



Effective Treatment of Substance Use Disorders

October 14, 2016

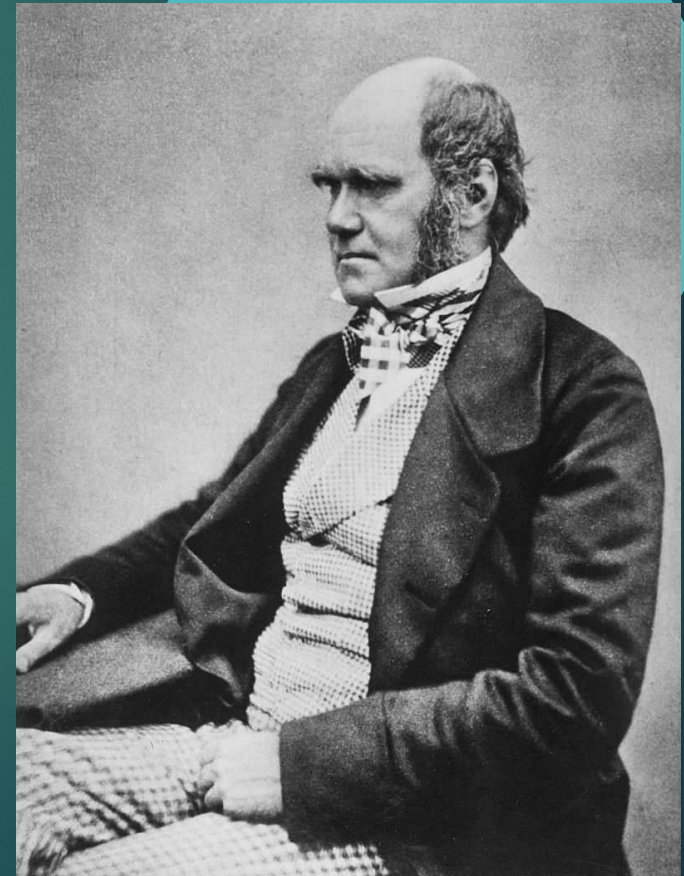
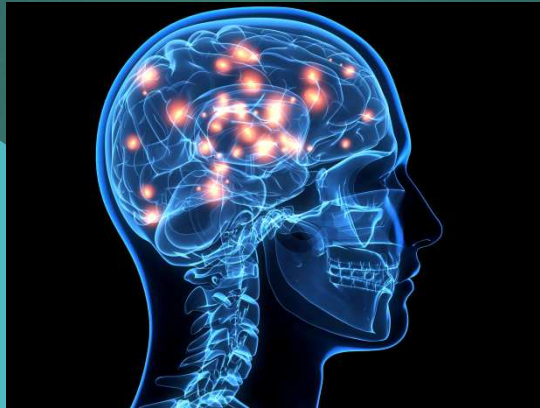
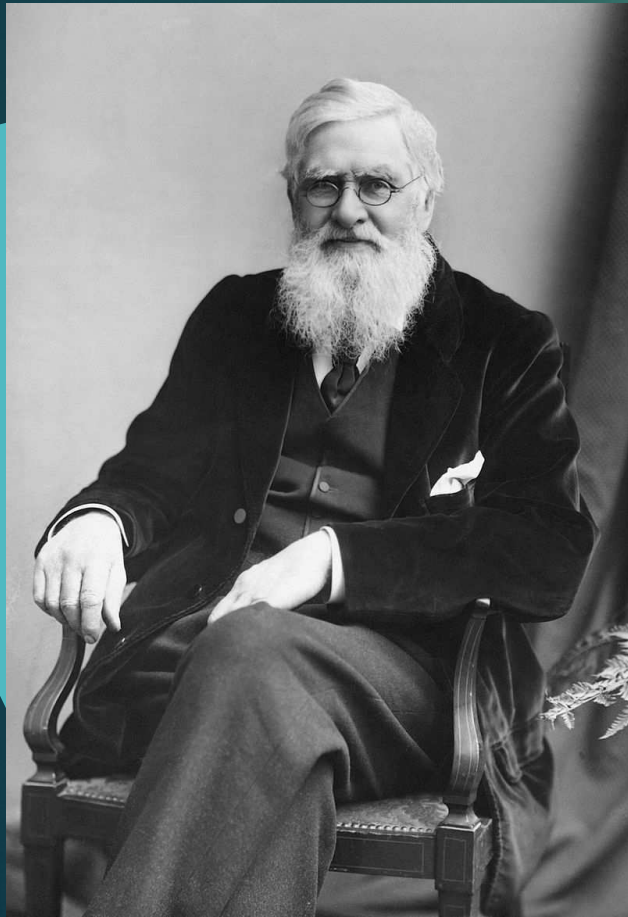
First International Conference on Addiction, Taipei, Taiwan

KEITH HUMPHREYS

VETERANS AFFAIRS AND STANFORD UNIVERSITY MEDICAL CENTERS

PALO ALTO, CALIFORNIA USA

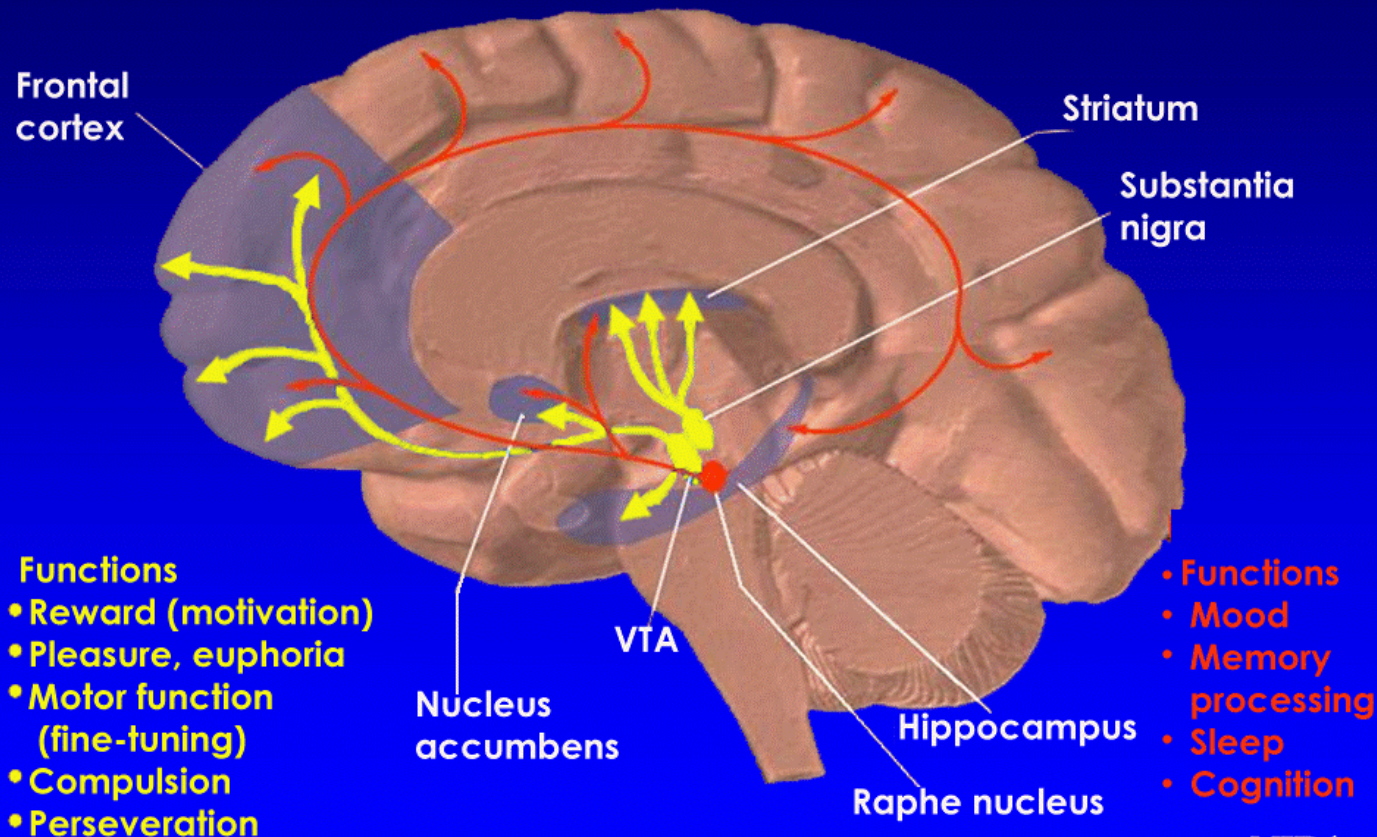
Evolution and the Human Brain



Brain Reward Systems

Dopamine Pathways

Serotonin Pathways



NIDA



What happens when the
brain we have evolved
meets a modern,
industrial world?



@JT

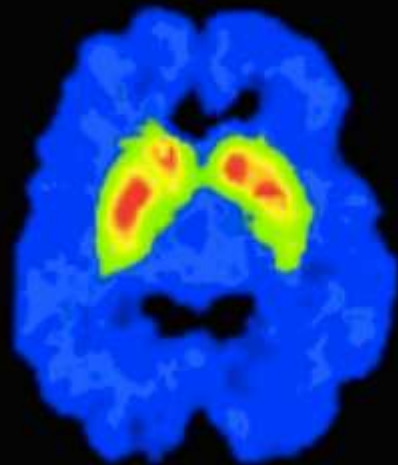
John Tewell

Massively expanded availability and use of potent psychoactive substances

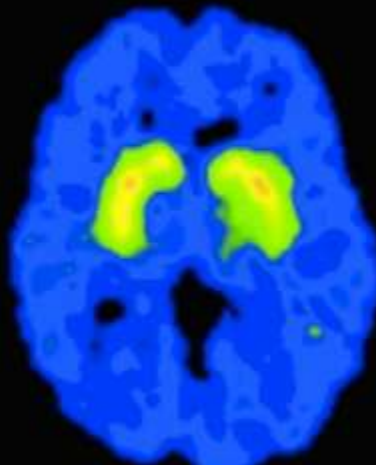
- ▶ Machine-rolled tobacco cigarettes
- ▶ Pharmaceutical opioids
- ▶ Cocaine
- ▶ Heroin
- ▶ High-strength and blended alcohol
- ▶ New Psychoactive Substances

Serious Substance Use Disorders Involve Enduring Brain Changes

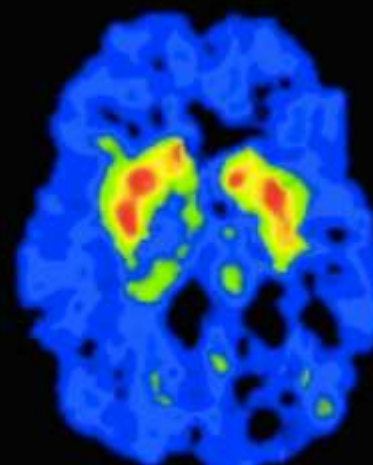
BRAIN RECOVERY WITH PROLONGED ABSTINENCE



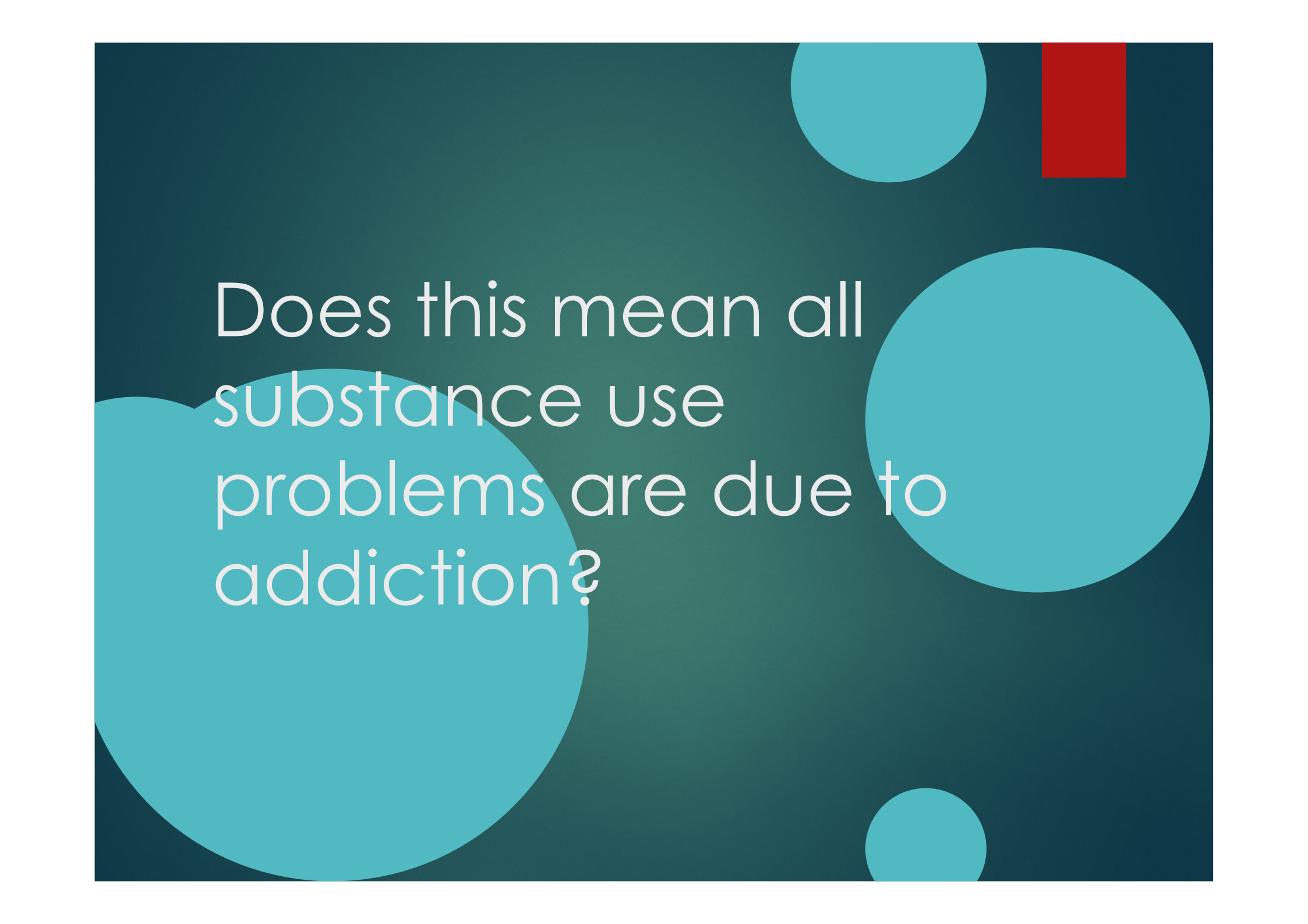
Healthy Person



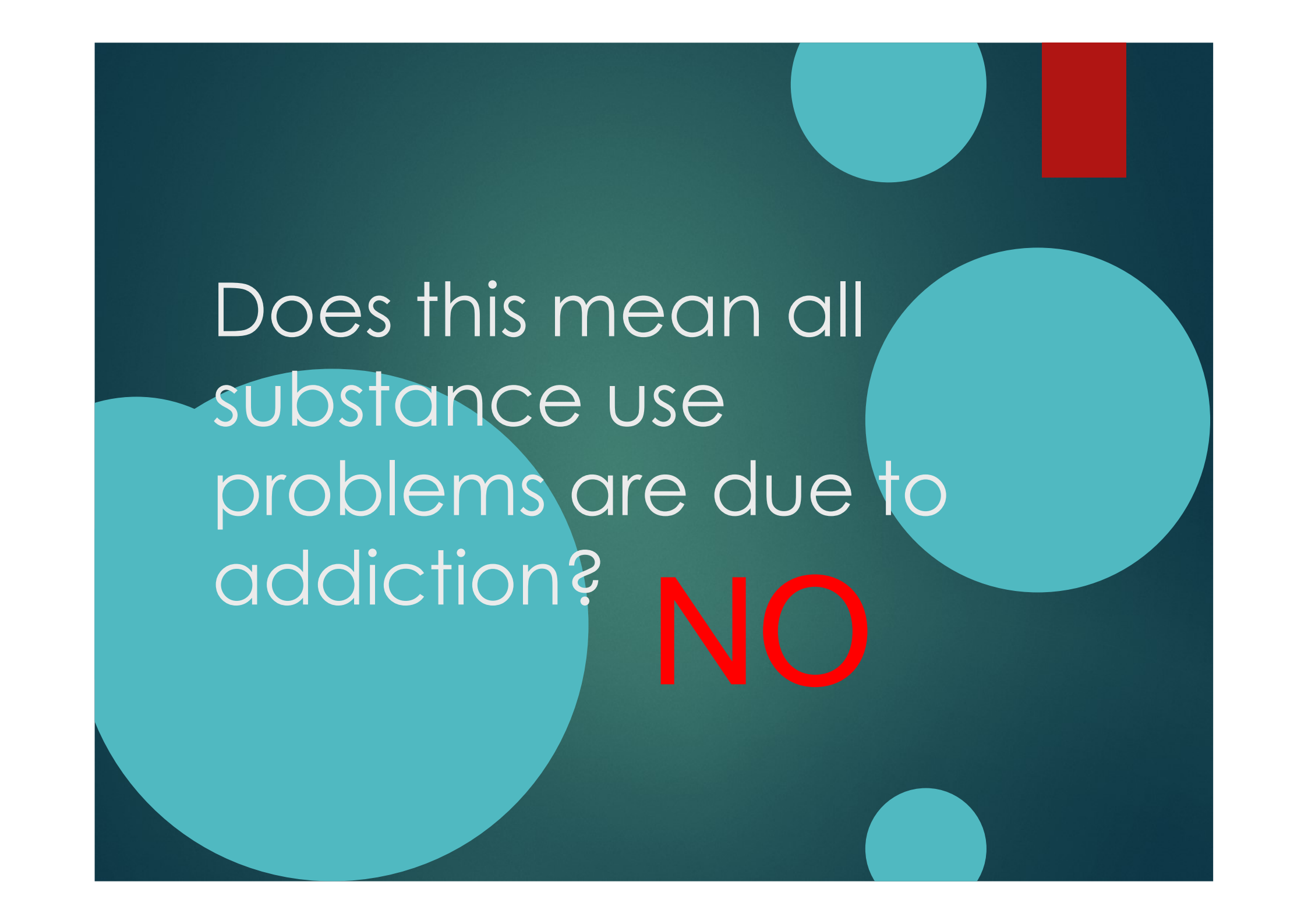
METH Abuser
1 month abstinence



METH Abuser
14 months abstinence



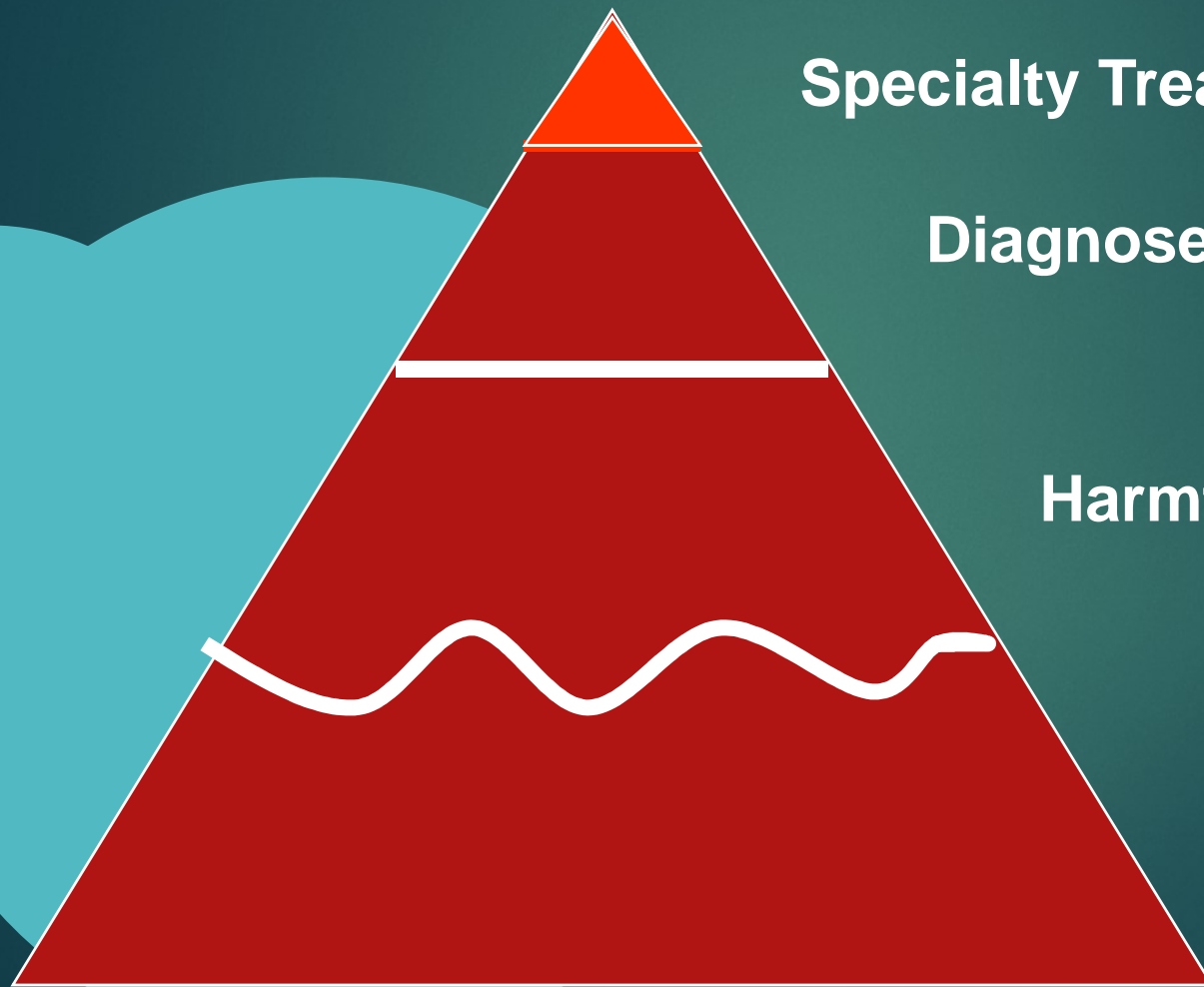
Does this mean all
substance use
problems are due to
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Does this mean all
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addiction?

NO

The Spectrum of Substance Use Disorder



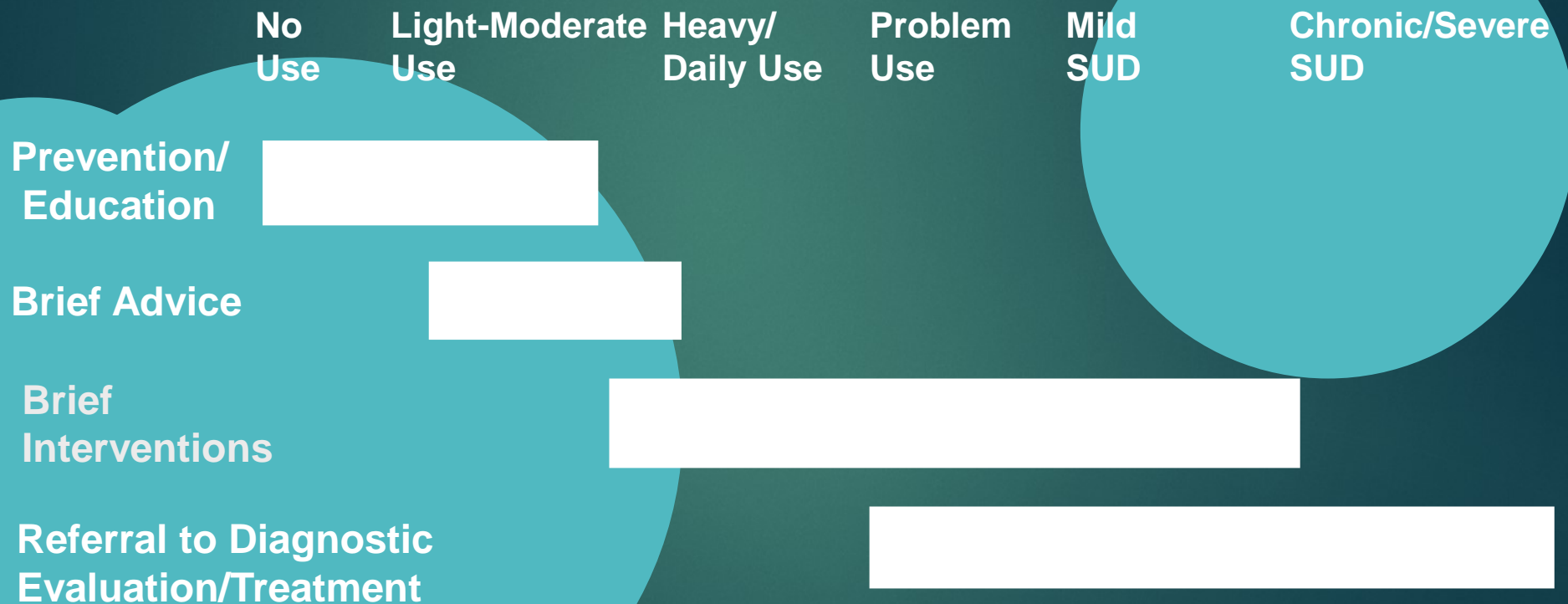
Specialty Treatment

Diagnosed SUD

Harmful/Hazardous Use

Little or No Use

Spectrum of Interventions for Substance Use



What actually happens in Brief Intervention?: FRAMES

Feedback

Responsibility

Advice

Menu of Options

Empathy

Self-Efficacy

Source: Miller, W. R., & Sanchez, V. C. (1993). Motivating young adults for treatment and lifestyle change. In G. Howard (Ed.), *Issues In Alcohol Use and Misuse by Young Adults*. South Bend, Indiana: Notre Dame University Press.

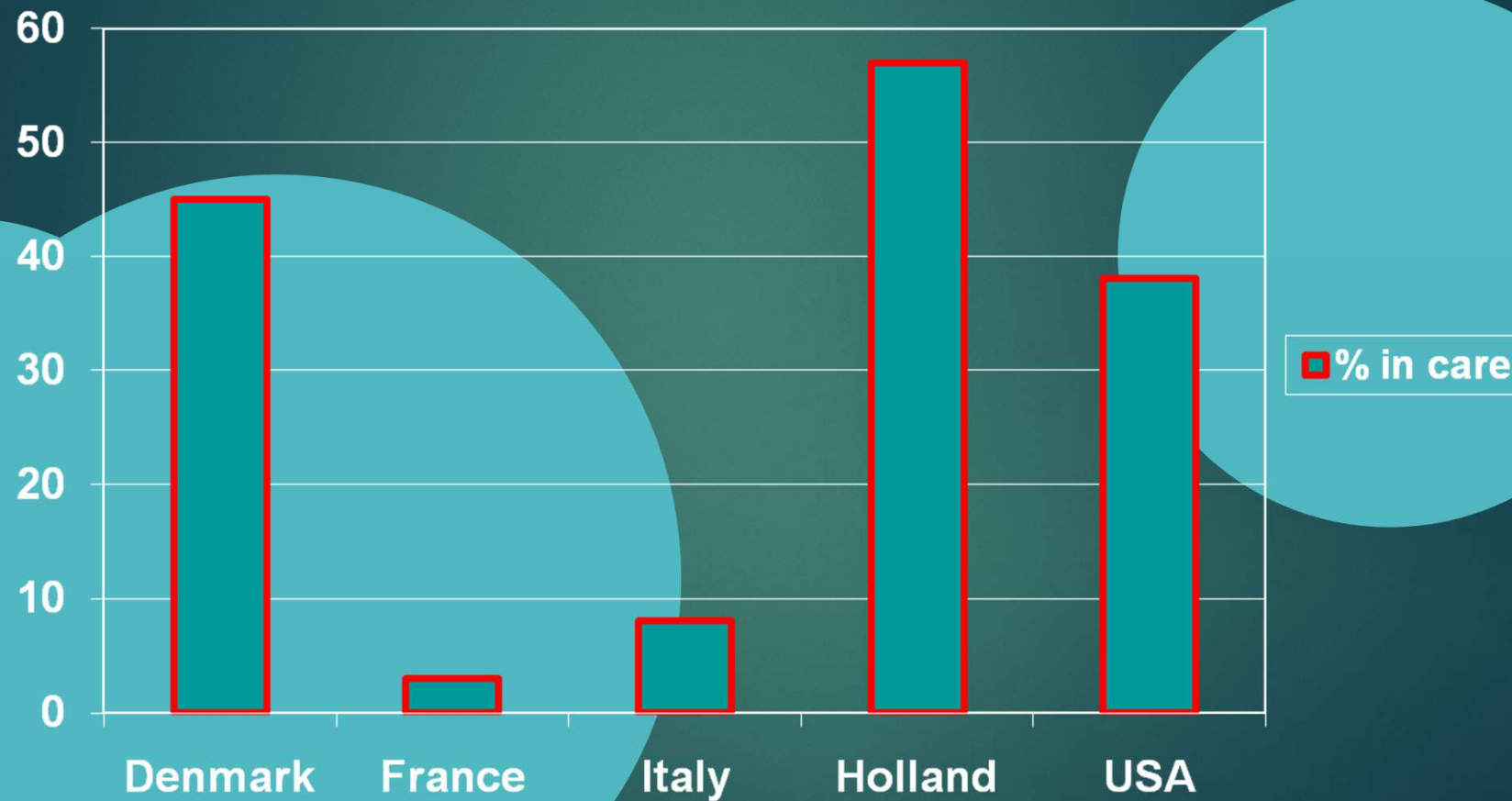
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Treatment for Serious Substance Use Disorders

Who Gets Treatment?

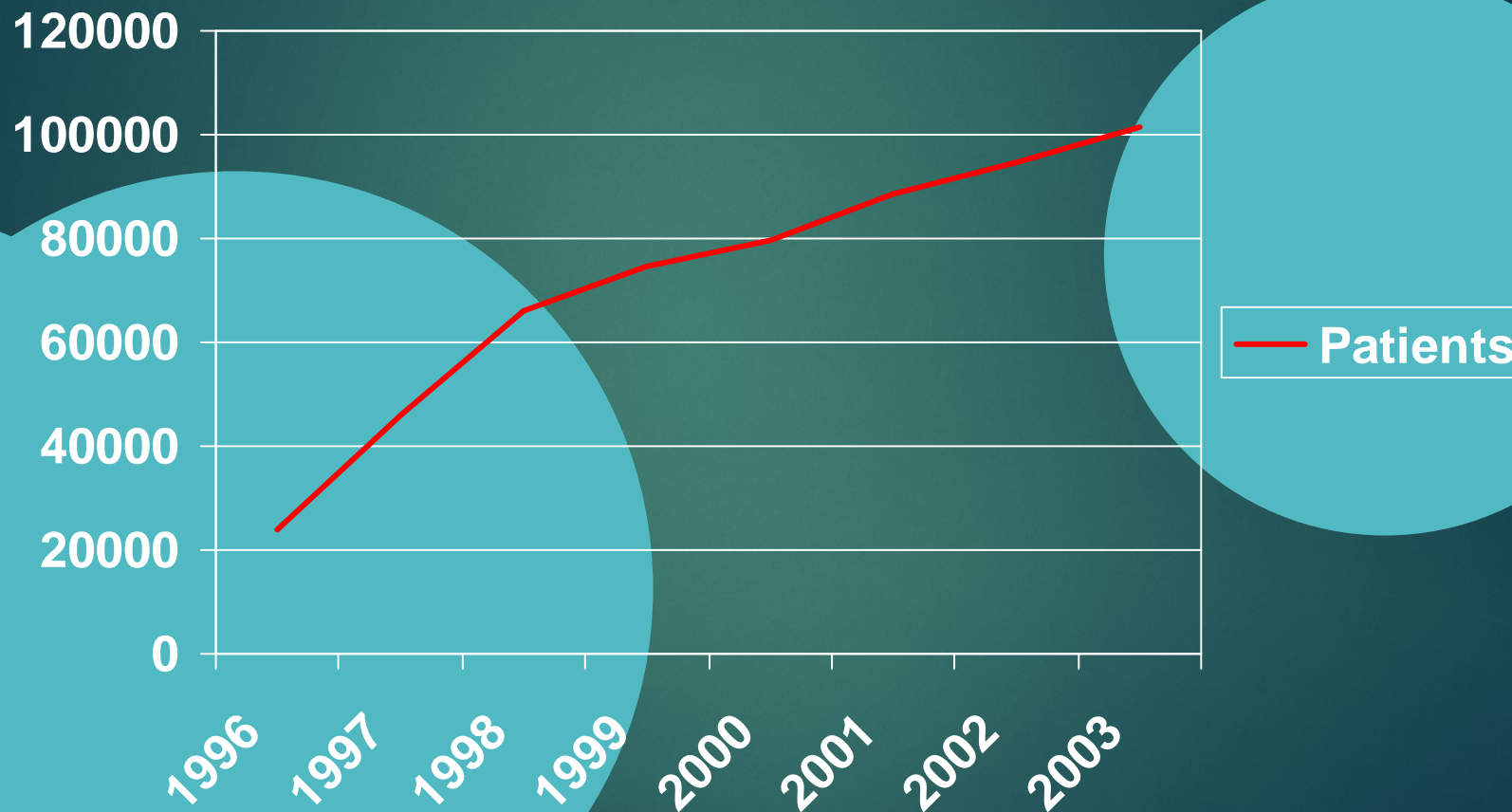
- ▶ Policy and Health Care System Factors
- ▶ Individual Factors

Proportion of heroin addicted people in methadone maintenance



Source: MacCoun, R. J., & Reuter, P. (2001). *Drug war heresies*. Cambridge, UK: Cambridge University Press.

France subsequently dramatically expanded opiate agonist treatment



Emmanuelli, J., & Desenclos, J-C. (2005). Harm reduction interventions, behaviours and associated health outcomes in France, 1996-2003. *Addiction*, 100, 1690-1700.



..Which may have achieved a tipping point 1996-2003

- ▶ Annual heroin arrests dropped from 17,328 to 4,025
- ▶ Annual overdose deaths declined from 465 to 89

Individual Factors that Affect Who Receives Treatment

- ▶ The 4 Ls

- ▶ Greater Objective Problem Severity (including comorbidities)

- ▶ Greater Subjective Distress

Levels of Care (ASAM)

- ▶ Outpatient (I)
- ▶ Intensive Outpatient/Partial Hospital (II)
- ▶ Residential (III)
- ▶ Medically Managed Inpatient Services (IV)

What Factors Influence Where a Patient Should Receive Care?

- ▶ Acute intoxication/withdrawal
- ▶ Biomedical conditions and complications
- ▶ Emotional, Behavioral and cognitive conditions or complications
- ▶ Patient motivations
- ▶ Relapse, continued use, continued problem potential
- ▶ Recovery environment

In General...

- Placing patients in appropriate levels of care remains as much art as science
- Science cannot substitute either for clinician judgment nor for patient values/preferences
- Very broadly, greater severity of problems warrants more intensive intervention
- At a policy level, stepped options likely maximize system effectiveness and equity

Common Elements of Addiction Treatment

- ▶ Individual or Group Counseling
- ▶ Mutual Help Groups
- ▶ Education
- ▶ Psychosocial and Medical Services
- ▶ Pharmacotherapy
- ▶ Secure, substance-free environment

State of the Science

- ▶ Treatment writ large not generally studied in controlled clinical trials
- ▶ Elements commonly studied
- ▶ RCTs show support for a small number of FDA-approved medications (none for NPS)
- ▶ Evidence for 12-step self-help groups, supportive services and particular psycho therapies


Importance of a Chronic Care Perspective

- ▶ Neuroadaptation is not an acute state
- ▶ Addictive behavior can be entrenched
- ▶ Pro-use environment can be persistent

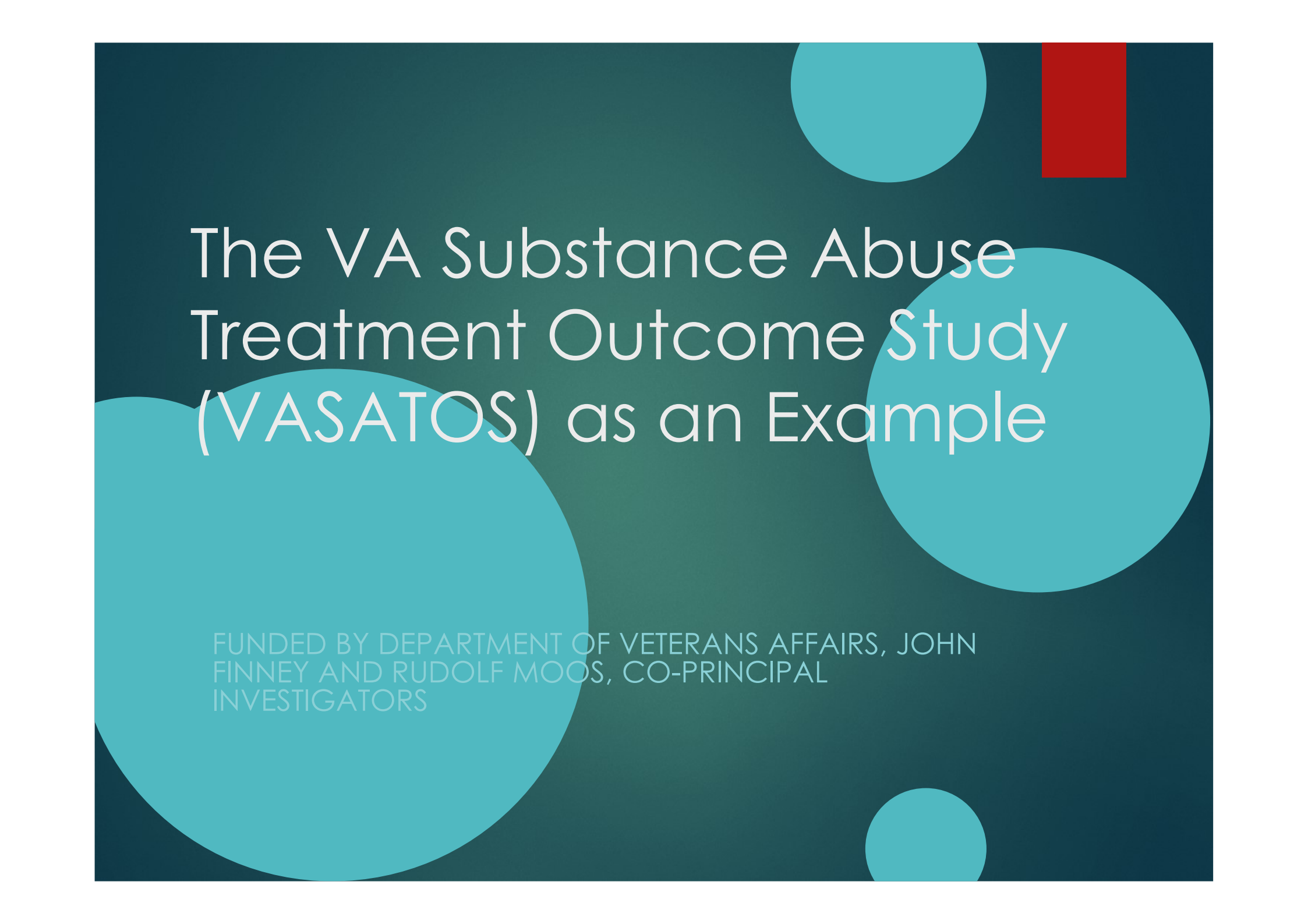
THEREFORE

Clinical care must adopt a chronic rather than acute perspective.

The disease is not curable, but it is manageable (not unlike diabetes)



What are the
typical outcomes
of addiction
treatment?

The background is a dark teal color. It features several abstract shapes: a large teal circle on the left, a smaller teal circle at the top right, a red vertical rectangle at the top right, a large teal circle on the right side, and a small teal circle at the bottom right.

The VA Substance Abuse Treatment Outcome Study (VASATOS) as an Example

FUNDED BY DEPARTMENT OF VETERANS AFFAIRS, JOHN
FINNEY AND RUDOLF MOOS, CO-PRINCIPAL
INVESTIGATORS

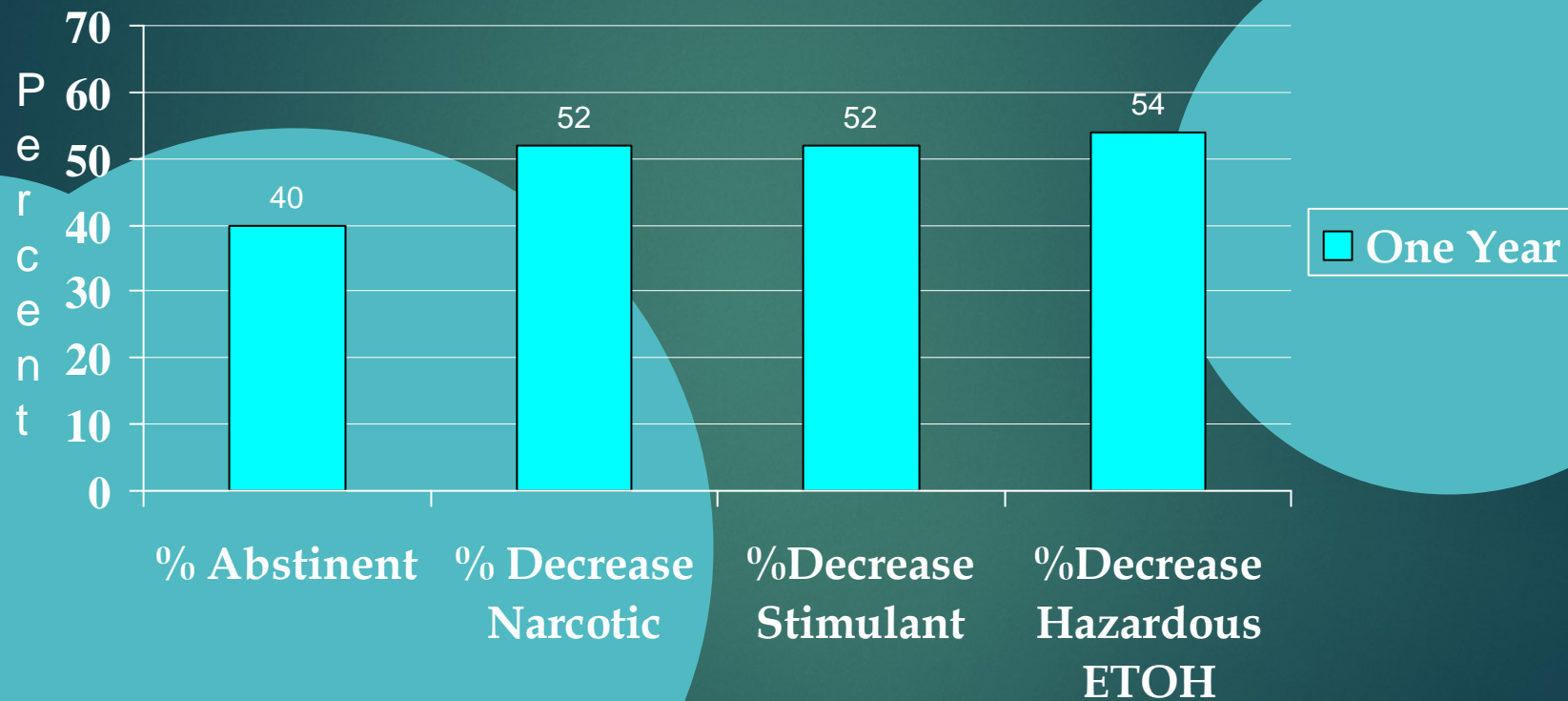
Project Description

- Congressionally-mandated; conducted under auspices of Mental Health Strategic Healthcare Group in VA Headquarters
- Almost 3,700 male veterans from 15 VA inpatient treatment programs with continuing outpatient care
- Patients assessed at baseline, discharge, and multiple follow-ups.

1-Year Follow-Up Sample

- N=3,018 Patients (83.5% of those alive)
- Average years age = 43, education 12.7
- 19% married; 56% divorced/separated
- 100% drug/alcohol dependent
- 35% co-occurring psychiatric diagnosis

Change in proportion of patients using different substances

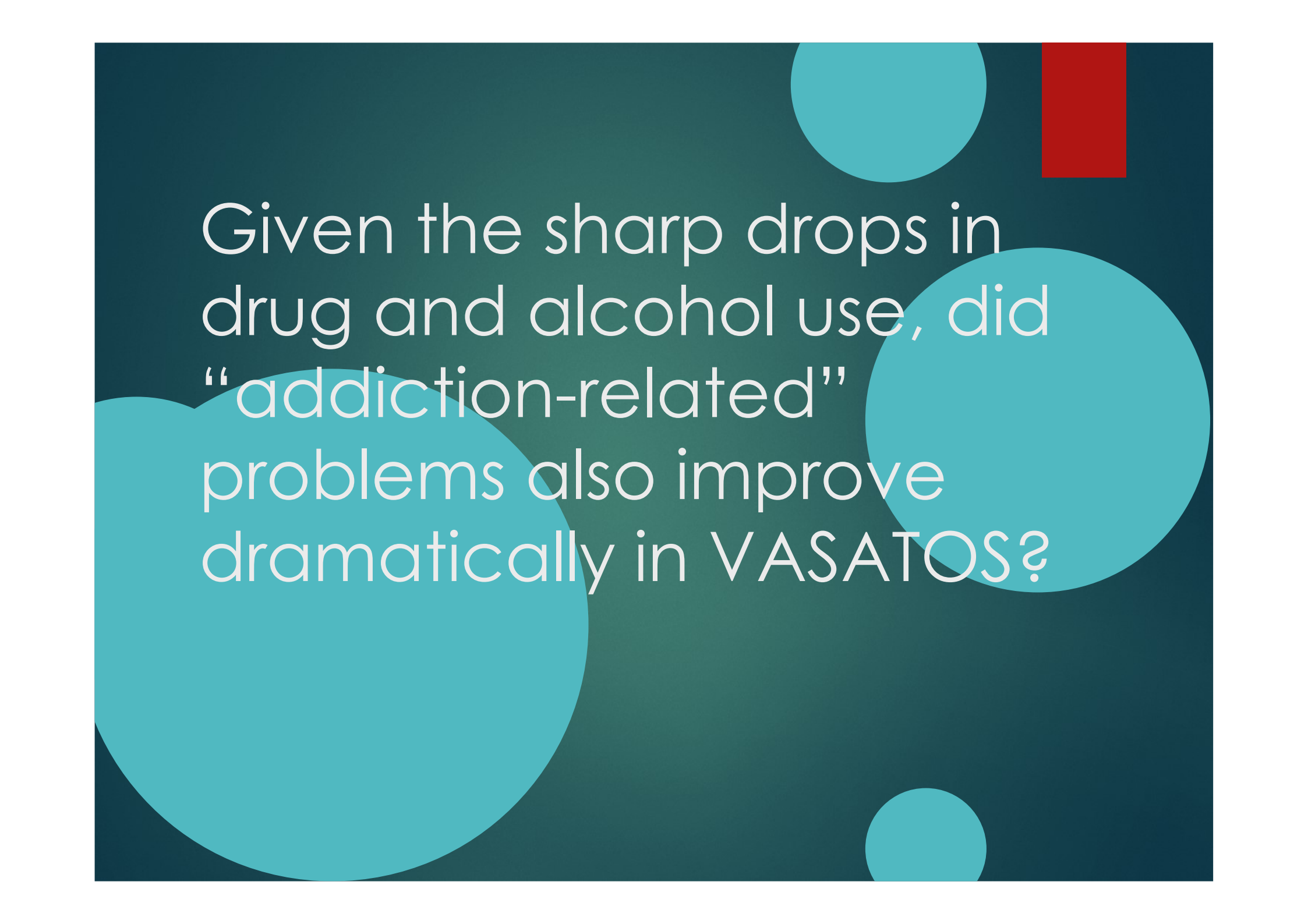


“About half” rule for estimating abstinence rates or drop in proportion using a particular drug

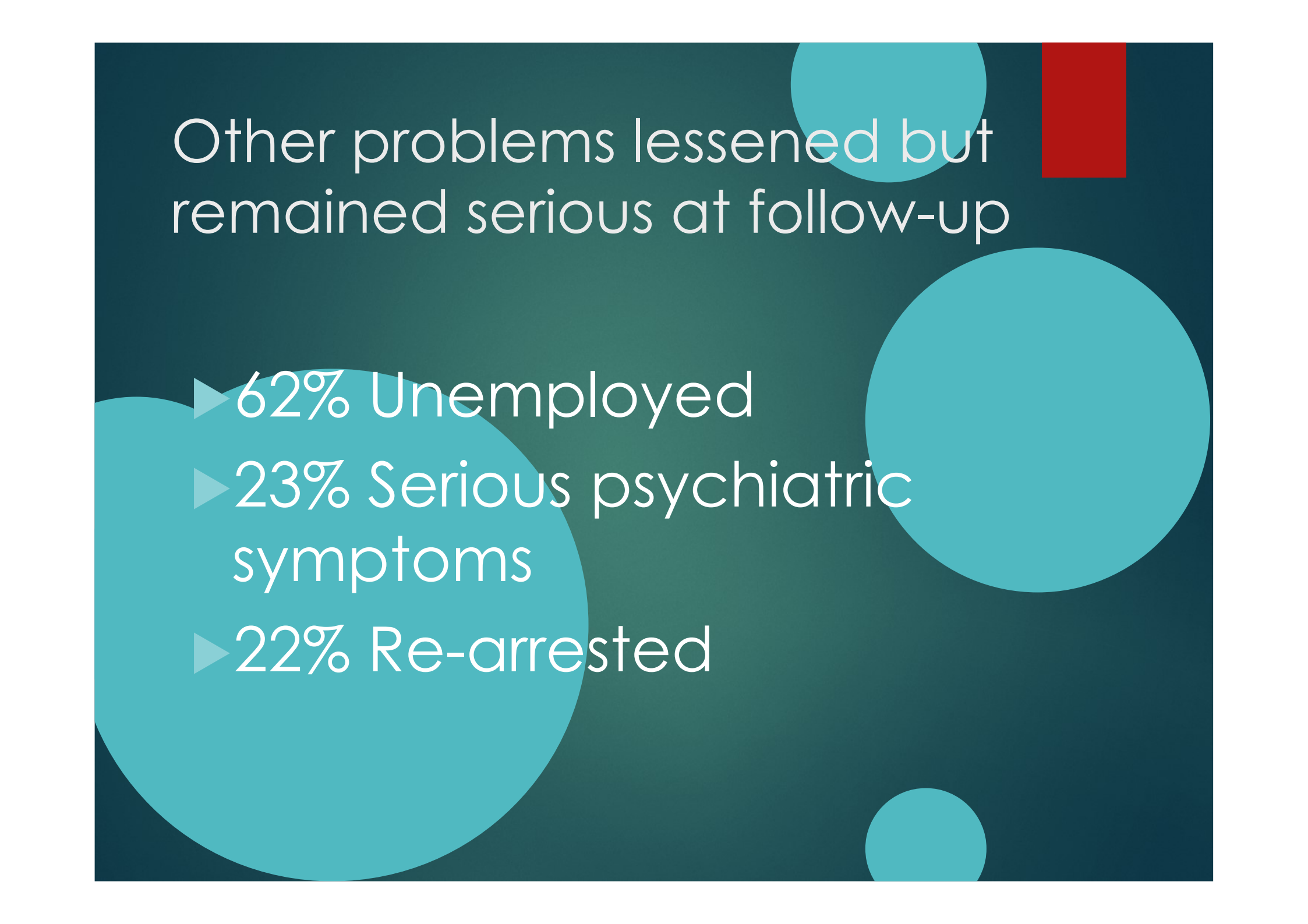
- ▶ VA-NOMP 48% not using any drugs or alcohol at 9-month follow-up
- ▶ TOPS residential 53.3% rate of “minimal” post-treatment use for all substances
- ▶ CALDATA 40% decline in use across substances
- ▶ SROS 45% drop in proportion using cocaine
- ▶ DATOS 50% drop in proportion reg. using cocaine in LTR, STI and OMF.
- ▶ NTIES 50% drop in proportion using crack, 55% for cocaine, 46% proportion using heroin

Main reasons for departures from the about half rule

- ▶ OAT for heroin
- ▶ Length of follow-up
- ▶ Strictness of substance abuse measure
- ▶ Psychiatric and other problem severity
- ▶ But type of evidence-based psychotherapy does not affect it except for abstinence



Given the sharp drops in drug and alcohol use, did “addiction-related” problems also improve dramatically in VASATOS?



Other problems lessened but remained serious at follow-up

- ▶ 62% Unemployed
- ▶ 23% Serious psychiatric symptoms
- ▶ 22% Re-arrested

“Addiction-related” problems change less than does use, and sometimes not at all

- ▶ VA-NOMP: Significant decrease drug and alcohol problems, no change in other domains
- ▶ DATOS: 33% of cocaine-dependent patients still experiencing serious psychiatric impairment **five years** after fairly successful drug treatment.
- ▶ SROS: No improvement in employment levels after treatment.

Why don't "related" problems always improve?

- ▶ Lack of targeted services
- ▶ Severity of problems and environments
- ▶ Other than crime, links between substance use and "related" problems may be weak
- ▶ Unrealistic expectations of substance use disorder treatment

Summary

- Potent psychoactive substances are more available than ever and our evolved brains are highly attuned to them
- Some substance use problems are low-level and can be dealt with via education & brief advice
- Serious substance use problems involve enduring, maladaptive changes in the brain, making addiction a chronic disorder
- A range of settings and evidence-based treatments can help patients
- For addicted patients, most interventions seem to reduce substance use by about 50%, other problems reduced to a lesser extent