

Smoking Among People with Severe Mental Illness

**Deb Hrouda
Patrick Boyle**

Center for Evidence Based Practices
Ohio SAMI CCOE Ohio SE CCOE
Tobacco: Recovery Across the Continuum
Case Western Reserve University, Cleveland, Ohio

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Goals for today

- Identify what contributes to high morbidity and mortality for people with SMI
- Explore significant tobacco-related health issues
- Examine the unique and serious interface between tobacco use and SMI
- Explore considerations for implementation of best practices

Recent data from several states have found that people with severe and persistent mental illness (SMI) **die**, on average,

25 years earlier

than the general population

Recent Multi-State Study Mortality Data: Years of Potential Life Lost

Year	AZ	MO	OK	RI	TX	UT	VA (IP only)
1997		26.3	25.1		28.5		
1998		27.3	25.1		28.8	29.3	15.5
1999	32.2	26.8	26.3		29.3	26.9	14.0
2000	31.8	27.9		24.9			13.5

Compared to the general population, persons with major mental illness typically lose more than 25 years of normal life span

Ohio Study (1998 – 2002)

Leading Causes of Death

1. Heart-related diseases	20.7%
2. Suicide	17.8%
3. Accidents (unintentional injuries)	13.7%
4. Cancers	7.2%
5. Abnormal clinical & lab findings	5.3%
6. Chronic lower respiratory diseases	5.1%
7. Diabetes	3.0%
8. Pneumonia & Influenza	2.6%
9. Cerebrovascular diseases	1.6%
10. Murder	1.6%

What are the Causes of Death in People with Serious Mental Illness?

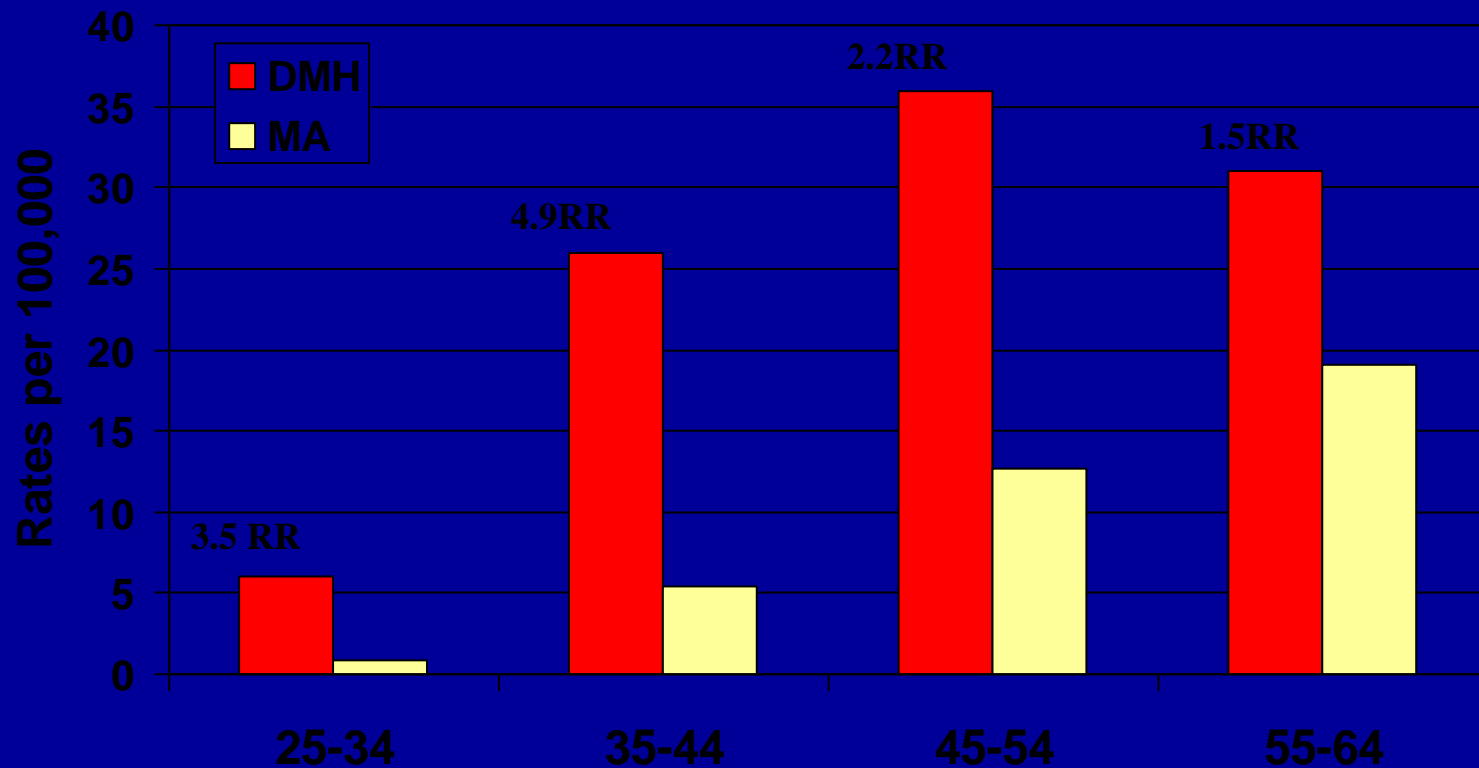
- While suicide and accidents account for about 30-40% of excess mortality, about 60% of premature deaths in persons with serious mental illness are due to “natural causes”
- Higher standardized mortality rates than the general population from:

– Cardiovascular disease	2.3x
– Respiratory disease	3.2x
– Diabetes	2.7x
– Infectious diseases	3.4x
- Cardiovascular disease associated with the largest number of deaths
 - 2.3 X the largest cause of death in the general population



Deaths from Heart Disease

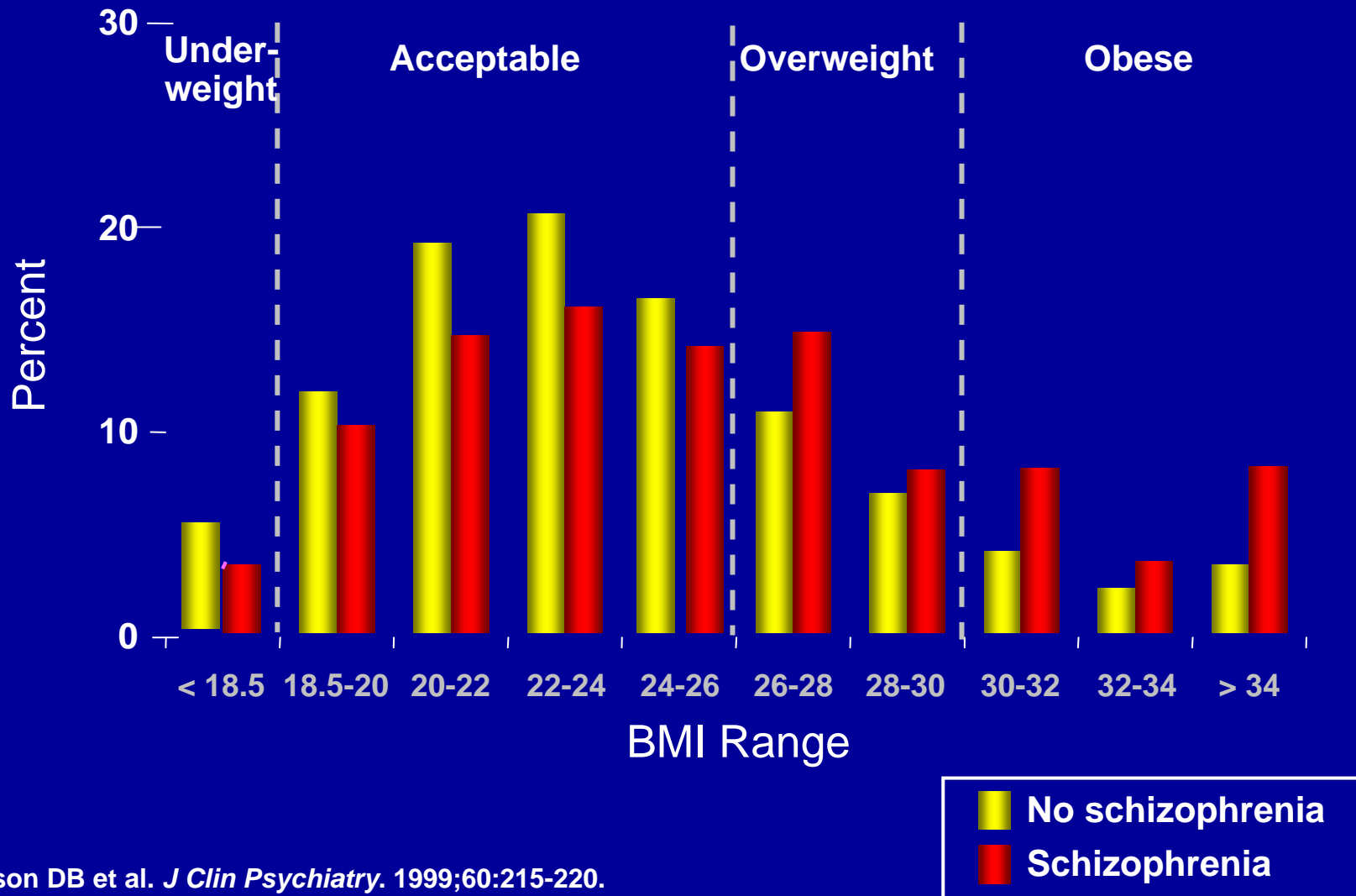
DMH Enrollees with SMI Compared to Massachusetts
1998-2000



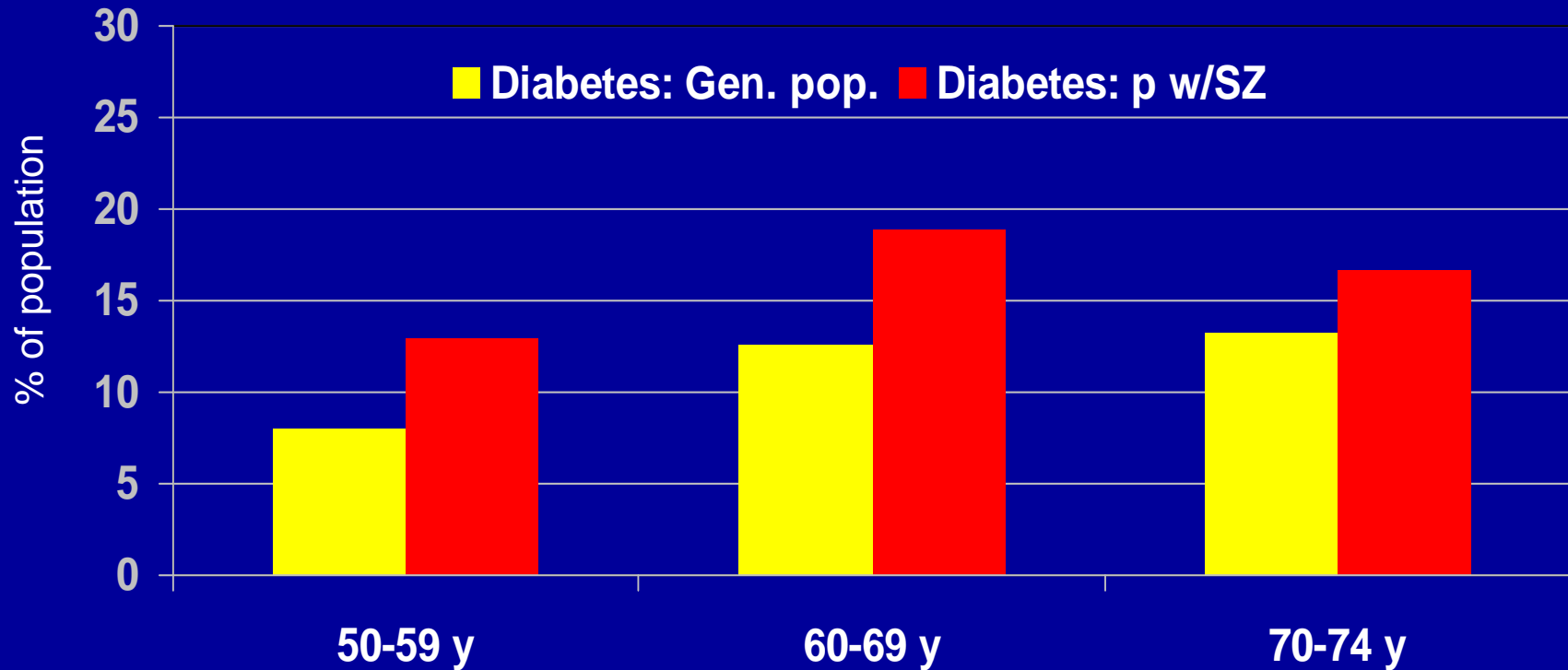
Cardiovascular Disease risk factors

- Overweight (BMI >27)
- Smoker
- High Cholesterol (TC >220)
- Diabetes
- High Blood Pressure

BMI Distributions for General Population and Those With Schizophrenia (1999)



Prevalence of Diabetes in General Population Versus People with Schizophrenia

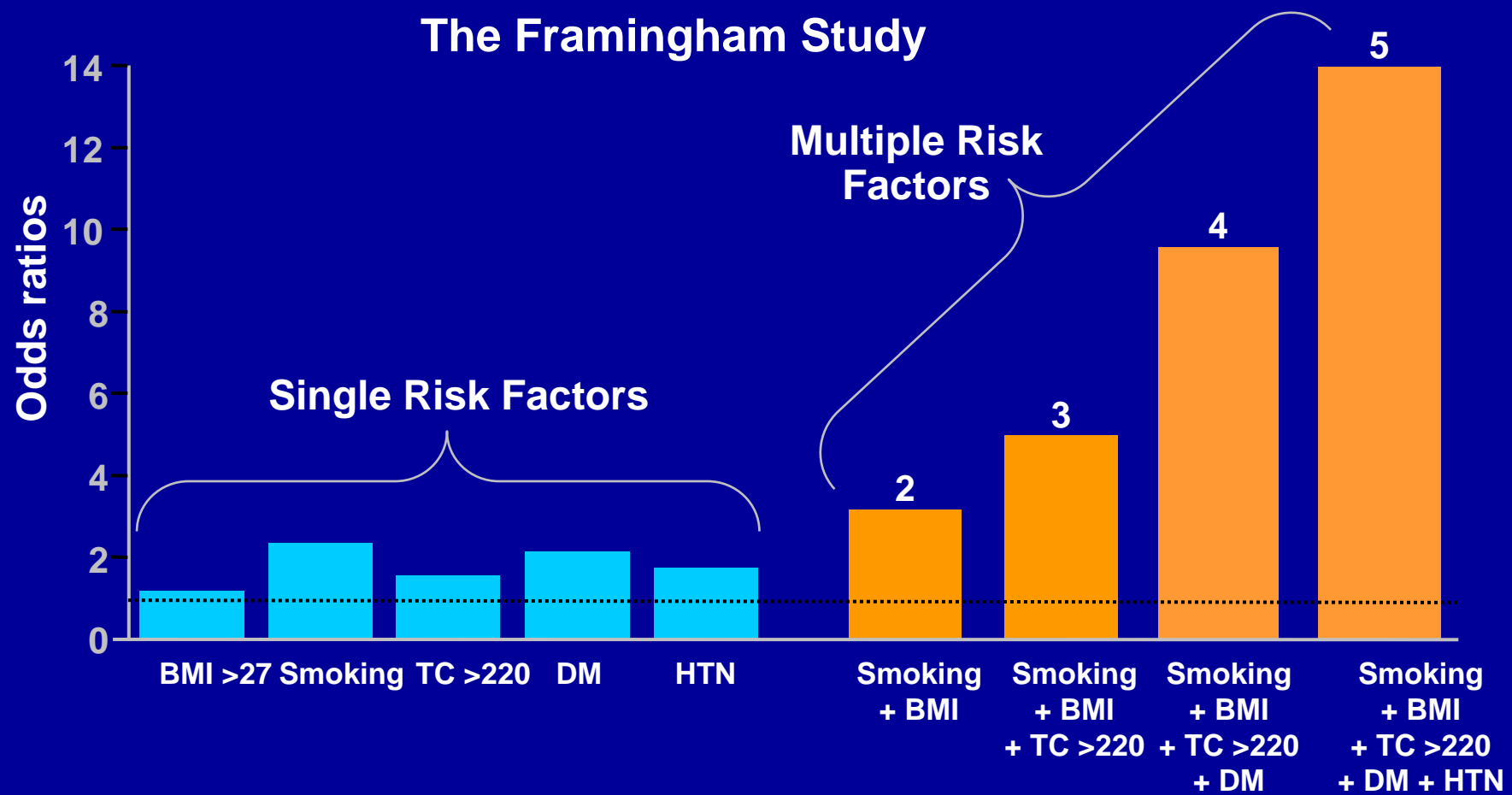


Harris et al. *Diabetes Care*. 1998; 21:518.

Mukherjee et al. *Compr Psychiatry*. 1996; 37(1):68-73.



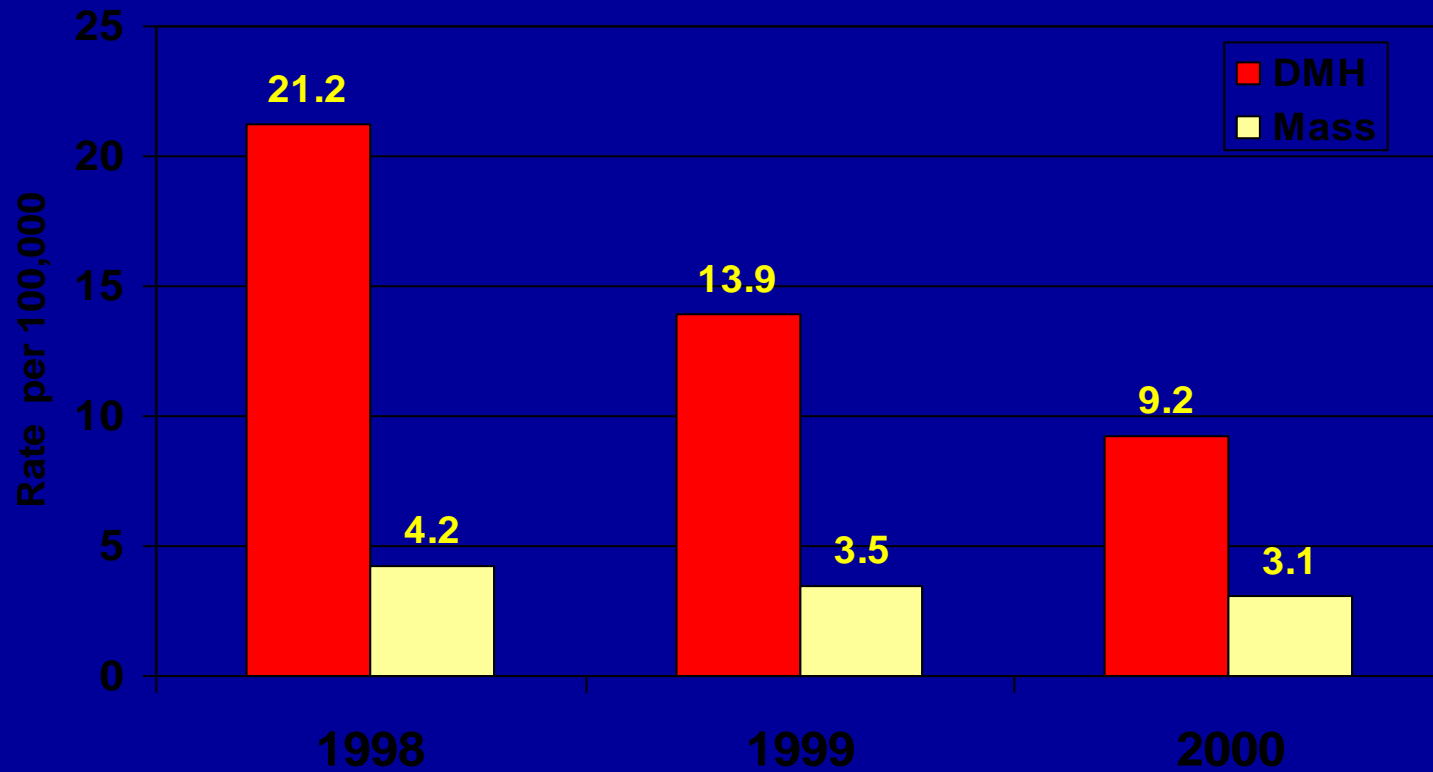
Cardiovascular risk factors – overview



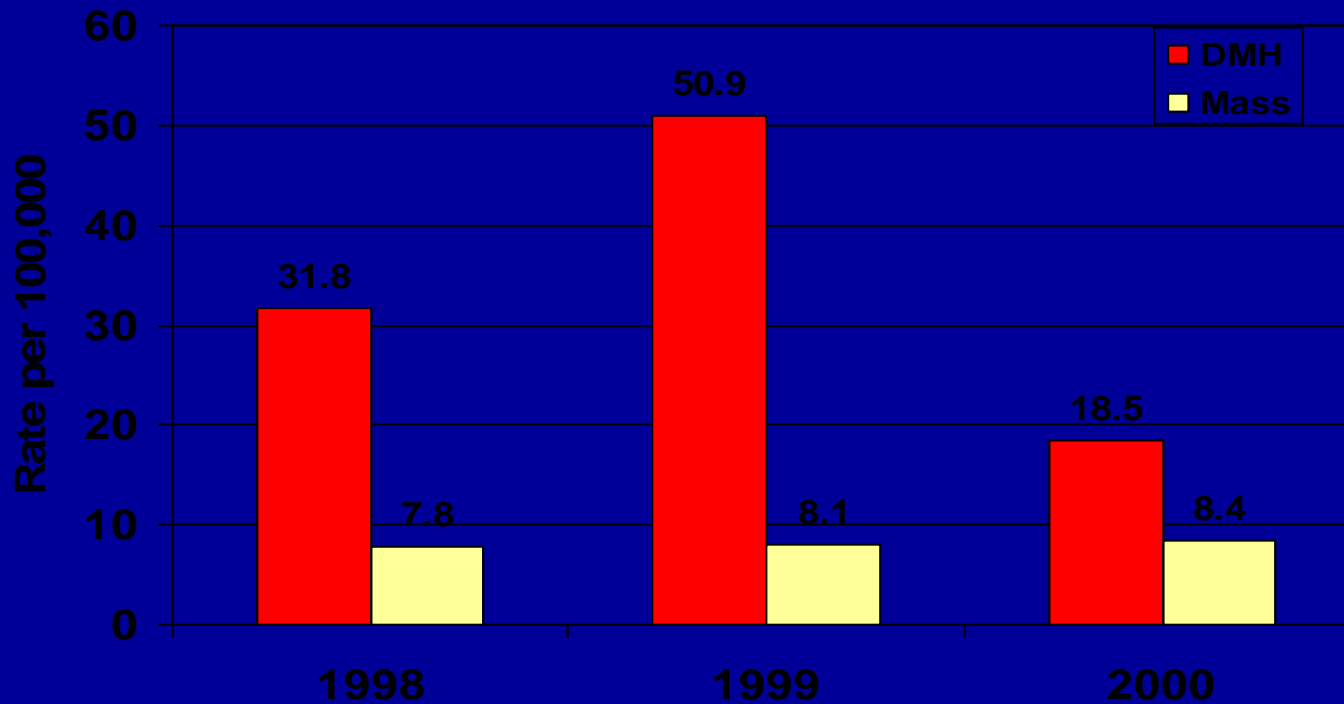
BMI = body mass index; TC = total cholesterol; DM = diabetes mellitus; HTN = hypertension.

Wilson PWF et al. *Circulation*. 1998;97:1837–1847.

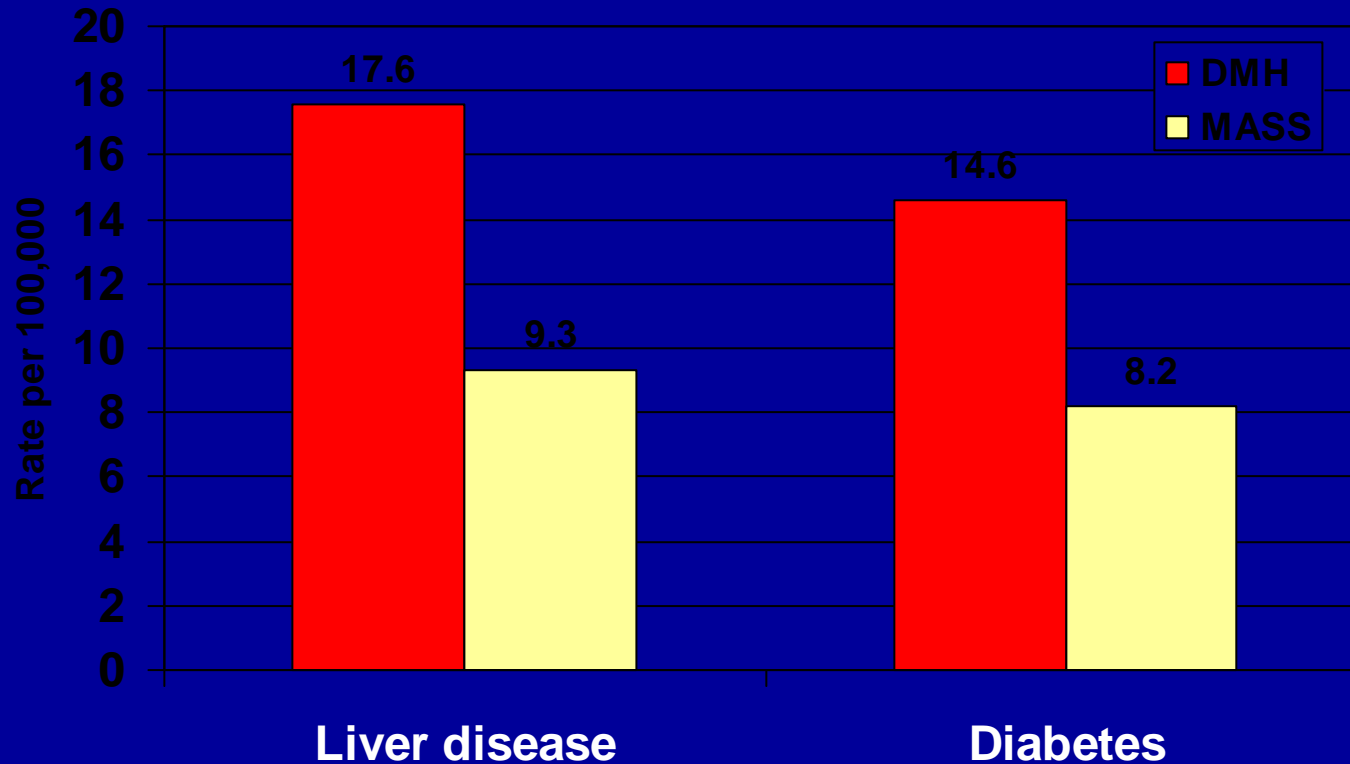
Deaths from Pneumonia/Influenza DMH clients, ages 25-64



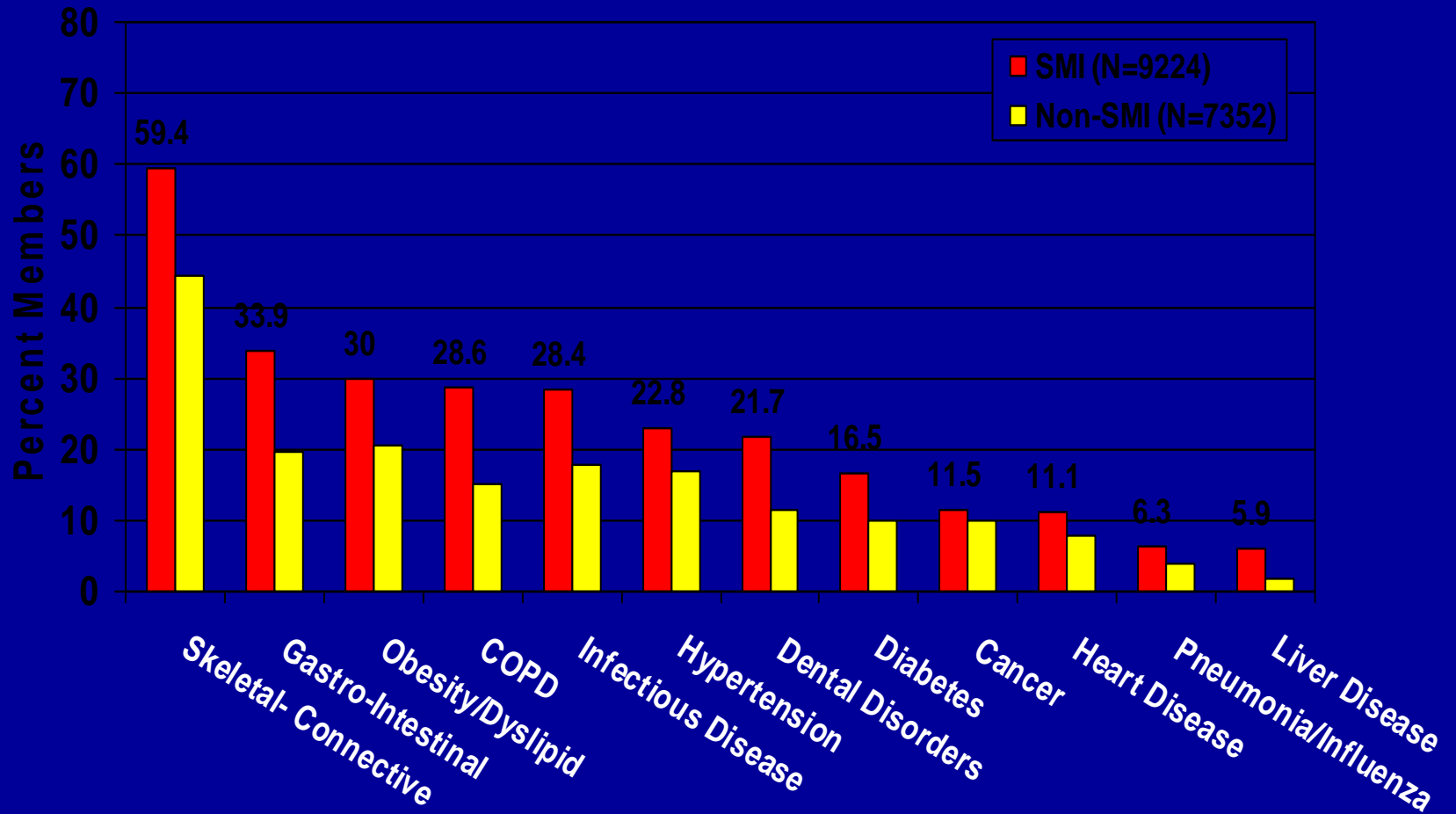
Deaths from Lower Respiratory Disease DMH clients, ages 25-64



Deaths from Liver Disease and Diabetes DMH and Massachusetts

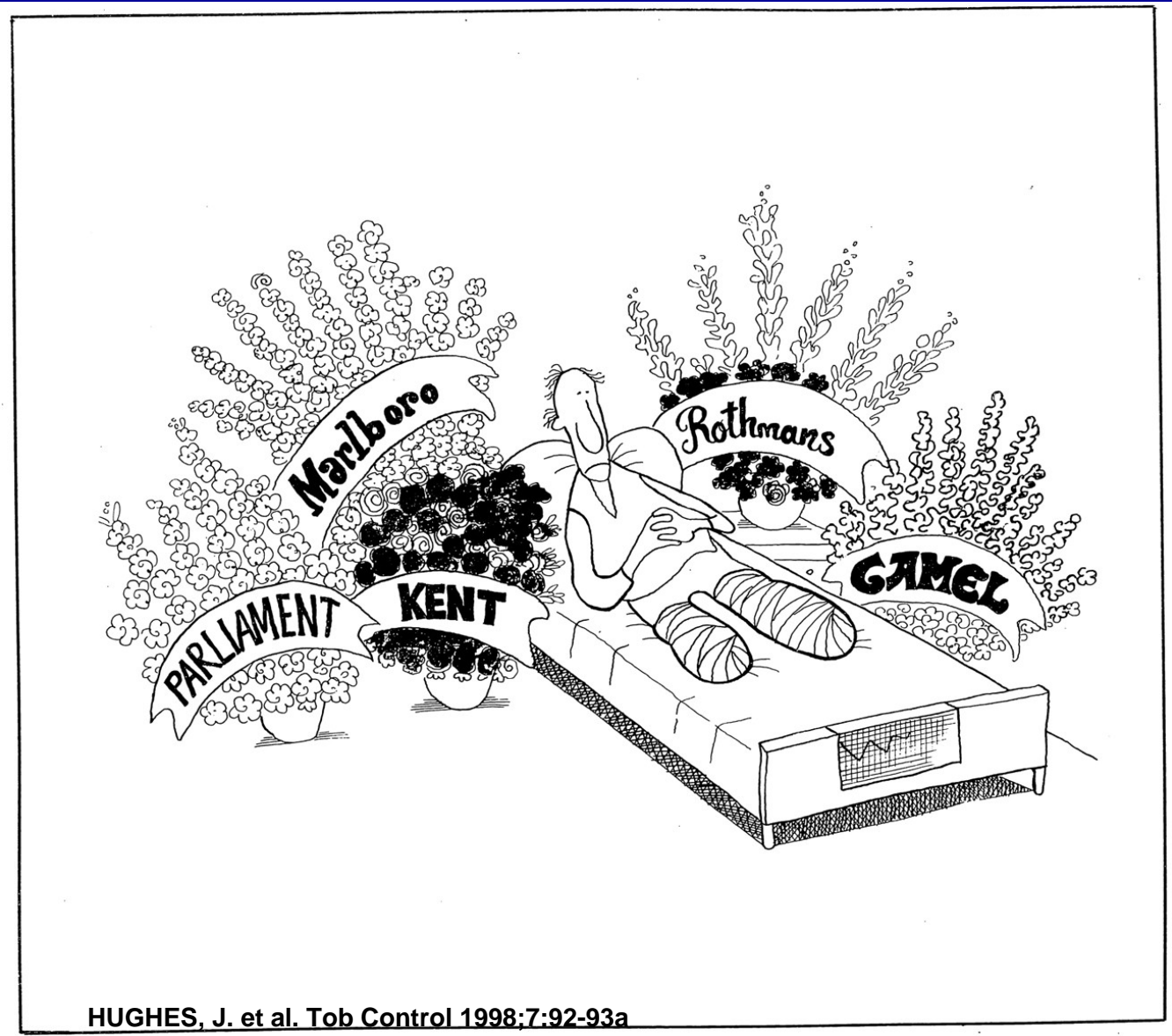


Comparison of Health Disorders Between SMI & Non-SMI Groups (Maine)



Morbidity and Mortality

- People with SMI have higher rates of morbidity and mortality from:
 - Heart disease, respiratory diseases, diabetes, high BMI, cancer
- These conditions can be either directly or indirectly related to and/or exacerbated by tobacco use



HUGHES, J. et al. Tob Control 1998;7:92-93a

What percent of cigarettes smoked in the US are smoked by people with a psychiatric condition?

A. 5%

B. 16%

C. 31%

D. 44%

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SMI and Smoking

- Higher prevalence (56-88% for patients with schizophrenia) of cigarette smoking (overall U.S. prevalence 18-25%)
- More toxic exposure for patients who smoke (more cigarettes, larger portion consumed)
- Similar prevalence in bipolar disorder

Neurobiological Connection (critical component)

- Smoking may interfere with the metabolism of psychotropic medications
 - Potentially higher doses needed for therapeutic effect
 - Side effects may increase as tobacco decreases
- Implications for reduction/cessation

“Positives” of Tobacco and SMI

- Nicotine improves sensory gating and cognitive symptoms in schizophrenia acutely
- Nicotine acts as a monoamine oxidase inhibitor and COULD have antidepressant effects
- Implications for reduction/cessation

“Positives” of Tobacco and SMI

(not)

- Tobacco itself is untested for all of these effects and its lethality is unquestionable. Much safer treatments are available.
- Long-term smoking causes appreciable cognitive decline, with decrease in memory, problem solving ability, thinking speed and even IQ
- Alcoholics who smoke have more cerebral atrophy than alcoholics who do not smoke

Six Degrees of Separation:

Tobacco and Concerns for SMI



- Premature death
- Diabetes
- “I’m on too much meds”
- Obesity
- No money
- Belief the smoking helps sxS

Premature Death

Tobacco use



Cardiovascular Disease /
Respiratory Illnesses / Diabetes /
Cancer / Accidents



Death

DS = 1

Diabetes

Tobacco use

Increased
insulin
resistance

Interferes w/ metabolism of Rx

Need higher dose of Rx

Rx related to
onset diabetes

Weight
gain

Diabetes

DS = 1 to 3

“I’m on too much medicine”

Tobacco Use



Interferes with metabolism of Rx



**Need higher doses to get
therapeutic effect**

DS = 1

Obesity

Tobacco Use



Interferes with metabolism of Rx



Higher dose of psychotropics needed



Weight gain potential side effect of
meds (dose dependent)

Sedation side effect of meds
(dose dependent) – sedentary



Obesity

DS = 3

On average, what percent of a consumer's income is spent on cigarettes?

A. 3%

B. 11%

C. 18%

D. 27%

Effects Upon Income

- People with schizophrenia spend an average of **27%** of their income on cigarettes (Steinberg et al, 2004)
- 68% of people with schizophrenia are “heavy smokers” (smoke 25 or more cigarettes per day) (McCreadie, 1999)

Cost of Cigarettes

- 1 pack of cigarettes = \$4.50
- 1 packs per day x 30 days = \$135/mon.
- 2 packs per day x 30 days = \$270/mon.
- Federal Benefit Rate (SSI) = \$674/mon.
 - Minus rent
 - Minus food
 - Minus utilities
 - Minus med co-pays
 - Minus ...

“I don't have enough money”

Tobacco Use



Expensive!



Not enough money for other things

DS = 1

“I don’t want to quit because smoking helps my symptoms”

Tobacco Use



Nicotine helps with sensory gating



Perception that smoking helps control voices/symptoms

DS = 1

Tobacco use and SMI

- Contributes to morbidity and mortality
- Impacts pharmacological treatment
- Neurobiological connection has direct implications for intervention
- Smoke more / get more toxic exposure per cigarette has direct implications for intervention

Premature death is largely due to

- Preventable medical conditions
 - Cardiovascular disease, diabetes, metabolic syndrome
- High prevalence of modifiable risk factors
 - Smoking, obesity, diet, exercise, substance use, infectious diseases, delayed/no well-care, medication and symptom management/monitoring
- For people with SMI, there is an epidemic within a National epidemic

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- For people with SPMI, there is an epidemic within a National epidemic

What can we do about it?

Implementing Best Practices

Implementation

The act of accomplishing some aim or executing some order -

- To put into practical effect; carry out
- Pursue to a conclusion

– Dictionary.com

...moving best practices into routine care
is more challenging than inventing them!

“It is one thing to say with the prophet Amos,
‘Let justice roll down like mighty waters,’ and
quite another to work out the irrigation system.”

William Sloane Coffin

Ohio's Plan

- President's New Freedom Commission on MH – take advantage of most effective treatments and supports available including evidence-based practices
- Increased national emphasis on integrating physical and behavioral health
- Development of “Coordinating Centers of Excellence (CCOEs)” – expert resources providing technical assistance, evaluation, training, and clinical and program consultation to improve quality of programs/services

Partnerships

- CCOEs – partnership between ODMH, ODADAS, ODH and Case Western Reserve University
- Center for EBPs – unique and innovative partnership within CWRU: MSASS and Dept. of Psychiatry
 - Ohio SAMI CCOE (IDDT)
 - Ohio SE CCOE (Supported Employment)
 - Tobacco initiative

The Center for EBPs

MISSION:

- To promote the development and maintenance of integrated treatment and contribute to the knowledge base concerning the treatment and recovery of people with co-occurring substance use and mental disorders
- To promote the successful implementation (high fidelity) and maintenance of IDDT, SE, and the Tobacco Cessation Model
 - To increase psychiatric stability and abstinence from alcohol, drugs and tobacco for all Ohio MH and SA clients

Number & Location of CEBP Services Areas

- 60 community based MH inpatient and outpatient programs in Ohio receive services
- 17 States from Maryland to California receive technical assistance
- 9 of which have contractual agreements with the Center
- SA & MH Providers from Australia, England and the Netherlands

“Problem” themes

- Dissemination of information (e.g. research literature, mailings, promulgation of practice guidelines) by itself does not lead to successful implementation
- Training alone, no matter how well done, does not lead to successful implementation

Why EBPs get a bad rep



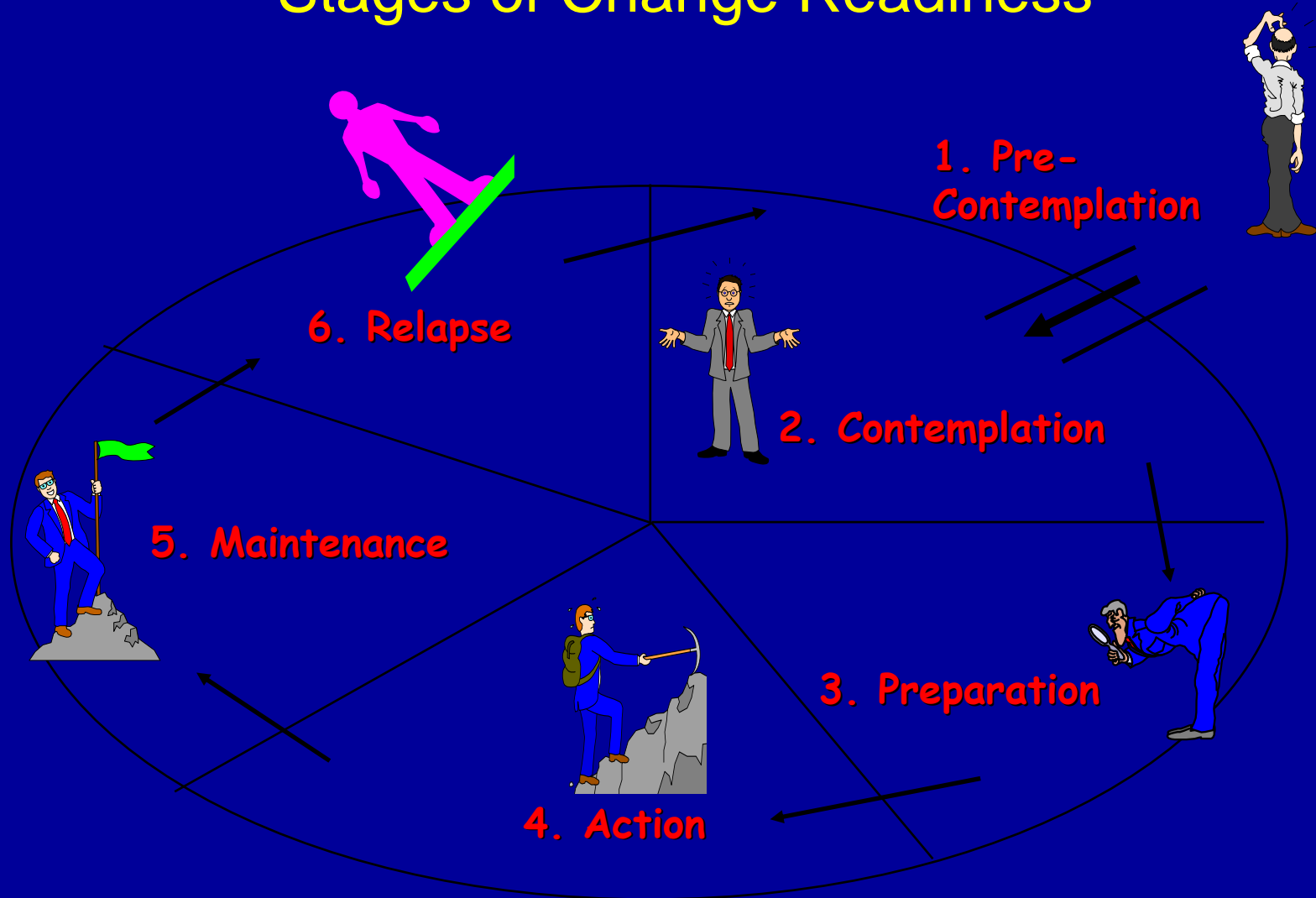
- Touting a practice with some evidence as “Evidence Based Practice”
- Doing EBP without ongoing evaluation of fidelity to the model
- Adapting the EBP to the point it is no longer related to the original model

Implementing Best Practices

(the CEBP way)

- Assess Readiness
 - Identify Organization's Stage of Change
- Baseline fidelity
- Action Plan
- Consultation and training
- Ongoing outcomes monitoring
 - Implementation – program-level
 - Intervention – participant-level

Stages of Change Readiness



Adapted from Prochaska & DiClemente (1982), "Transtheoretical therapy: Toward a more integrative model of change." *Psychotherapy: Theory, Research, and Practice*, 19: 276-288.

Stage-based Approach to Organizational Change

Pre-contemplation	Unaware or uninterested
Contemplation	Information gathering
Preparation	Motivating change processes
Action	Implementing the model/services
Maintenance	Sustaining change
Relapse	Help organization learn from “relapse” and recycle through stages of contemplation, preparation, and action

Gently Resisting
Change Since 1872.



HISTORIC GRUENE ★ NEXT LEFT

MAGIC MEDIA

Market Days Every 3rd Weekend Feb./Nov.

STORAGE
BOATS - RVs - AUTO - HOUSEHOLD
605-9300

Baseline (and ongoing) Fidelity

- *Fidelity* – the degree to which a practice is being delivered as intended (are the elements of the practice model present and recognizable)
- High fidelity EBP programs produce superior consumer outcomes
- Measuring fidelity allows us to attribute consumer outcomes to the intervention



**ORIGINAL NESTLÉ® TOLL HOUSE®
CHOCOLATE CHIP COOKIES**

- 2 1/4 cups all-purpose flour
- 1 tsp. baking soda
- 1 tsp. salt
- 1 cup (2 sticks) butter
or margarine, softened
- 3/4 cup granulated sugar
- 3/4 cup packed brown sugar

- 1 tsp. vanilla extract
- 2 large eggs
- 2 cups NESTLÉ TOLL HOUSE
Semi-Sweet Chocolate
Morsels
- 1 cup chopped nuts

PREHEAT oven to 375°F.

COMBINE flour, baking soda and salt in small bowl. Beat butter, granulated sugar, brown sugar and vanilla extract in large mixer bowl until creamy. Add eggs one at a time, beating well after each addition. Gradually beat in flour mixture. Stir in morsels and nuts. Drop by rounded tablespoon onto ungreased baking sheets.

BAKE for 9 to 11 minutes or until golden brown. Cool on baking sheets for 2 minutes; remove to wire racks to cool completely.

Makes about 5 dozen cookies

covered
oven for
15-20
minutes

chocolate
morsels

oven



2 1/4

2 1/4

1 3/4

3

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10

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Measuring Fidelity to a Model

- **Organizational Characteristics**

Those aspects of an organization's structure and operations that support or block the implementation of new clinical approaches

- **Treatment Characteristics**

Clinical components of the model

Organizational Characteristics

(TRAC)

- T01: Organizational Philosophy
- T02: Organizational Policies and Procedures
- T03: Evidence of Individualized Treatment
- T04: Organization Wide Training
- T05: Tobacco Unit Staff
- T06: Inter-Disciplinary Communication
- T07: Supervision
- T08: Process Monitoring
- T09: Outcomes Monitoring
- T010: Quality Improvement
- T011: Participant Choice

Treatment Characteristics (TRAC)

TT1: Identification and Assessment

TT2: Continuum of Stage-Wise Tobacco Treatment Interventions

TT3: Motivational Interventions

TT4: Comprehensive Integrated Physical and Behavioral Health

TT5: Tobacco Specific Treatment Curriculum Content

TT6: Pharmacological Treatment

TT7: Abstinence Based Skill Development

TT8: Involvement of Social Support Network

Item Response Categories

Each item is rated using 5-point anchors

1 = NOT
IMPLEMENTED

to

5 = FULLY
IMPLEMENTED

Fidelity Review Process

- Step one – review occurs on-site (interviews and observations)
- Step two – all reviewers score fidelity independently
- Step three – consensus is reached
- Step four – full report with scores, rationales, and recommendations written and shared with agency stakeholders
- Step five – agency develops Action Plan in response to report/feedback

Ongoing outcomes monitoring

- Intervention Outcomes
 - The “Evidence” in EBPs
 - Collection of intervention outcomes in every application
- Implementation Outcomes
 - Fidelity scales measure the success of the implementation effort
 - Presence or absence of key elements
 - Scores allow us to attribute changes in intervention outcomes (consumer, etc.) to the EBP

Using a Fidelity Evaluation Report: Action Plan

- Steps to improve implementation/services
 - Based on fidelity feedback
 - Concrete steps, responsible parties, target dates
- Action Plan and organizational stage of change guide consultation and training

Implementation Lessons Learned

- Best practices and EBPs are preferred because they have empirical support they work
- Training alone is not sufficient
- Change occurs in stages and takes time
- Intellectual buy-in does not necessarily equal changed practice
- Agency cultures are heterogeneous
- Agency leaders often underestimate the complexity of implementation
- Ongoing attention to fidelity/outcomes is critical

Tobacco use and SMI

- Contributes to morbidity and mortality
- Tobacco has unique and serious interface with SMI
 - Impacts pharmacological treatment
 - Neurobiological connection
 - Smoke more / get more per cigarette
- Intervention is complex but critical



"My question is: Are we making an impact?"

Contact us

Deb Hrouda debra.hrouda@case.edu

Patrick Boyle patrick.boyle@case.edu

Center for EBPs at Case

Ohio SAMI CCOE

Ohio SE CCOE

Tobacco: Recovery Across the Continuum

www.centerforebp.case.edu

SMI and Physical Health Care

References

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SMI and Physical Health Care

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