

Medicine Responds to Addiction II

October 25, 2016



Office of National Drug Control Policy

In Collaboration with:

National Institute on Drug Abuse

National Institute on Alcohol Abuse and Alcoholism

Substance Abuse and Mental Health Services Administration

Centers for Disease Control and Prevention

National Cancer Institute

Department of Veterans Affairs

Opening Remarks



June Sivilli, M.A.
Division Chief, Public Health & Public Safety
Office of Policy, Research, and Budget
Office of National Drug Control Policy

Welcome & Meeting Purpose



Michael Botticelli, M.Ed.
Director
National Drug Control Policy

State of the Art of Addiction Science, Practice, and Service



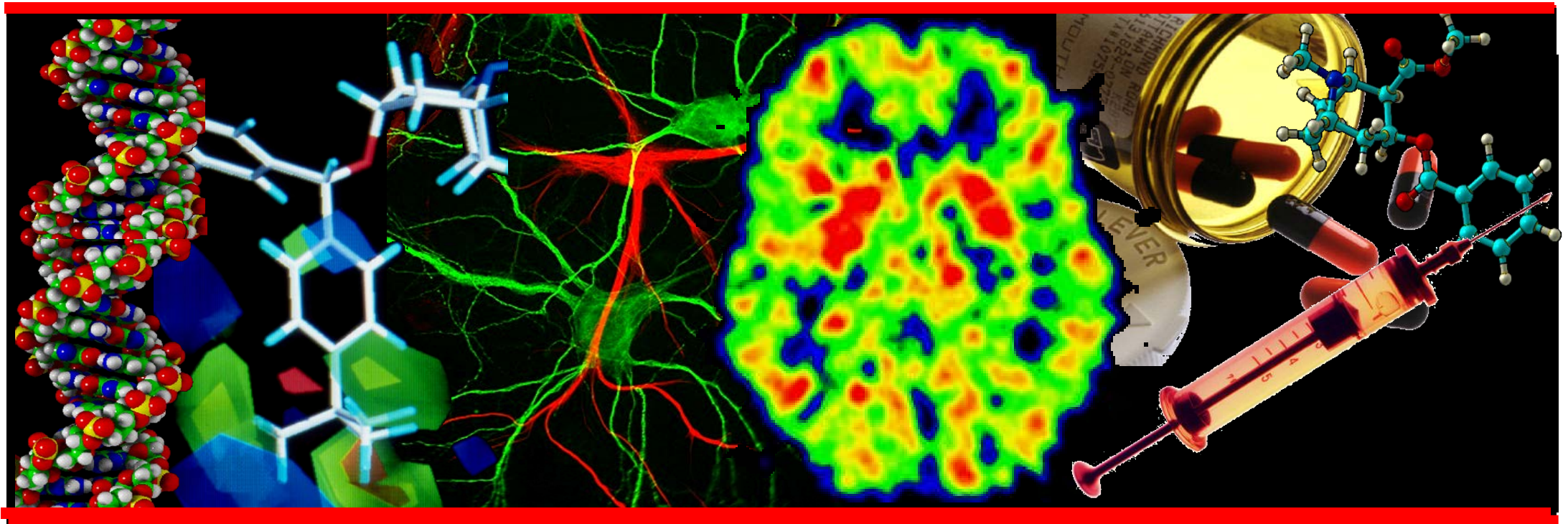
George F. Koob, Ph.D.
Director

National Institute on Alcohol
Abuse and Alcoholism

Nora D. Volkow, M.D.
Director

National Institute on Drug Abuse

What Do We Really Know About **ADDICTION?**



George F. Koob, Ph.D.

Director



National Institute
on Alcohol Abuse
and Alcoholism

Nora D. Volkow, M.D.

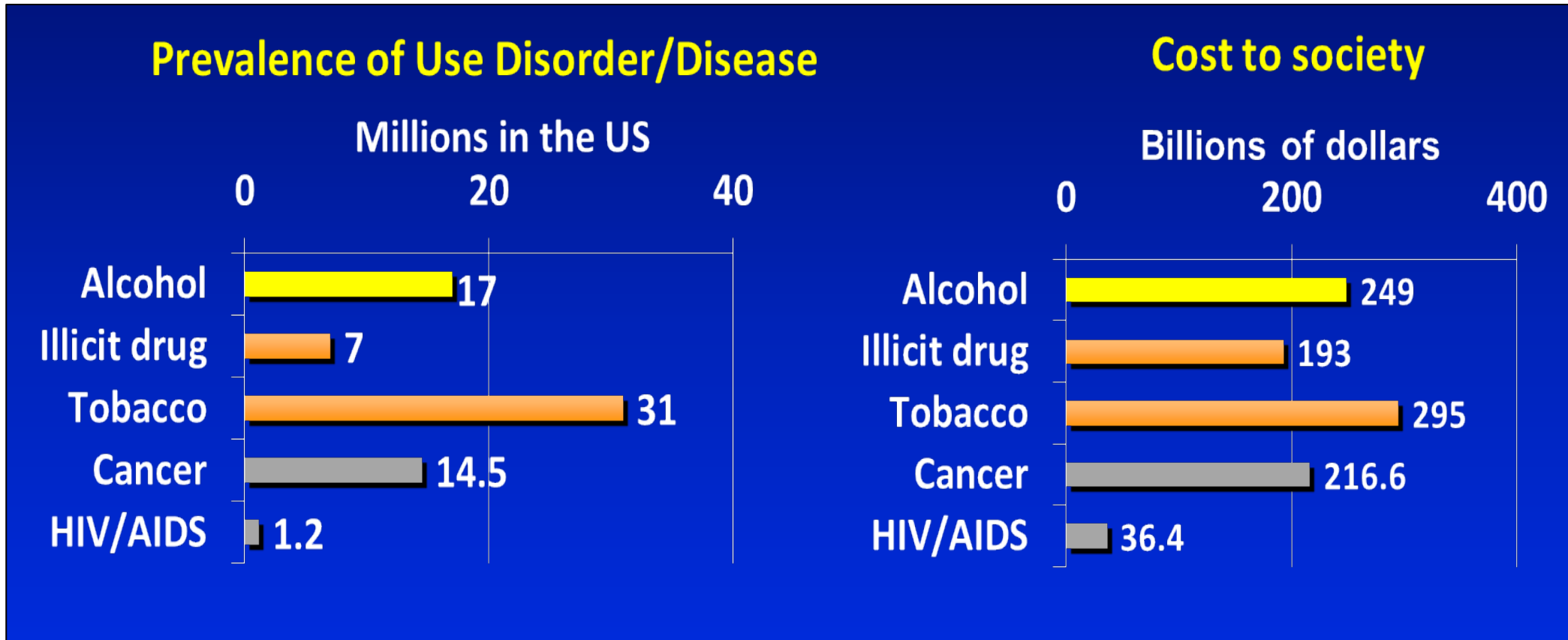
Director



National Institute
on Drug Abuse

NIH...Turning Discovery into Health

Cost and Scope of Addiction Related Problems

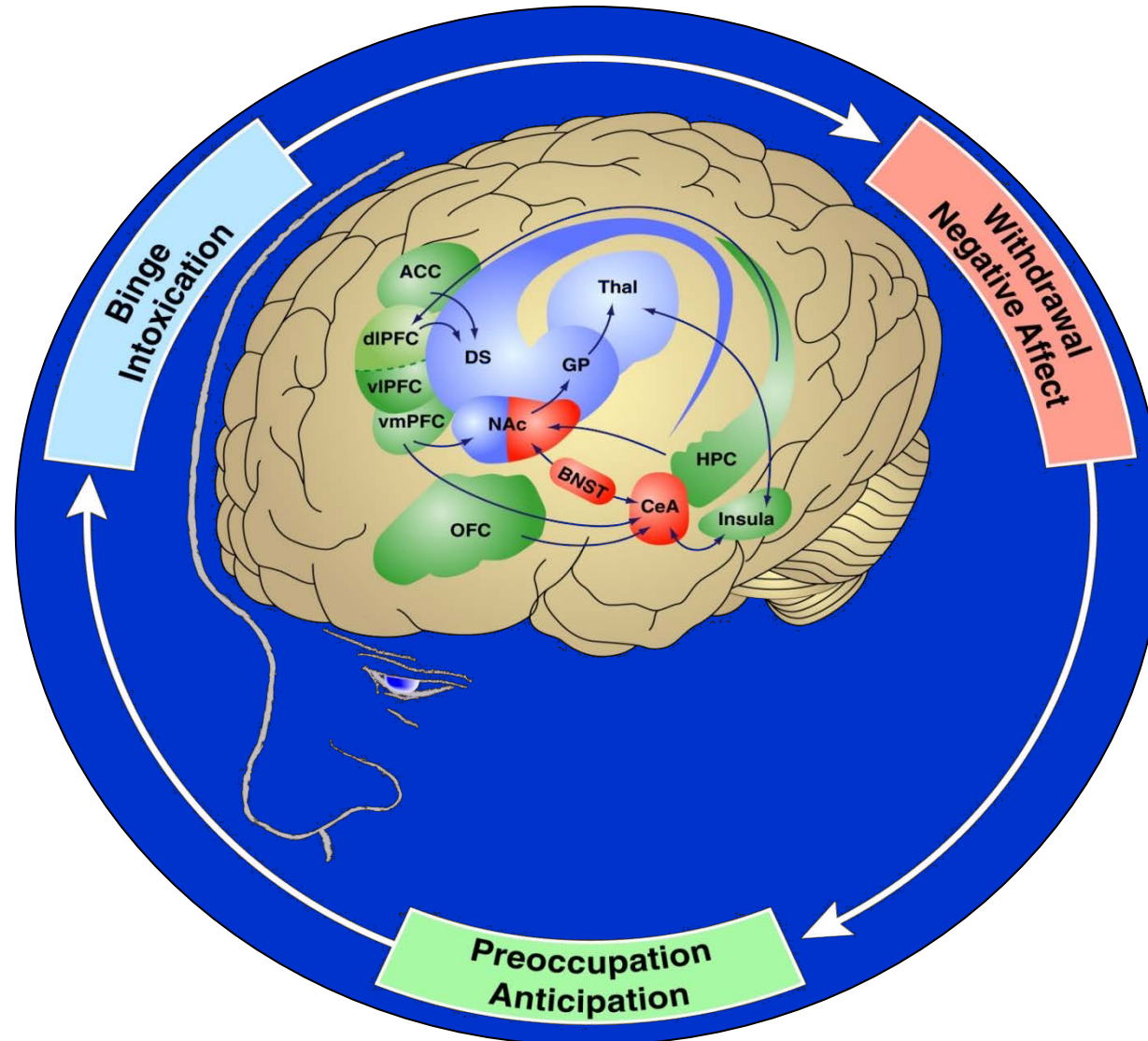


Sources: Prevalence – NSDUH (2014), NCI (2014), CDC (2012); Cost – CDC (2015), National Drug Intelligence Center - National Drug Threat Assessment (2011), 2014 Surgeon General’s Report, NHLBI (2012), Hutchinson et. al. 2006.

Bottom Line: Neurobiology of Addiction

- 1. Addiction is an incentive salience disorder.**
- 2. Addiction is a reward deficit disorder / stress surfeit disorder.**
- 3. Addiction is an executive function disorder.**

Neurobiological Circuitry Implicated in Addiction

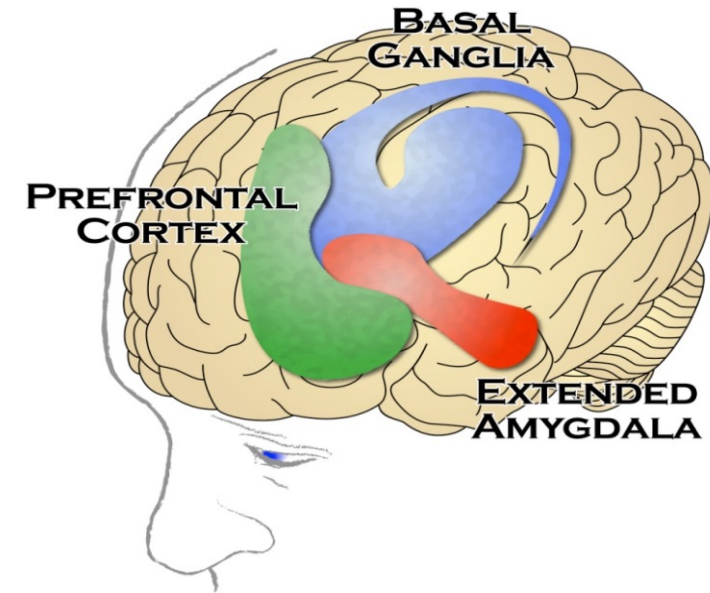


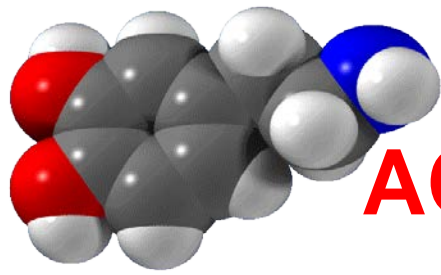
From: Koob GF, Volkow ND. *Neuropsychopharmacol Rev*, 2010, 35:217-238; George O, Koob GF. *Proc Natl Acad Sci USA*, 2013, 110:4165-4166.



Primary Brain Regions Involved in SUDs

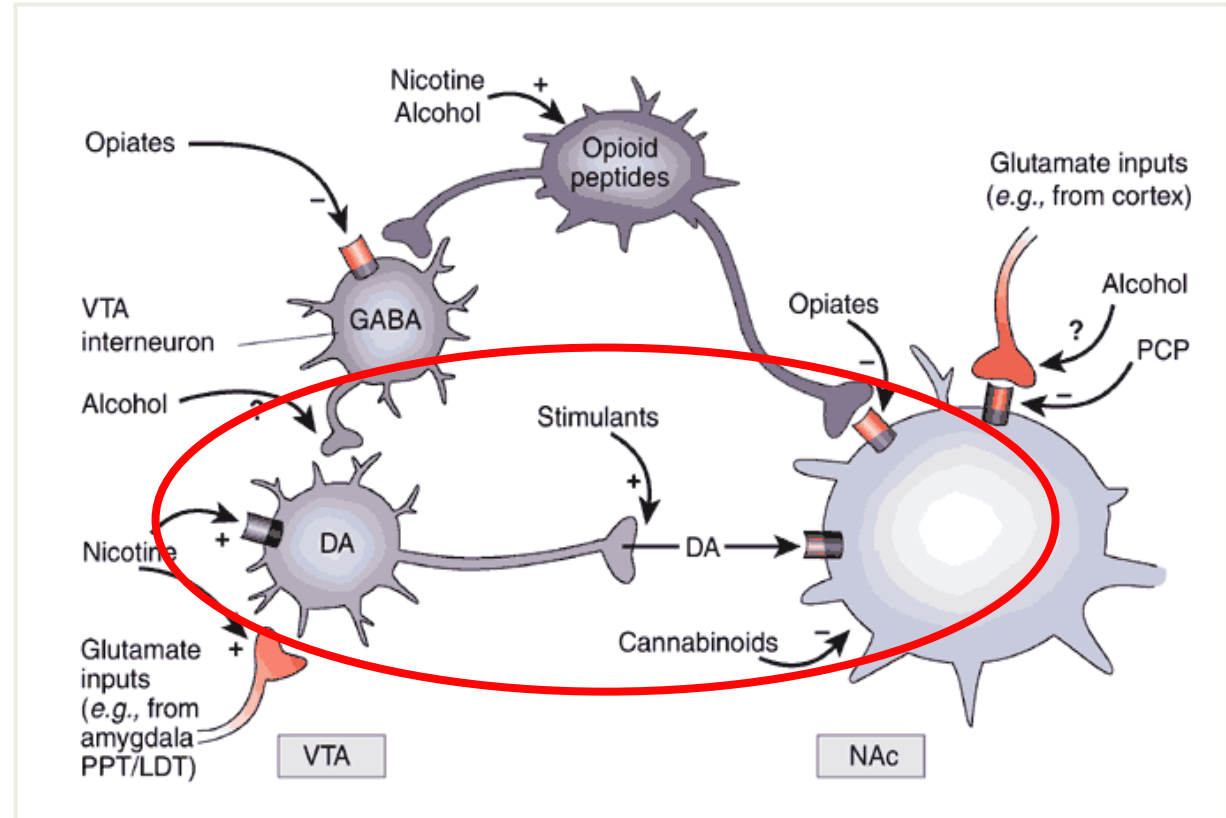
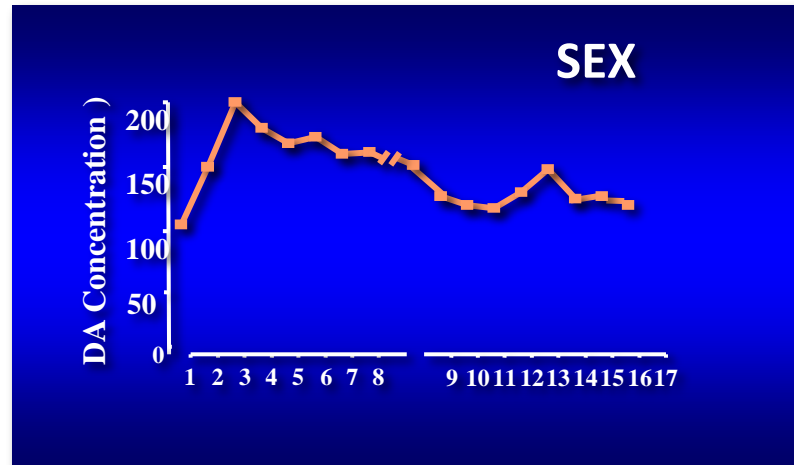
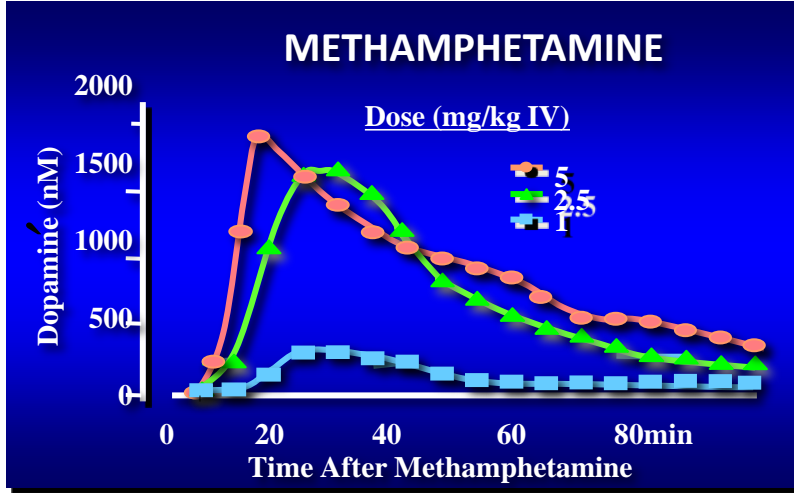
- **Basal ganglia:** controls the rewarding, or pleasurable, effects of substance use (**nucleus accumbens**); responsible for the formation of habitual substance taking (**striatum**)
- **Extended amygdala:** involved in stress and the feelings of unease, anxiety, and irritability that accompany withdrawal
- **Prefrontal cortex:** involved in executive function—the ability to organize thoughts and activities, prioritize task, and make decisions—including exerting control over substance use





Drugs and Natural Rewards

ACTIVATE Dopamine in Reward Regions



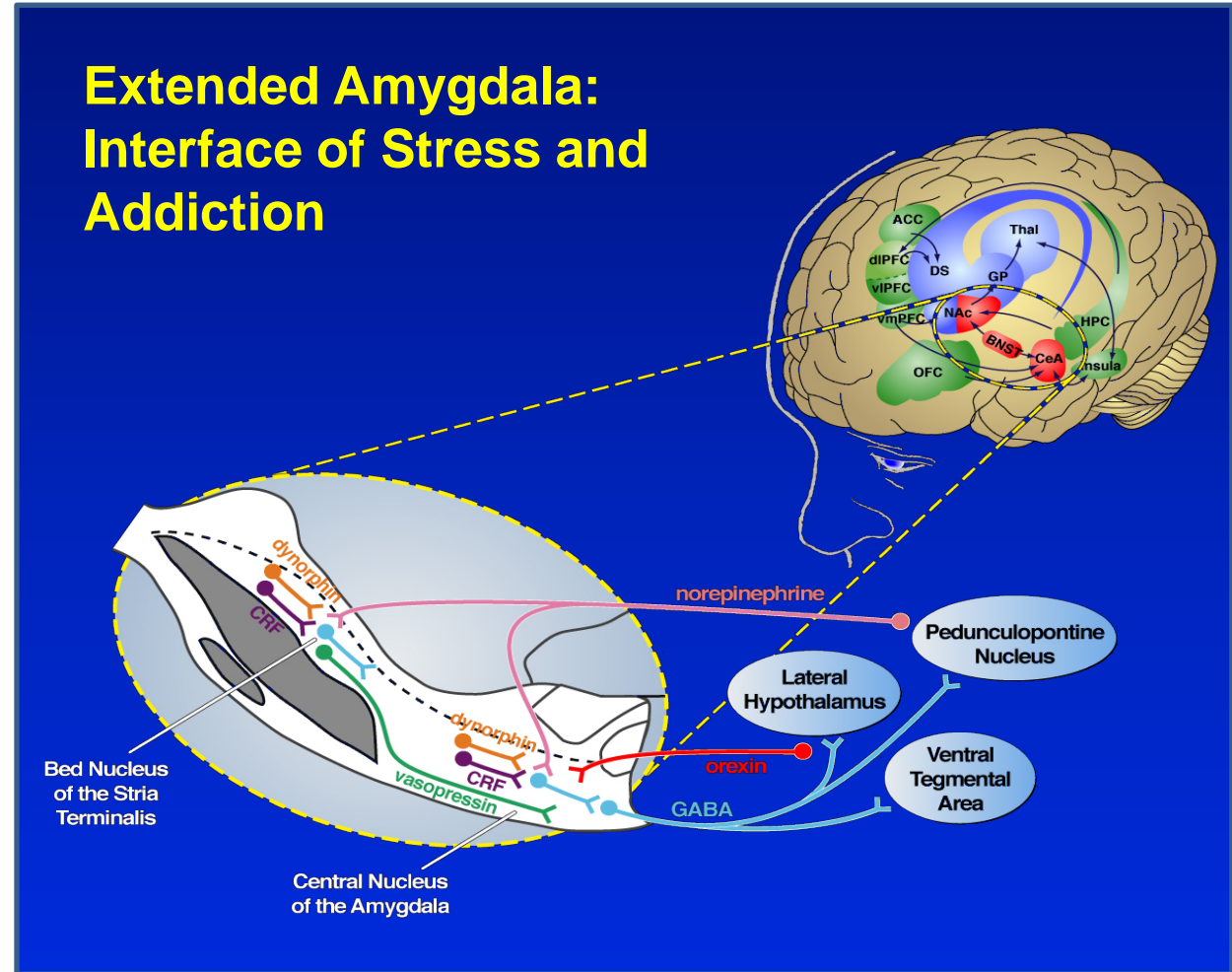
Neuroplasticity Targets from the Withdrawal Negative Affect Stage

Stress Neurotransmitters

- ↑ Corticotropin-releasing factor (CRF)
- ↑ Norepinephrine
- ↑ Dynorphin
- ↑ Vasopressin
- ↑ Orexin (hypocretin)
- ↑ Substance P
- ↑ Glucocorticoids
- ↑ Neuroimmune factors

Anti-stress Neurotransmitters

- ↓ Neuropeptide Y
- ↓ Nociceptin (orphanin FQ)
- ↓ Endocannabinoids
- ↓ Oxytocin



From: Koob, GF 2008 *Neuron* 59:11-34 and George O, Koob GF. *Proc Natl Acad Sci USA*, 2013, 110:4165-4166.

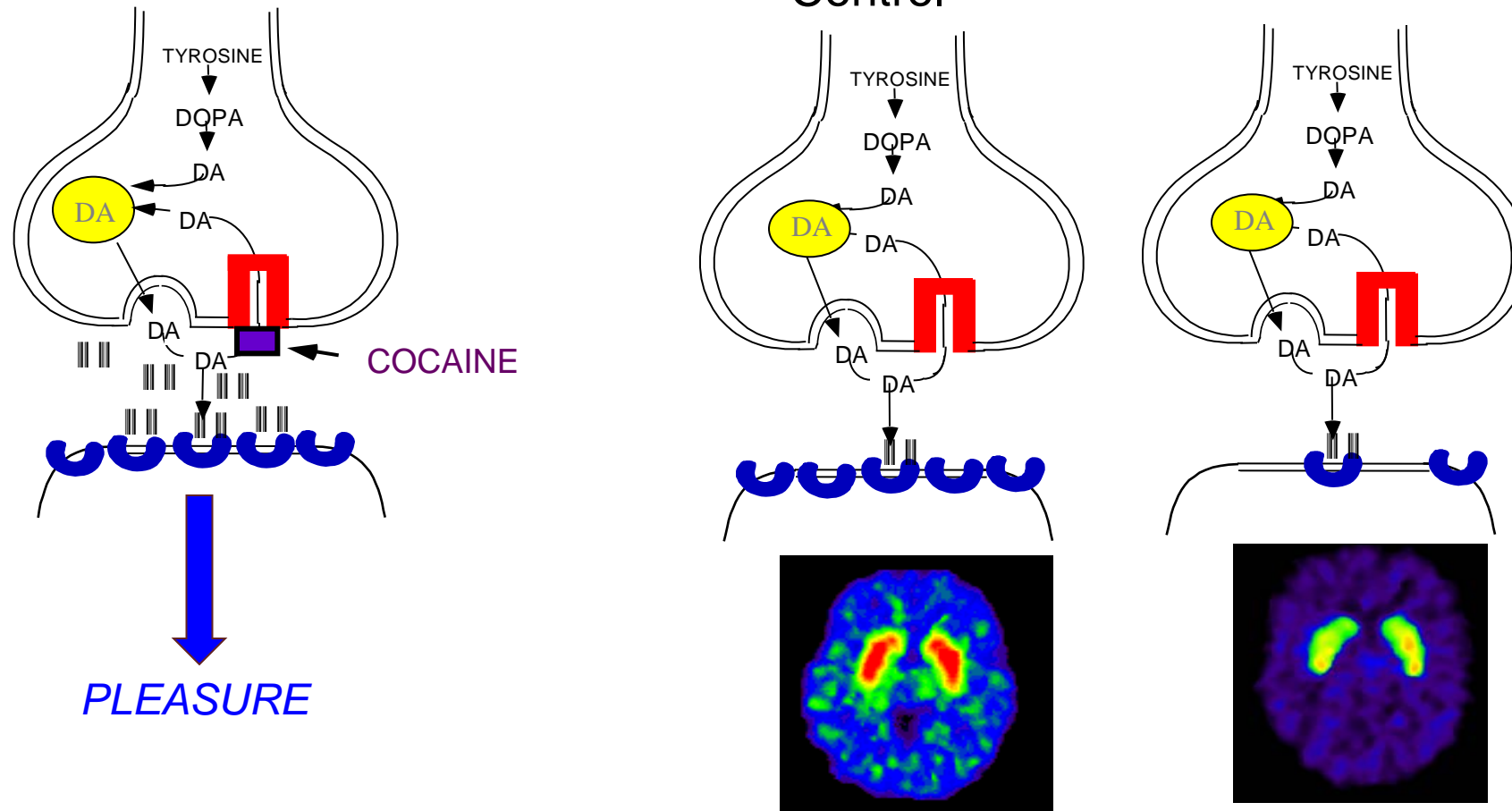
Key Findings

- Addiction is a **chronic, relapsing brain disorder** with potential for recurrence and recovery
- Addiction involves a **three-stage cycle** that becomes more severe with continued substance use:
 - binge/intoxication stage
 - withdrawal/negative affect stage
 - preoccupation/anticipation stage
- The cycle is associated with **dramatic and persistent changes in three principal brain regions**:
 - basal ganglia
 - extended amygdala
 - prefrontal cortex

Key Findings

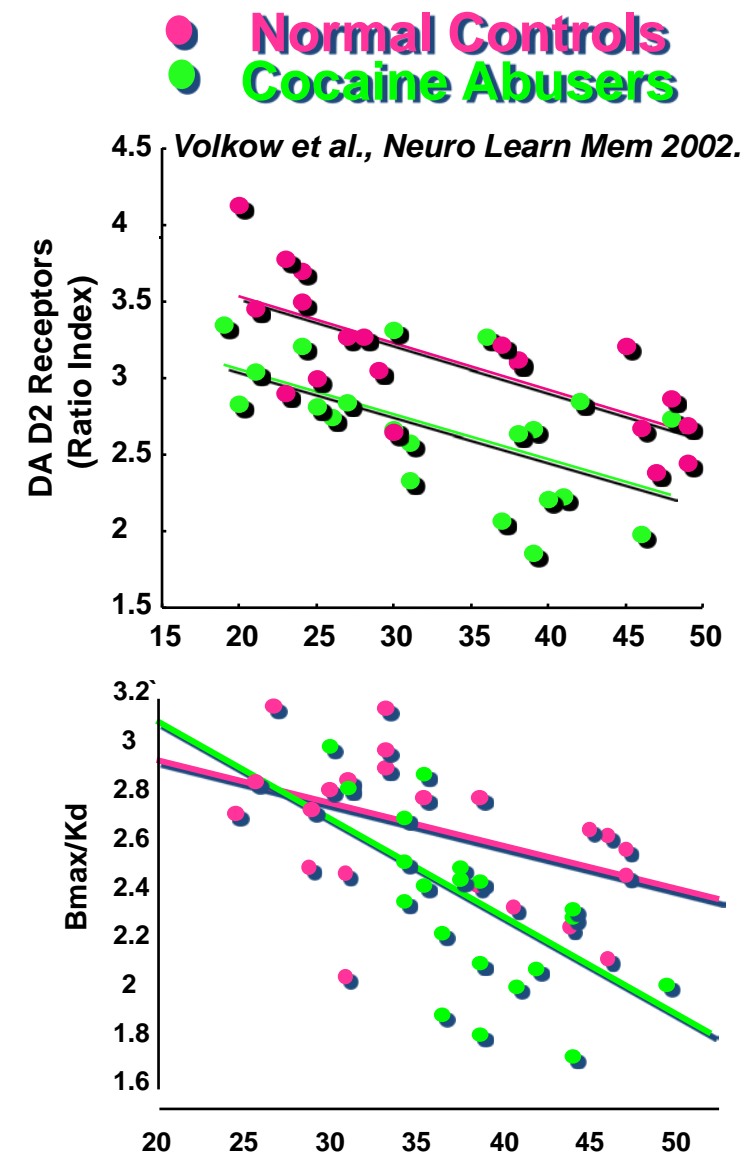
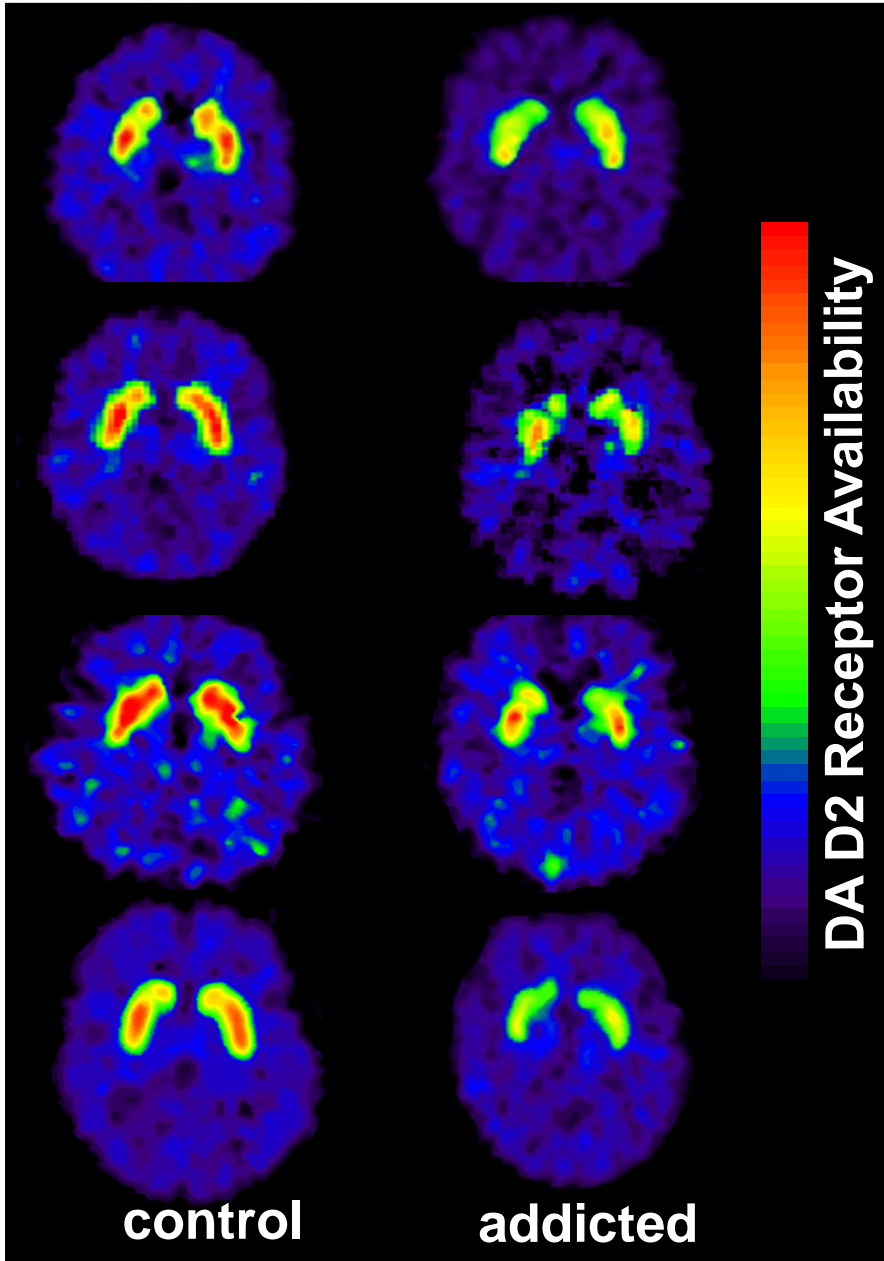
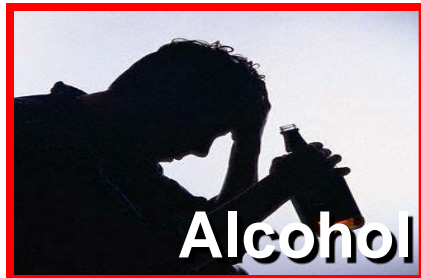
- **Disruptions in these brain regions:**
 - **enable substance-associated cues to trigger substance seeking (i.e., they increase incentive salience)**
 - **reduce sensitivity of brain reward systems and heighten activation of brain stress systems**
 - **reduce functioning of brain executive control systems, which are involved decision-making and regulating actions, emotions, and impulses**
- **Brain changes persist long after substance use stops; it is not known how much these changes may be reversed or how long it takes**
- **Adolescence is a critical “at-risk period” for substance use and addiction**
- **All addictive drugs have especially harmful effects on the adolescent brain, which is still undergoing significant development**

Repeated Drug Use **Changes the Brain** *Weakens the Brain Dopamine System*

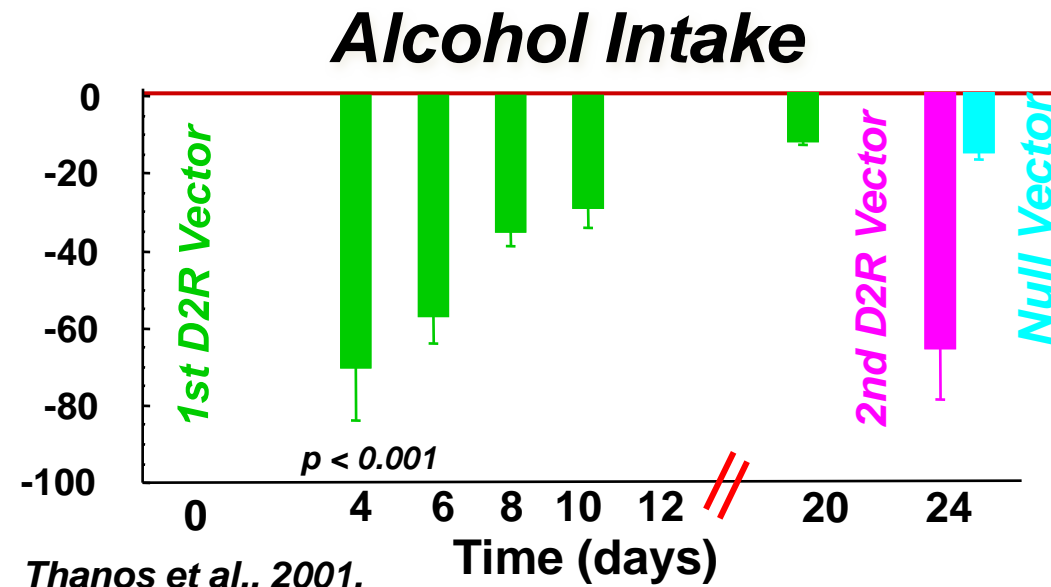
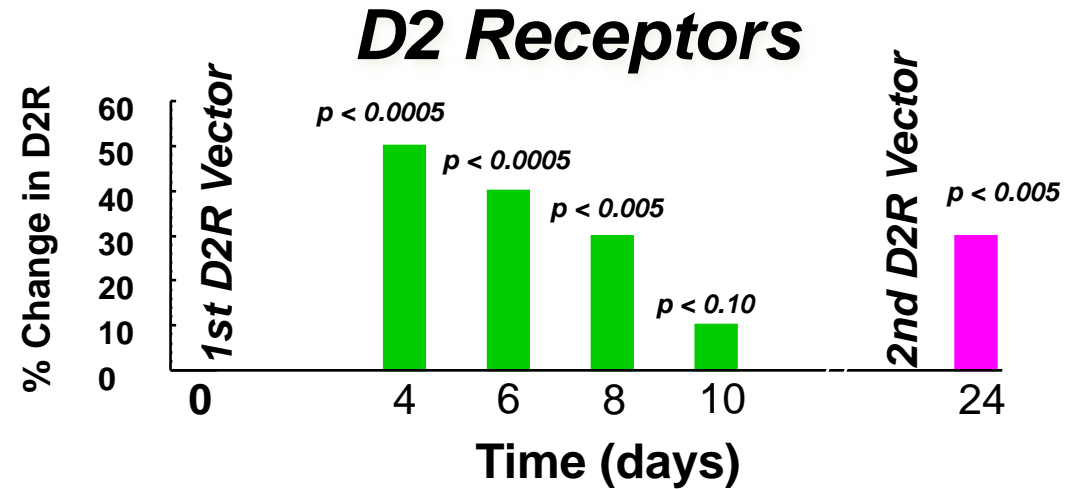
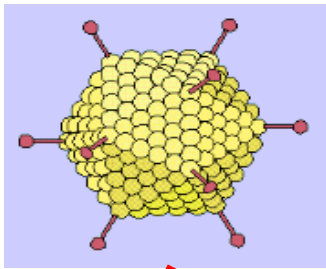
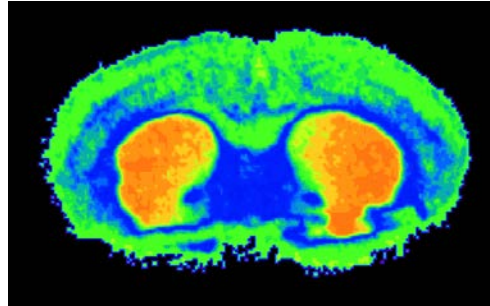


**REPEATED USE OF COCAINE OR OTHER DRUGS
REDUCES LEVELS OF DOPAMINE D2 RECEPTORS**

Dopamine D2 Receptors are Lower in Addiction



Effects of Increasing Brain D2 Receptors in Alcohol Drinking Behavior

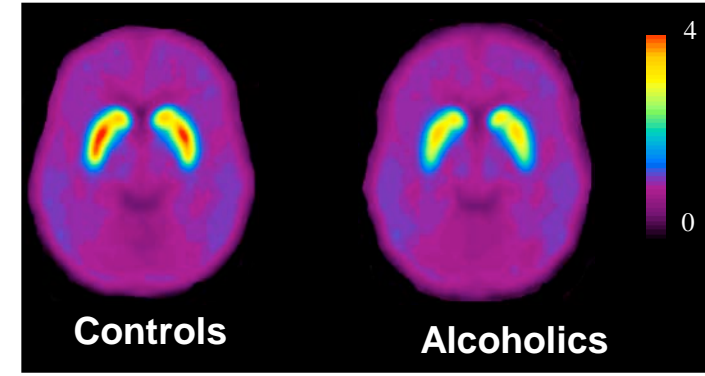
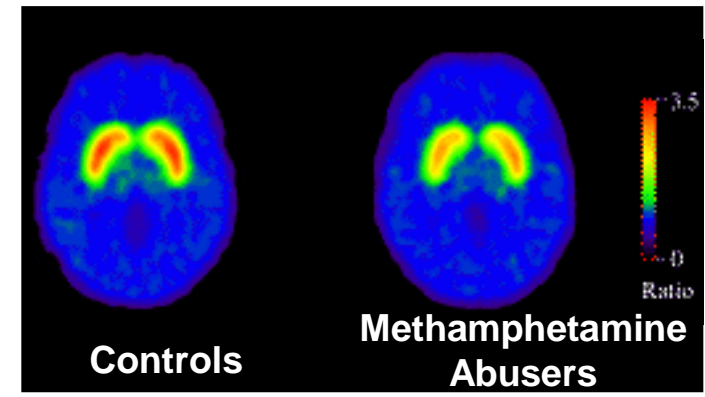
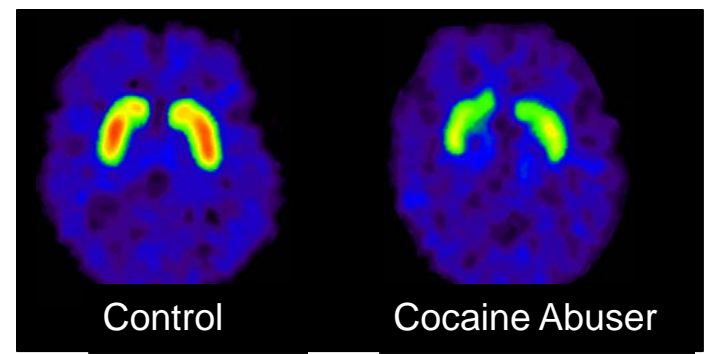
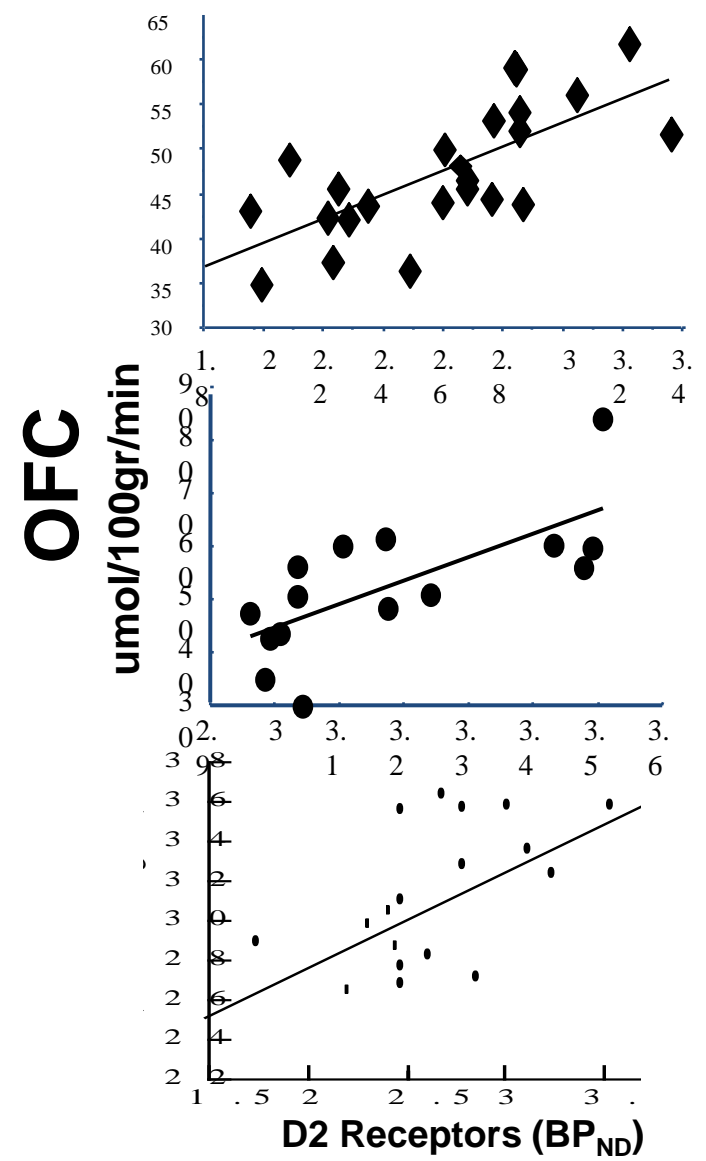
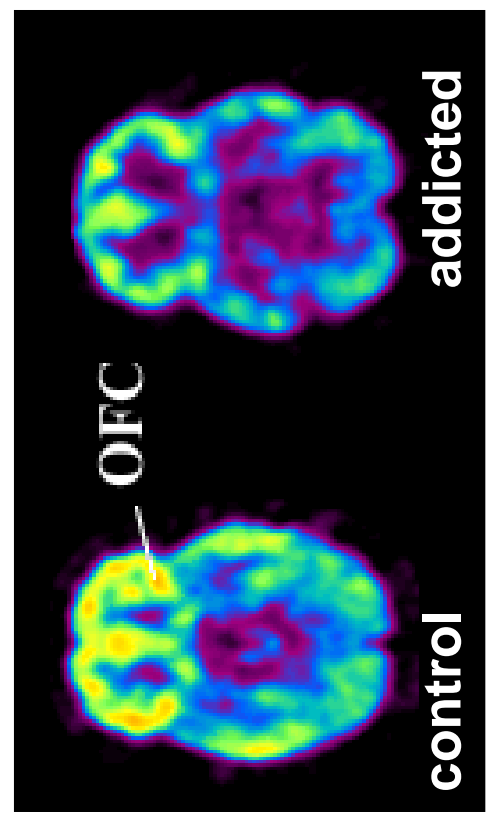


Thanos et al., 2001.



Relationship Between Brain Glucose Metabolism and Striatal D2 Receptors

Brain glucose metabolism

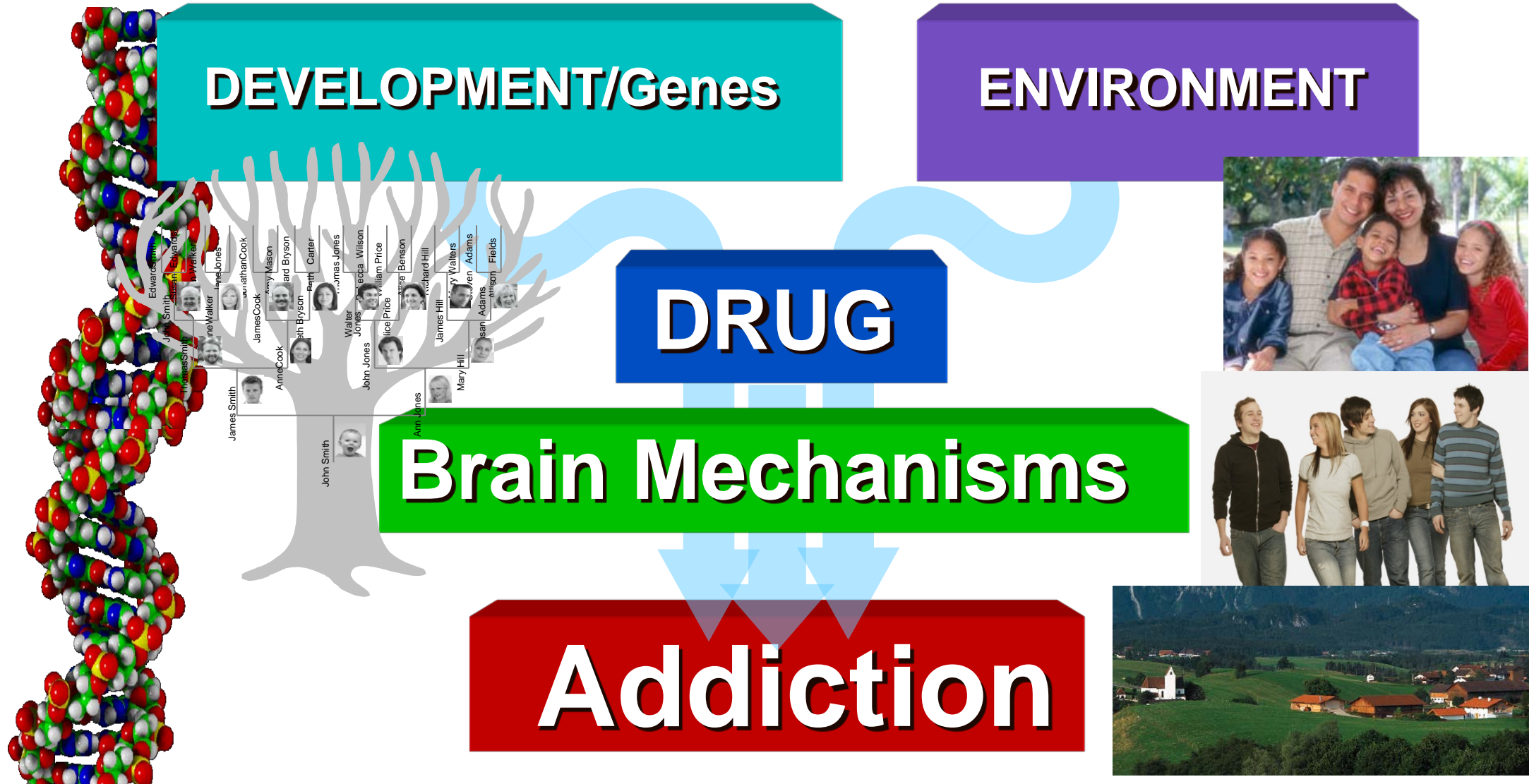


DA D2 receptors

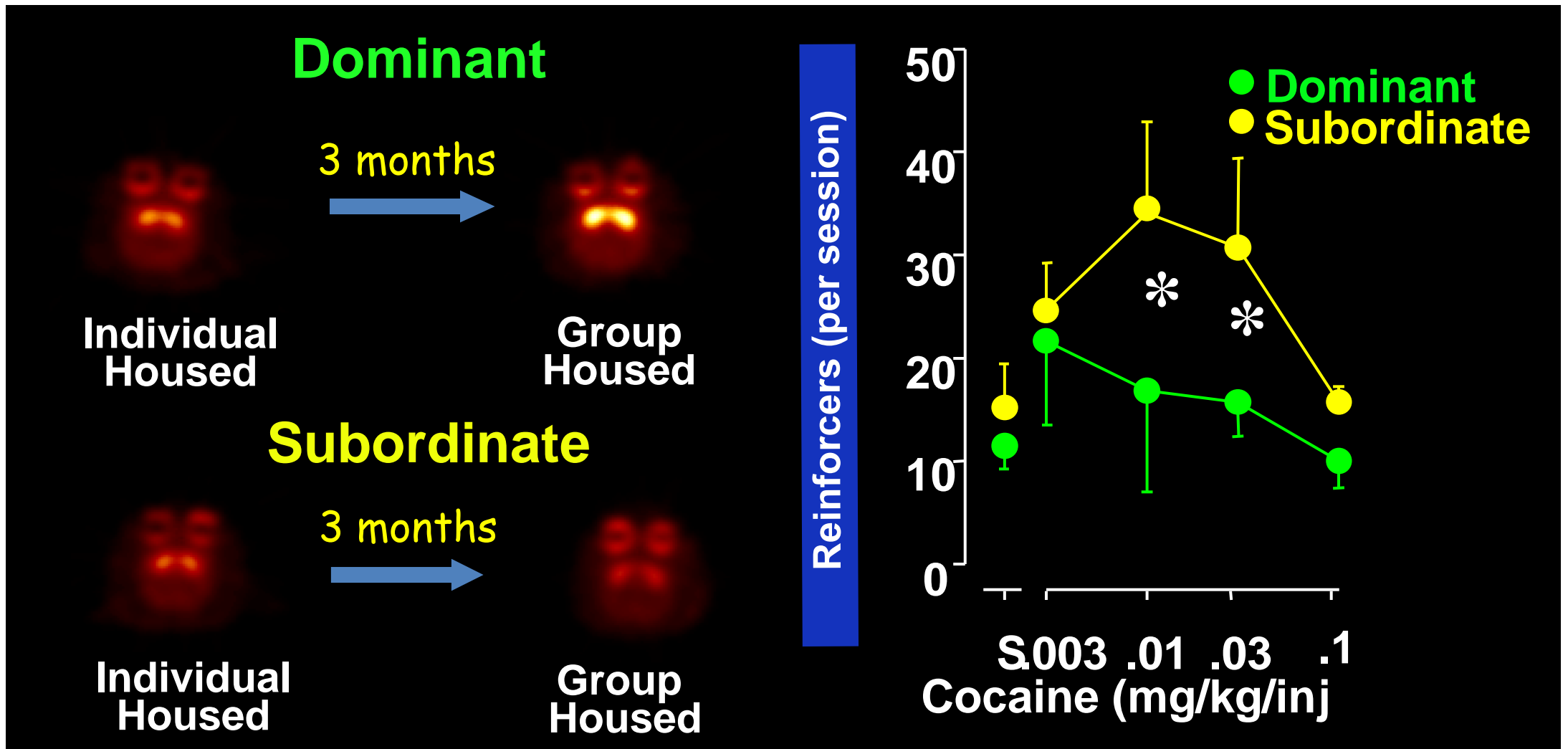
Volkow et al., PNAS 2011.



Addiction Involves *Multiple Factors*

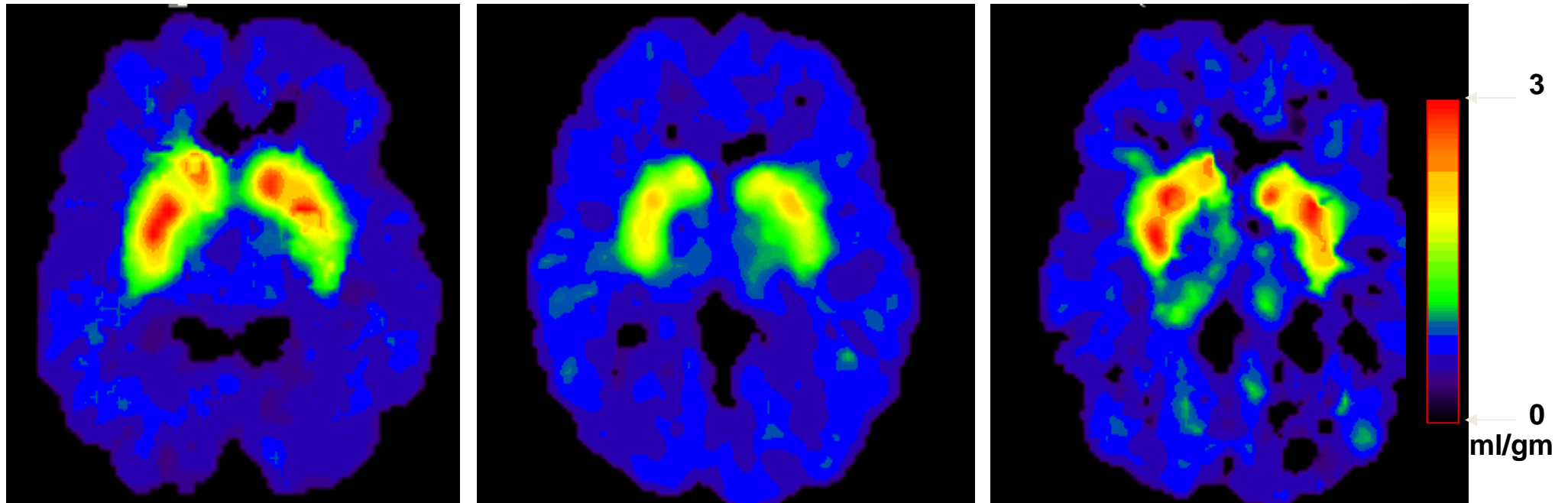


Social Rank & Vulnerability to Drug Abuse



ADDICTION **CAN BE TREATED**

Partial Recovery of Brain Dopamine Transporters in Methamphetamine (METH) Abuser After Protracted Abstinence



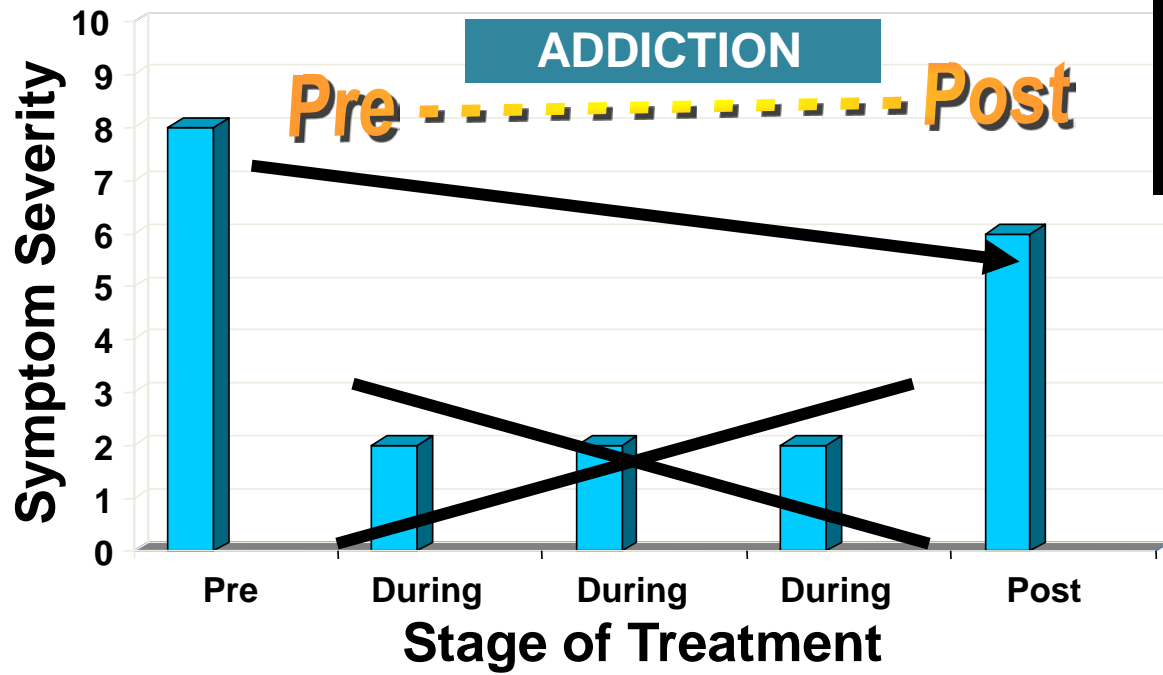
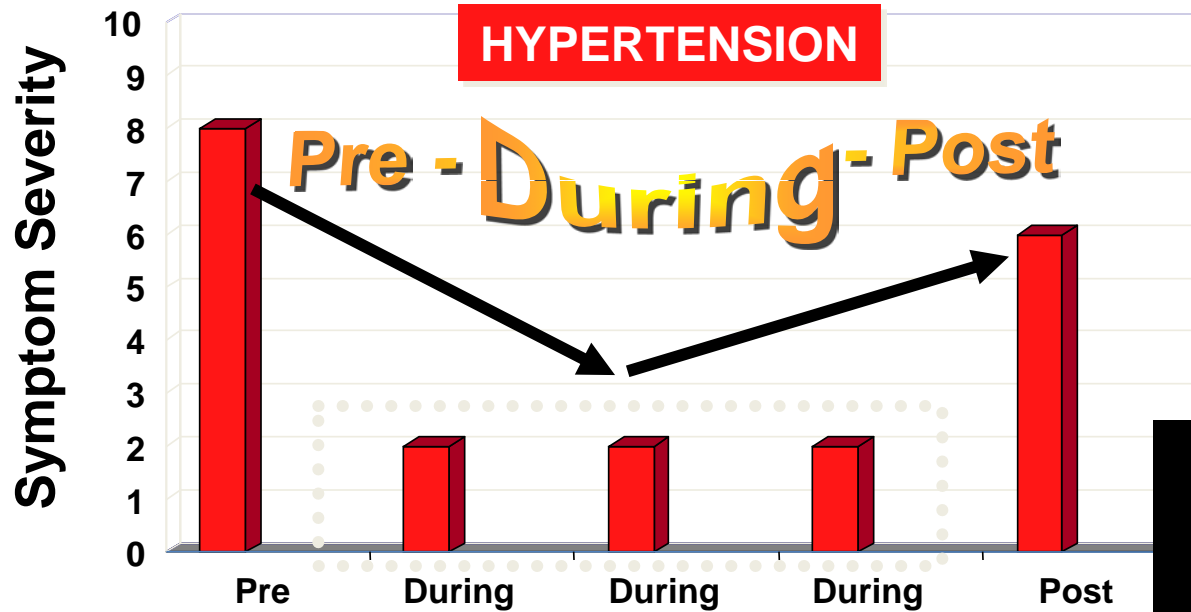
Normal Control

METH Abuser
(1 month detox)

METH Abuser
(14 months detox)

Source: Volkow, ND et al., *Journal of Neuroscience* 21, 9414-9418, 2001.

Evaluation of A Hypothetical Treatment



**Just Like Hypertension,
Addiction Is A
Chronic Disease That
Requires Continued Care**

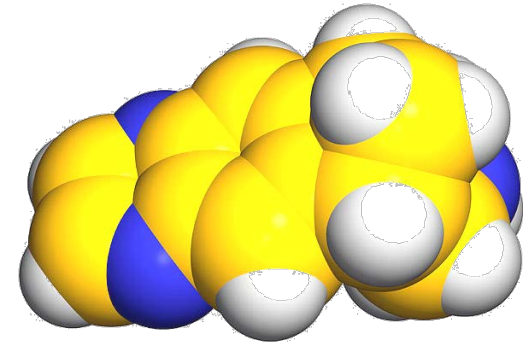
Source: McLellan, AT, *Addiction* 97, 249-252, 2002.



Medical Treatment for Addictions

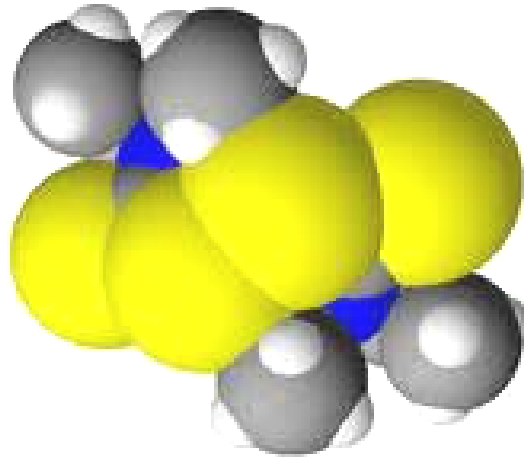
For Nicotine Addiction

- Nicotine Replacement Therapies (NRT)
- Bupropion
- Varenicline



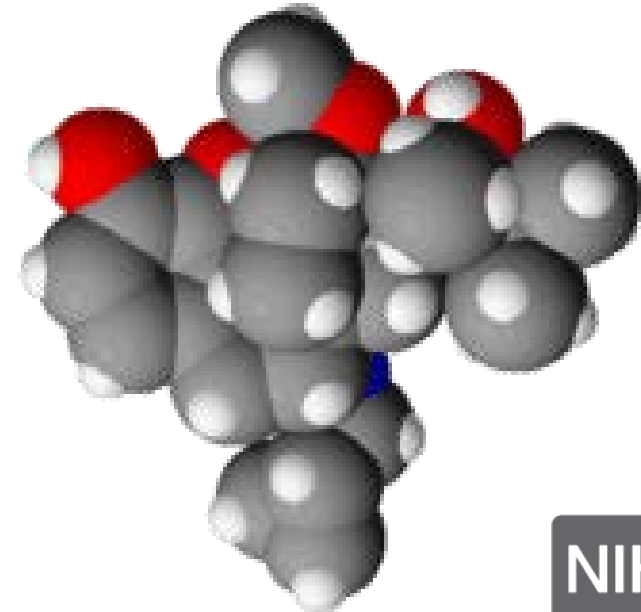
For Alcoholism

- Disulfiram
- Naltrexone
- Acamprosate
- Naltrexone ER

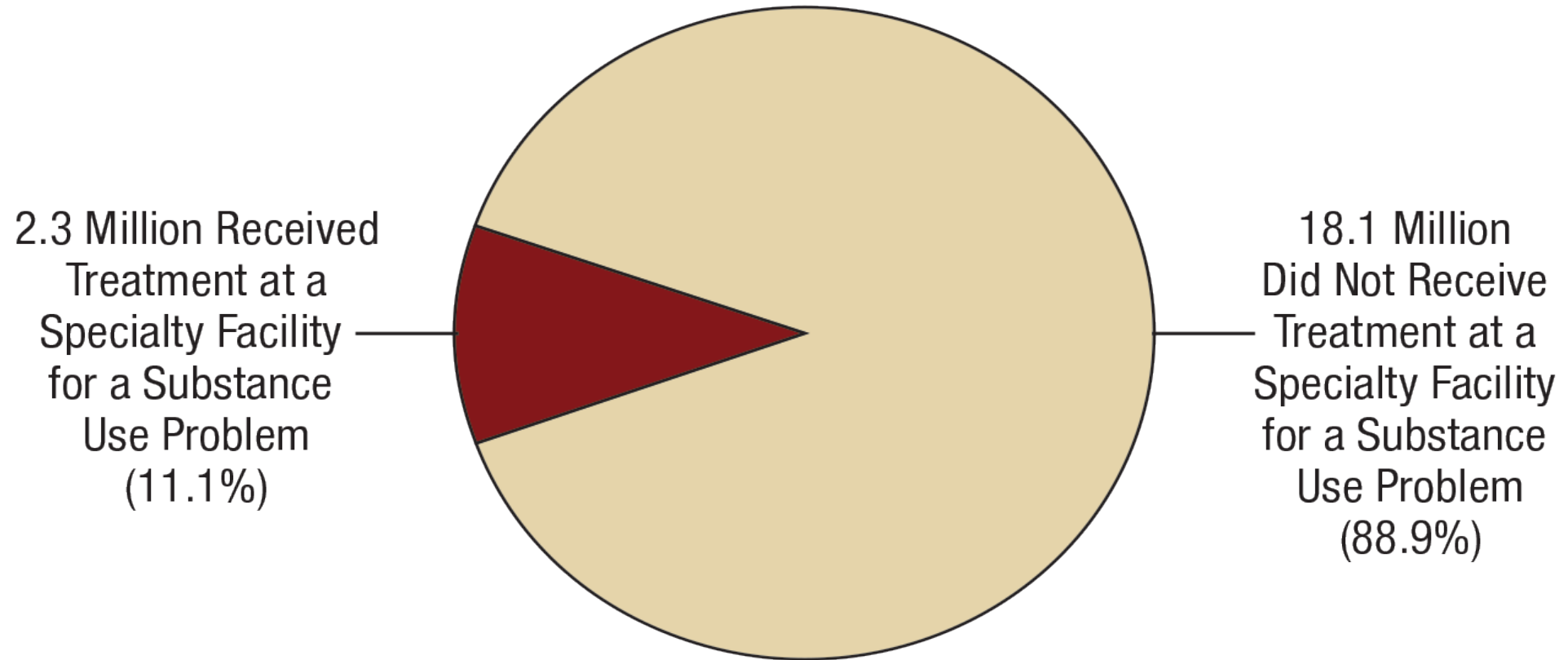


Opioid Addiction

- Methadone
- Naltrexone ER
- Buprenorphine



Receipt of Specialty Treatment in Past Year Adults 18 or Older Who Needed Substance Use Treatment in the Past Year: 2015 NSDUH



20.4 Million Adults Needed Substance Use Treatment

President Barack Obama

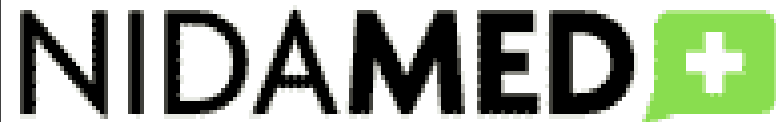
National Prescription Drug Abuse and Heroin Summit

Atlanta Georgia -- March 29, 2016



“ we need to recognize that addiction is a disease. If we treat addiction like a crime then we're doing something that'sineffective.

.... taking parity seriously so that mental health issues and addiction issues are treated as a disease in the same way that if somebody came in with a serious medical illness that it's treated”



- **Center of Excellence for Physician Information (2007-14)**
 - Partnership with AMA and 8 medical schools
 - 12 innovative curriculum resources for students/residents
 - Focus on SUD identification and treatment
- **Opioid and Pain Management Continuing Education Modules (2012-15)**
 - Partnership with ONDCP and Medscape Education
 - Two online CME/CE modules for physicians and other health care providers
 - Accessed 220,000 times
- **Preventing Adolescent Substance Use and Prescription Medication Misuse Continuing Education Module (2015-)**
 - Partnership with coalition of major medical associations and researchers
 - CME/CE module on science-based strategies to prevent, identify, and treat SUDs in adolescents
 - Winter 2016/17 release

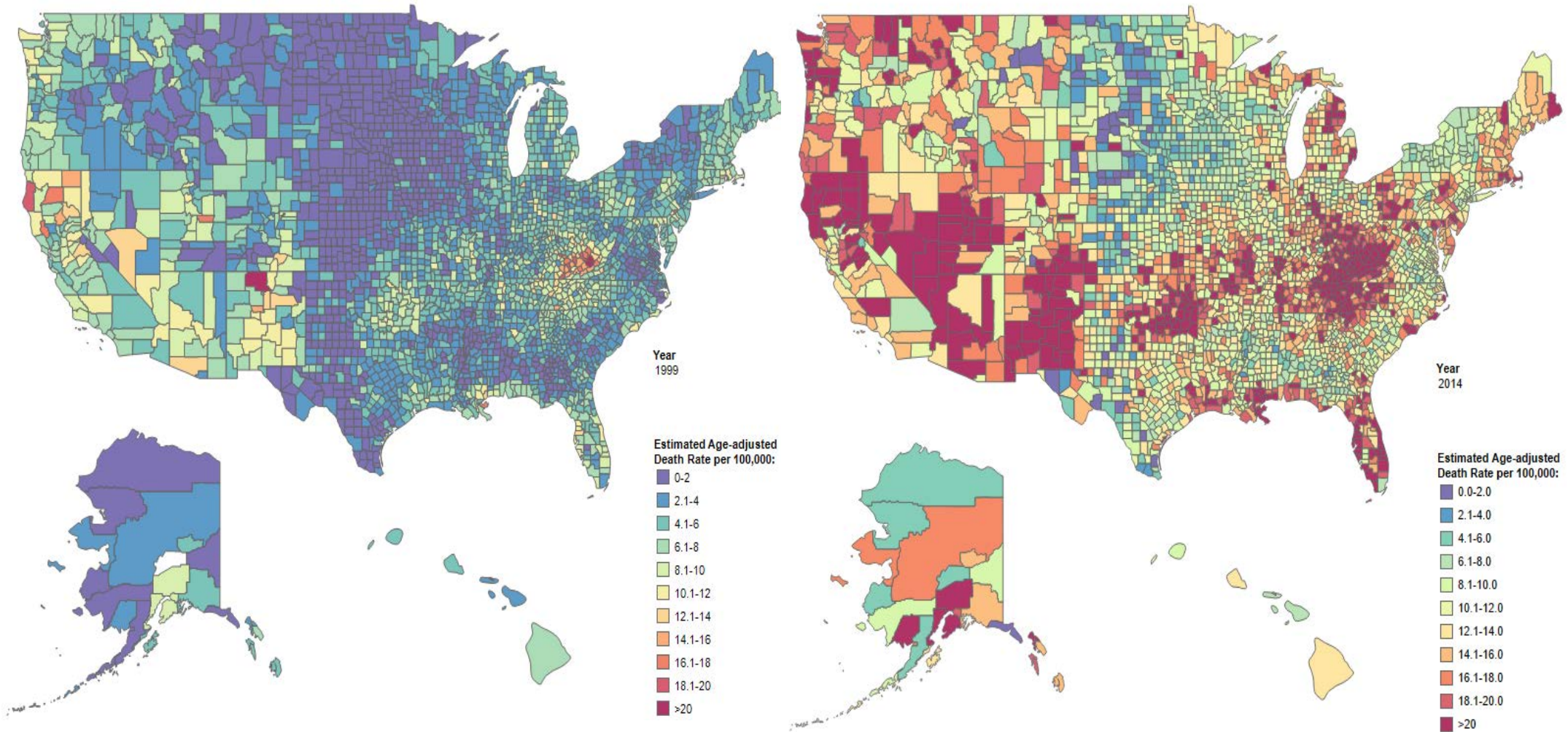
[Drugabuse.gov/nidamed](https://drugabuse.gov/nidamed)



Overdose Death Rates

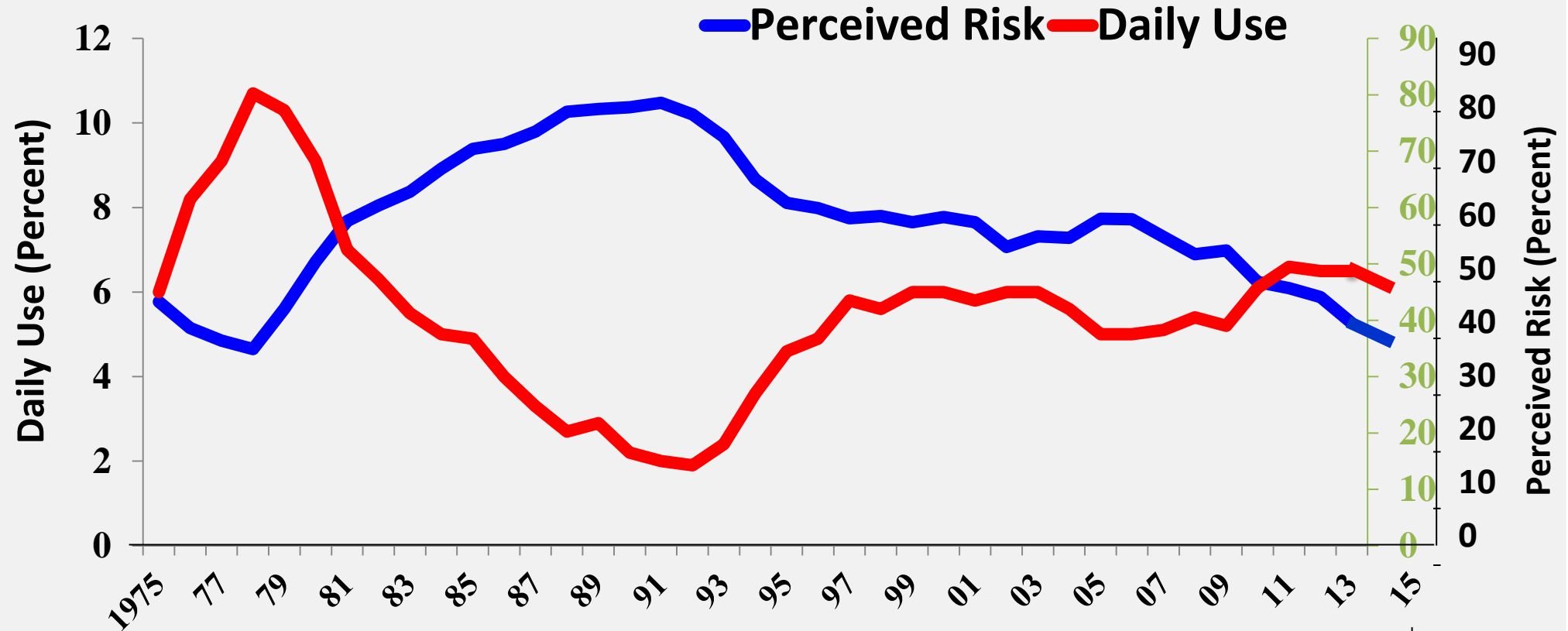
1999

2014



SUBSTANCE ABUSE IS PREVENTABLE

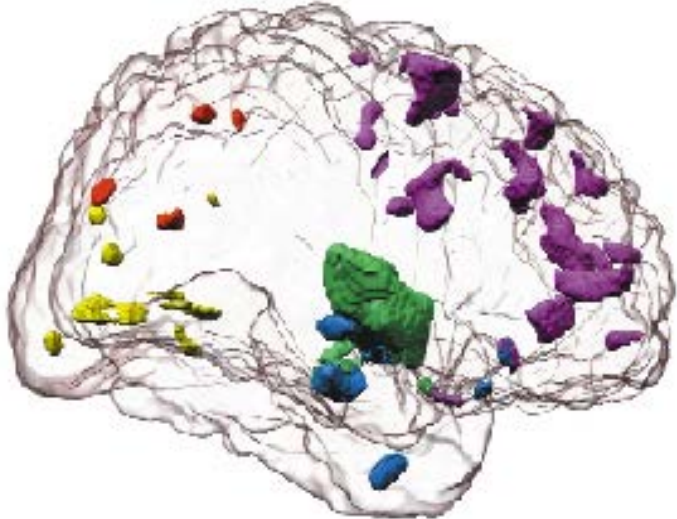
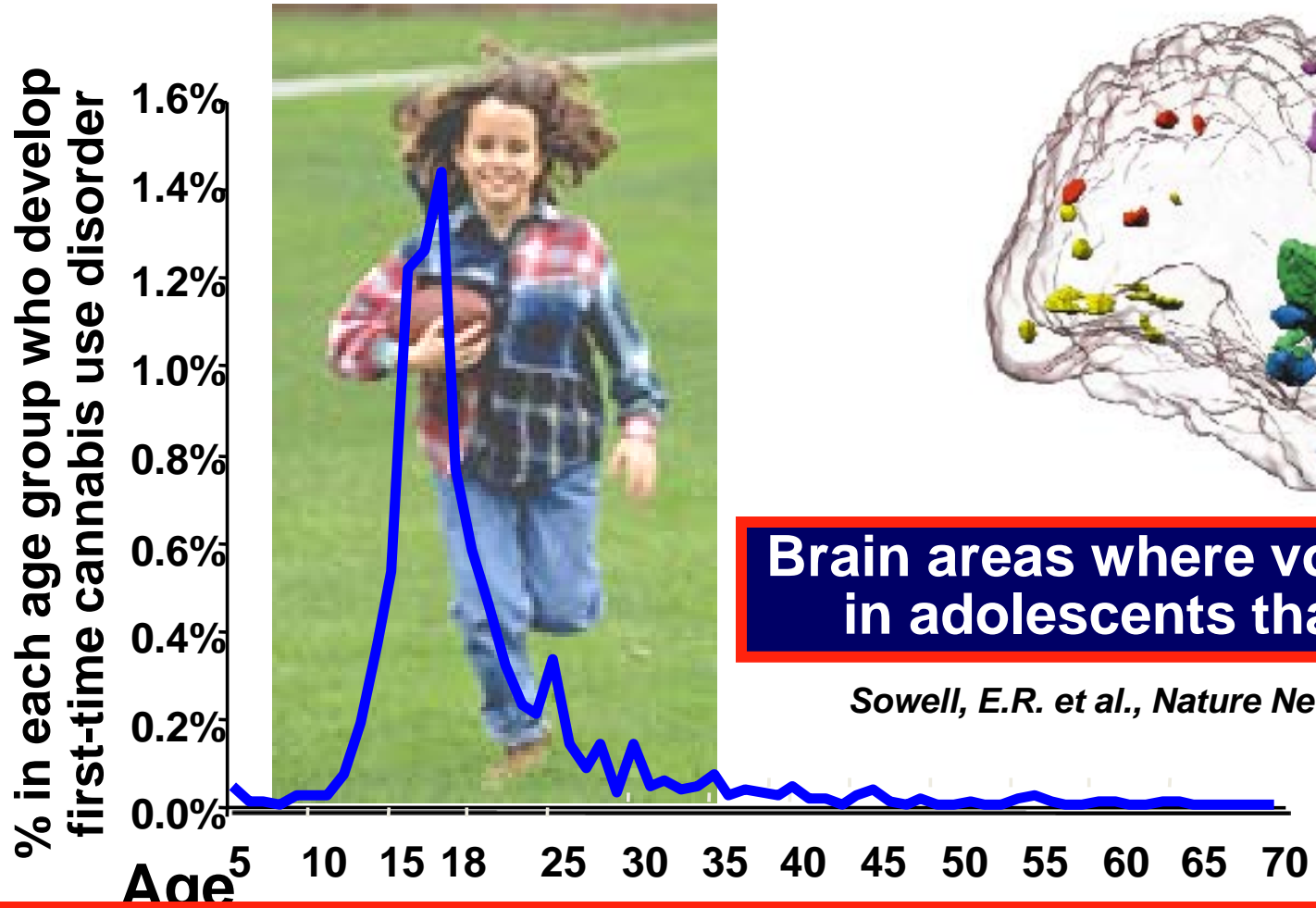
Percent 12th Grade Students Reporting Daily Cannabis Use vs. Perceived Risk of Regular Use



SOURCE: University of Michigan, 2014 Monitoring the Future Study



ADDICTION IS A **DEVELOPMENTAL** DISEASE *starts in adolescence and childhood*

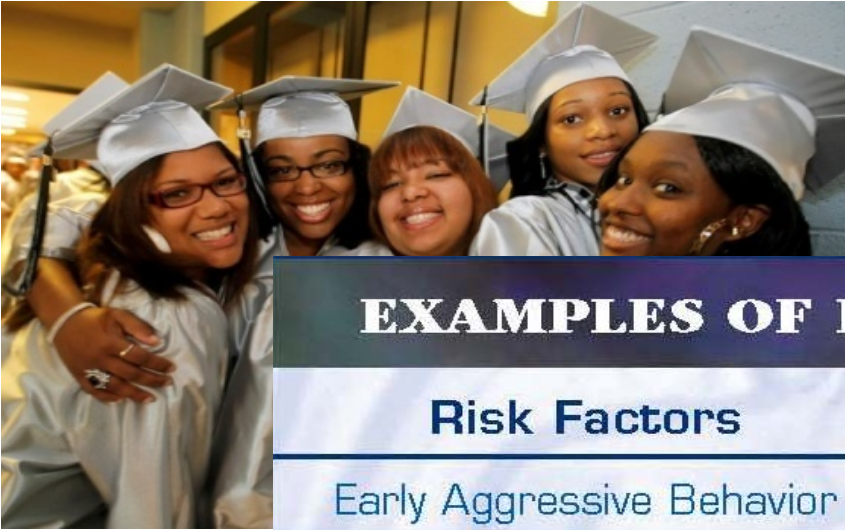


Brain areas where volumes are smaller in adolescents than young adults

Sowell, E.R. et al., Nature Neuroscience, 2, 859-861, 1999.

Age at cannabis use disorder as per DSM IV





EXAMPLES OF RISK AND PROTECTIVE FACTORS

Risk Factors	Domain	Protective Factors
Early Aggressive Behavior	Individual	Self-Control
Poor Social Skills	Individual	Positive Relationships
Lack of Parental Supervision	Family	Parental Monitoring and Support
Substance Abuse	Peer	Academic Competence
Drug Availability	School	Anti-Drug Use Policies
Poverty	Community	Strong Neighborhood Attachment

Reduce these

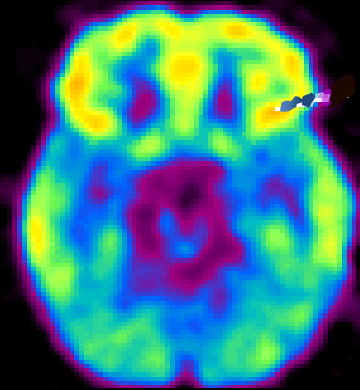


Elevate these

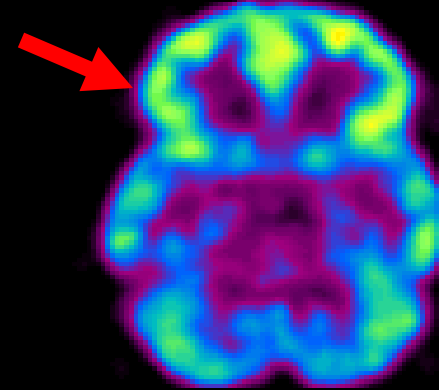
- **Prevention Programs Should Enhance Protective Factors & Reduce Risk Factors**

ADDICTION IS A **DISEASE OF THE BRAIN** *as other diseases it affects the tissue function*

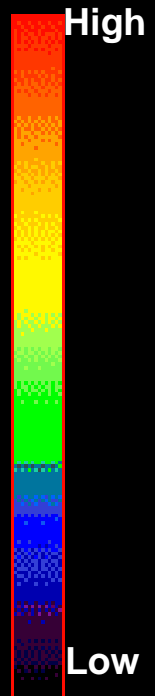
Decreased Brain Metabolism in *Drug Abuse Patient*



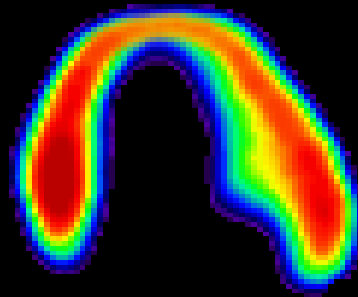
Control



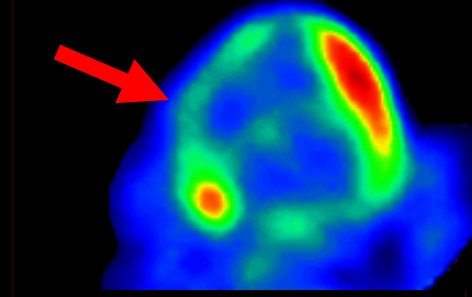
Cocaine Abuser



Decreased Heart Metabolism in *Heart Disease Patient*



Healthy Heart



Diseased Heart

Sources: From the laboratories of Drs. N. Volkow and H. Schelbert

State of the Art of Addiction Science, Practice, and Service



Kana Enomoto
Principal Deputy Administrator
Substance Abuse and Mental Health Services Administration

Behavioral Health is Essential To Health



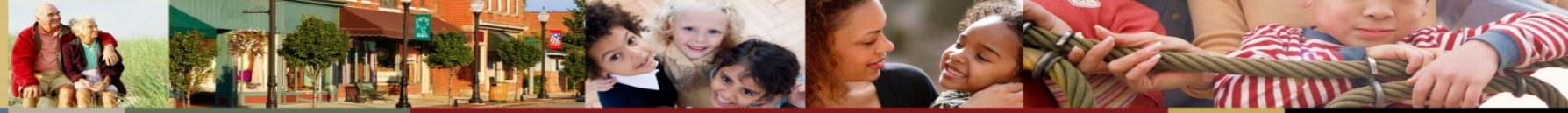
Prevention Works



Treatment is Effective



People Recover



Moving research to practice to improve outcomes for people

Kana Enomoto

Substance Abuse and Mental Health Services Administration

Medicine Responds to Addiction II
State of the Art of Addiction Science,
Practice and Service
Washington, DC • October 25, 2016



A hand holding a magnifying glass over a puzzle piece labeled 'Practice'. The puzzle piece is dark brown with the word 'Practice' in white. To the left, another puzzle piece is labeled 'Theory'. The background is a white puzzle with other pieces visible. The hand is holding the handle of the magnifying glass, which is focused on the 'Practice' piece.

Theory

Practice

SBIRT in Action: UCSF-Natividad



- ✓ Residents' SBIRT-related skills, attitudes and personal satisfaction increased
- ✓ Residents placed a higher value on addiction education
- ✓ Training was well received by residents and community members

Leadership and Voice

Leading change at the national level to create a behavioral health system that better meets the needs of individuals, communities, and providers



126

1 (3) in subsection (f)(2)(C)(iii), by striking “sub-

2 section (k)” and inserting “subsection (m)”; and

3 (4) by inserting after subsection (f) the following:

4 “(g) **CHIEF MEDICAL OFFICER.**—

5 (1) **IN GENERAL.**—The Administrator, with the

6 approval of the Secretary, shall appoint a Chief Med-

7 ical Officer within the Administration.

8 “(2) **ELIGIBLE CANDIDATES.**—The Adminis-

9 trator shall select the Chief Medical Officer from

10 among individuals who—

11 “(A) have a doctoral degree in medicine or

12 osteopathic medicine;

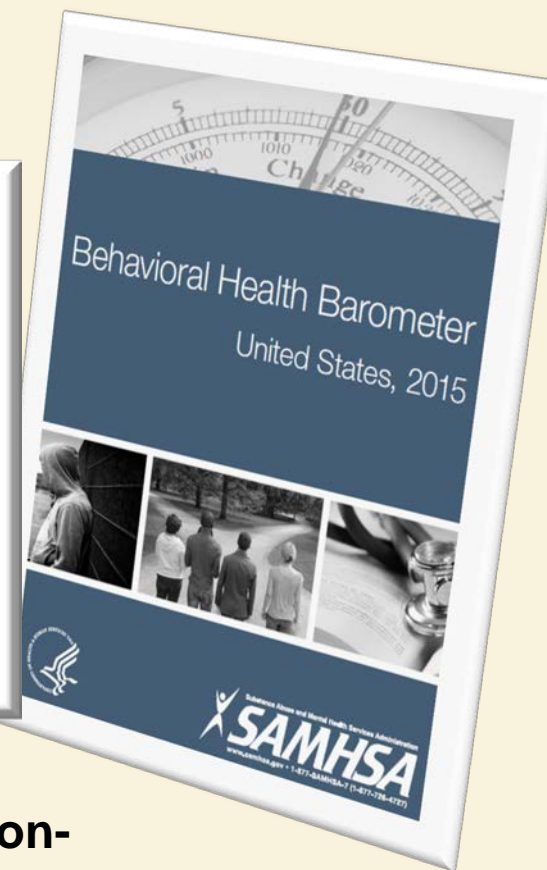
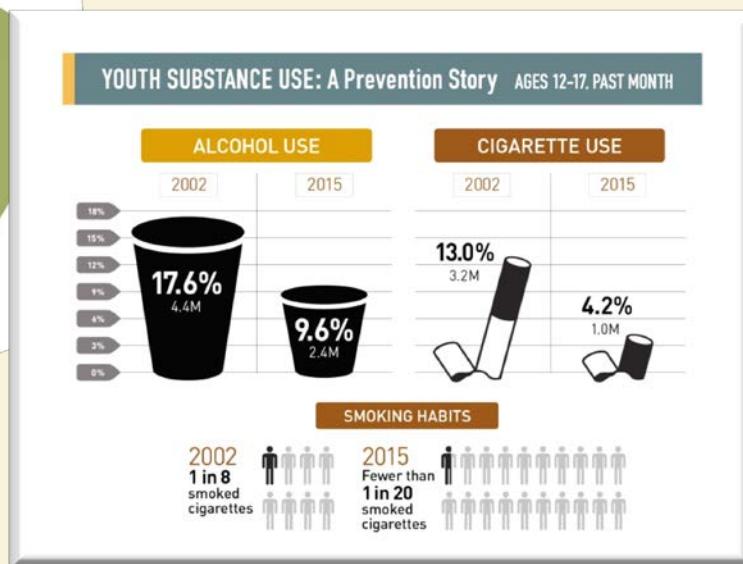
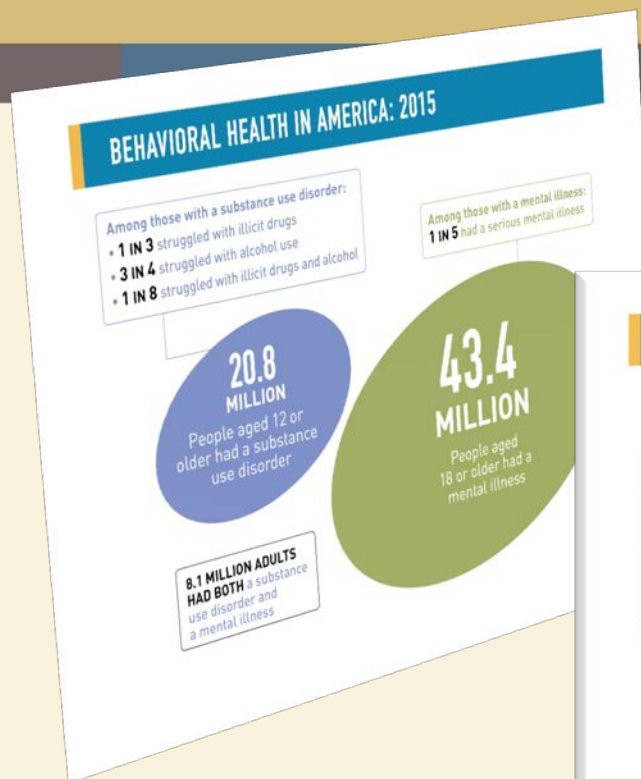
13 “(B) have experience in the provision of

14 mental or substance use disorder services;

15 “(C) have experience working with mental



Surveillance and Data



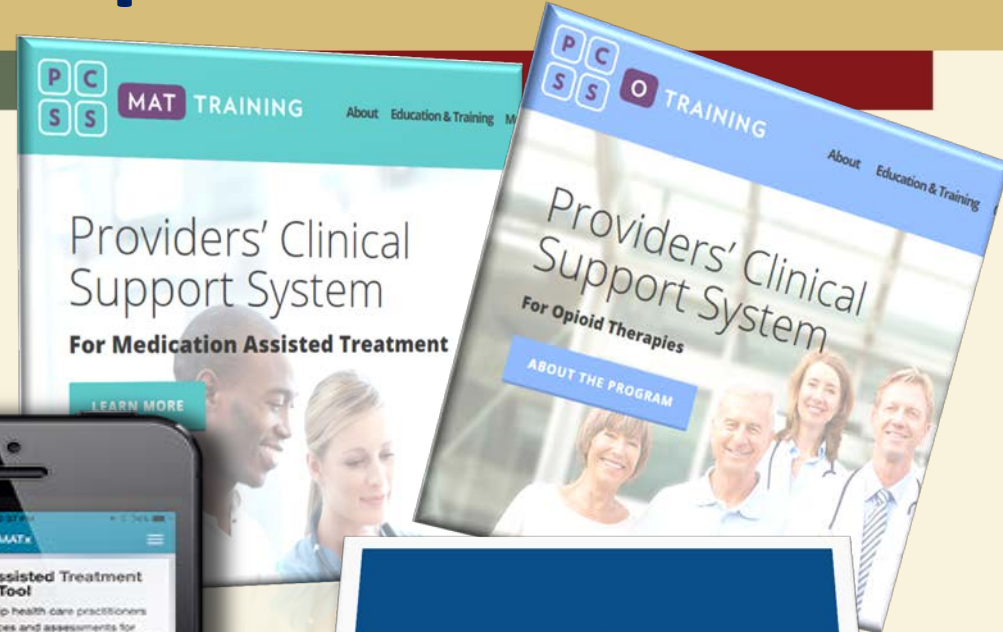
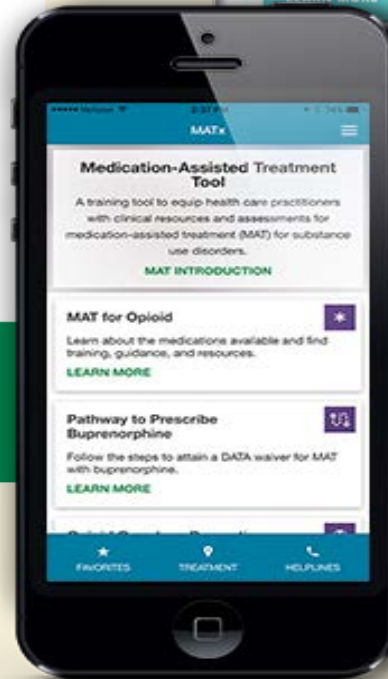
Informing policy and program decision-making with critical data from evaluation and surveillance

Practice Improvement

Ensuring the delivery of state-of-the-art services by supporting innovation and practice improvement



Visit: store.samhsa.gov/apps/mat



Public Awareness

Promoting the importance of behavioral health and wellness with traditional and digital awareness campaigns and public education



Regulation and Standard Setting

Protecting public health, privacy, and patients' rights by supporting regulation and standard setting



DEPARTMENT OF HEALTH AND HUMAN SERVICES

42 CFR Part 8

RIN 0930-AA22

Medication Assisted Treatment for Opioid Use Disorders

AGENCY: Substance Abuse and Mental Health Services Administration (SAMHSA), HHS.

ACTION: Proposed rule.

SUMMARY: The Secretary of the Department of Health and Human Services (the Secretary) (HHS) proposes a rule to increase the highest patient limit for qualified physicians to treat opioid use disorder under section 303(g)(2) of the Controlled Substances

Strategic Grantmaking

SBIRT

More than 15,000 healthcare professionals trained— including 600 residents

2 million individuals screened and/or received treatment

15 %
at risk

2.5%
referred for
brief
treatment

2.5%
referred for
specialty
treatment

Addressing the opioid crisis

1.



2.



New Prescription Drug Overdose Grants

\$12,000,000

12 states

purchase, equip,

3.



MEDICATION-ASSISTED TREATMENT (MAT)

- **NEW:** SAMHSA Medication Assisted Treatment for Prescription Drug and Opioid Addiction (MAT-PDOA) Grants
- \$25,000,000
- 23 States
- Focus on high-need communities



A Model Approach to Addiction Medical Education: Key Components



Kevin Kunz, M.D., M.P.H.
Executive Vice President
The Addiction Medicine Foundation

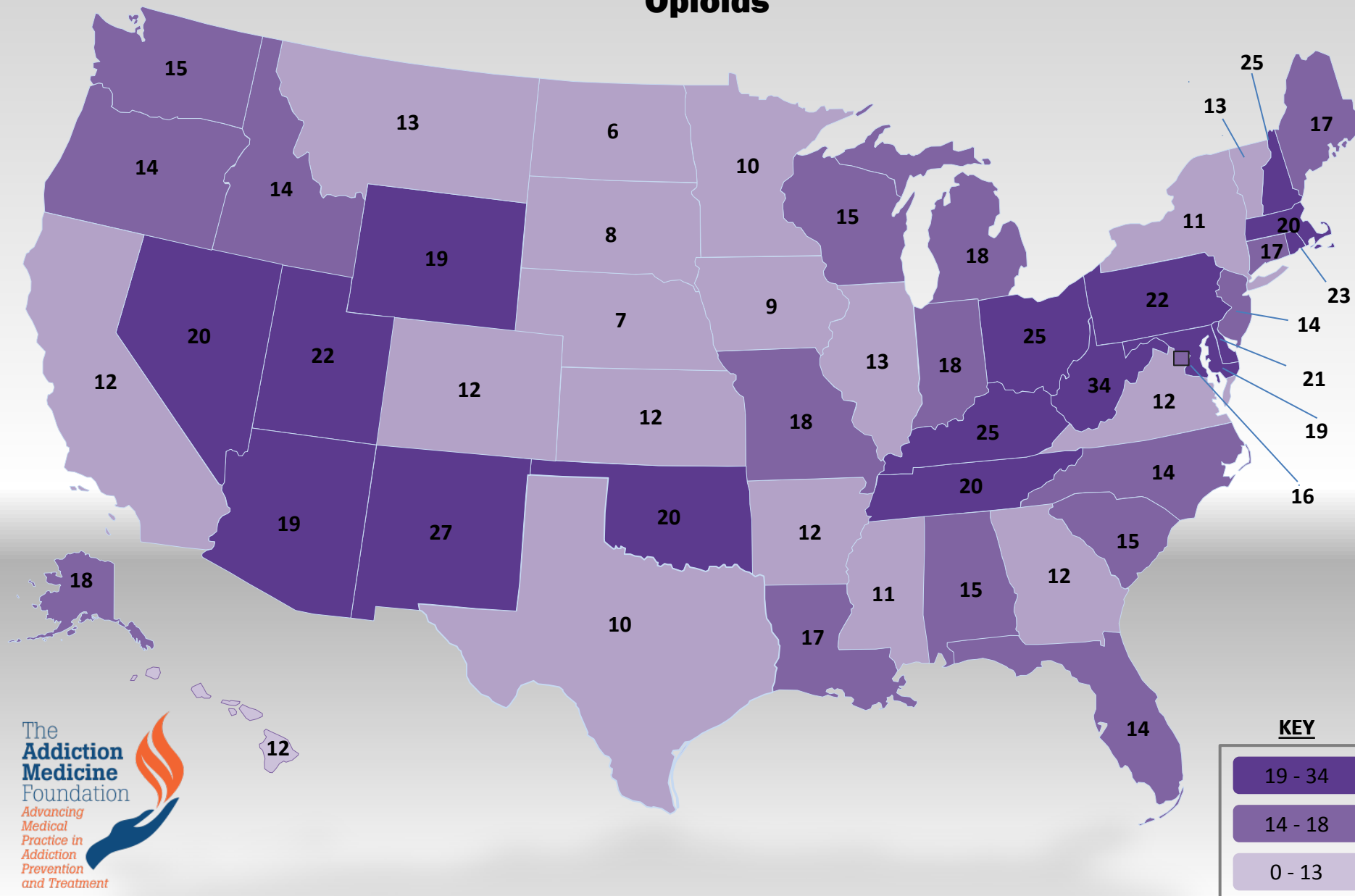
David Stern, M.D.
Executive Dean and Vice-Chancellor for Clinical
Affairs
University of Tennessee College of Medicine and
the University of Tennessee Health Science Center

Overview and Addiction Medicine Fellowship Training Programs

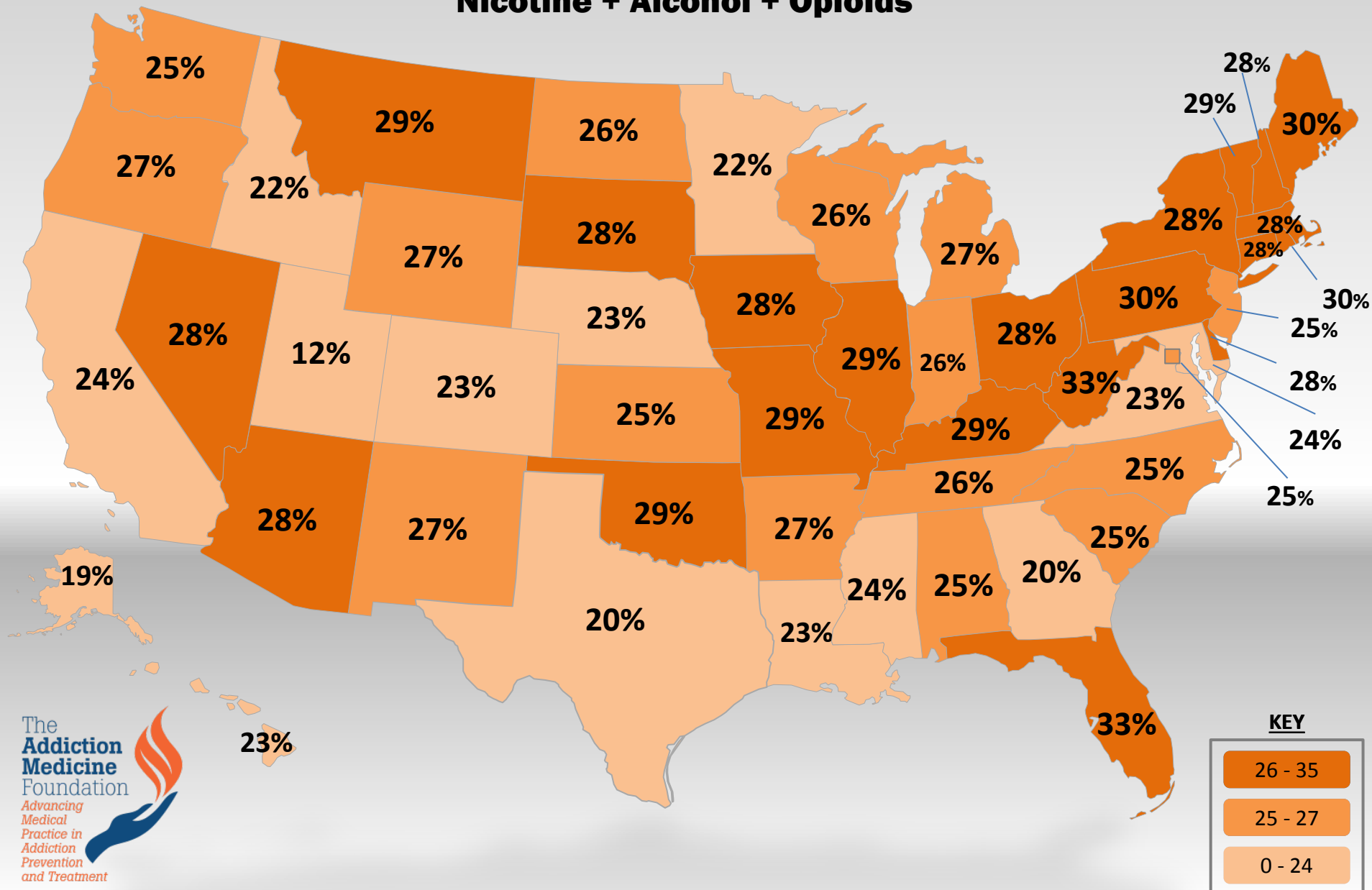


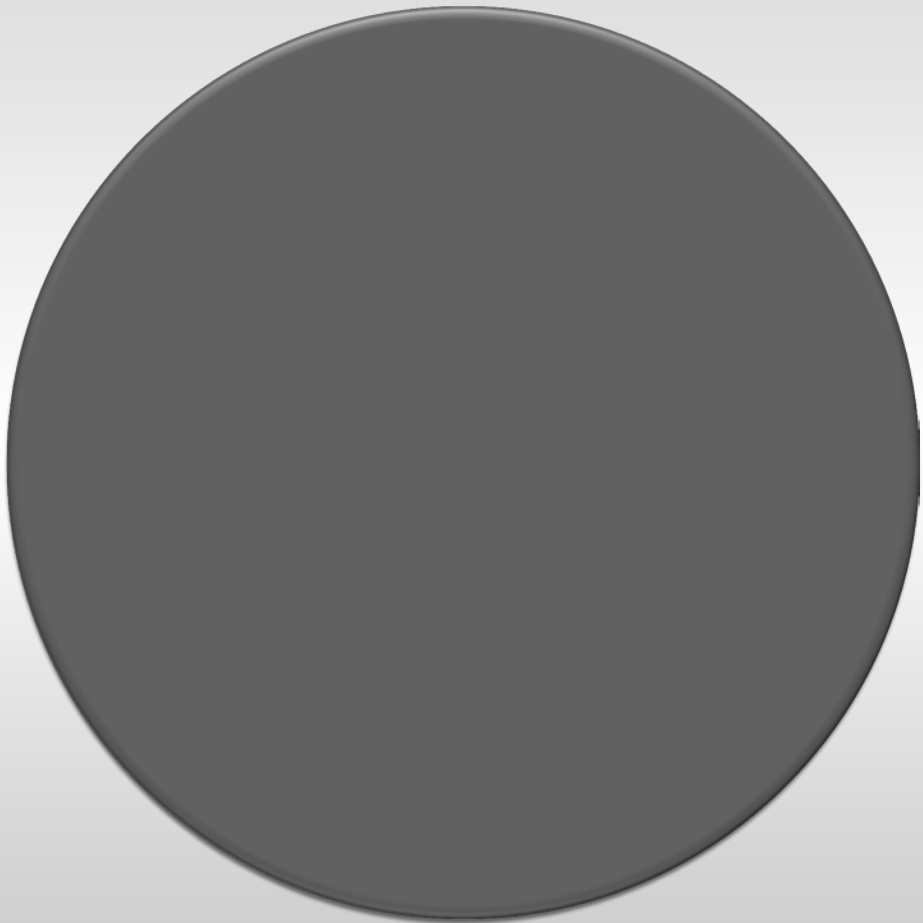
Kevin Kunz, M.D., M.P.H.
Executive Vice President
The Addiction Medicine Foundation

Death Rate per 100,000 Residents Opioids

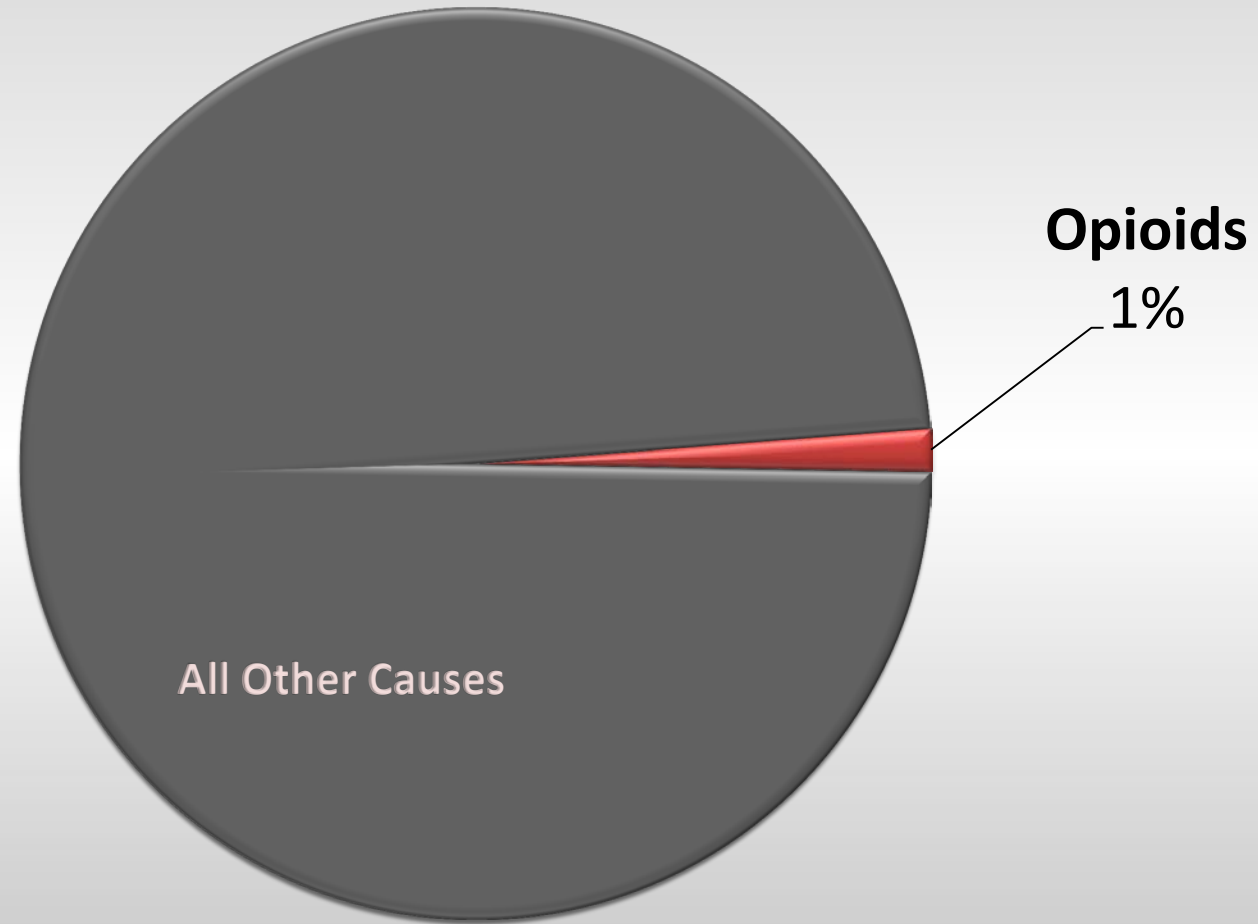


Percentage of All Annual Deaths Nicotine + Alcohol + Opioids

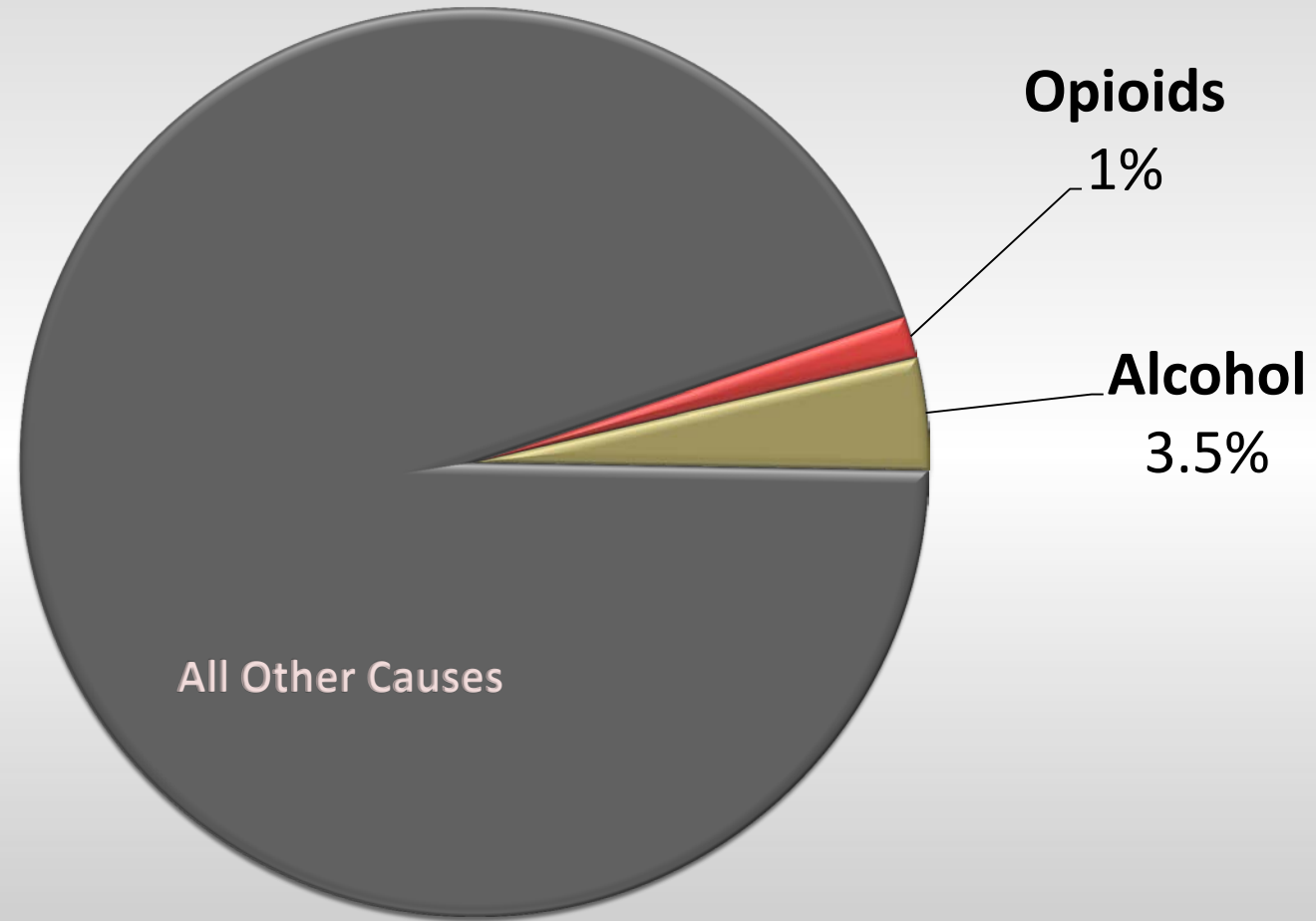




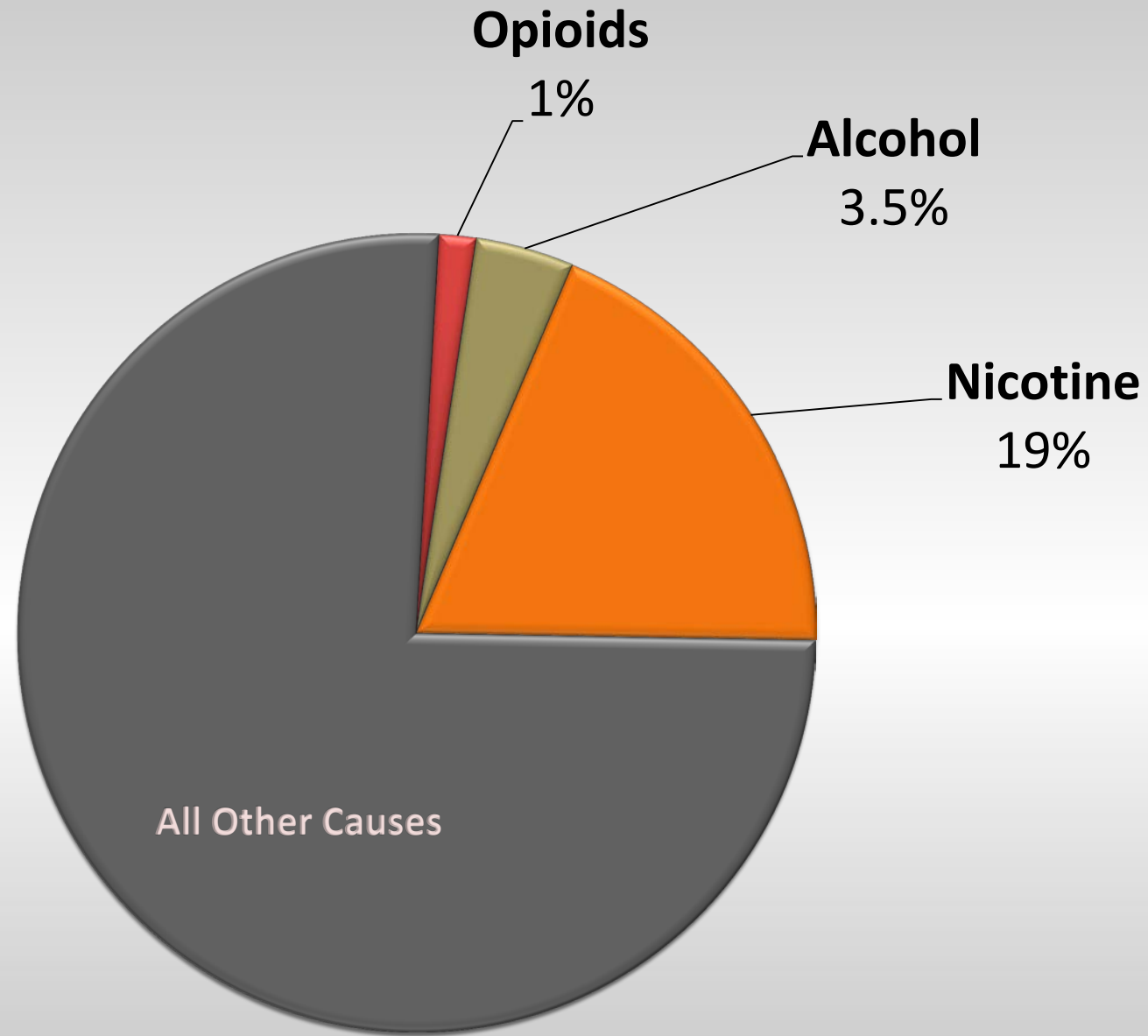
2.6 Million Total Annual U.S. Deaths



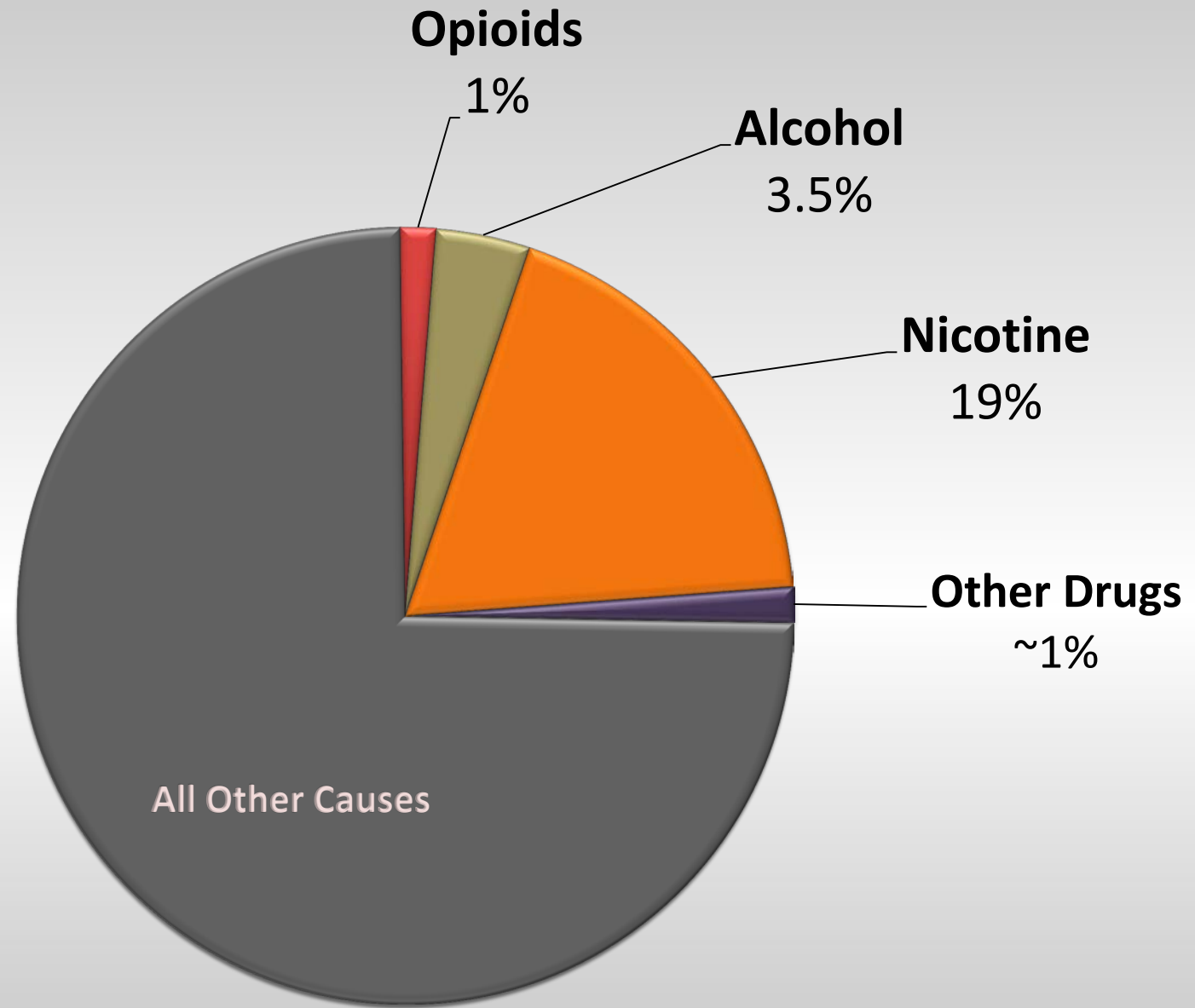
2.6 Million Total Annual U.S. Deaths



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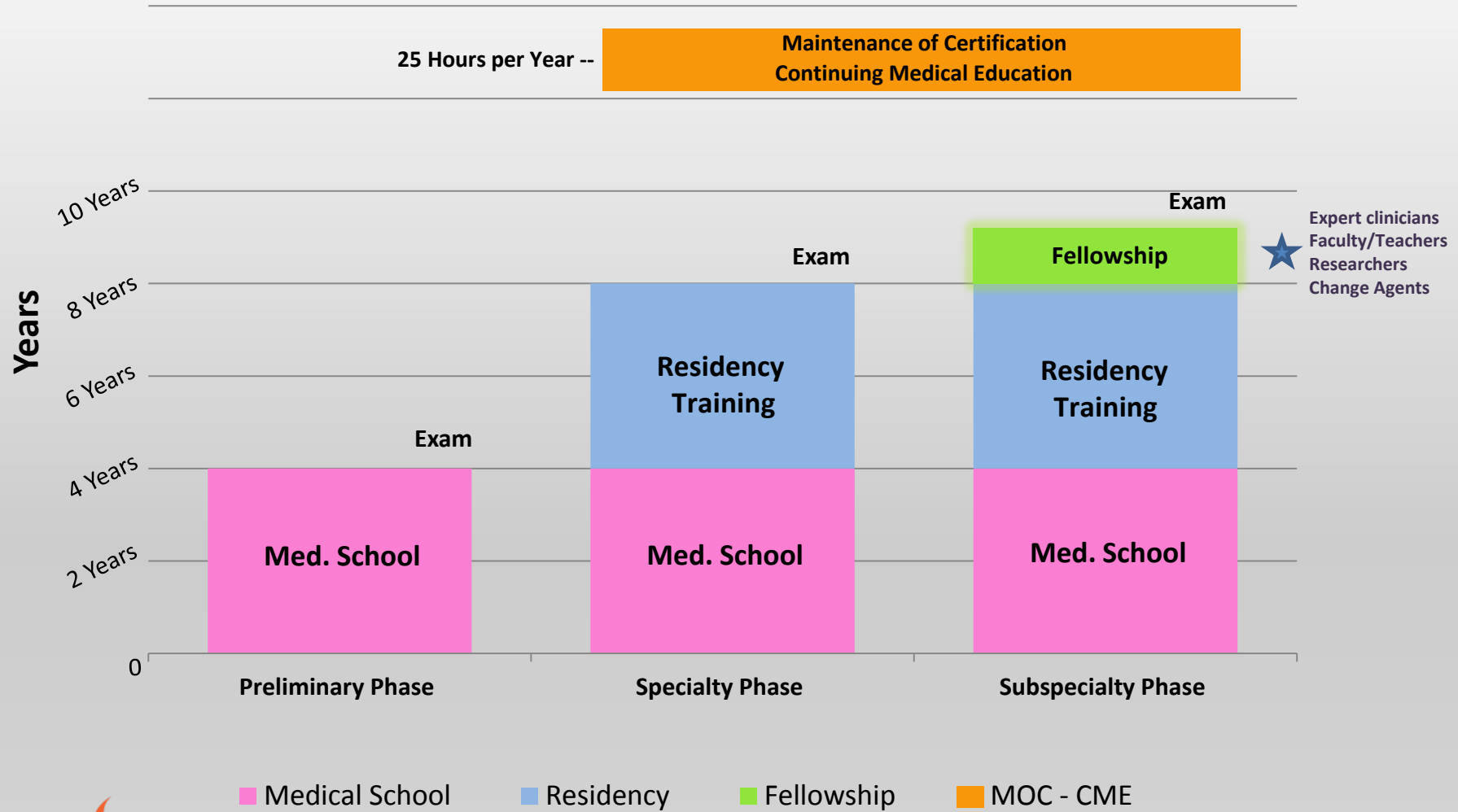


2.6 Million Total Annual U.S. Deaths

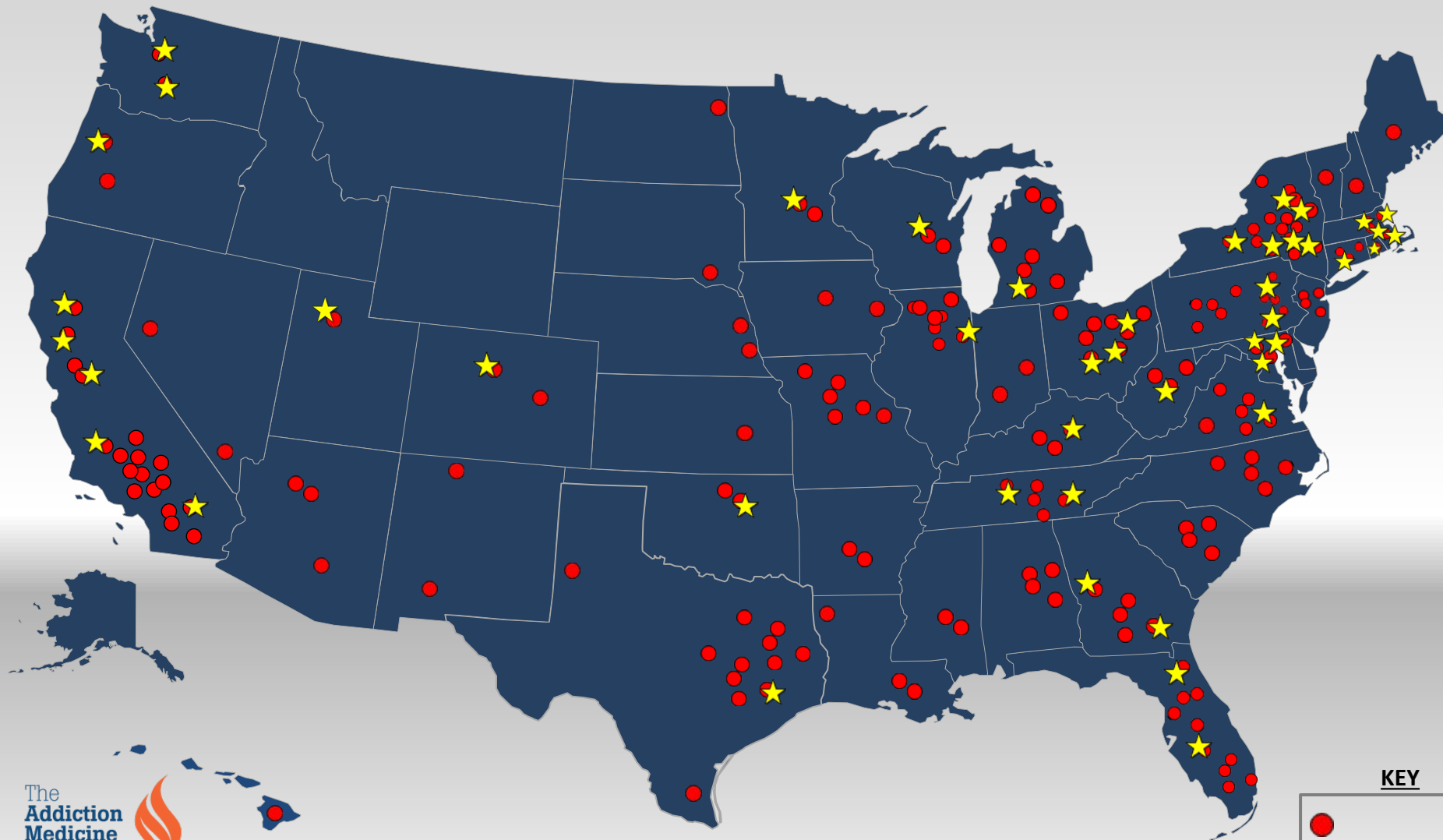


2.6 Million Total Annual U.S. Deaths

Continuum of Medical Education and Training



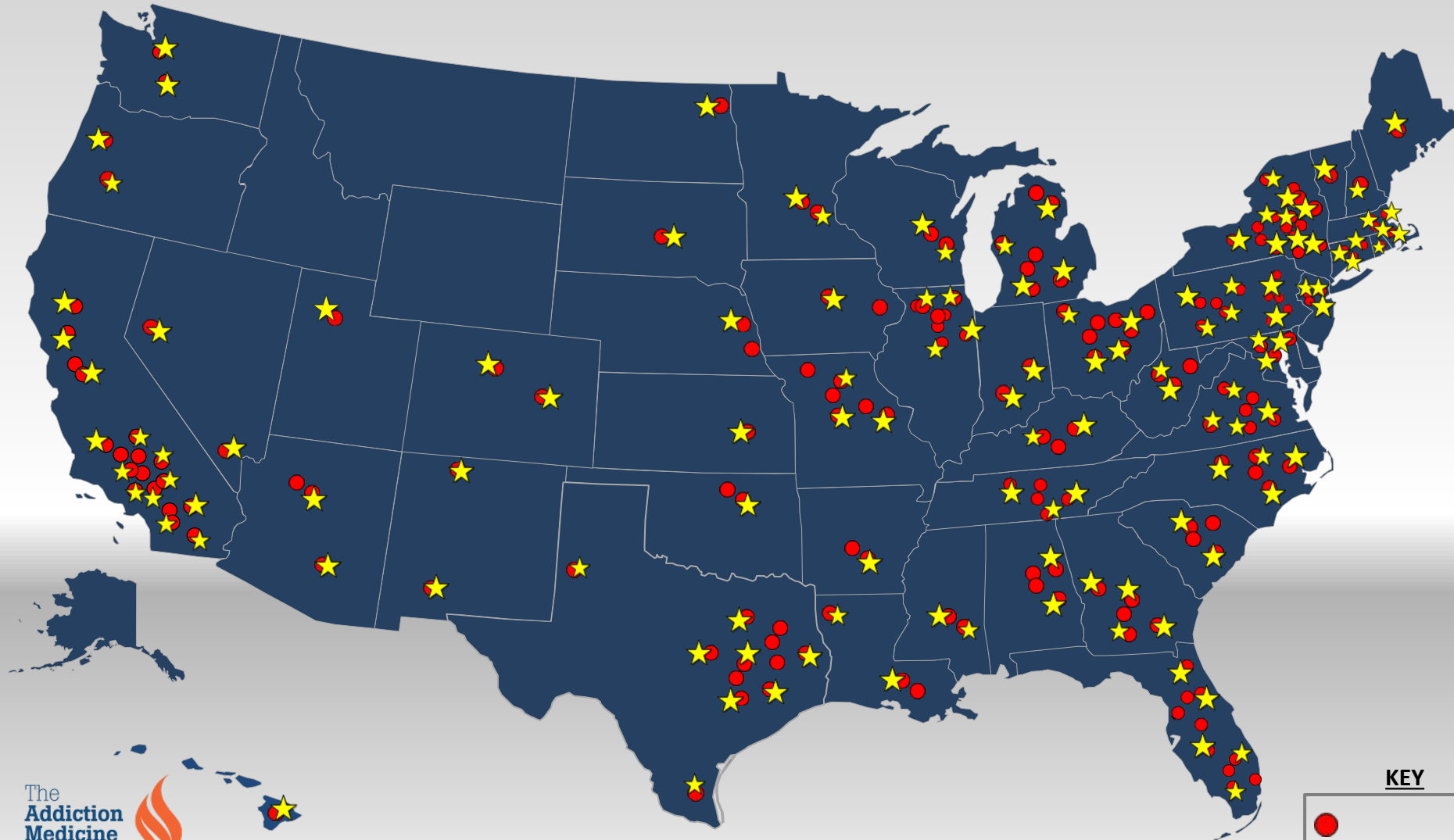
183 Medical Schools: 46 ADM Fellowships



KEY

- Medical School
- ★ ADM Fellowship

125 ADM Fellowships by 2025



KEY

- Medical School
- ★ ADM Fellowship

Innovation Underway: Medical Education and Training



George E. Thibault, M.D.
President
The Josiah Macy Jr. Foundation



JOSIAH MACY JR. FOUNDATION

macyfoundation.org

INNOVATIONS IN HEALTH PROFESSIONS EDUCATION

George E. Thibault, MD
President, Josiah Macy Jr. Foundation

Medicine Responds to Addiction II
Eisenhower Executive Office Building
Washington, DC
October 25, 2016





Thesis

The size, composition, distribution of skills of the health care work force will determine the success of healthcare reform

THEREFORE

Innovations in health professions education are needed to prepare the work force for tomorrow



Six Areas of Innovation

- I. Interprofessional Education
- II. New Models for Clinical Education
- III. New Content to Complement the Biological Sciences
- IV. New Educational Models based on Competency rather than time
- V. New Educational Technologies
- VI. Faculty Development for Teaching and Educational Innovation



Culture Change

- I. Breaking down the professional silos
- II. Creating closer ties between education and practice
- III. Outward looking – patient and community oriented



Article:

Developing Core Competencies for the Prevention and Management of Prescription Drug Misuse: A Medical Education Collaboration in Massachusetts

Karen H. Antman, MD, Harris A. Berman, MD, Terence R. Flotte, MD, Jeffrey Flier, MD, Dennis M. Dimitri, MD, and Monica Bharel, MD, MPH

Abstract

Drug overdose has become the leading cause of injury death in the United States. More than half of those deaths involve prescription drugs, specifically opioids. A key component of addressing this national epidemic is improving prescriber practices.

A review of the curricula at the four medical schools in Massachusetts revealed that, although they taught components of addiction medicine, no uniform standard existed to ensure that all students were taught prevention and management strategies for prescription drug misuse. To fill this gap, the governor and the secretary

of health and human services invited the deans of the state's four medical schools to convene to develop a common educational strategy for teaching safe and effective opioid-prescribing practices. With leadership from the Department of Public Health and Massachusetts Medical Society, the deans formed the Medical Education Working Group in 2015. This group reviewed the relevant literature and current standards for treating substance use disorders and defined 10 core competencies for the prevention and management of prescription drug misuse.

The medical schools have incorporated these competencies into their curricula and have committed to assessing students' competence in these areas. The members of the Medical Education Working Group have agreed to continue to work together on key next steps, including connecting these competencies to those for residents, equipping interprofessional teams to address prescription drug misuse, and developing materials in pain management and opioid misuse for practicing physicians. This first-in-the-nation partnership has yielded cross-institutional competencies that aim to address a public health emergency in real time.

Centers of Excellence in Addiction Medicine and Practice



David Stern, M.D.

Executive Dean and Vice Chancellor for Clinical Affairs
University of Tennessee College of Medicine and the University of
Tennessee Health Science Center

A Model for a Center of Excellence in Addiction Medicine:

The Center for Addiction Science at the University of Tennessee



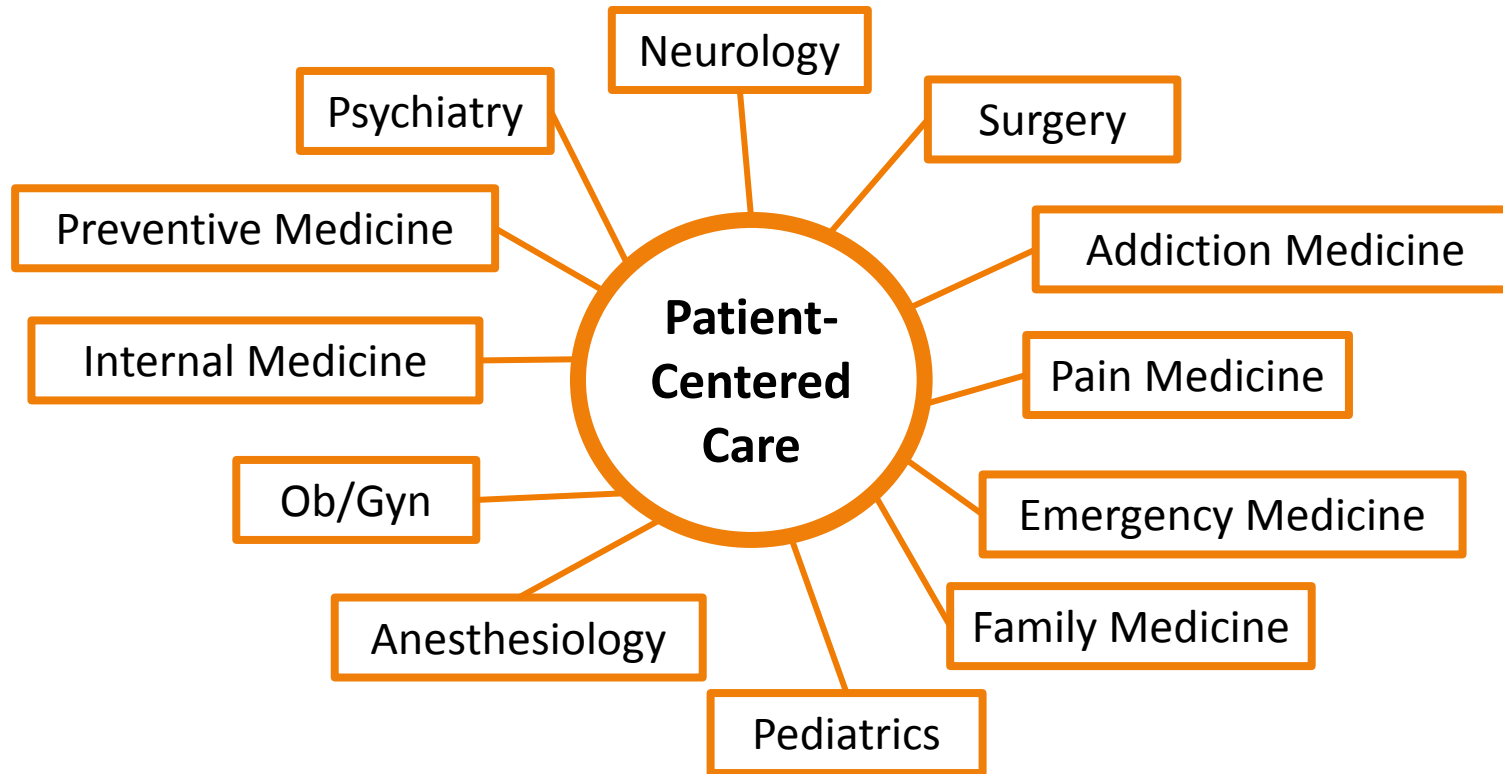
An integrated approach to substance use disorders leveraging clinical care, research, education and community outreach.

Center-of-Excellence in Addiction Medicine (ADM)

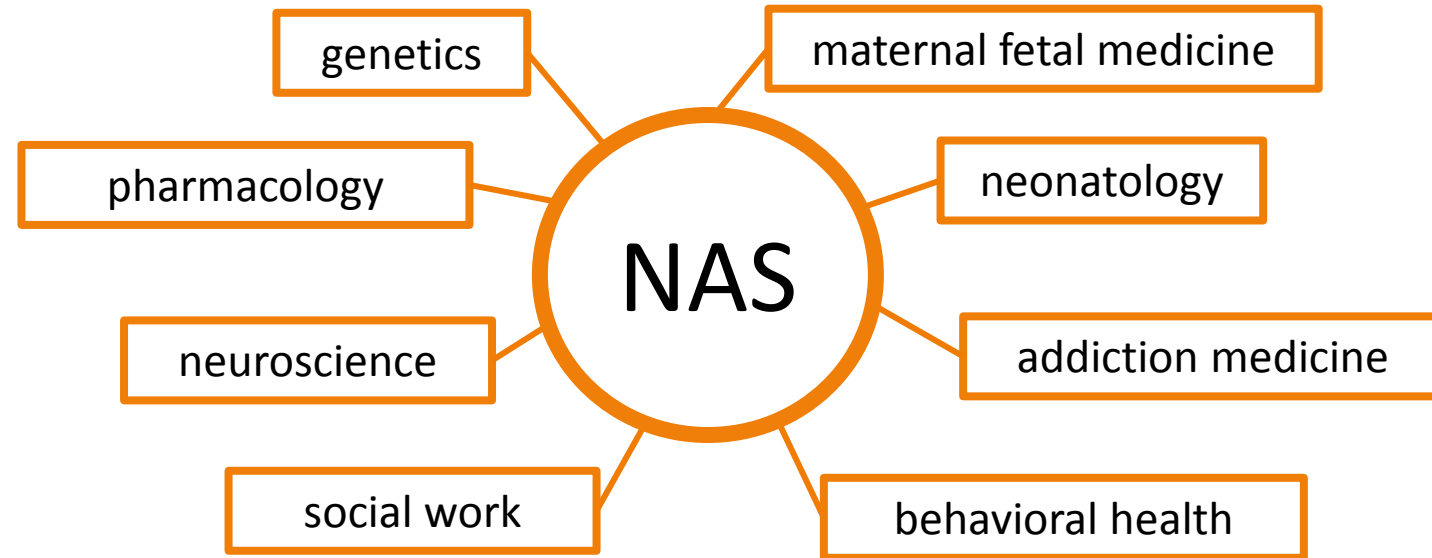
- Clinical: multi- and inter- disciplinary *services across all substances, the life cycle and all demographics,*
- Educational: *training fellows as cultural change agents* and reaching trainees at all levels
- Research: *basic, translational, clinical research* to expand the evidence base for ADM biology and treatments
- Community outreach: leveraging clinical, educational and research missions to improve health in our community

Multidisciplinary Clinical Care

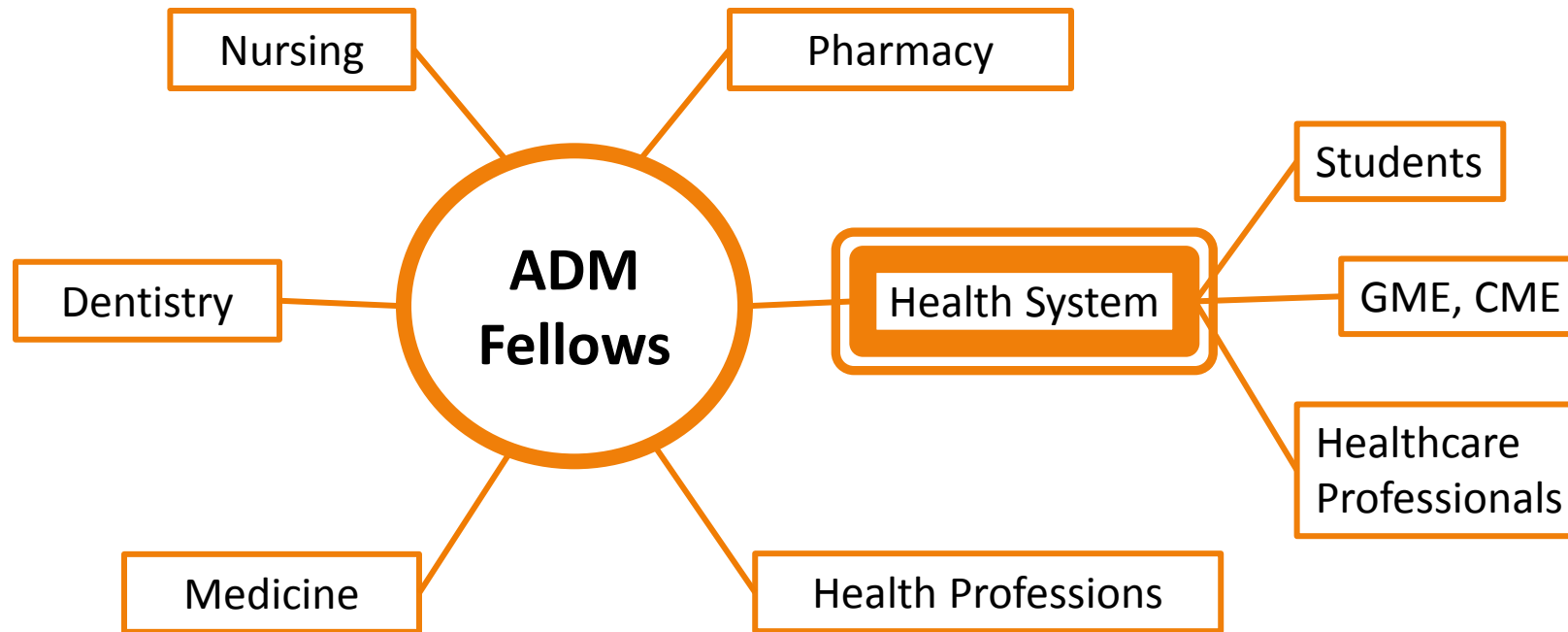
- Preventive – Therapeutic
- Acute – Chronic
- Inpatient – Outpatient
- Telemedicine



Multidisciplinary Research: Neonatal Abstinence Syndrome (NAS)



ADM Fellows: interprofessional education and cultural change agents



....from “suspicion” to evidence-based treatment pathways

What will success look like?

Impact measures

- Reduced *incidence and prevalence* of substance use disorders
- Reduced *medical complications* of addiction (NAS, fetal alcohol syndrome, liver & lung disease, trauma, etc)
- Reduced *costs* of healthcare for patients with risky substance use/addiction and associated complications
- Reduced *social consequences* linked to risky substance use
- Reduced *iatrogenic harm*

Benefits to all stakeholders: *Community – patients – employers – payers – educators – health system*

A Model Approach to Addiction Medical Education: Key Components



Sarah Wakeman, M.D., FASM
Assistant Professor of Medicine and Medical Director, Substance Use
Disorder Initiative
Massachusetts General Hospital, Harvard Medical School

A Model Approach to Addiction Medical Education: Key Components



Alison Whelan, M.D.
Chief Medical Education Officer
Association of American Medical Colleges

A Model Approach to Addiction Medical Education: Key Components



Mary Lieh-Lai, M.D.
Senior Vice President for Medical Accreditation
Accreditation Council for Graduate Medical Education

A Model Approach to Addiction Medical Education: Key Components



Donald Melnick, M.D., FACMI
President
National Board of Medical Examiners

A Model Approach to Addiction Medical Education: Key Components



Hugh Mighty, M.D., M.B.A., FACOG
Dean and Vice President of Clinical Affairs
Howard University College of Medicine

A Model Approach to Addiction Medical Education: Key Components



Jan Willcox, D.O., FACOFP
Dean

Edward Via School of Osteopathic Medicine, Virginia Campus

A Model Approach to Addiction Medical Education: Key Components



Christen Johnson
Medical Student
President
Student National Medical Association

A Model Approach to Addiction Medical Education: Key Components



Discussion



Implementation Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction



Patrick G. O'Connor, M.D., M.P.H., FACP
Chief, General Internal Medicine
Yale School of Medicine
Director, The Addiction Medicine Foundation

Implementation-Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction

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Dan and Amanda Adams Professor and Chief, General Internal Medicine

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Past President, The Addiction Medicine Foundation

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Associate Dean for Undergraduate Medical Education

University of Minnesota

Eric Holmboe, M.D.

Senior Vice President for Milestone Development and Evaluation

Accreditation Council for Graduate Medical Education

Implementation Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction



Robert Englander, M.D., M.P.H.
Associate Dean for Undergraduate Medical Education
University of Minnesota Medical School

Putting Addiction Medicine in the Context of Medical Education in the 21st Century

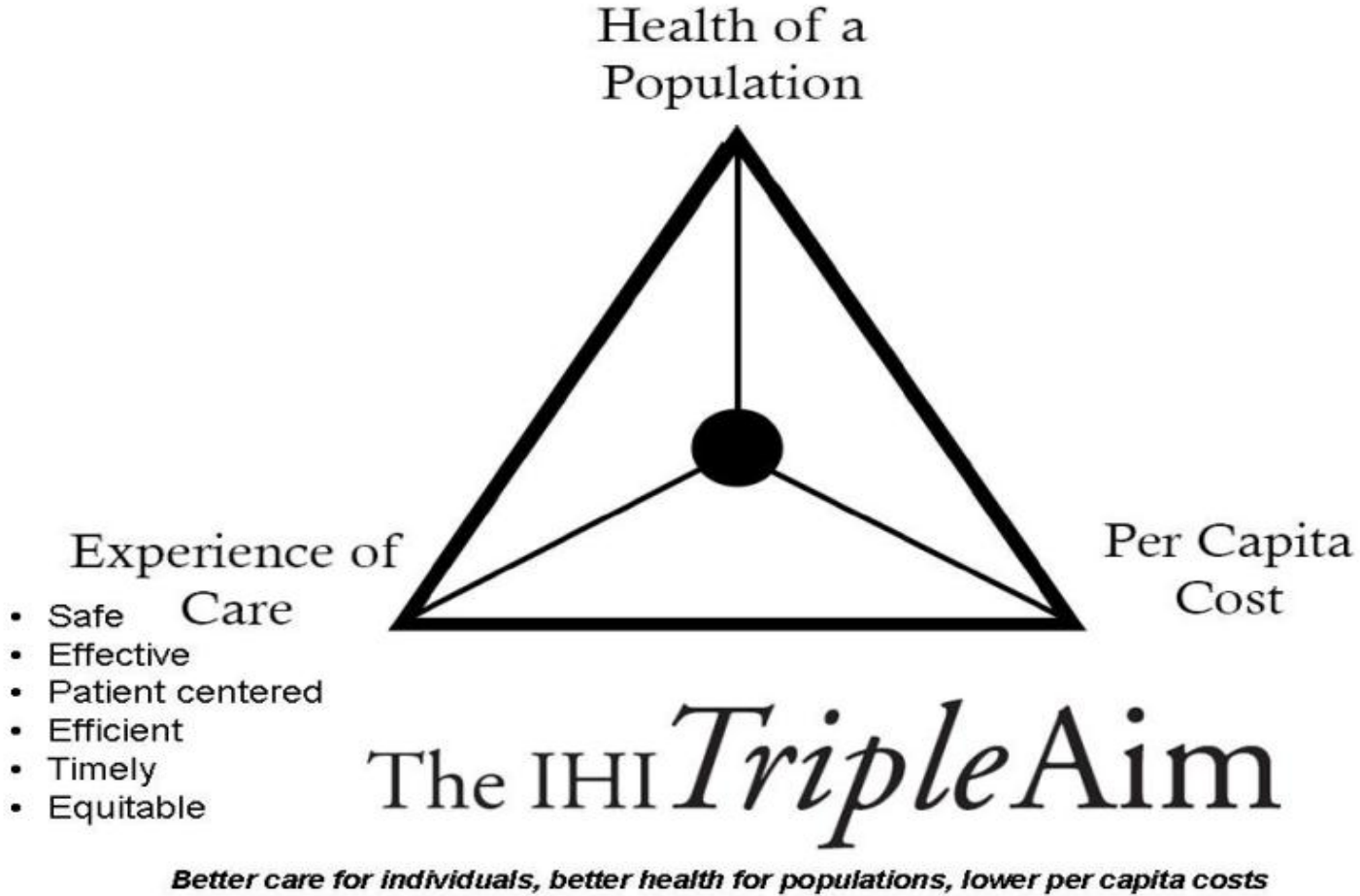
Robert Enlander, M.D., M.P.H.

October 25th, 2016



UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

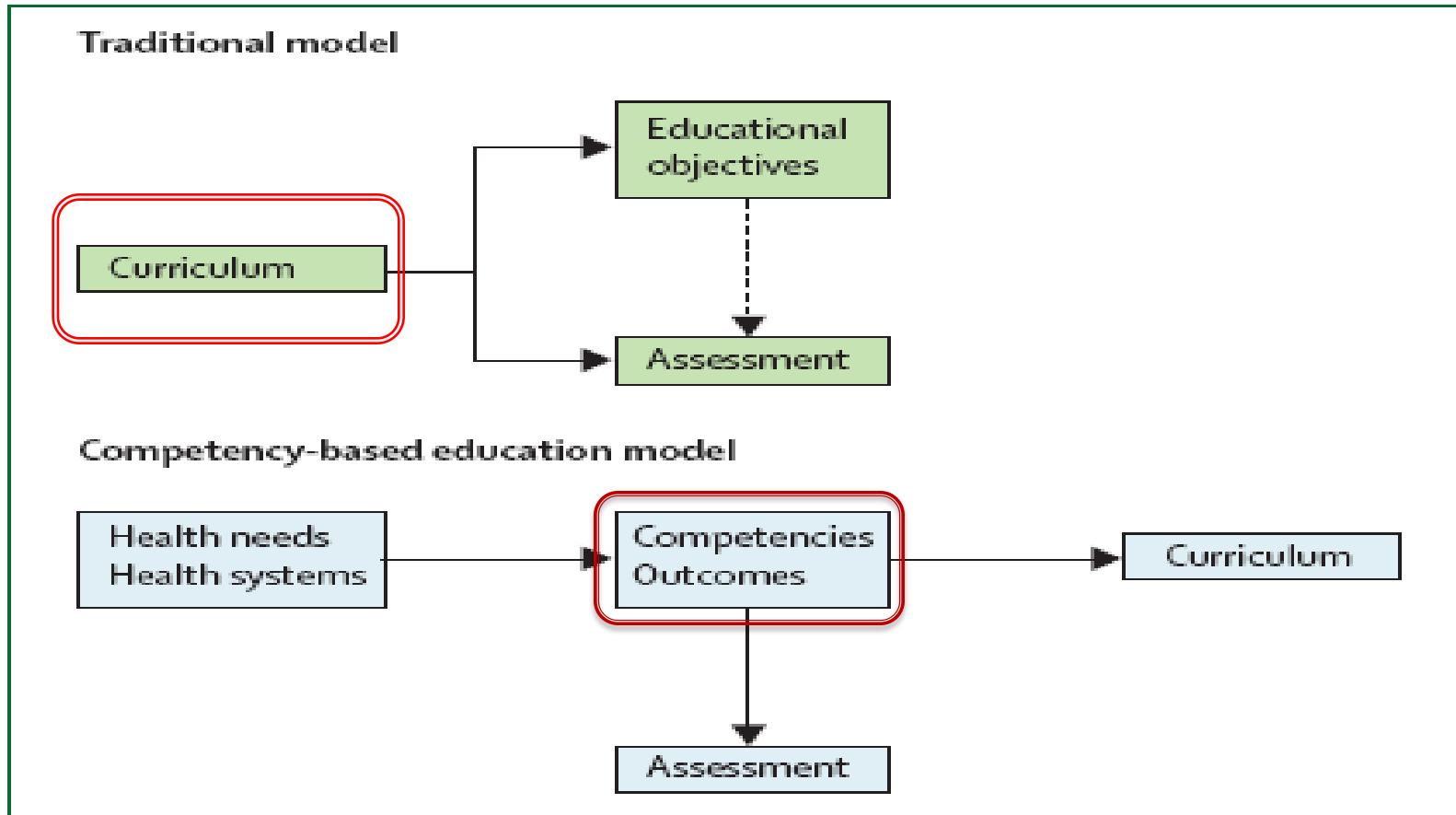
The ultimate outcomes for clinical care & education



r



CBME: Start with System Needs



84

Frenk J, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Lancet. 2010



UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

SPECIAL THEME ARTICLE

Shifting Paradigms: From Flexner to Competencies

Carol Carraccio, MD, Susan D. Wolfsthal, MD, Robert Englander, MD, MPH,
Kevin Ferentz, MD, and Christine Martin, PhD

ABSTRACT

Realizing medical education is on the brink of a major paradigm shift from structure- and process-based to competency-based education and measurement of outcomes, the authors reviewed the existing medical literature to provide practical insight into how to accomplish full implementation and evaluation of this new paradigm. They searched Medline and the Educational Resource Information Clearinghouse from the 1960s until the present, reviewed the titles and abstracts of the 469 articles the search produced, and chose 68 relevant articles for full review.

The authors found that in the 1970s and 1980s much attention was given to the need for and the development of professional competencies for many medical disciplines. Little attention, however, was devoted to defining the

benchmarks of specific competencies, how to attain them, or the evaluation of competence. Lack of evaluation strategies was likely one of the forces responsible for the three-decade lag between initiation of the movement and widespread adoption. Lessons learned from past experiences include the importance of strategic planning and faculty and learner buy-in for defining competencies. In addition, the benchmarks for defining competency and the thresholds for attaining competence must be clearly delineated. The development of appropriate assessment tools to measure competence remains the challenge of this decade, and educators must be responsible for studying the impact of this paradigm shift to determine whether its ultimate effect is the production of more competent physicians.

Acad. Med. 2002;77:361-367.

The challenge to medical education at the turn of the 20th century took the form of the Flexnerian revolution.¹ Exposure of poor educational content and processes in the early 1900s captured public attention and concern, precipitating a chain of events that led to drastic reform. In the early 21st century, accountability

and responsibility to the public for the competency of practicing physicians have become a driving force behind an initiative of the American Board of Medical Specialties (ABMS) and the Accreditation Council for Graduate Medical Education (ACGME) to establish competency-based training for all physicians. The current structure- and process-based system defines the training experience by exposure to specific contents for specified periods of time (e.g., one month of adolescent medicine), while a competency-based system defines the desired outcome of training, the outcome driving the educational process (e.g., competence in the care of adolescent patients). The paradigm shift from the current structure- and process-based curriculum to a competency-based curriculum and evaluation of outcomes is the Flexnerian revolution of the 21st century.

We reviewed the literature on competency-based education in medicine to (1) understand the evolution of this educational paradigm, (2) assess the evidence to date of the efficacy of competency-based education, and (3) provide practical insight into how to accomplish full implementation and evaluation of the paradigm shift.

Dr. Carraccio is professor and associate chair for education, Department of Pediatrics. Dr. Wolfsthal is associate professor and associate chair for education, Department of Medicine, and Dr. Ferentz is associate professor of family medicine and residency program director, Department of Family Medicine, all at the University of Maryland, Baltimore. Dr. Englander is assistant professor and associate program director, Department of Pediatrics, University of Connecticut, Hartford (held same titles at the University of Maryland, Baltimore, at the time the work was done). Dr. Martin is assistant professor and medical education, Department of Medicine, University of Maryland (was professor of biology, Uraline College, Pepper Pike, Ohio, at the time the work was done).

Correspondence should be addressed to Dr. Carraccio, Department of Pediatrics, Box NSW56, 22 South Greene Street, Baltimore, MD 21201; telephone: 410-328-5213; fax: 410-528-0646; e-mail: ccarraccio@psd.umaryland.edu. Reprints are not available.

Shifting the paradigm from
**fixed time:variable
 outcome to
 fixed outcome:variable
 time**
 Medical Education



The Vision

- Physicians will spend their careers, from premed to exit from practice, on a developmental trajectory building mastery in 8 domains of competence



...Eight Domains of Competence



“The Complete Physician”



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Current Content Areas Under Consideration for UME Curriculum

- Addiction Medicine
- Pain Medicine
- Nutrition
- Ultrasound
- Spirituality and Health
- Sexual Health Care
- Quality and Patient Safety
- Health Care Systems



Example of Integrating Content Area into the Existing Competency Framework

- Eckstrand KL, Potter J, Roth Bayer C, Englander R. Giving context to the physician competency reference set: Adapting the needs of diverse populations. *Academic Medicine*, 2016; 91:930–935.
- *(see, in particular, Table 1)*



Ex. Competency not requiring qualifier for LGBT Population

- Domain: Practice-based Learning and improvement
- Competency:
 - Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes



Ex. Competency that required qualifier for LGBT population

- Domain: Patient Care
- Competency:
 - *Gather essential and accurate information about patients and their conditions through history taking, physical examination, and the use of laboratory data, imaging, and other tests (by sensitively... eliciting relevant information about sex anatomy, sex development, sexual behavior, sexual history, sexual orientation, sexual identity, and gender identity from all patients in a developmentally appropriate manner.)*



Addiction Medicine: Ex. competency not requiring qualifier

- Competence providing care to (**substance use disorder patients**) patients with diversity in age, gender, socio-economic status, limited English proficiency or literacy, and co-morbid medical and psychiatric conditions



Addiction Medicine: Ex. competency with qualifier

- Advocate for quality patient care and assist patients, employers, programs, agencies and governments in managing system complexities:
 - including an awareness of heightened stigma associated with addiction and other systemic barriers to obtaining addiction services



Implementation Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction



Eric Holmboe, M.D., FACP, FRCP
Senior Vice President for Milestone Development and Evaluation
Accreditation Council for Graduate Medical Education



HOW DOES THIS FIT TOGETHER AROUND LEARNING TO CARE FOR PATIENTS WITH ADDICTION?

Eric S. Holmboe MD

PAST/PRESENT APPROACH: ADD CURRICULUM!

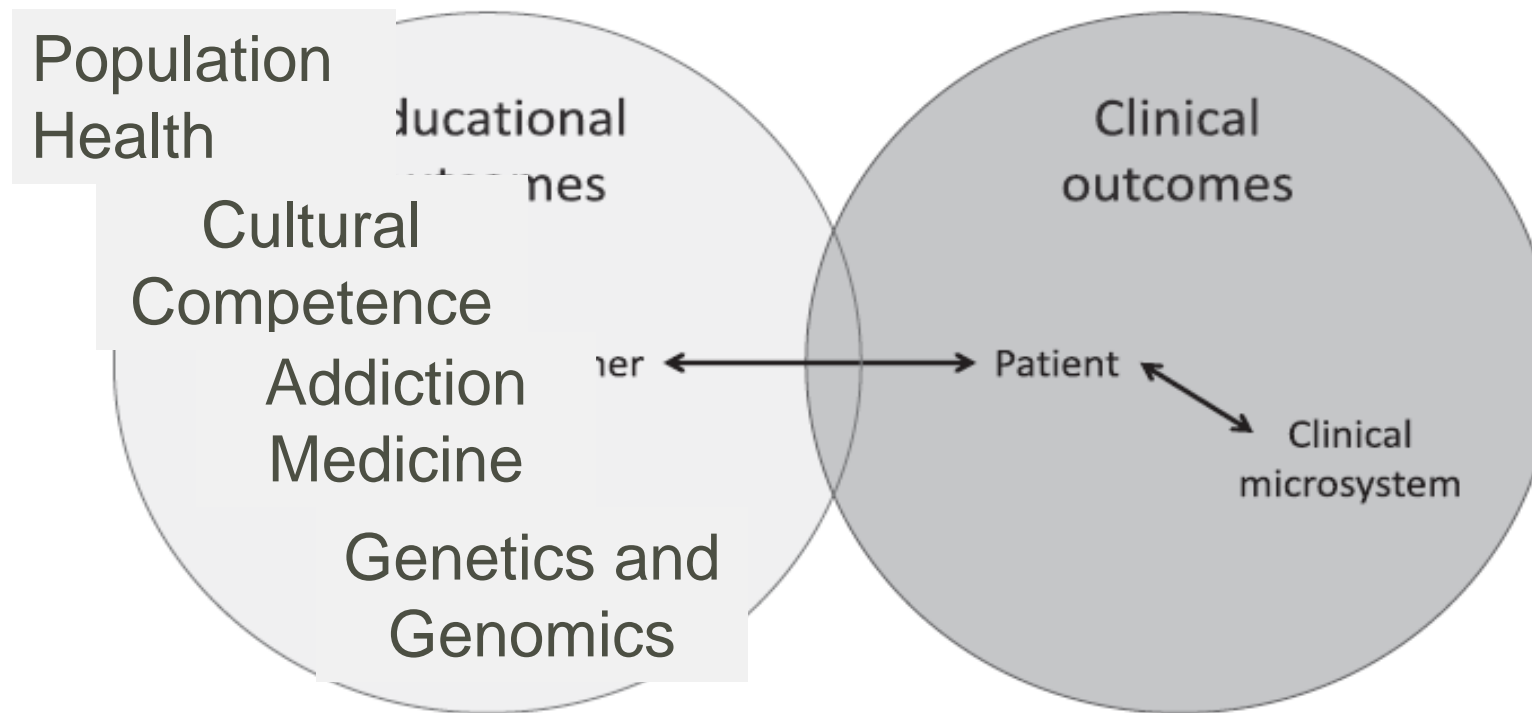
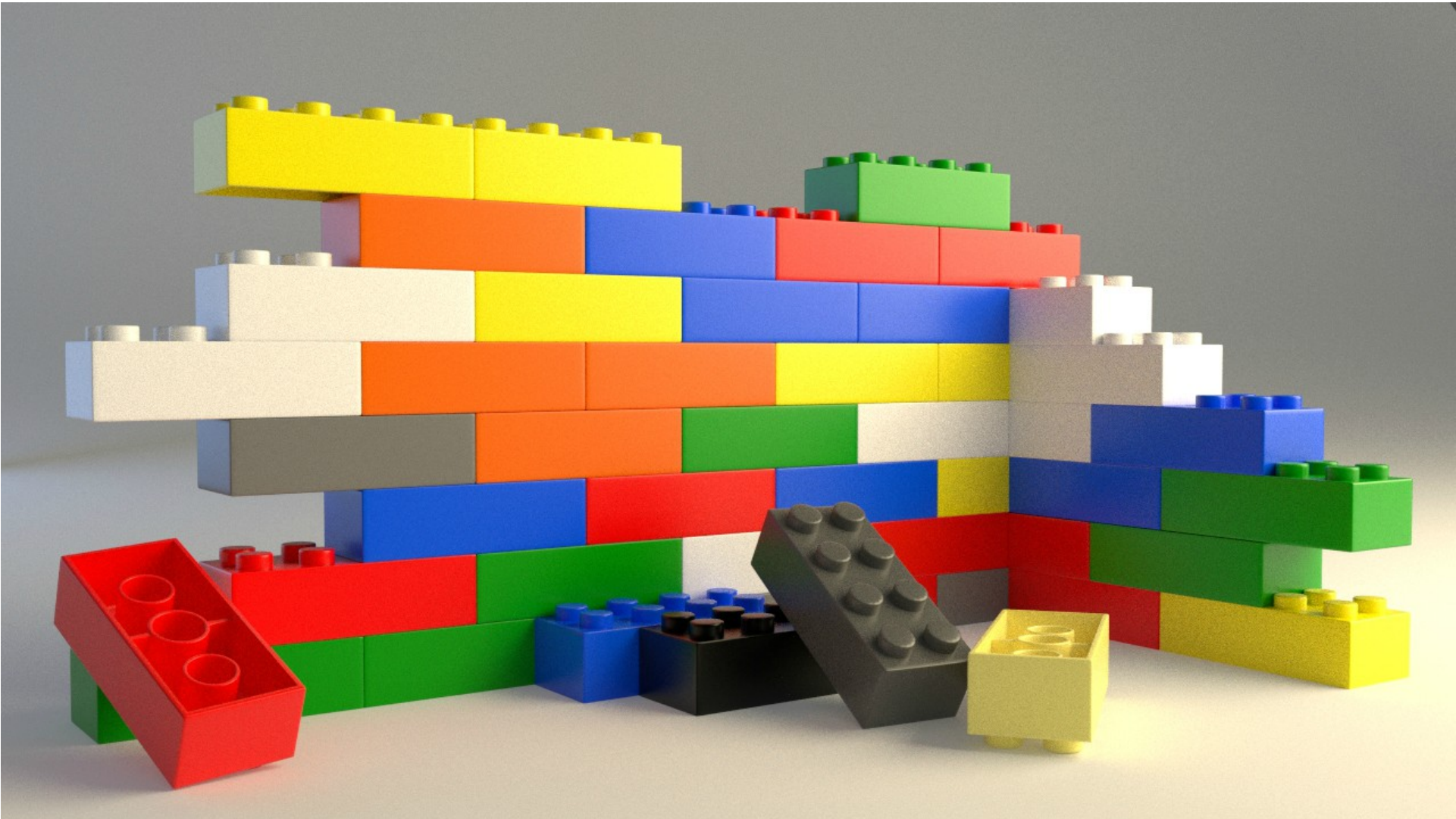


Figure 1 Schematic of the traditional academic faculty perspective and the current educational design of graduate medical education programs, which often consider educational outcomes as separate from clinical outcomes. As a result, educational outcomes are often centered around the learner, and clinical outcomes are often centered around the patient. This perspective tends to place greater emphasis on *learner-patient* interactions than on *learner-patient-clinical microsystem* interactions.

HOW NOT TO BUILD A CURRICULUM



Care of the Opiate Addicted Patient

Epidemiology of substance use and abuse (MK)

CO

VIT

NET

EN

CE

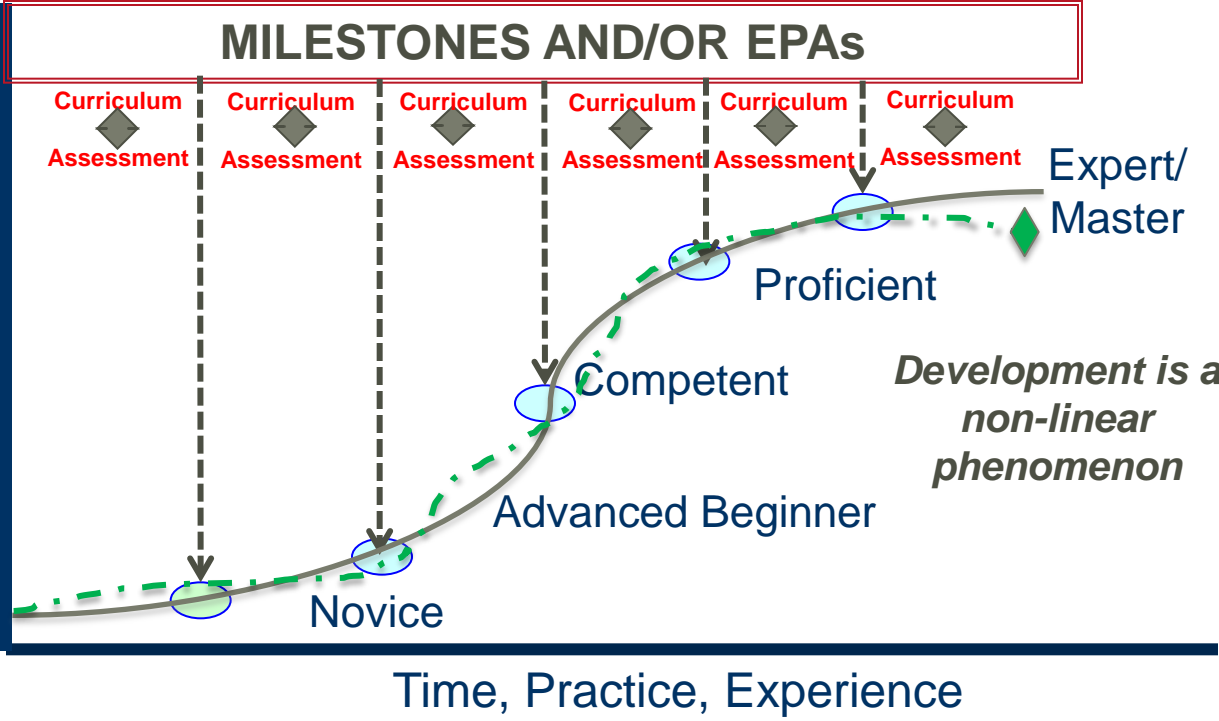
Compassion, integrity, and respect for others (Prof)

Medical model of addiction (MK)

Proficiency in screening, brief Intervention, & motivational interviewing (PatCare)

Work collaboratively as members of interdisciplinary teams (IS&Comm)

PROFESSIONAL DEVELOPMENT: DREYFUS MODEL



Dreyfus SE and Dreyfus HL. 1980
Carraccio CL et al. Acad Med 2008;83:761-7

NEEDED PERSPECTIVE MOVING FORWARD

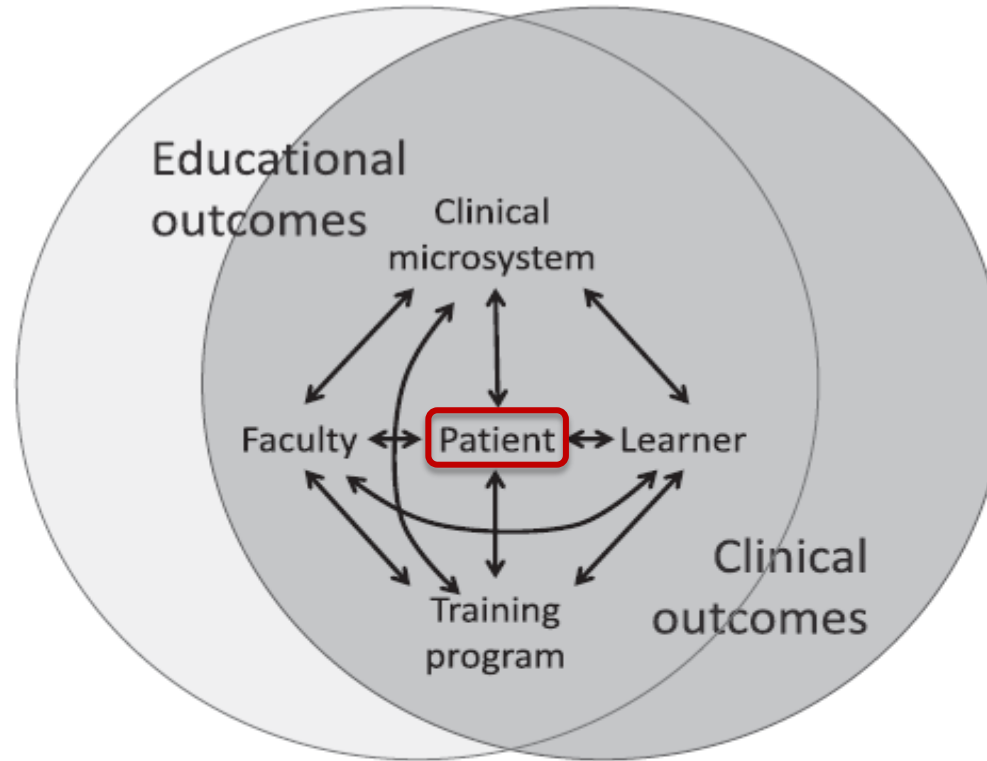


Figure 2 Schematic of the proposed framework for academic faculty perspective and educational design of graduate medical education training programs, where both educational and clinical outcomes are centered around the patient. This reorganization recognizes that (1) the dynamic interplay between the faculty, learner, training program, and clinical microsystem ultimately influences the quality of physician that emerges from the training program *and* the environment, and (2) patient outcomes relate to the quality of education and the success of clinical microsystems.

Wong BM, Holmboe ES, Transforming the Academic Faculty Perspective in Graduate Medical Education to Better Align Educational and Clinical Outcomes. [Acad Med.](#) 2016;91(4):473-9.

SUMMARY

- Learning to care for patients with addiction requires rethinking education as an embedded, integrated process and experience guided by competency frameworks.
 - Some abilities (i.e. competencies) will be specific to the content and context of addiction medicine, but...
 - Many other abilities will be acquired through other integrated educational and clinical care experiences



NEXT STEPS

- Given most of medical education and learning is experiential, how can we integrate, i.e. “embed”, addiction medicine into existing curricula...
 - Undergraduate medical education?
 - Residency and fellowship programs?
 - Across the continuum of practice?



Implementation Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction



Anna Lembke, M.D.

Assistant Director, Psychiatry and Behavioral Sciences
Director, Stanford Addiction Medicine Fellowship Program, and
President, Addiction Medicine Fellowship Directors Association

Implementation Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction



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Vice President and Executive Dean
West Virginia University Health Sciences
West Virginia University School of Medicine

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COMP-Northwest, Western University of Health Sciences

Implementation Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction



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Yale University School of Medicine

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Associate Dean for Health Disparities
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Assistant Professor Obstetrics and Gynecology
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Stanford University School of Medicine

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Kelly Thibert, D.O.
President

American Medical Student Association

Implementation Part I: Integrated Curriculum and Core Competencies on Prevention of Risky Substance Use and Treatment of Addiction



Discussion



-
- Group 1: Room 176
 - Group 2: Room 178
 - Group 3: Room 476
 - Group 4: Room 472
-

Implementation Part II: Critical Partners



Anna Lembke, M.D.

Assistant Director, Psychiatry and Behavioral Sciences,
Director, Stanford Addiction Medicine Fellowship
Program,
President, Addiction Medicine Fellowship Directors
Association

Joseph Lee, M.D.

Medical Director, Youth Continuum
Hazelden Betty Ford Foundation

The Role of Philanthropy



Joseph Lee, M.D.
Medical Director, Youth Continuum
Hazelden Betty Ford Foundation

The Role of Philanthropy



Don Matteson, M.A.
Chief Program Officer
The Peter and Elizabeth C. Tower Foundation

Leadership in Physician Credentialing and Certification



Mira Irons, M.D.
Senior Vice President for Academic Affairs
American Board of Medical Specialties

Leadership in Physician Credentialing and Certification



Carolyn Murray, M.D., M.P.H
Director, American Board of Preventive Medicine and
Chair, ABPM Certification Examination Committee

Leadership in Physician Credentialing and Certification



Jeffrey Lyness, M.D.
Psychiatry Director and Chair of the Clinical Psychiatry Certification
Examination Committee
American Board of Psychiatry and Neurology

Leadership in Physician Credentialing and Certification



Laurel Leslie, M.D., M.P.H.
Vice President of Research
American Board of Pediatrics

Leadership in Physician Credentialing and Certification



Jeanne Sheffield, M.D.

Member, American Board of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine,
Professor of Gynecology and Obstetrics, and
Director, Division of Maternal-Fetal Medicine
Johns Hopkins School of Medicine

Leadership in Physician Credentialing and Certification



Michael L. Carius, M.D.
President
American Board of Emergency Medicine

The Connection of Research to Clinical Practice



Randall T. Brown, M.D., Ph.D., FASAM
Associate Professor, Department of Family Medicine and Community Health,
Director, University of Wisconsin Addiction Medicine Fellowship

The Role of a University in Advancing Addiction Medicine Education and Training



Clinton E. Adams, D.O., FACHE
President and Chief Executive Officer
Rocky Vista University

Community Experience for Physicians in Training



Neil Calman, M.D., FAACP
President, American Association of Teaching Health Centers, and
President and CEO, Institute for Family Health

Implementation Part II: Critical Partners



Anthony Albanese, M.D., FACP, DFASM
Physician Liaison for Graduate Medical Education, VA Office of Academic
Affiliations, and
Clinical Professor of Medicine and Psychiatry, UC Davis School of Medicine

Implementation Part II: Critical Partners



Discussion

Moving into Action: Opportunities and Challenges



-
- Group 1: Room 350
 - Group 2: Room 230A
 - Group 3: Room 476
 - Group 4: Room 178
-

Work Group Session Report Outs/ Discussion/ Next Steps



Alex Walley, M.D., M.Sc.

Assistant Professor of Medicine

Director, Boston University Addiction Medicine
Fellowship, Director, Inpatient Addiction Medicine
Consult Service, Boston Medical Center
Boston University School of Medicine

Paula Lum, M.D., M.P.H.

Professor, HIV/AIDS Division

Director, UCSF Primary Care Addiction Medicine
Fellowship Program
University of California, San Francisco School of Medicine

Work Group Session Report Outs:

Group 1



Work Group Session Report Outs:

Group 2



Work Group Session Report Outs:

Group 3



Work Group Session Report Outs:

Group 4



Closing Remarks



June Sivilli, M.A.
Division Chief, Public Health & Public Safety
Office of Policy, Research & Budget
Office of National Drug Control Policy

Thank You

