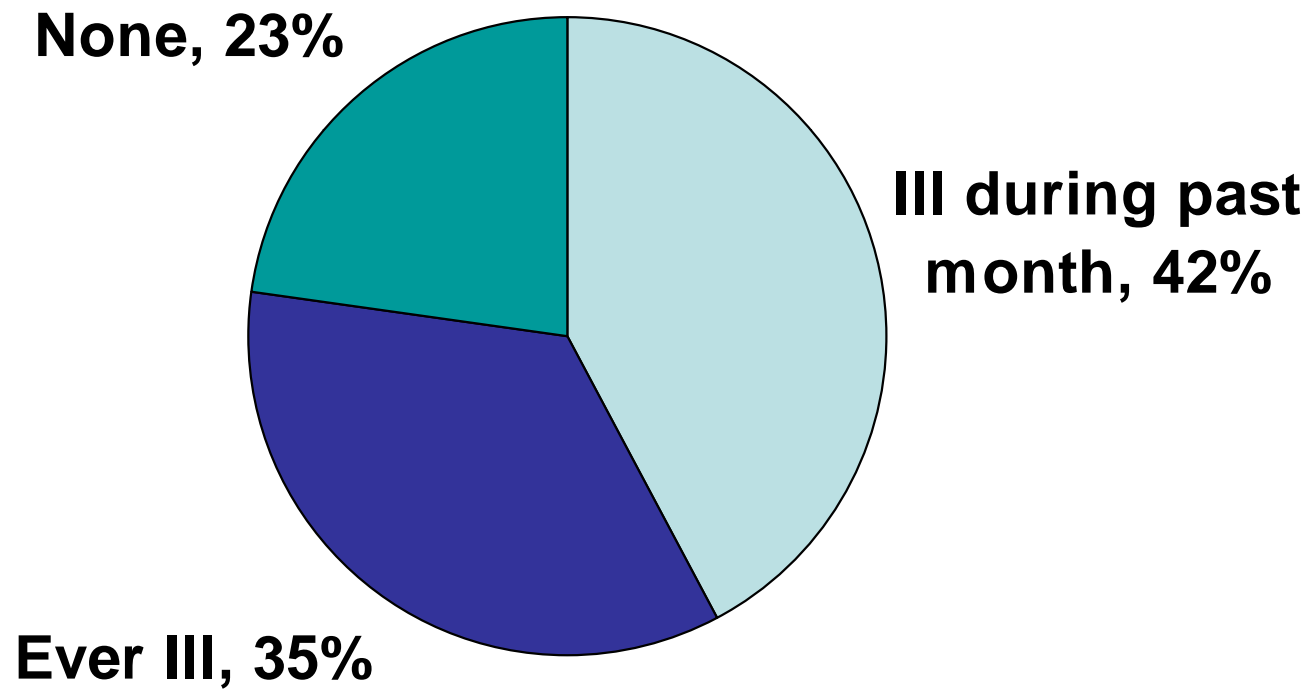
# Who owns the problem?

- Mental health population represents a wide spectrum
- Smoking has a high prevalence across the continuum (Only 22% of smokers have not had a diagnosable mental illness)
- Common factor: high prevalence of desire to quit across the population
- However: not all segments of the mental health population are equally successful with traditional quit-smoking interventions

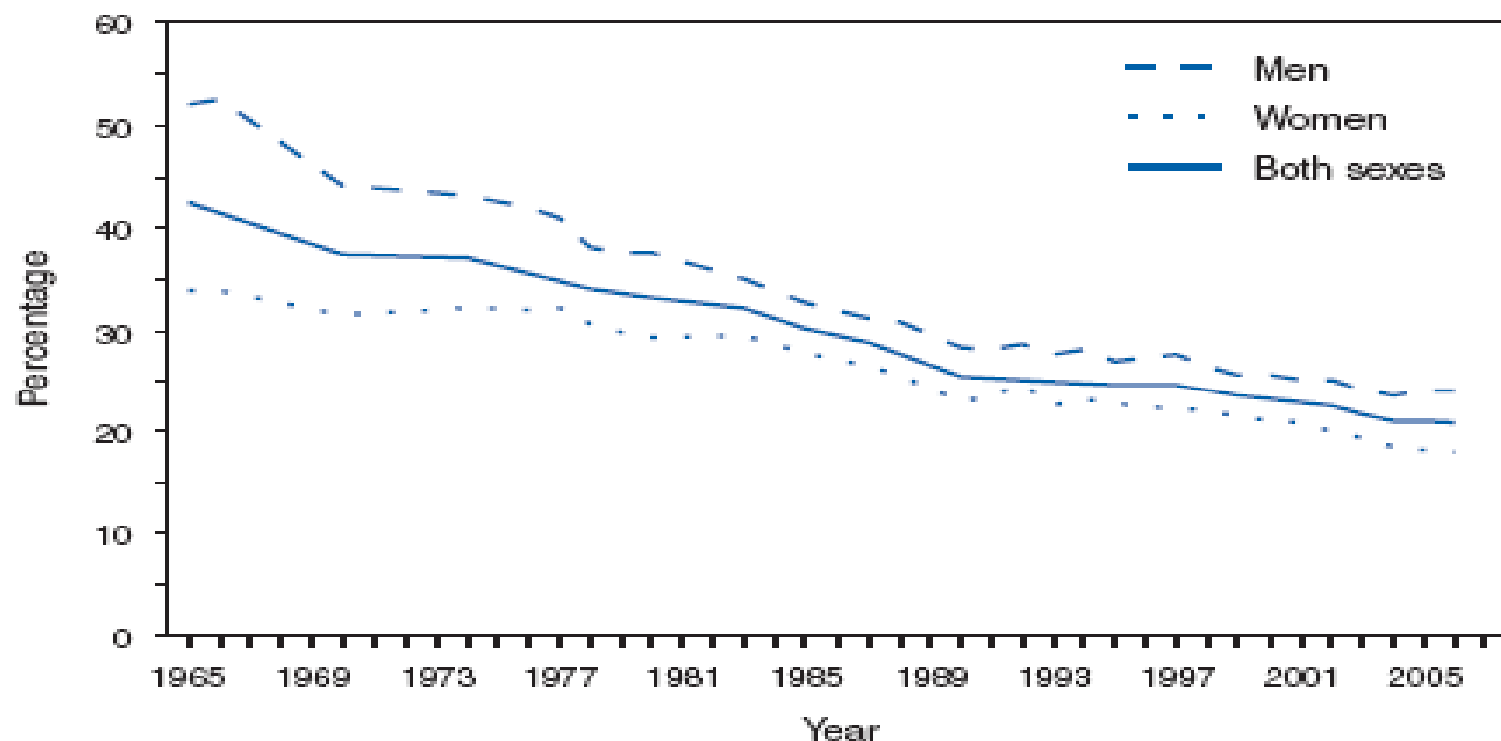


# Current Smokers by Mental Illness History

*Lasser, et.al. 2000*

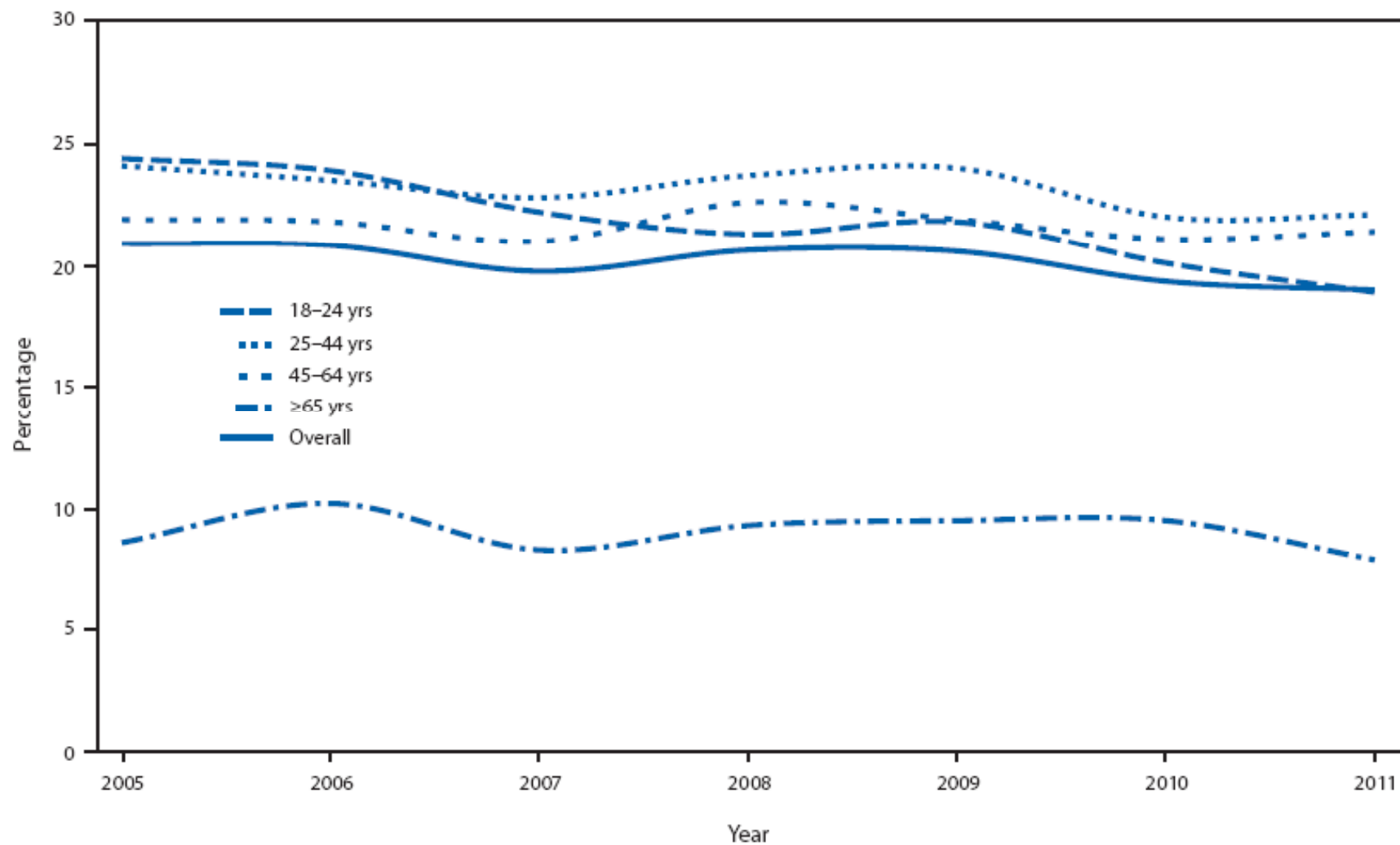


**FIGURE. Estimated percentage of persons aged  $\geq 18$  years who were current smokers,\* by sex — National Health Interview Survey, United States, 1965–2006**



\* During 1965–1991, current smokers were defined as persons who reported smoking at least 100 cigarettes during their lifetimes and who, at the time of interview, reported smoking (“Have you smoked at least 100 cigarettes in your entire life?” and “Do you smoke cigarettes now?”). In 1992, the definition changed to more accurately assess intermittent smoking (i.e., smoking on some days) and included persons who reported they smoked either every day or some days (“Do you now smoke cigarettes every day, some days, or not at all?”)

FIGURE 1. Percentage of adults aged  $\geq 18$  years who were current smokers,\* by age group — National Health Interview Survey, United States, 2005–2011



\* Persons who reported smoking at least 100 cigarettes during their lifetime and who, at the time of interview, reported smoking every day or some days.



# Quit Attempts in Total Population

- About 2/3 of all current smokers have tried to quit
- Majority of quit attempts whether or not successful, occur without organized assistance
- Some evidence that more nicotine dependent/multiple relapses may respond better to organized cessation



# Smoking and Mental Illness

- Depression and Anxiety compared to Schizophrenia:
  - Depression and Anxiety:
    - About 50% as likely to make a quit attempt
    - When engaged in treatment success rates are similar to general population
  - Schizophrenia:
    - About 5-10% make a quit attempt on their own
    - Engagement in tobacco cessation programs: only ½ as likely to have a successful quit attempt
  - Most people with SMI wish they could stop and many have made attempts though they are highly prone to relapse
  - Patients report that they would participate in tobacco treatment groups and activities if available

Jill Williams: Treating Tobacco Dependence in Mental Illness

# Suicide and Smoking

- Daily smoking → predicts suicidal thoughts or attempt (adjusted for prior depression, SUD, prior attempts; OR 1.82)
- ↑ risk in schizophrenia and bipolar disorder
- Heavy smoking
  - ↑ Suicide completions
  - ↑ Attempts in adolescents (especially girls)

Breslau et al., 2005; Ostacher et al., 2006; Altamura et al., 2006; Iancu et al., 2006; Cho et al., 2007; Oquendo et al., 2007; Riala et al., 2006; Moriya et al., 2006

NYC Department of Health & Mental Hygiene (DOHMH)

Communities Putting Prevention to Work – Tobacco

NYC






# SMI-Reduced Life Expectancy

- 20% shorter life span
- Poor health care
- Increased coronary heart disease largely smoking related (remains when controlled for weight/bmi) *Goff 2005*
- Increased mortality rates (above general population)
  - Cardiovascular disease 2.3 x
  - Respiratory disease 3.2 x
  - Cancer 3.0 x

Brown 2000; Davidson 2001; Allison 1999; Dixon 1999; Herran 2000



# Non-SMI

- Non-SMI population:

- ☐ Mood Disorder; Anxiety Disorders; Mild-Mod. PD's;
- ☐ Need thorough tobacco assessment, engagement, and motivational support
- ☐ Tend to respond to currently offered modalities with same success rates

\* *(Nicotine Dependence=co-occurring disorder)*





# SMI

- Serious Mental Illness

- About 6% of population

- Bipolar Disorder: 2.6%

- Schizophrenia and  
schizoaffective disorders: 2%

- Others 1.4%



# Tobacco Control Techniques

- Current public health model for tobacco control
  - Focus on workplace outreach---misses many of SMI population
  - Very little to no preventative efforts
  - Allocation of resources: very little driven through Mental Health treatment venues



# Schizophrenia and Tobacco Dependence Treatment

- Motivated to quit
- But less successful with conventional treatment
  - Less likely to engage outside of Mental Health settings
  - Less likely to respond to treatment that is driven through purely verbal means
  - Less likely to respond to traditional pharmacologic support



# Schizophrenia and Smoking

- Very high prevalence: (65-85 %)
- Smoke more
  - quantity of cigarettes
  - amount of draw per cigarette
- Smoking topography studies
- Half as successful in quit attempts
- Smoking produces therapeutic benefit
- Smoking ameliorates medication side effects



## **Tobacco (nicotine): psycho-active agent**

- Effect of Nicotine on illness symptoms
- Effect of Nicotine on side effects of psychotropic medications
- Effect of Nicotine on social and psychological well-being
- Impact of tobacco smoking on P-450 system
- Impact of quitting smoking (and quit/relapse cycles) on other medications

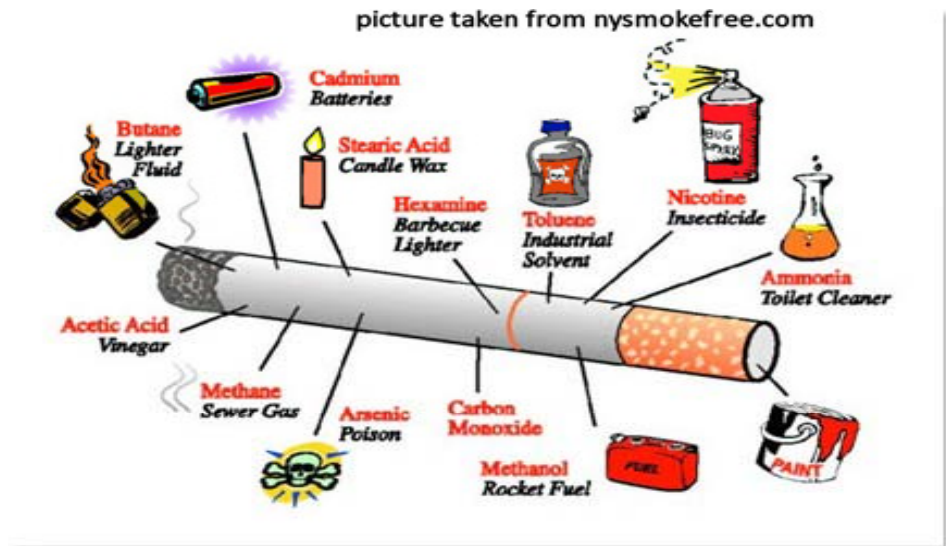
# It's the Smoke that Kills

**Cigarette smoke > 4000 compounds**

Acetone, Cyanide, Carbon Monoxide,  
Formaldehyde

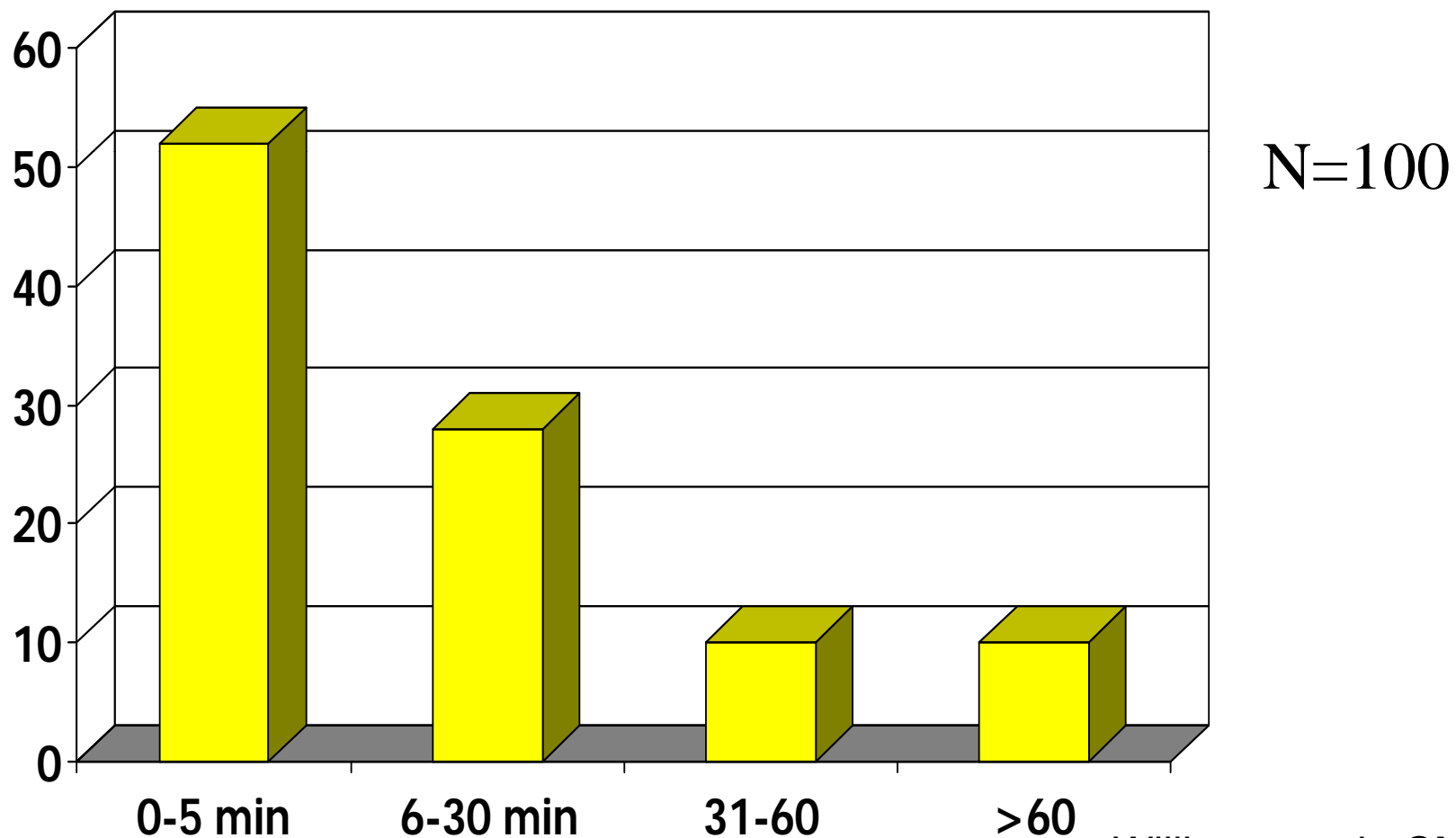
**>60 Carcinogens**

Benzene,  
Nitrosamines



(CDC 2003)

# 80% of Smokers with SMI report smoking within 30min of awakening



Williams et al., CMHJ 2010



# Myth Busting about Nicotine Replacement

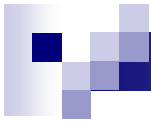
- Nicotine is not a carcinogen
- Patients tend to self dose
- Scheduled is better than PRN
- Period of treatment: may be crucial factor in SMI
- OK to combine with bupropion
- OK to combine with each other
- Very few contraindications
- Little to no drug-drug interactions





# More myth busting regarding NRT

- Nicotine and patients with MI / Cardiac Disease
  - ☐ No reason not to use
  - ☐ Not introducing a “new drug”
  - ☐ Safer nicotine delivery vs smoking



## Intensive Treatment for People with SMI

- **A general rule regarding smoking cessation efforts for SMI: more is better.**
  - **More intensive treatment frequency/ duration**
  - **More intensive pharmacotherapy**
    - **Increased dose**
    - **Increased combinations**
    - **Longer duration**
- **Involving more than one type of provider leads to greater success.**



# Medication for Tobacco Dependence

- First-line Tobacco Dependence Medications (FDA Approved)
  - Nicotine Replacement
    - Gum, lozenge, inhalers, spray, patch,
  - Bupropion (Zyban; Welbutrin)
  - Varenicline (Chantix)

Jill Williams: Treating Tobacco Dependence in Mental Health Settings



# Nicotine Replacement

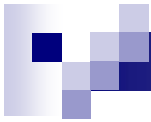
- Nicotine absorption poorer with all forms than with cigarettes
- Oral ingestion: involves first pass
- Less rewarding than smoking
- Results:
  - Under dosing a concern
  - Worsened if compliance and consistency are reduced



# Smoking with NRT

- Relatively safe
- Harm Reduction
- UK NRT Reduction- no adverse effects  
6-18 months of NRT use with smoking
- Less reinforcing effects
- Withdrawal of treatment=punishment for relapsing

Rose et al., 2006; Rose et al., 2009; Moore et al., BMJ, 2009



# Overview of NRT

- Patch: Slower onset, decreased peak, more continuously even blood levels
- Gum and Lozenge:
  - Greater peak effects depending on how used
  - First pass
- Inhaler and spray
  - Not absorbed from lungs
  - Rapid delivery, avoids first pass
  - Some dependence risk with spray
- Patch plus Gum: First line approach for SMI Heavy Smokers?



# Conclusions Regarding NRT

- Treatments increase the success rates in making a quit attempt and should be used in ALL smokers
- Nicotine treatments are effective and well tolerated
- Dose aggressively
- Patient education about nicotine use
- SMI: May need increased dosing; combinations and longer term treatment for success



# Other Treatments

- Anti-depressants

- Bupropion

- Varenicline (Chantix) First Line Treatment

- Concerns regarding psychiatric symptoms

- Success rate: 14-21%, better than bupropion and NRT.

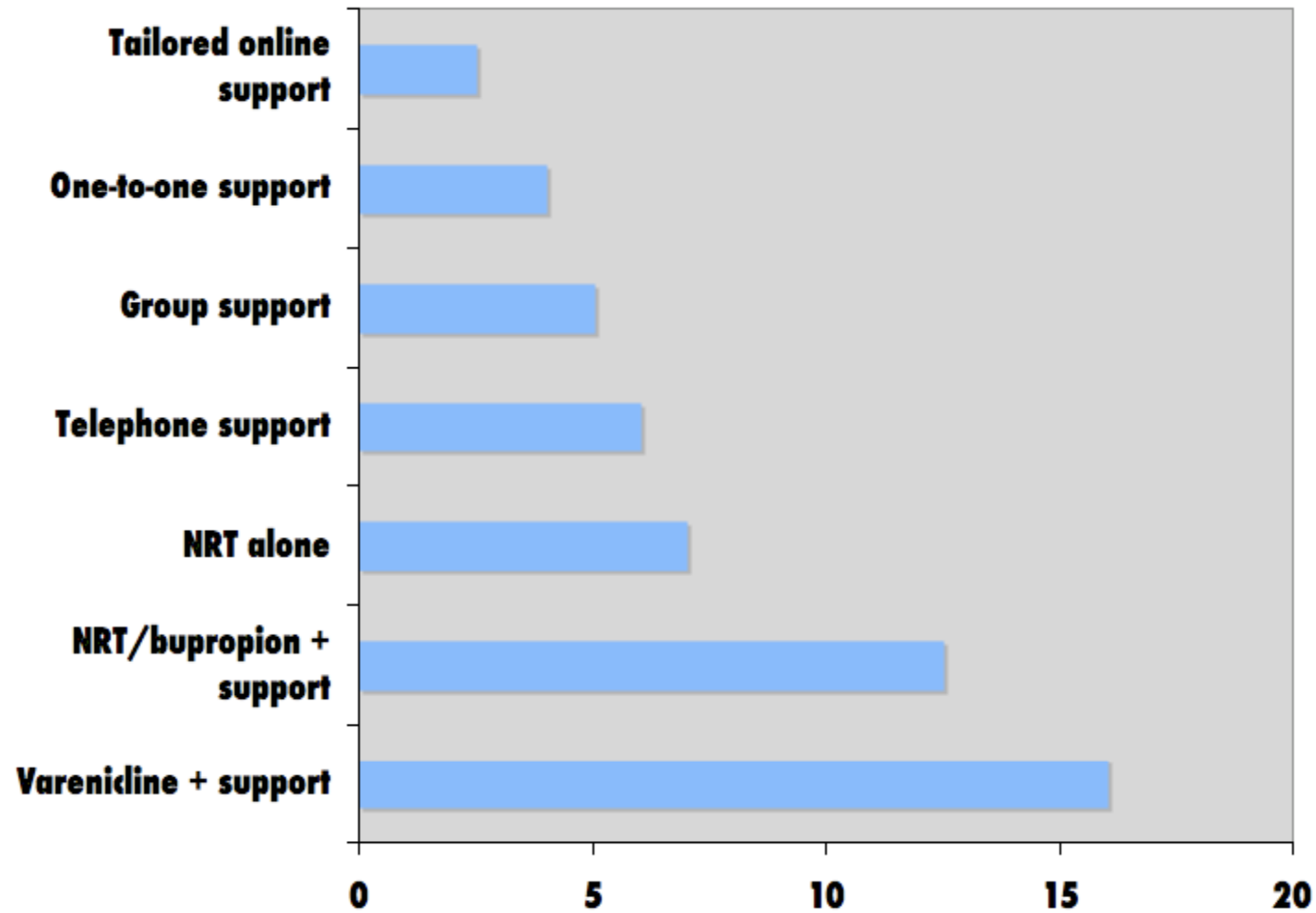




# Varenicline and Suicide

- 80,660 smokers prescribed NRT (~63k), varenicline (~11k), and bupropion (~6k);  
UK, primary care
- No clear evidence that varenicline was associated with an increased risk of fatal (n=2) or non-fatal (n=166) self harm
- No evidence that varenicline was associated with an increased risk of depression or suicidal thoughts

Gunnell et al., 2009; BMJ



Westman/ Schiff, 2010 based on Cochrane Review Data



# Smoking-psychotropic interactions

## ■ Smoking:

- Increased P-450 1A2 isoenzyme activity
- Some general enhancement of P-450 enzymes
- Psychotropic drugs with lowered blood levels from smoking:
  - Olanzapine; clozapine; fluphenazine; haloperidol; chlorpromazine
  - Amitriptyline, doxepin, clomipramine, desipramine, imipramine
  - Caffeine, theophylline, warfarin, propranolol

Jill Williams: Tobacco Dependence Treatment in Mental Health Settings



# NRT

- Nicotine: CYP 450 2A6
- This P450 isoenzyme is virtually exclusive to the break down of Nicotine
- Not involved in interactions with psychotropic medications



# **Smoking and Psychotropic Medications**

- Stabilized on inpatient unit: No-smoking
- Drug levels drop when discharged and return to smoking
- Quitting: Might result in increased blood levels. Closely observe at the least



# Principles of Co-occurring Disorders Treatment

- Integrated mental health and addiction services
- Comprehensive services
- Treatment matched to motivational level
- Long-term treatment perspective
- Continuous Assessment of substance use
- Motivational interventions
- Psychopharmacology
- Case management
- Housing



# Principles of Co-occurring Disorders Treatment

- Dual diagnosis patients develop stable remission at a rate of about **10-15% achieving remission per year**
- Programs need to take a long term, outpatient perspective

Drake & Mueser, 2001; Drake 2000



# SMI and Tobacco Dependence

- Tobacco Dependence Medications must be part of the psychopharmacologic treatment plan
  - Consideration of the need to deviate from “standard” treatment
  - How and why (logic of plan)
  - Thoughts about next steps
  - Cost benefit considerations
  - Important aspect of plan whether or not prescribing is done by the psychiatrist or by primary care
  - Difficult to quit patients need focused and aggressive treatment planning around smoking dependence treatment





# The FIVE A's

- Ask
- Advise
- Assess
- Assist
- Arrange

**Regardless of the client's stage of readiness for a cessation attempt, the 5 A's should be utilized at every visit.**

The U.S. Public Health Service Clinical Practice Guideline: Treating Tobacco Use and Dependence 2008



# SMI and Tobacco Dependence

- Assessment and counseling
  - Every patient who smokes/ every visit
  - Included in every treatment plan for smokers
  - Integrated into every format
  - Access to tools:
    - Five A's; Fagerstrom; toolkits, etc..
  - Planning for quitting is crucial for SMI
    - Meds
    - Relapse prevention
    - Weight gain



# Counseling

- Motivational Interviewing
- CBT Approaches
- Individual/ Group/ Combination
- Integrated into treatment plan
- Consideration of needs specific to SMI:
  - Relapse
  - Medication impact of quitting and relapse
  - Impact of Weight Gain
  - Attention to depressive symptoms



# Conclusions

- It's the smoke that kills
- Mental health professionals need to be MORE involved in tobacco treatment
- Tobacco Free policies at behavioral health services support tobacco cessation for recipients
- Treatments increase the success rates in making a quit attempt and should be used in all smokers
- Policies such as tobacco free psychiatric hospitals support treatment initiatives



# Toolkits

- **OMH Wellness Initiative: LifeSPAN**
- [http://www.omh.state.ny.us/omhweb/adults/wellness/lifespan/smoking\\_cessation/](http://www.omh.state.ny.us/omhweb/adults/wellness/lifespan/smoking_cessation/)
- **UMDNJ Learning About Healthy Living Manual**
- <http://ubhc.umdj.edu/nav/LearningAboutHealthyLiving.pdf>
- **University of Colorado Smoking Cessation in People with mental Illnesses**
- [http://smokingcessationleadership.ucsf.edu/Downloads/catalogue/MHtoolkitJan\\_2009.pdf](http://smokingcessationleadership.ucsf.edu/Downloads/catalogue/MHtoolkitJan_2009.pdf)
- **APNA Tobacco Dependence Intervention Manual for Nurses**
- <http://www.apna.org/files/public/TobaccoDependenceManualforNurses.pdf>
- **NASMHPD Tobacco-Free Living in Psychiatric Settings**
- [http://www.nasmhpd.org/general\\_files/publications/NASMHPD.toolkit.FINAL.pdf](http://www.nasmhpd.org/general_files/publications/NASMHPD.toolkit.FINAL.pdf)



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