



CTN-NE

**Northeast Node of the National Drug Abuse
Treatment Clinical Trials Network**

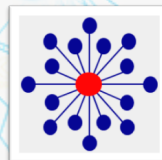
SCIENCE SERIES

Grant # UG1DA040309

National Institute on Drug Abuse (NIDA)

National Institutes of Health (NIH)

NIDA NATIONAL INSTITUTE
ON DRUG ABUSE



Center for **Technology**
and **Behavioral Health**

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Lisa Marsch, PhD, Alan Budney, PhD, and Andrea Meier, MS

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LEARNING OBJECTIVES OF THE SCIENCE SERIES

- Increase knowledge of current addiction and integrated care models
- Increase understanding of evidence-based practices for substance use disorders
- Impart providers with the tools to integrate SUD treatment with other behavioral care approaches



INTRODUCTION



Dr. Mary F. Brunette is an Associate Professor of Psychiatry at Geisel School of Medicine at Dartmouth and the Medical Director of the Bureau of Mental Health Services within the New Hampshire Department of Health and Human Services. As a board-certified addiction psychiatrist, she has been involved with research and clinical care of patients with mental illnesses and co-occurring substance use disorders for over 20 years. She has been active with both psychosocial research and clinical trials studying treatments for people with these co-occurring disorders and other disadvantaged populations. In the past few years, she initiated a program of research on smoking cessation for people with mental illnesses, and has been involved in studying the use of technology to increase the efficacy and expand the research of treatments for people with co-occurring disorders, with a focus on people with severe mental illnesses in general and nicotine addiction in particular.

What's age got to do with it?
MOTIVATIONAL DECISION SUPPORT FOR
SMOKING CESSATION AMONG YOUNG
ADULTS

Mary.f.brunette@dartmouth.edu, CTBH October 2017

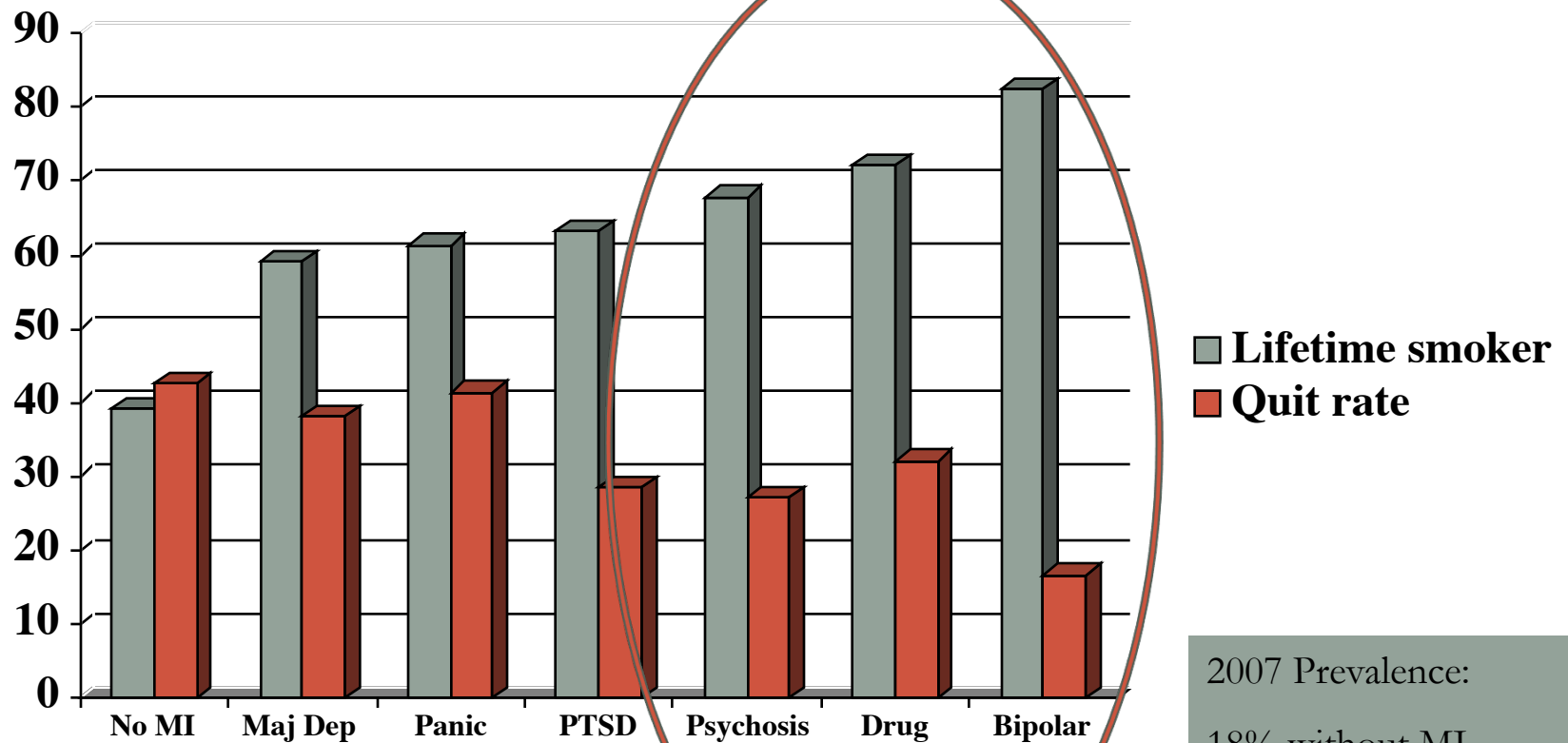


AGENDA

- Prevalence of smoking in mental illness and in young adults
- A little information about tobacco and nicotine
- Research on a web-based strategy to engage young adults with mental illness into quitting
- Tips and strategies for addressing smoking among young people in treatment settings
- Discussion

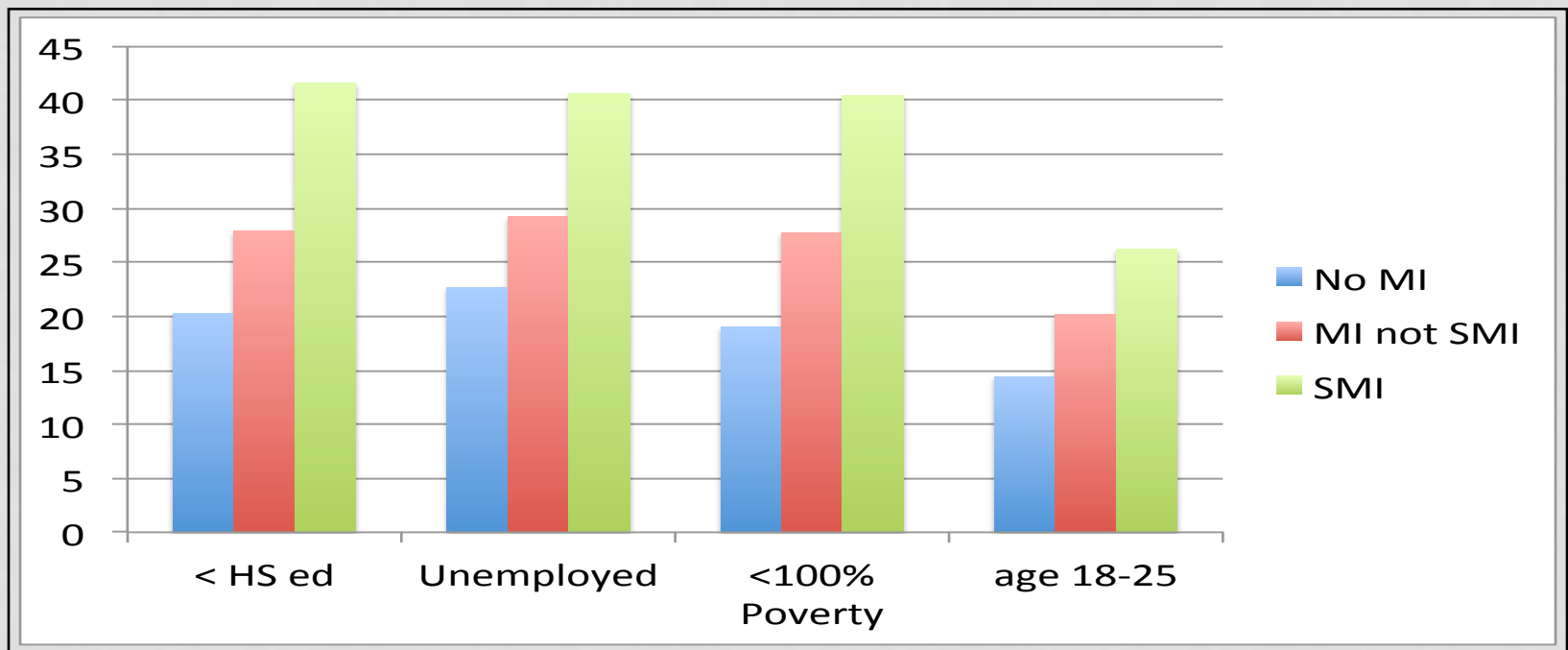
SMOKING IS HIGHLY PREVALENT IN PEOPLE WITH MENTAL ILLNESS

(LASSER ET AL, 2000)



2007 Prevalence:
18% without MI
30-60% with MI
(McClave, 2009)

MENTAL ILLNESS AND OTHER RISK FACTORS

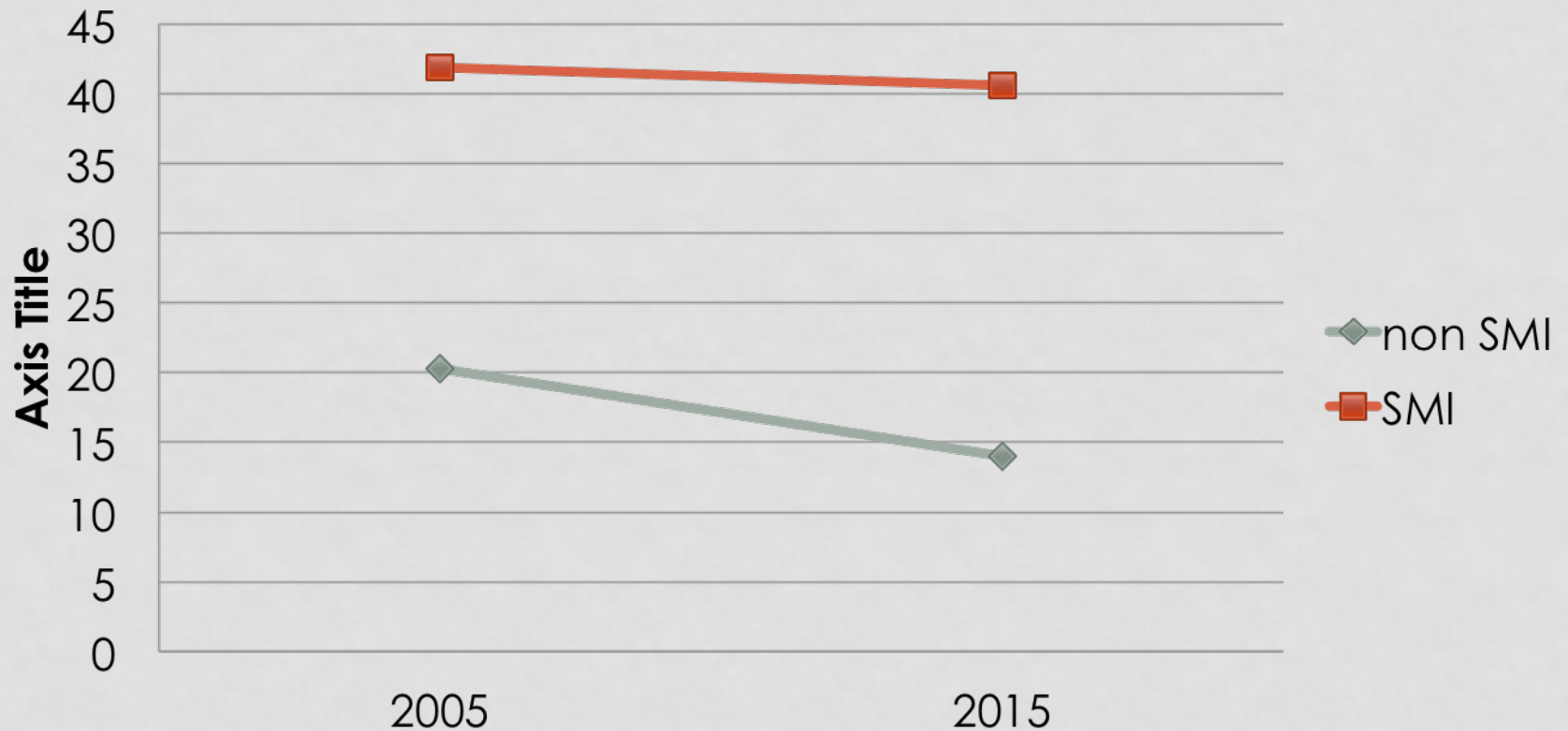


(Glasheen, 2014)

SMOKING PERSISTENCE IN U.S. AMONG PEOPLE WITH AND WITHOUT SERIOUS PSYCHOLOGICAL DISTRESS

(JAMAL ET AL 2016)

Percentage of adults who are current smokers



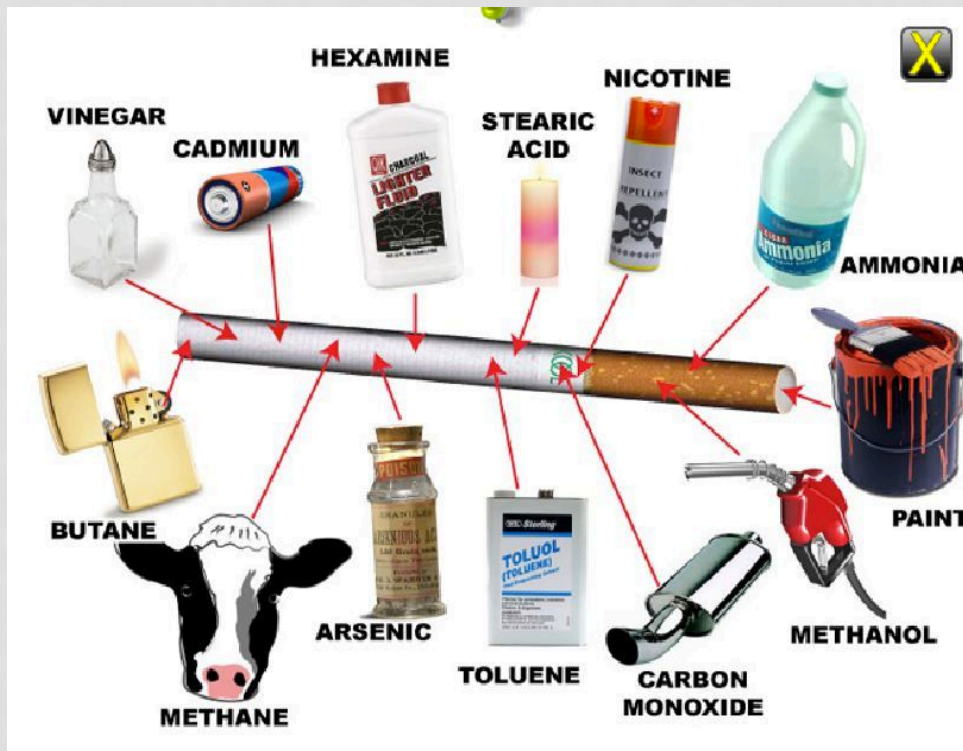
NHIS - A nationally representative, in-person survey of non-institutionalized U.S. civilian population, N=33,672

A LITTLE BIT ABOUT TOBACCO

- Tobacco plant
 - Nicotine is the only addictive component
 - Other components – some harmful
- 599 approved additives in products
- Tobacco smoke: over 4000 components, 100s proven to be toxic



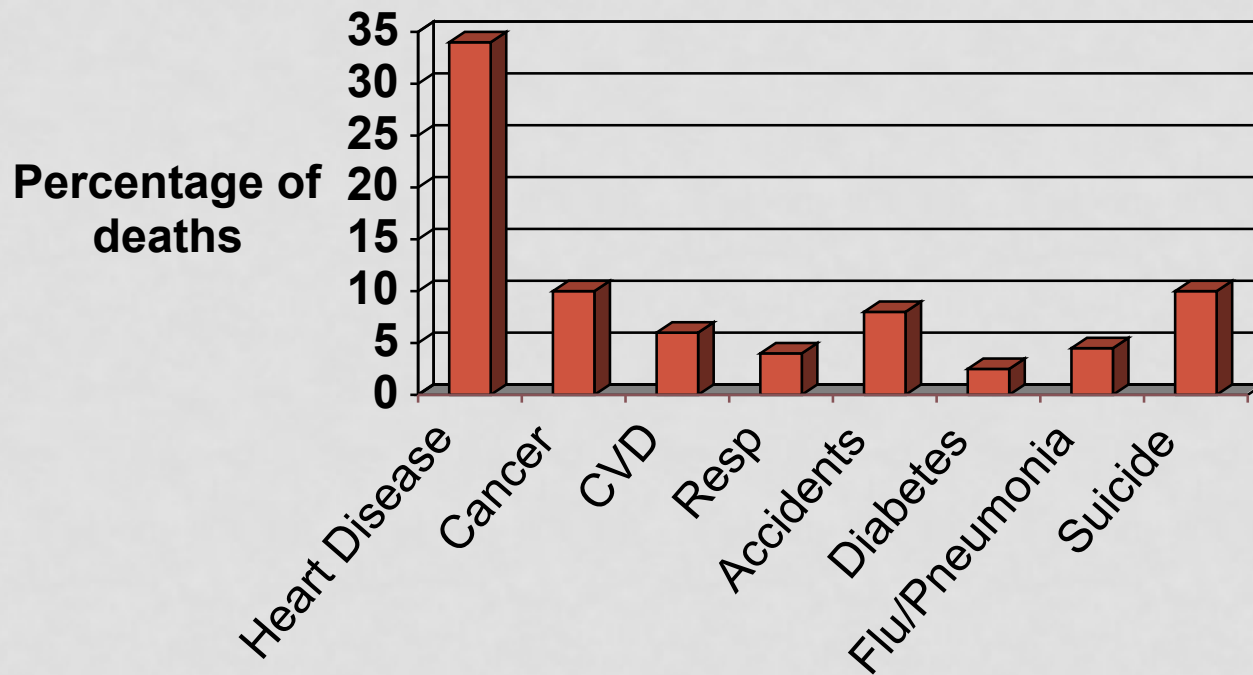
TOXINS IN SMOKE CAUSE DISEASES



- Cardiac disease
- Vascular disease
- Diabetes
- Lung diseases
- Cancers
- Problems with pregnancy and fetus
- Skin aging
- And more

SMOKING-RELATED DISEASES ARE PRIMARY CAUSES OF DEATH IN PERSONS WITH SMI

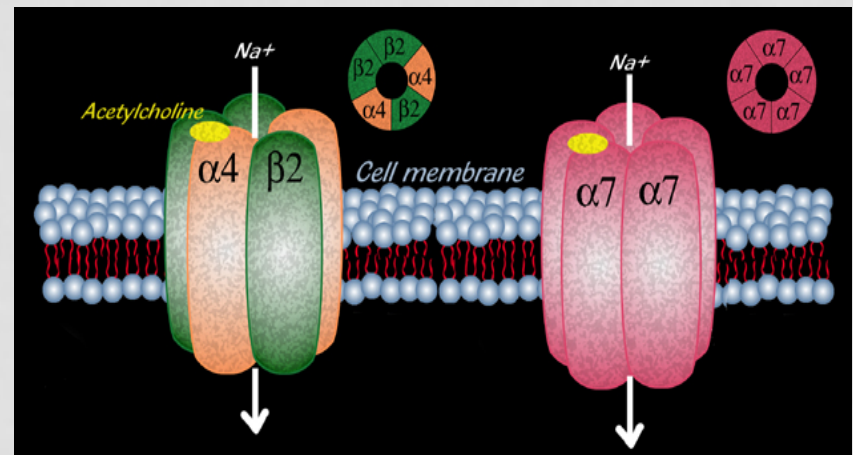
30 year early
mortality in SMI



Data from Oklahoma 1996-2000; Colton et al, 2006

A LITTLE ABOUT NICOTINE

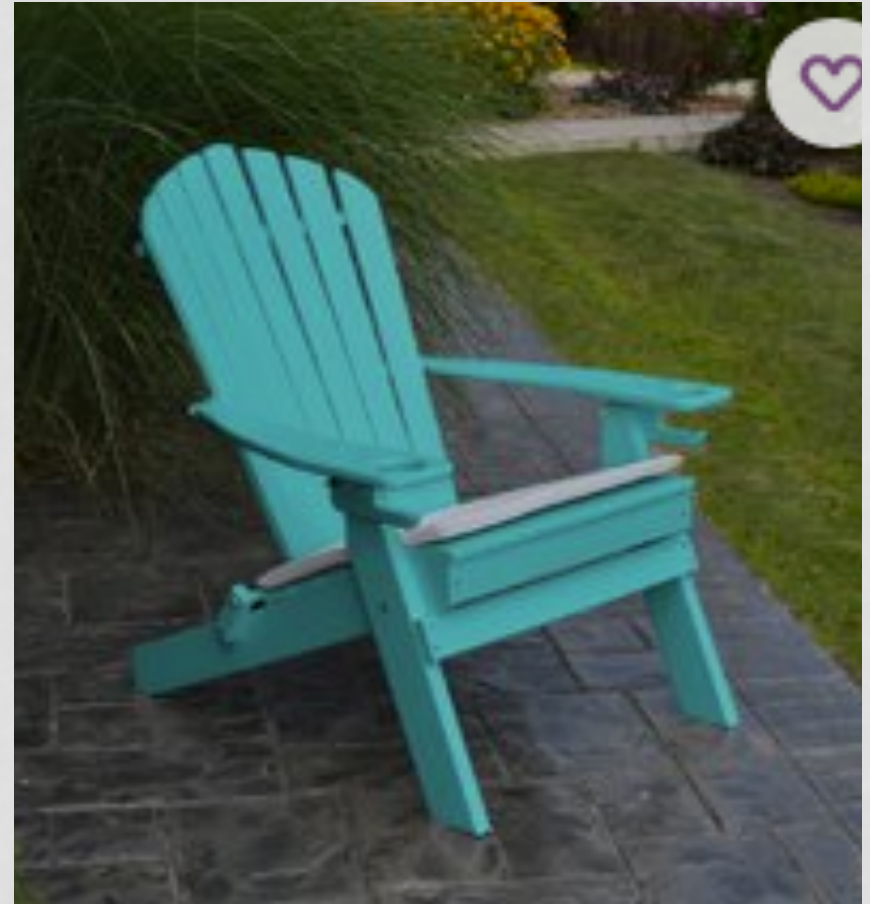
- Nicotine effects are mediated by nicotinic acetylcholine receptors
 - 17 receptor subtypes
 - alpha-4, beta-2 and alpha-7 likely related to nicotine addiction
 - New research focusing on other receptor subtypes
 - E.g. Alpha4beta2alpha5
 - Allosteric modulator
 - Active in networks that facilitate cognition and reward
 - Development of dependence



Why don't they just quit?

Nicotine Addiction

- Smoking is not 'just a habit'
- Regular use leads to persistent and pervasive seeking and using of the substance, especially with paired cues and stress
- "Brain is hijacked"



NICOTINE WITHDRAWAL

- Daily use at least a few weeks
- Abrupt cessation or reduction leads to 4 or more peaking at 1-4 days:
 - Dysphoric or depressed mood
 - Irritability, frustration, anger
 - Anxiety
 - Insomnia
 - Difficulty concentrating
 - Restlessness
 - Decreased heart rate
 - Increased appetite or wt gain

WHY FOCUS ON YOUNG ADULTS?

Benefits of quitting – The british doctors study (Doll 2004)

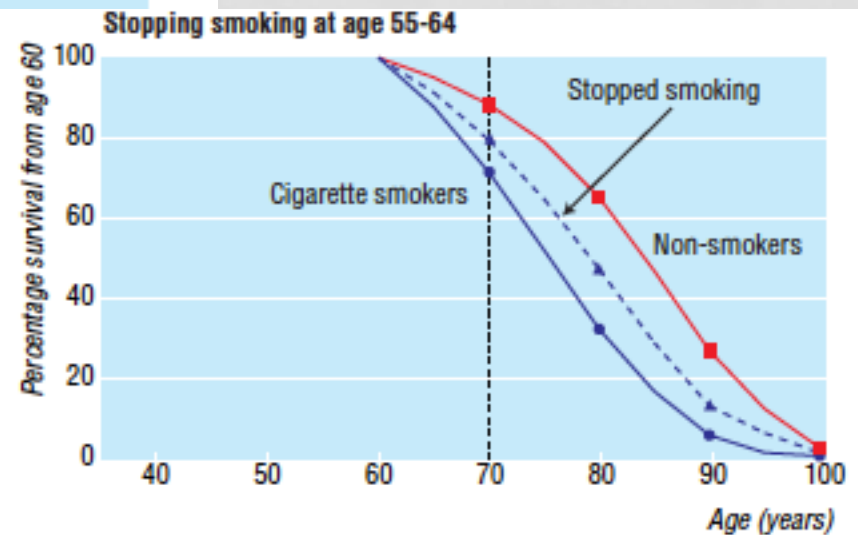
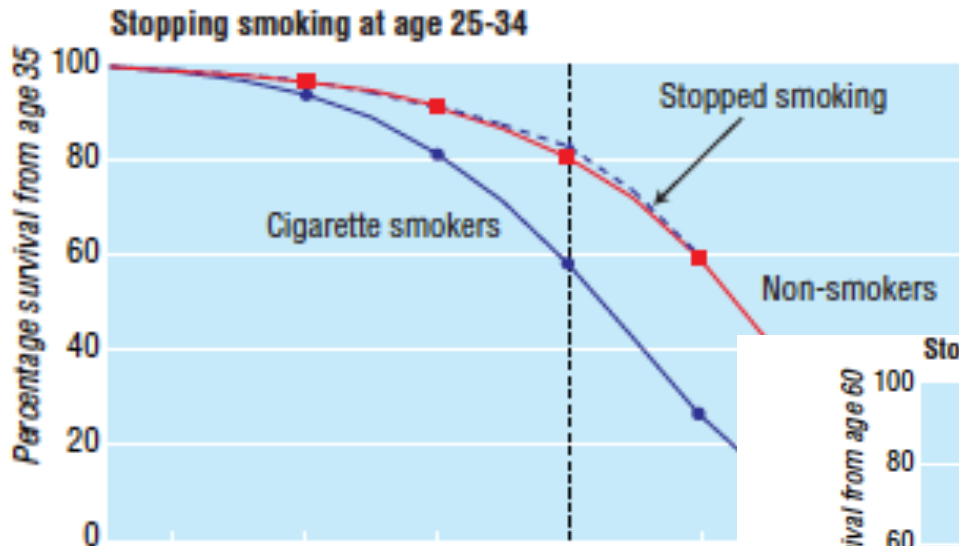


Fig 4 Effects on survival of stopping smoking cigarettes at age 25-34 (effect from age 35), age 35-44 (effect from age 40), age 45-54 (effect from age 50), and age 55-64 (effect from age 60)

QUITTING AT A YOUNG AGE

- Quitting by age 30
 - Reduces disease and risk of death due to smoking-related diseases
 - Normalizes lifespan – lengthens life by 10 years in general population studies (Doll)
 - Avoid stigma, financial burdens, and medication interactions

HOW ARE YOUNG ADULT SMI SMOKERS DIFFERENT? (BRUNETTE ET AL 2016)

Table 1. Characteristics of smokers with SMI	Young adult Age 18-30 N=43	Adult Age 31+ N=141
Demographics		
Male, N (%)**	39 (90.7%)	93 (66%)
Age, mean (SD)	25.74 (3.59)	48.21 (9.39)
Race, African American, N (%)	24 (55.81)	73 (51.77)
Ethnicity, Hispanic, N (%)	3 (6.98)	19 (13.48)
Lifetime psychiatric hospitalizations, mean (SD)	6.1 (5.23)	11.61 (13.98)
Smoking Characteristics		
Cigarettes/day, mean (SD)	12.50 (12.8)	14.47 (9.38)
Fagerstrom dependence score, mean (SD) **	4.22 (2.14)	5.24 (1.95)
Breath Carbon Monoxide, mean ppm (SD) ***	15.92 (10.48)	28.68 (20.49)
Quit attempt in past 3 months, N (%)	16 (37.21)	38 (26.95)
Attitudes and knowledge about smoking		
ATS Summary score, mean (SD)	-10.28 (9.53)	-10.20 (11.15)
Knowledge score; smoking & treatment, mean (SD)	63% (17.29)	65% (15.98)
Tobacco product use		
Prerolled cigarettes	36 (83.72)	114 (82.61)
Mini Cigars *	11 (25.58)	62 (43.97)
Hookah *	3 (6.98)	1 (0.71)
Electronic cigarette*	11 (25.58)	18 (12.77)
Menthol	34 (80.95)	111 (80.43)
Stage of change for cessation		
Ready to quit this month, N (%)	10 (23.26)	43 (30.5)
Thinking of quitting but not in next month, N (%)	16 (37.21)	41 (29.08)
Not thinking of quitting, N (%)	17 (39.53)	57 (40.43)
Intention to use cessation treatment (1=low, 7=high)		
Intention to use NRT, M (SD)	3.58 (1.80)	3.84 (2.18)
Intention to use cessation medication, M (SD)	3.00 (1.95)	3.50 (2.06)

REASONS FOR USE AND CONCERNS AMONG YOUNG SMOKERS WITH SMI

- Positive
 - Image, peer group
 - Relaxation, stress management
- Negative
 - Impact on skin, teeth, fingers, nails
 - Impotence
 - Impact on pregnancy, unborn child
- Health effects seen as preventable, but still important

STAGE-BASED TREATMENT

- PRECONTEMPLATIONS: Education for engagement
- CONTEMPLATION: Education and motivational strategies
- PREPARATION: Planning assistance, CBT, medication
- ACTION: Behavioral treatments for quit skills, medication for withdrawal/craving
- RELAPSE PREVENTION: Behavioral treatments for skills, medication for craving

THE 5 AS OF TOBACCO CESSATION

- **Ask** about tobacco use
- **Advise** to quit through clear personalized messages
- **Assess** willingness to quit
- **Assist** to quit
- **Arrange** follow-up and support

EDUCATION AND MOTIVATIONAL INTERVENTIONS in SMI SMOKERS

- 4 studies show efficacy of in-person motivational and educational interventions in people with schizophrenia and other SMI compared to education or no intervention
 - (Steinberg 2004; Steinberg 2012; Cather 2010; Williams 2010)
- Clinics and clinicians are challenged with delivering such interventions due to competing demands, funding challenges

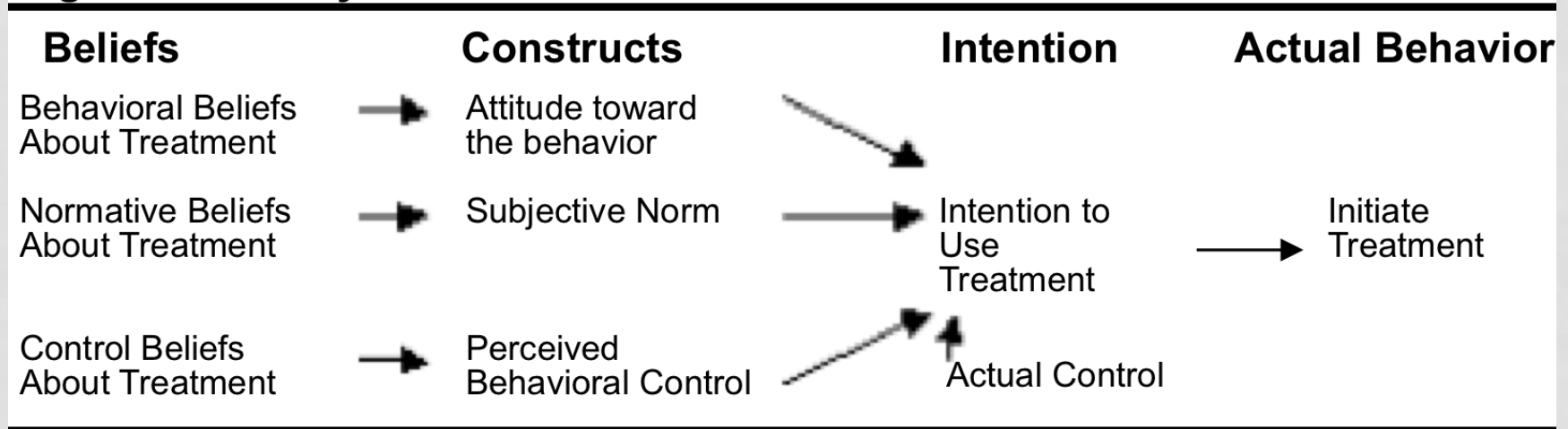
LETS TALK ABOUT SMOKING: DARTMOUTH WEB-BASED MOTIVATIONAL DECISION SUPPORT SYSTEM

Based on usability testing with 85 SMI smokers (Ferron et al., 2011) and research of others (Rotondi, 2007)

- Computer mouse tutorial
 - Simple, linear design – only 2 layers deep
 - Large buttons, font
 - Simplified language - 5th grade level
 - Text to Audio (for slow or poor readers)
-
- Goals - Increase motivation to quit and to use cessation treatment
-
- Content - Information and exercises from Motivational Interviewing and Decision Support Systems
 - Vide hosts with MI
 - Quit with treatment video stories
 - Use of perceived loss and perceived gain framing
 - Guided by focus groups and feedback from user population

BASED ON THEORY OF PLANNED BEHAVIOR

Figure 1: Theory of Planned Behavior



SIMPLE DESIGN WITH AUDIO



What are things that make you want to smoke?

Things that make you want to smoke are called **triggers**.

A trigger is when a certain time, place, person or activity makes you want to smoke.

- A trigger can be a certain **time** of day you are used to lighting up a cigarette or cigar, like when you wake up.
- A trigger can be a **place** where you usually smoke, like your kitchen table.
- A trigger might be another **person**, such as a friend you always smoke with.
- A trigger can also be an **activity** during which you usually smoke, like waiting for the bus.

Back

Next

TYPICAL WEBSITE CONTRAST

AMERICAN LUNG ASSOCIATION.
Freedom
FROM SMOKING®
ONLINE

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SEARCH

Introduction Our Program Support Living Smokefree Your Resources

Module 2: Figuring it Out
Module 2: Triggers
Module 2: Nicotine Addiction
Module 2: Stress Management
Module 2: Ways to Make Lifestyle Changes

Connect with the Freedom From Smoking® Community

Related Materials

- [Relaxation Exercises](#)
- [Are You Addicted to Cigarettes?](#)
- [My Reasons to Stop Smoking.](#)

Give the gift of Freedom From Smoking® Online

Home ▶ Premium Program ▶ Our Program ▶ Module 2 ▶ Triggers

Module 2: Triggers

Welcome back! :-) This lesson is about identifying your smoking triggers. After you started smoking you began to perfect your smoking behavior by bringing your cigarettes into other situations. Then you began to experience other positive results. You probably found it gave you something to do with your hands when you were on the phone or at a party. Or you found it helped you slow down and take a break when you needed to relax.

Each time you smoked in these situations you reinforced your pattern of behavior. You began to connect the act of smoking with these different activities and emotions. You no longer think about needing something to do with your hands. Instead, you just smoke when you're on the telephone, or when driving. The situations became triggers, or cues to light up. What are some of your triggers?

Triggers can be many things. They can be associated with good or bad situations. Different people have different triggers. For some smokers, waking is a trigger, or turning on the computer. For others it isn't. Some triggers are more important than others. Some activities are so strongly connected to smoking that you cannot imagine doing them without a cigarette. Am I striking a chord?

Studying your smoking triggers helps you determine your smoking pattern. You will learn how often the triggers happen. You will learn which triggers are the strongest, or which cigarettes are the "gotta haves". With this information, you can begin to break

Your Account

Welcome Mary
Your Premium Membership will expire on Nov 2, 2013

Quit Date: Sep 1, 2013 ([update](#))

[Manage your membership](#)

[Click here](#) to log out.

Local American Lung Association Chapters

Connect with the American Lung Association nearest you.

Sign Up For eNewsletters

Receive Mary Ella's weekly message via email.

Contact Us

Contact the American Lung Association HelpLine by phone, email or instant chat.

Email the American

SINGLE SESSION WEB-BASED MOTIVATIONAL DECISION SUPPORT (LTAS) IN MIDDLE AGED SMOKERS WITH SMI

Cessation behavior	%
Met with doctor	39%
Started cessation counseling without meds	10.5%
Started meds without counseling	14.5%
Started both meds/counseling	23.4%
Started any	39.5%
Any quit attempt without treatment	59.7%
Any 1-week abstinence	29%
Verified abstinence at 2 months, 6 months	0%, 7%

- 3 studies (n~1750) – 30-50% proceeded to use cessation treatment

Brunette et al, 2013;
Ferron et al, 2016;
Brunette et al, In press

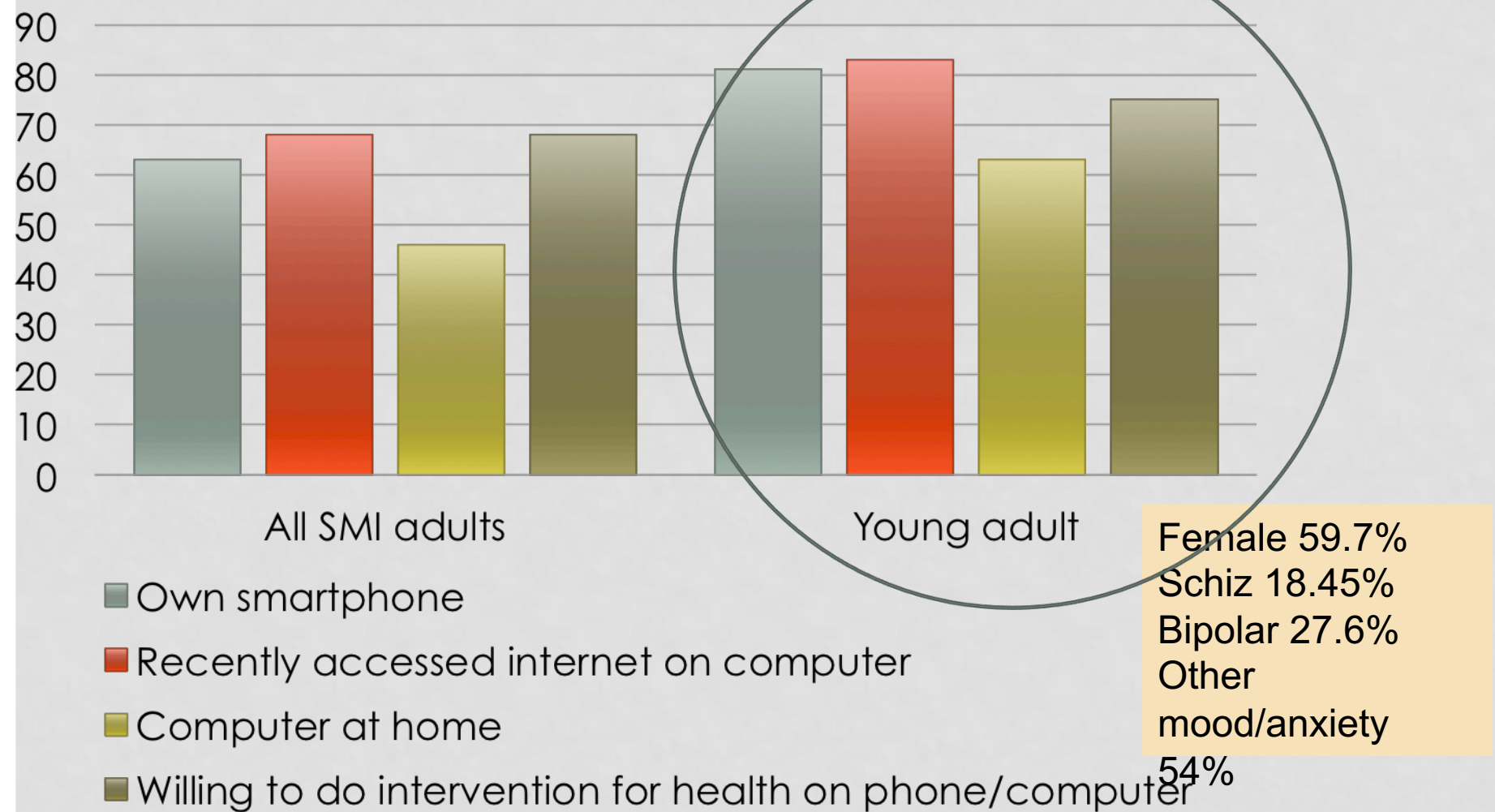
BARRIERS TO YOUNG ADULT SMOKERS GETTING INTERVENTION

- Education and Motivational interventions may not be delivered in typical treatment settings
- Young adults are not interested in standard counseling and medication cessation treatment

ARE YOUNG ADULTS WITH SMI WILLING AND ABLE TO USE TECH FOR SMOKING INTERVENTION?

- Young adults with SMI are open to getting information about cessation, using online resources, and using tech for treatment
- Most young adults with SMI have access to internet via smartphone or computer

Tech use among people with SMI, Manchester NH, August 2017, N=178

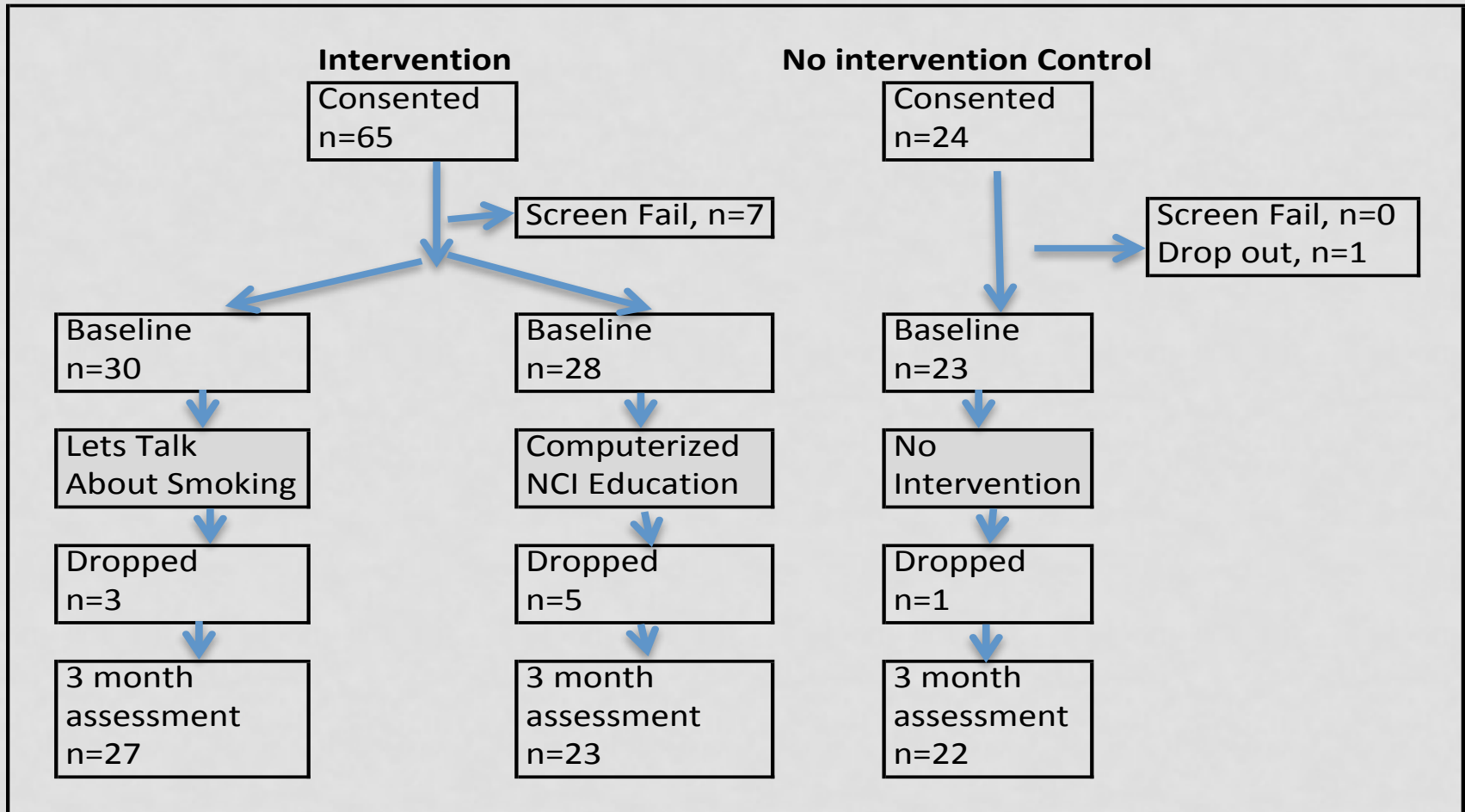


Paper in preparation

ADAPTATIONS FOR YOUNG ADULTS

- Attractive young adult hostess who identifies as smoker with SMI and guides user through program
- Increased focus on social norms
 - Famous people quit stories
 - Inventory of social contacts who don't smoke
- Reduced focus on health, increased focus on impact on appearance
- Edgy videos depicting the harms of smoking
- Content on pregnancy

AIM 4. PILOT STUDY STUDY FLOW

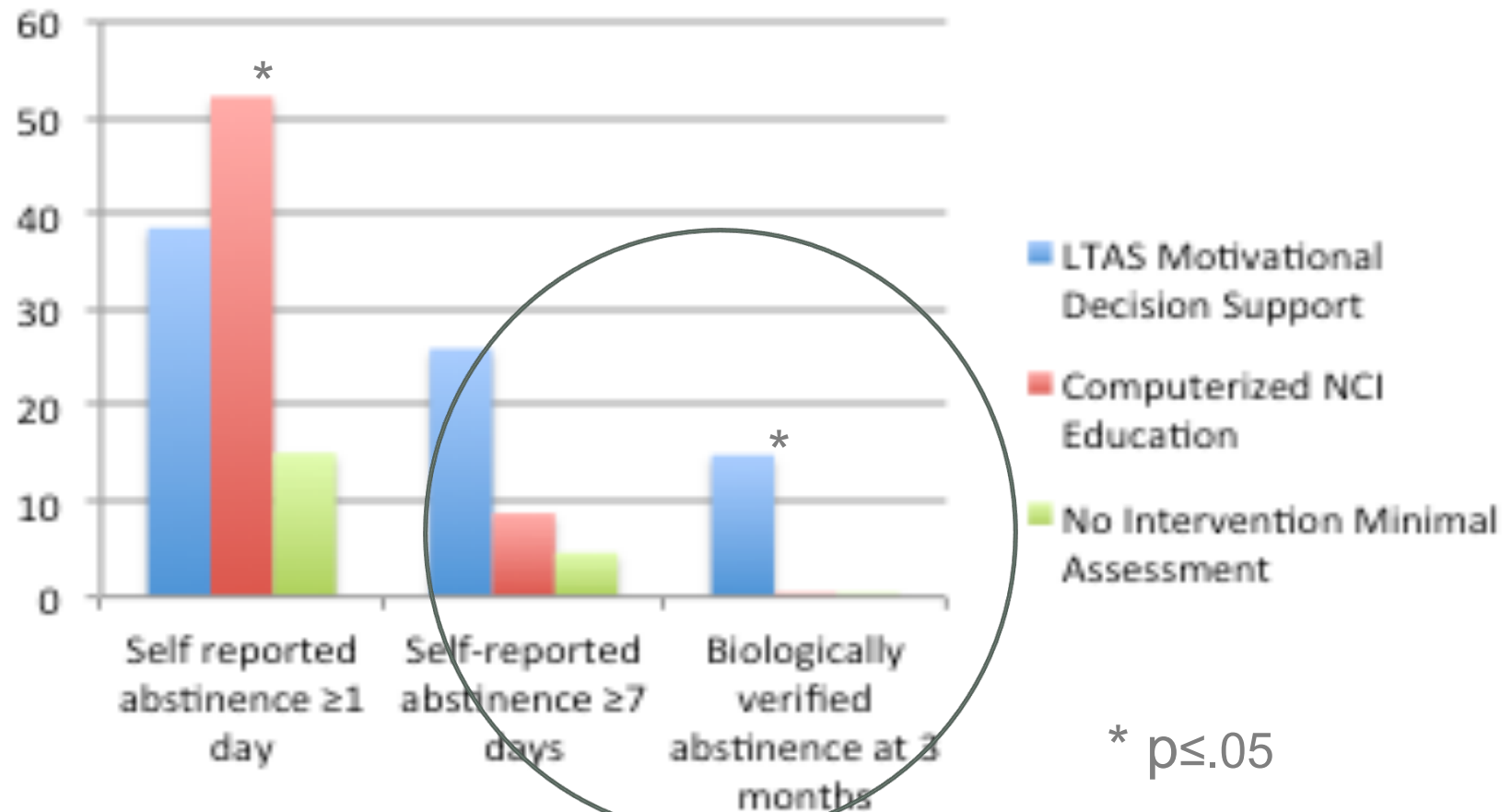


PILOT STUDY PRIMARY OUTCOMES

Table 2. Cessation treatment and support utilization over three month follow-up

	Motivational Decision Support (LTAS) N=27	Computerized NCI Education (NCI) N=23	No Intervention Min Assessment N=22	Total Sample N=72
Verified treatment				
Met with doctor to discuss cessation, verified	1 (3.7)	2 (8.7)	1 (4.5)	4 (5.6)
Attended cessation counseling, verified	0	0	0	0
Initiated cessation medication, verified	0	0	0	0
Initiated cessation NRT, verified	2 (7.4)	1 (4.3)	1 (4.5)	4 (5.6)
Started any verified treatment	2 (7.4)	1 (4.3)	1 (4.5)	4 (5.6)
Self reported treatment				
Met with doctor to discuss cessation, self report	2 (7.4)	1 (4.3)	2 (9.1)	5 (6.9)
Attended cessation counseling, self-report	2 (7.4)	2 (8.7)	1 (4.5)	5 (6.9)
Initiated cessation medication, self report	0	0	0	0
Initiated NRT, self-report	3 (11.1)	5 (21.7)	2 (9.1)	10 (13.9)
Talked to a friend about quitting, self report	5 (18.5)	6 (26.1)	5 (22.7)	16 (22.2)
NCI=National Cancer Institute Computerized Pamphlet, LTAS=Let's Talk About Smoking Website				
N = number, SD=Standard Deviation, NRT=Nicotine Replacement Therapy				

PILOT STUDY SECONDARY OUTCOMES: ABSTINENCE



PILOT STUDY CONCLUSIONS

- Brief, web-based interventions via computer activated young smokers with SMI into quitting behavior
- Contrary to our hypotheses and in contrast to middle aged SMI smokers, young adult smokers with SMI did not initiate cessation treatment
- LTAS participants had more effective quitting behavior resulting in verified abstinence compared to control, unrelated to treatment utilization
- Results suggest further testing of LTAS as an intervention for abstinence is warranted
- Future efforts for increasing the potency of the intervention may focus on social norms, peers or social support

YOUNG ADULT SMOKERS WITH COMORBIDITY

CAN THEY QUIT?

YES THEY CAN!!

TIPS AND STRATEGIES FOR
ADDRESSING SMOKING AMONG
YOUNG ADULTS WITH COMORBIDITY

COMBINED, INTEGRATED TREATMENT

- Behavioral treatment
 - Skills training and support
 - Addresses beliefs that smoking is needed to cope; teaches new coping strategies
- Medication treatment –
 - Addresses biological dependence & withdrawal
- Integrated with primary care
- Integrated with mental health and addiction care

- MAY NEED MORE HELP FOR A LONGER PERIOD OF TIME
- MAY NEED REPEATED OFFERS FOR HELP

TREAT ACTIVE DEPRESSION, ANXIETY, SUBSTANCE DISORDERS

- History of psychiatric illness or addiction does not impede outcomes
- Current symptoms and severe substance abuse are associated with more difficulty quitting
- Use cognitive, behavioral counseling strategies, exercise, medications if severe

TAILOR STANDARD BEHAVIORAL STRATEGIES

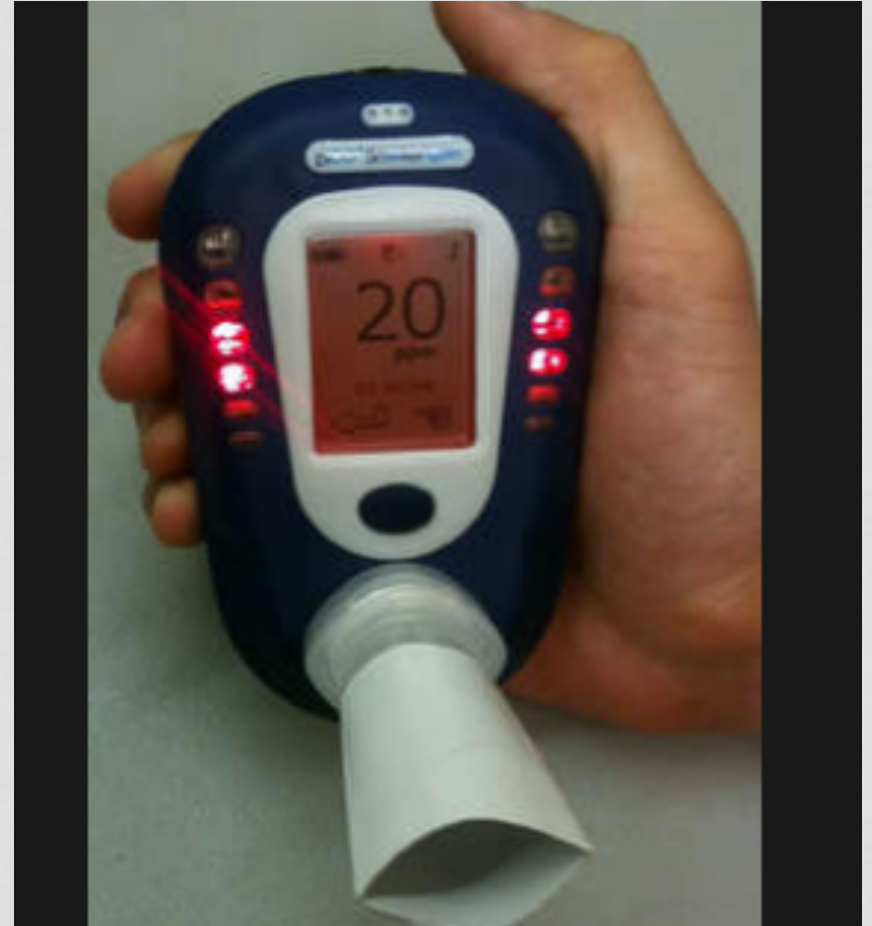
- Education, decision support
- Motivational counseling
- Self assessment and tracking
- Cessation skills - 4 Ds
- Using medication effectively
- Relapse prevention
- Coping with slips
- Expanding health and wellness

EDUCATION

- Clear, simple information about smoking and quitting
- Example:
 - ~~Smoking will cause lung disease~~
 - “The tar in smoke is harmful to your body in many ways. Little by little, the harms build up and cause problems for your heart, your lungs, your blood vessels. This eventually can cause problems with sexual functioning for men and developing babies for women.”

MAKE IT CONCRETE

- Use a breath carbon monoxide monitor to demonstrate toxins
- “The toxins or poisons in smoke hurt you and your baby. We can measure them.”
- “Your breath carbon monoxide is 20. Do you want to see what happens when you cut down or quit? It will go down to zero, and you won’t be harming your body.”



MOTIVATIONAL STRATEGIES

- Health checklist – review each condition smoking causes – has it happened to you yet?
- Blow into carbon monoxide monitor and learn that smoke toxins in your lungs will be gone the day after you quit.
- Calculate the financial cost of buying smokes – what else could you spend that money on?
- Create a pros and cons list for smoking and for quitting
- Build confidence by using nicotine gum or lozenge to skip cigarettes.
- Hear about how other young adult smokers successfully quit – role models to increase social norms for quitting

LINK TO VIDEO QUIT STORY

- <https://www.youtube.com/watch?v=dZ66pcdvq1s>

DECISION SUPPORT

for cessation and treatment

- Decision support means providing information in plain language about treatment options with similar efficacy
- Improves use of treatment and satisfaction with treatment – many studies in medicine
- Help people review medication options and choose one that can work for them
- Because nicotine replacement therapy is safe, easily available, and does not interfere with other medications, it may be the best option for most people
- Daily patch with as needed gum or lozenge up to 12 times/day is very effective

WHAT IS MOTIVATIONAL INTERVIEWING?

- Goal:
 - To create a salient dissonance or discrepancy between the person's current substance abuse behavior and important personal goals
- Core Principles
 - Express empathy – learn about how it is hard to quit, perceived benefits and down sides from smoking
 - Establish personal goals with which quitting aligns– health, finance, social,
 - Develop discrepancy- smoking interferes
 - Roll with resistance – don't argue
 - Support self efficacy – past quits, cutting down, other steps towards health and self sufficiency that felt successful

TEACH QUIT SKILLS: PRACTICE THE 4 DS WHEN YOU HAVE THE URGE INSTEAD OF SMOKING

- **Deep, relaxed breathing**
 - A way to cope with stress, emotions, and urges to smoke
 - Helps everyone cope with stress and feel better
- **Delay – ride the wave**
 - Urges happen but they subside within 5-10 minutes
 - Urges won't harm you and they will go away
 - People can observe the urge, accept it, but not act on it
- **Do something else to distract yourself**
 - When you want to smoke, get engaged in something else that helps you forget the smoke
 - Make a list of 10 things you can do instead of smoking that will get your mind off the urge
 - Tape list to pack, put on phone, or other prominent place
- **Drink water**
 - Helps you feel better while you are quitting

BEHAVIORAL STRATEGIES: HELP SMOKER LEARN ABOUT SMOKING ROUTINE AND TRIGGERS

- Track smoking for a week
 - When, where, who?
 - Feelings – boredom, anger, loneliness?
 - Patterns and people you smoke with?
 - Track it with a paper on your pack
- Explore all the reasons why you want to quit
 - write them down,
 - put them on your pack
 - and look at them all week.

GETTING READY

- Set a quit date
- Plan the quit day,
 - Write out hour to hour plan
- Get rid of smokes, ashtray and lighter, other triggers
- Get nicotine replacement therapy or other cessation medication prescription and start using it
- Learn how to say no to others and practice refusing a cigarettes

QUIT DAY

- Use written, detailed, hour to hour plan
- Counselor should call on that day to encourage the plan

STAYING QUIT

- Keep using the NRT or meds – helps prevent relapse
- Use 4 D skills when urges come
- Using strategies to cope with stress
- **Keep remembering why to stay motivated**
- Don't give up after a slip – provide support and help people get back on track right back into quit after slip
- Increase meds if needed
- Do behavioral analysis and work on shoring up skills and motivation
- Further health and wellness activities
 - Exercise, social life, hobbies, etc

BEHAVIORAL CESSATION TREATMENT FOR DISADVANTAGED POPULATIONS:

- Improve social support and skills training for quitting
- Combine with biological treatments
- More and longer treatment
- Incorporating motivational interventions
- Incorporate incentives for treatment attendance or abstinence
- Flexible but persistent approach -
- Integrate with pregnancy care, mental health and addiction treatment

INCORPORATE ENVIRONMENTAL AND ORGANIZATIONAL CHANGE

- Smoke free treatment facilities
 - Reduce cues that trigger craving
- Smoke free clinicians
 - Are role models
- Focus on health and wellness
 - Highlights reasons to quit
- Take a whole person approach to recovery
 - Cigarettes will harm people who otherwise are in recovery
- Teach healthy coping strategies that can be applied across disorders
 - Cessation skills help with other addiction and mental health conditions

SUMMARY

- Young adult smokers can eliminate health disparities if they quit by age 30
- Many young adults with comorbidity will quit when provided basic education and motivational intervention
- Others may need more extensive cessation interventions over time

QUESTIONS & DISCUSSION



For more information, see my short videos:

Smoking, mental illness and substance abuse

<https://www.youtube.com/watch?v=kOqwF4JkXK4>

Nicotine replacement therapy

https://www.youtube.com/watch?v=IWvhYUuAV_w



UPCOMING PRESENTATION

Initiating Treatment of Opioid Use Disorder in Emergency Departments

Ryan McCormack, MD | January, 2018 (exact date TBD)



The Emergency Department (ED) is a critical venue to initiate opioid use disorder (OUD) interventions. ED patients have a disproportionately high prevalence of substance use disorders, are at an elevated risk of overdose, and many do not access healthcare elsewhere. Despite this, OUD interventions are rarely initiated in EDs. Lack of training, time, and definitive referral opportunities are frequently cited barriers. Research is urgently needed to clearly identify, develop and implement the elements essential to initiating OUD treatment and referral in EDs in ways that are effective, practical and sustainable across settings and that are acceptable to patients, families, providers, healthcare agencies and payers. Dr. McCormack will present on ED-based interventions and pharmacotherapy for opioid use disorder. Specifically, he will discuss design and implementation of NIDA CTN-0079: ED Connection to Care with Buprenorphine for Opioid Use Disorder in Rural and Urban Settings (ED CONNECT), a multi-center study anticipated to begin recruitment in early 2018 at Bellevue Hospital Center (NY, NY), Catholic Medical Center (Manchester, NH) and Valley Regional Healthcare (Claremont, NH).



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