

Director's Report to the National Advisory Council on Drug Abuse

May 4, 2016

Nora D. Volkow, M.D., Director

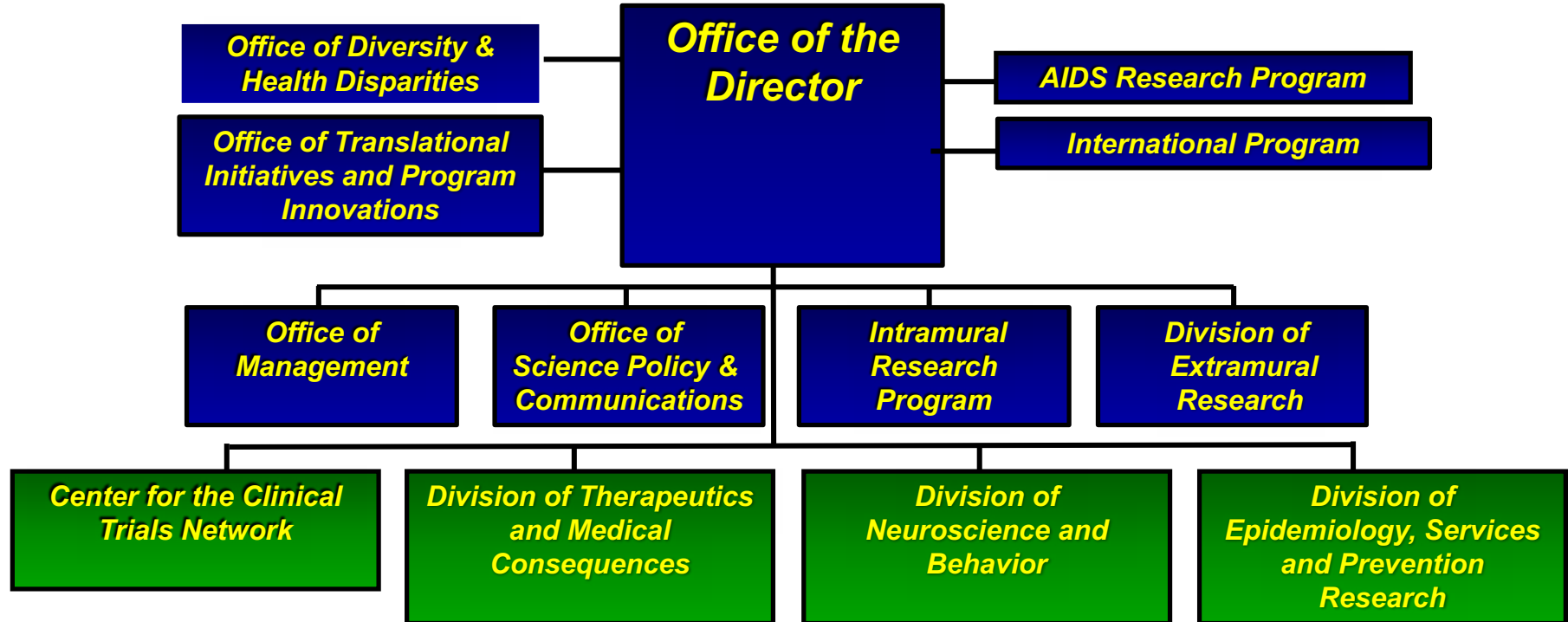


National Institute
on Drug Abuse



@NIDAnews

NIDA



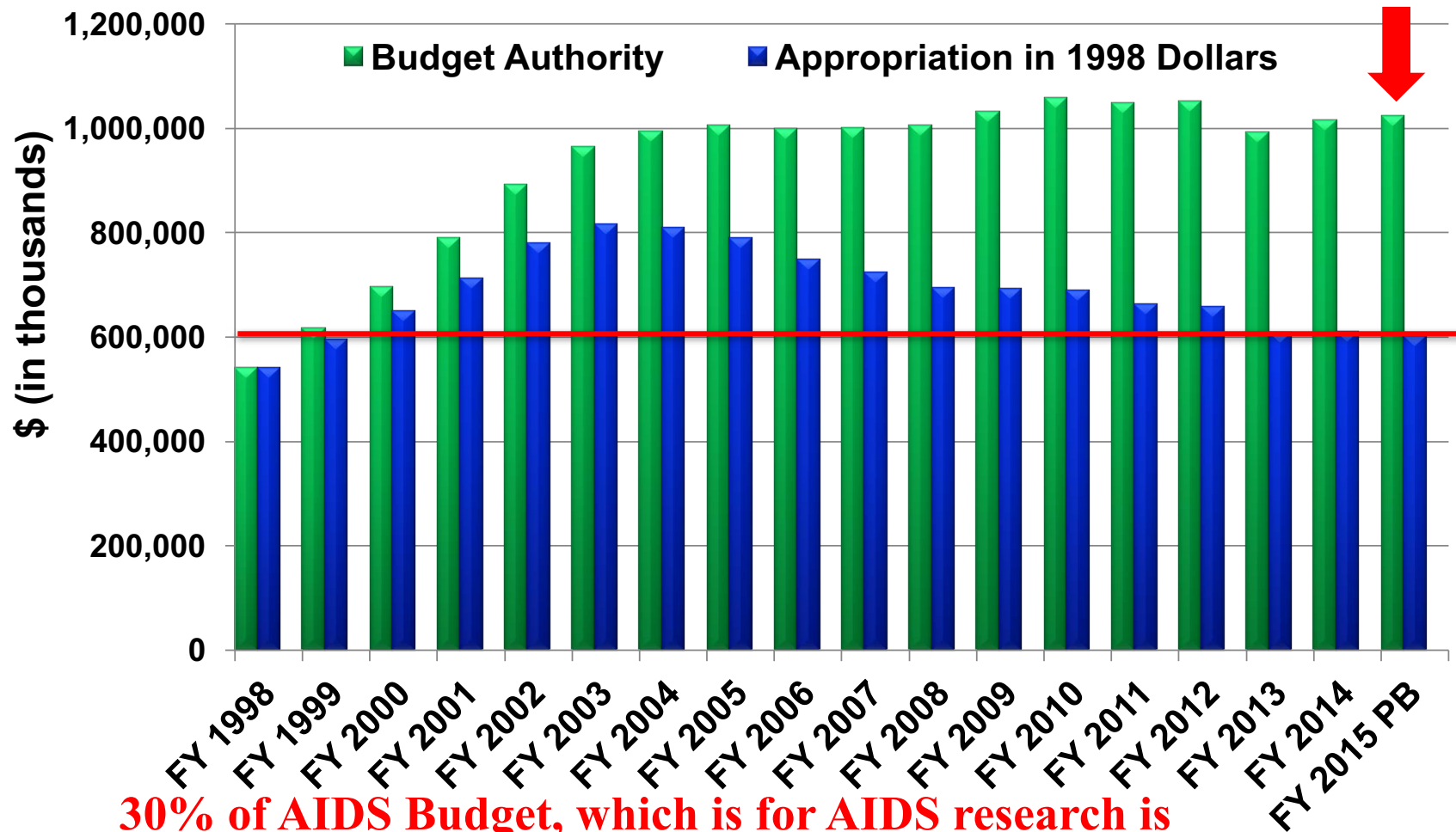
Roger Little, PhD
Acting Director

NIDA BUDGET

(Thousands)

	FY 2015 Actuals	FY 2016 Operating Plan	FY 2017 PB
NonAIDS	\$716,833	\$756,306	\$756,306
AIDS	\$298,862	\$294,244	\$294,244
TOTAL	\$1,015,695	\$1,050,550	\$1,050,550

NIDA Program Level in Appropriated Dollars and Constant 1998 Dollars



30% of AIDS Budget, which is for AIDS research is re-competed based on NEW NIH HIV priorities

Director's Report to the National Advisory Council on Drug Abuse

- **Budget Update**

- **What's New @ HHS/NIH?**

- **Recent NIDA
Activities & Events**

Precision Medicine Initiative®

2016, **\$215 million** (**\$130 million** for cohort).



Funding Opportunities Issued

- PMI Cohort Program Coordinating Center (U2C)
- PMI Cohort Program Healthcare Provider Organization Enrollment Centers
- PMI Cohort Program Participant Technologies Center (U24)
- PMI Cohort Program Biobank (U24)
- PMI Cohort Program Direct Volunteers Pilot Studies (OTA)
- Communication Support for the PMInitiative Research Programs at NIH



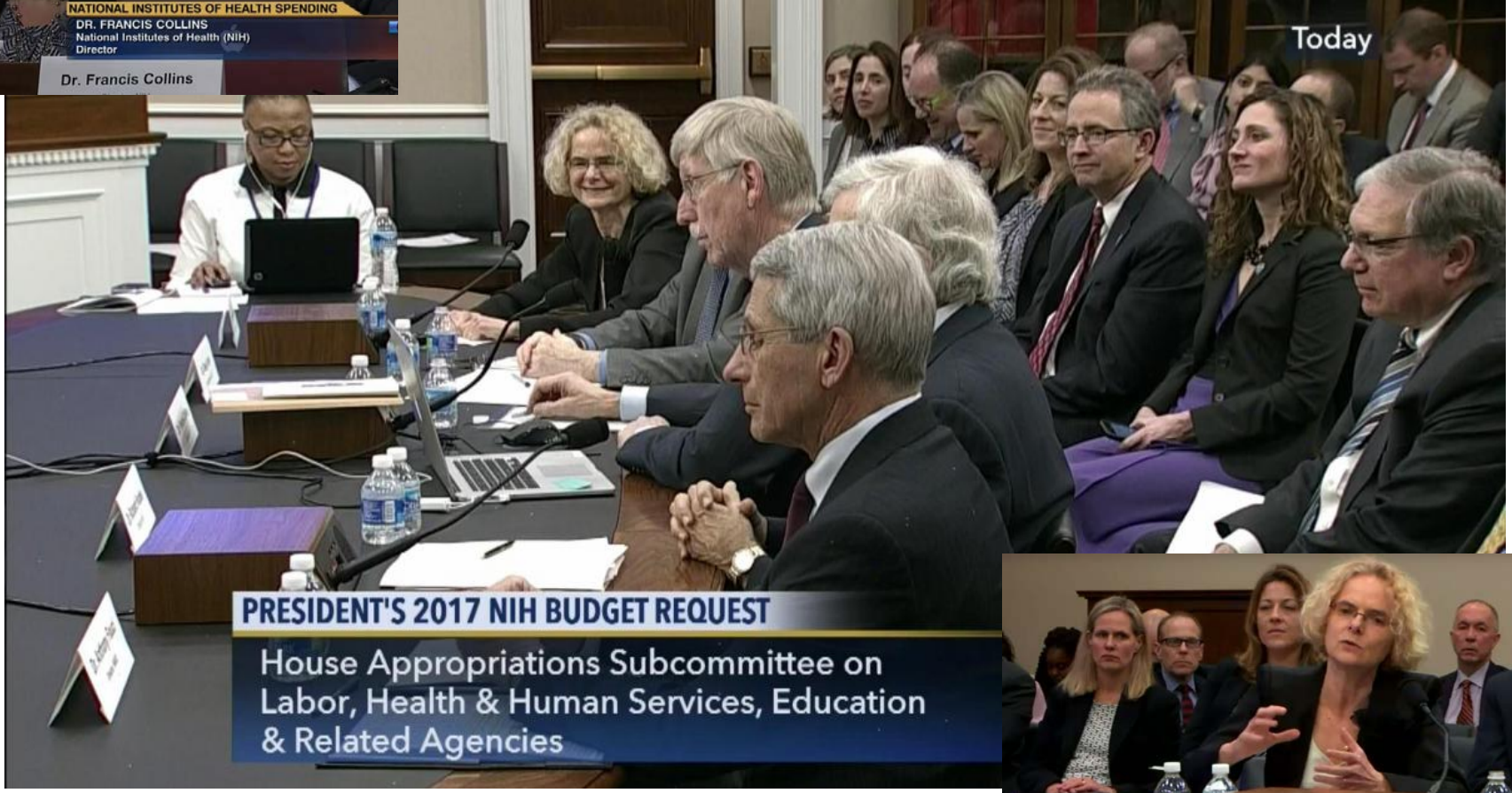
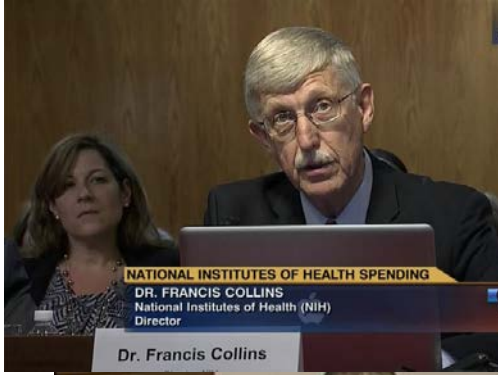
Eric Dishman

***Director, Precision Medicine Initiative
(PMI) Cohort Program***

**Formerly, Vice President & Intel Fellow of Intel
Corporation's Health & Life Sciences Group**

President's 2017 NIH Budget Request

House Hearing – March 16, 2016
Senate Hearing – April 7, 2016



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- **Budget Update**
- **What's New @ HHS/NIH?**
- **Recent NIDA
Activities & Events**

Priority Areas

Prevention Research

(Children & Adolescents)
genetics/epigenetics
development
environment
co-morbidity





Adolescent Brain Cognitive Development
Teen Brains. Today's Science. Brighter Future.

ABCD Update

- Protocol Development
 - School based recruitment strategy
 - Received cIRB approval
 - Informatics systems developed for data collection
 - Train the Trainers meeting April 18-20, 2016
 - Pilot testing and protocol refinement ongoing
 - **Full recruitment to begin in the Fall**
- Outreach/Partnerships

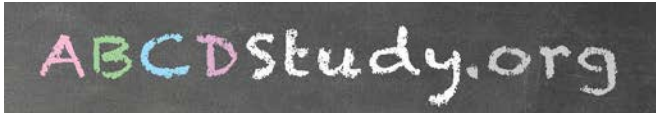


LEARNING FIRST ALLIANCE

Strengthening public schools for every child



CDC Division of Adolescent and School Health



ABCDSTUDY
Adolescent Brain Cognitive Development

HOME ABOUT EDUCATORS & OTHER PARTNERS PARENTS SCIENTISTS CONTACT

ADOLESCENT BRAIN COGNITIVE DEVELOPMENT

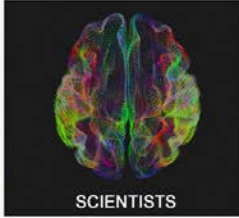
The ABCD Study is the largest long-term study of brain development and child health in the United States.



EDUCATORS & PARTNERS



PARENTS



SCIENTISTS

19

LEADING UNIVERSITIES
AND INSTITUTES PARTICIPATE IN
ABCDSTUDY
Adolescent Brain Cognitive Development

STUDY SITES



Teen Brains. Today's Science. Brighter Future.

Developed public facing website at abcdstudy.org

Developed outreach materials for educators and parents.

Sites have begun engaging with school districts. 11 school districts have approved the sites approaching local schools. Most other sites are awaiting approvals.

There will be a symposium at CPDD with a more extensive overview of the ABCD Study and progress to date.



Save the Date!

Registration Opens
January 2016



National Institutes of Health

MARIJUANA AND CANNABINOIDS: A NEUROSCIENCE RESEARCH SUMMIT

March 22-23, 2016

Natcher Conference Center, Building 45
NIH Campus, Bethesda, MD

National Institute on Drug Abuse
National Institute on Alcohol Abuse and Alcoholism
National Center for Complementary and Integrative Health
National Institute of Mental Health
National Institute of Neurological Disorders and Stroke





Presidential Early Career Award for Scientists and Engineers (PECASE)

On February 18, 2016, President Obama named 105** researchers as recipients of the Presidential Early Career Awards for Scientists and Engineers, the highest honor bestowed by the United States Government on science and engineering professionals in the early stages of their independent research careers.

Dr. Courtney Miller
The Scripps Research Institute

`For studies on the prevention of substance abuse relapse triggered by drug-associated memory (NIDA)



<https://www.whitehouse.gov/the-press-office/2016/02/18/president-obama-honors-extraordinary-early-career-scientists>

<http://grants.nih.gov/grants/policy/pecase.htm>

New NIDA FOAs

Role of Astrocytes and Astrocytic Networks in Drug Abuse (R01) (PA-16-144); (R21) (PA-16-145)

*Issued: March 22, 2016; Open date: May 5, 2016;
Application Due Date: Standard Dates.*

Encourages the submission of applications to examine the effects of drugs of abuse on the structural connectivity of astrocytic networks within the CNS, and the generation, processing and spatiotemporal control of activities within these networks.

The Application of Big Data Analytics to Drug Abuse Research (R01) (PA-16-119)

*Issued: March 9, 2016; Open date: May 5, 2016;
Application Due Date: Standard Dates.*

Encourage the application of Big Data analytics to reveal deeper or novel insights into the biological and behavioral processes associated with SUD. Applicant should develop and/or utilize computational approaches for analyzing large, complex datasets relevant to SUD.

Priority Areas

Prevention Research

(Children & Adolescents)
genetics/epigenetics
development
environment
co-morbidity

Treatment Interventions

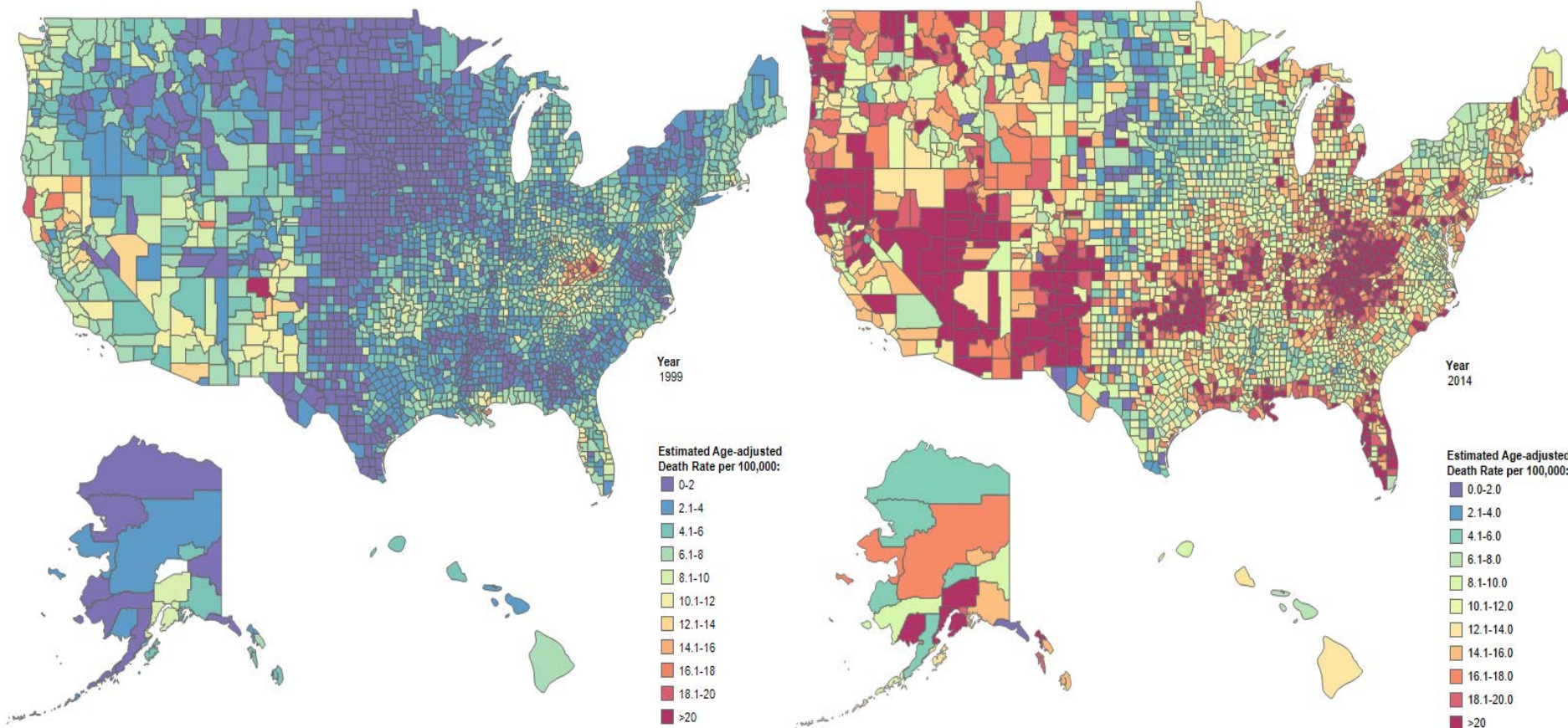
(New Targets & New Strategies)



Overdose Death Rates

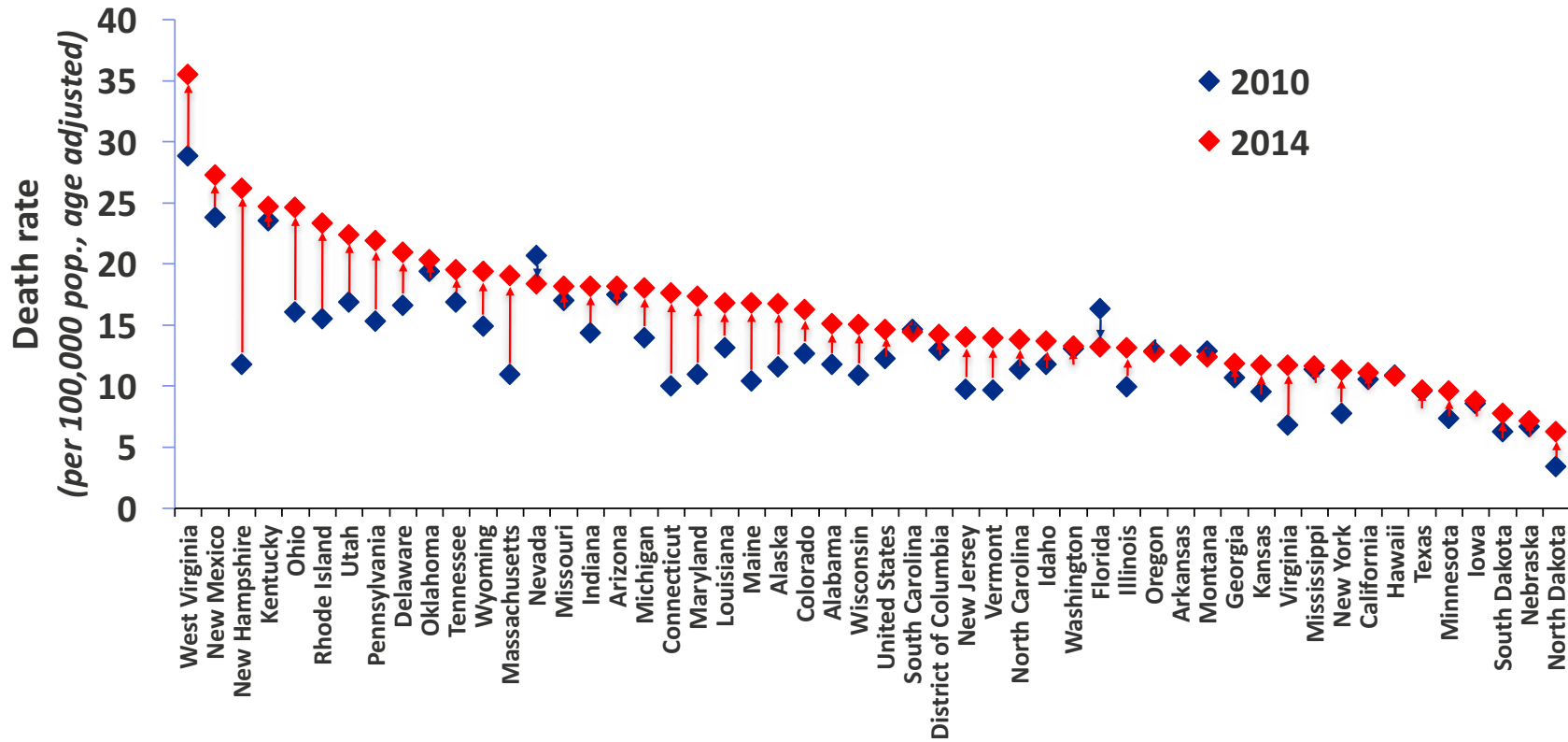
1999

2014



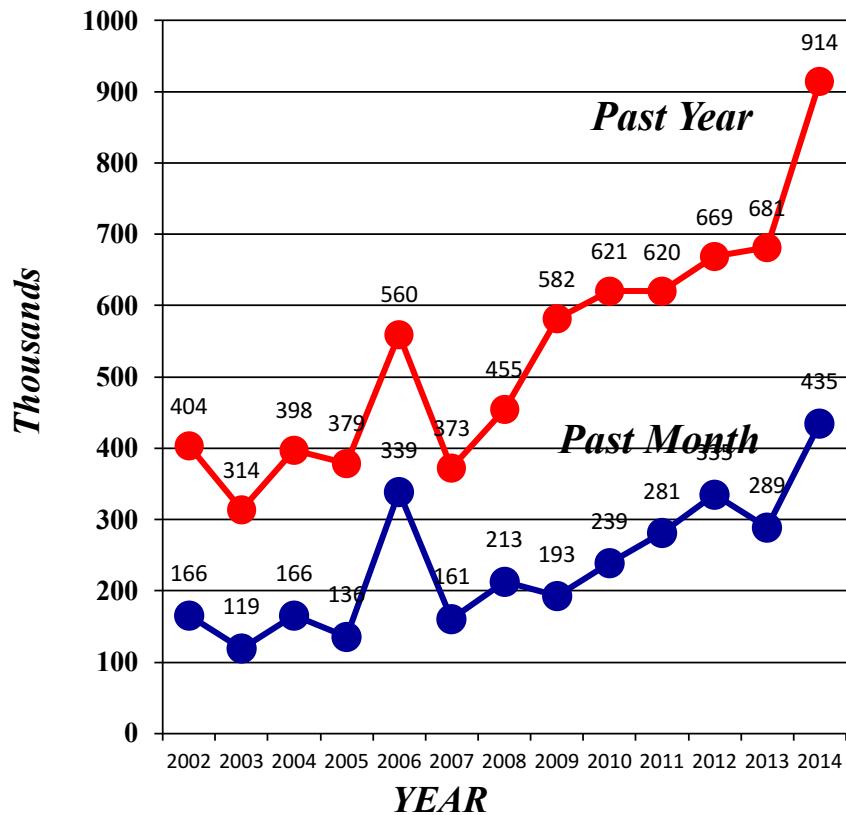
Designed by L. Rossen, B. Bastian & Y. Chong. SOURCE: CDC/NCHS

Drug Poisoning Death Rates Have Increased In Almost Every State



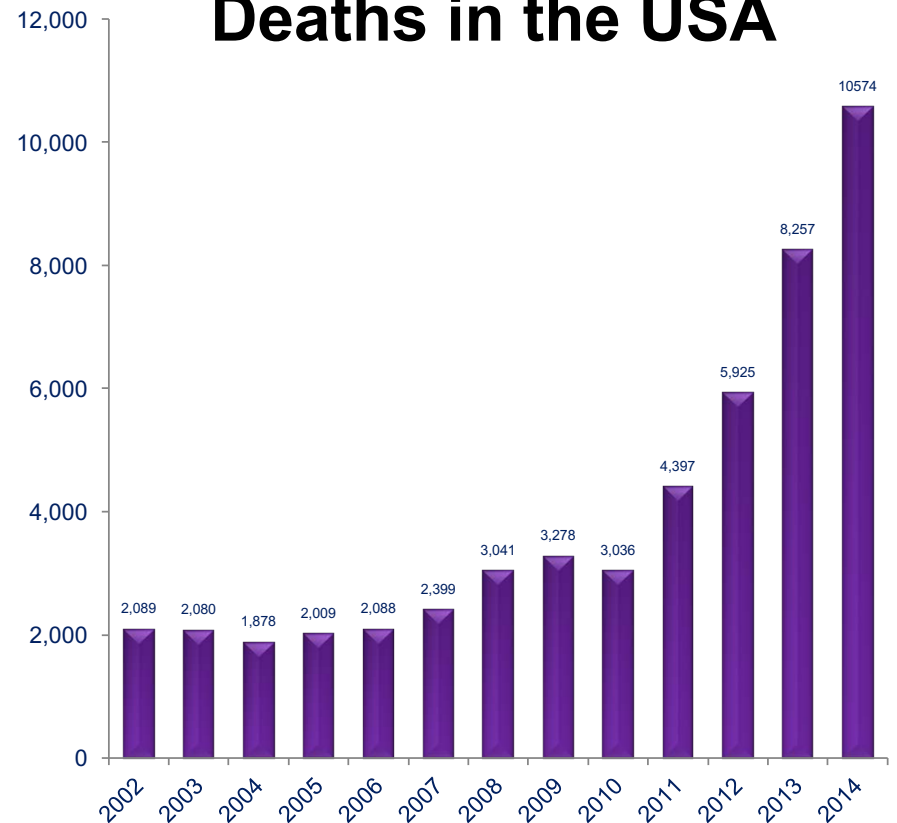
Rise in Deaths from Heroin Overdoses (4.5X) is Greater than the Rise in Heroin Abuse (2.5)

Past Month & Past Year Heroin Use Persons Aged 12 or Older



SAMHSA, 2014 National Survey on Drug Use & Health, 2015.

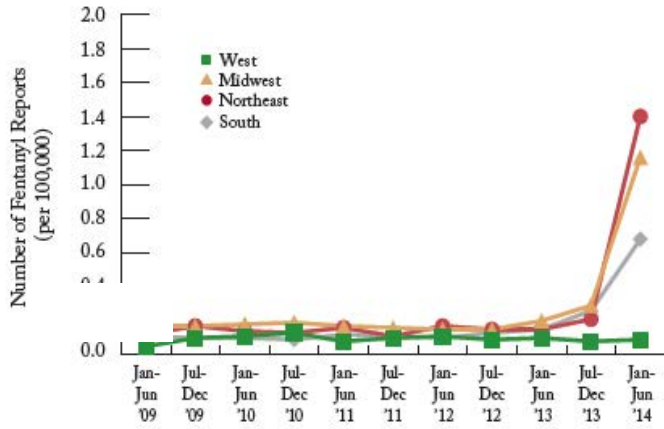
Heroin Overdose Deaths in the USA



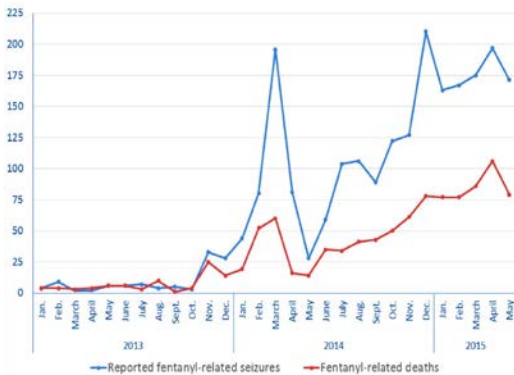
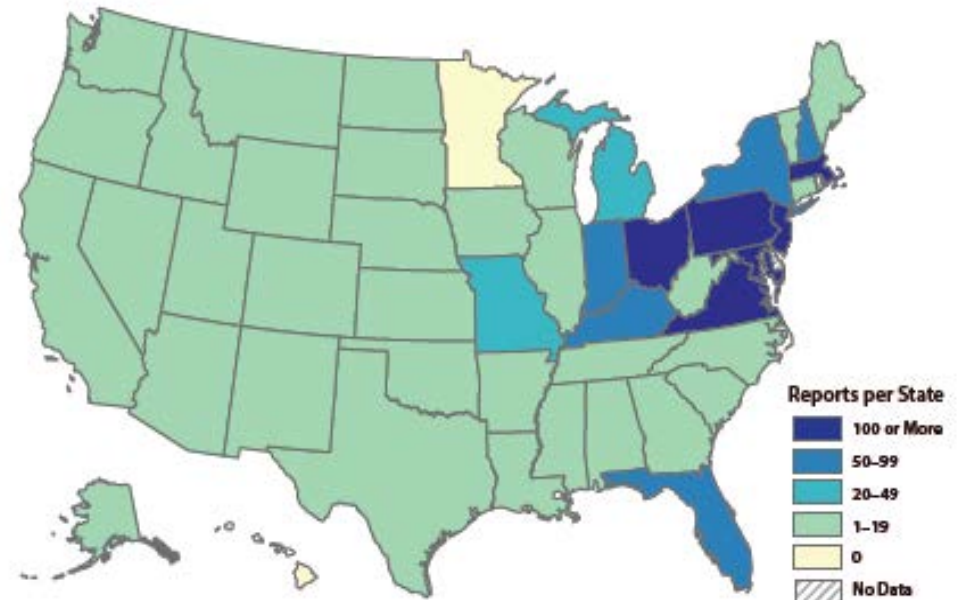
http://www.cdc.gov/nchs/data/health_policy/AADR_drug_poisoning_involving_OA_Heroin_US_2000-2014.pdf

Fentanyl Seizures have been Increasing Particularly in Northeast

NFLIS regional trends in fentanyl reported per 100,000 persons aged 15 or older, January 2009–June 2014



Fentanyl reports in NFLIS, by State, January–June 2014



Fentanyl seizures mirror fentanyl-related deaths (Ohio)

President Barack Obama

**National Prescription Drug
Abuse and Heroin Summit**

Atlanta Georgia -- March 29, 2016

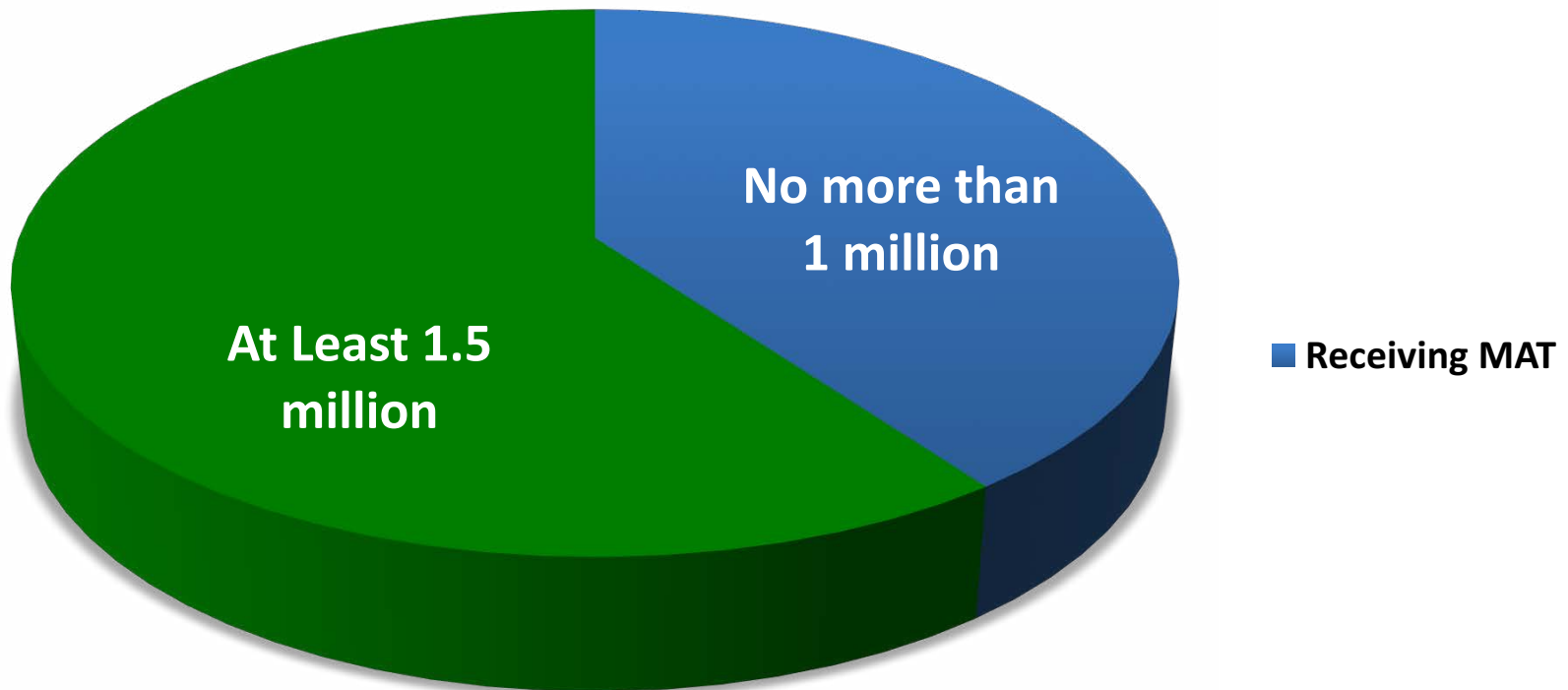


“.....we need to recognize that addiction is a disease. If we treat addiction like a crime then we're doing something that'sineffective.

.... 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”

Addiction Management & Treatment

Most people with addiction are not receiving medication-assisted treatment

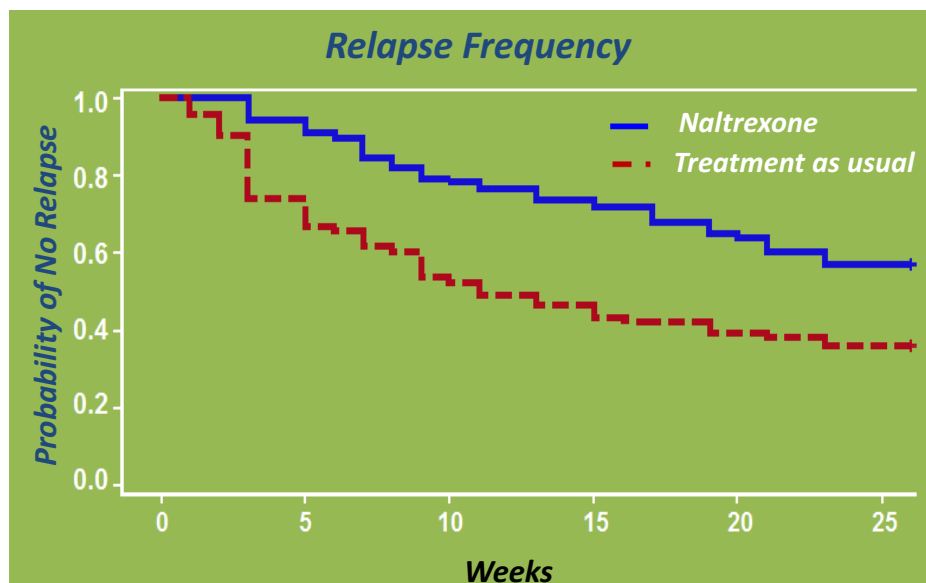


Volkow et al. NEJM 2016;370:2063-2066.

Improving Treatments for Addiction: *Naltrexone Trial in CJ Populations*



- *Participants:* parolees/probationers with opioid addiction
 - all *volunteers* – received either
 - Monthly injections of extended release naltrexone for 6 months
 - Community treatment, including methadone or Suboxone (encouraged)



Overdoses in 78 weeks:

Control: 7

Naltrexone: 0

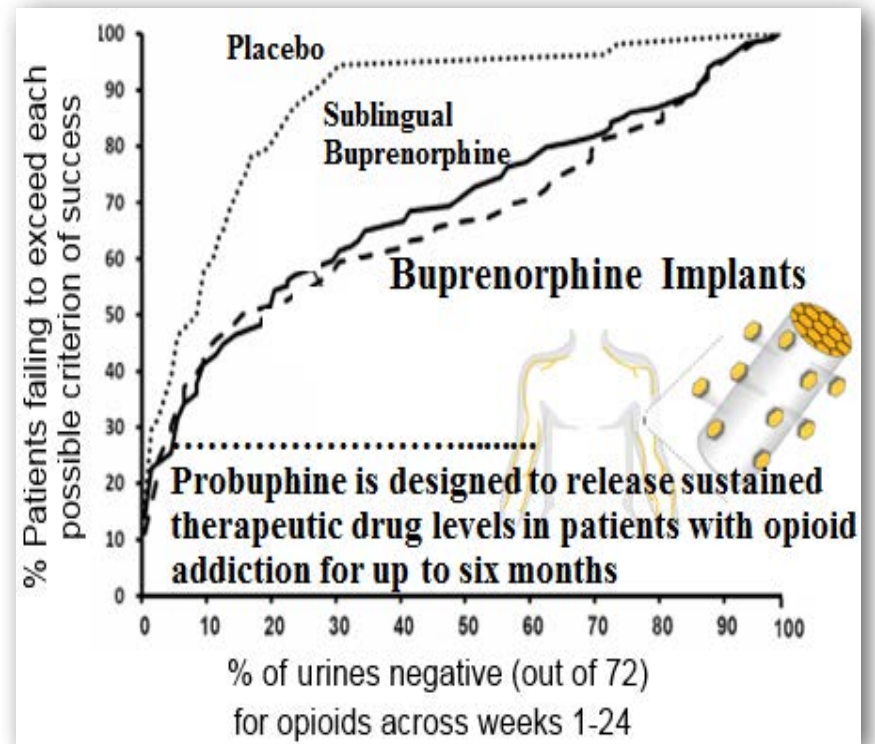
Lee et al. NEJM March 31, 2016.

Improving Treatments for Addiction:

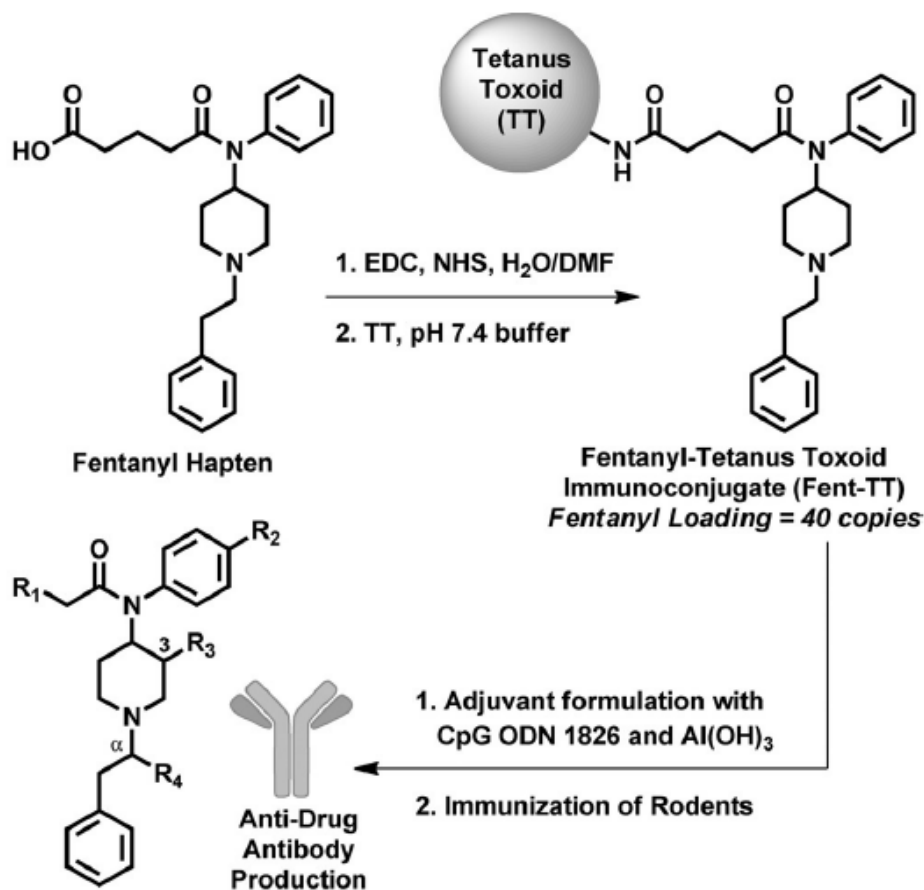
Extended Release Medications Improve Compliance

- Implanted buprenorphine may improve compliance
 - Trial: buprenorphine implants vs. placebo for 6 months

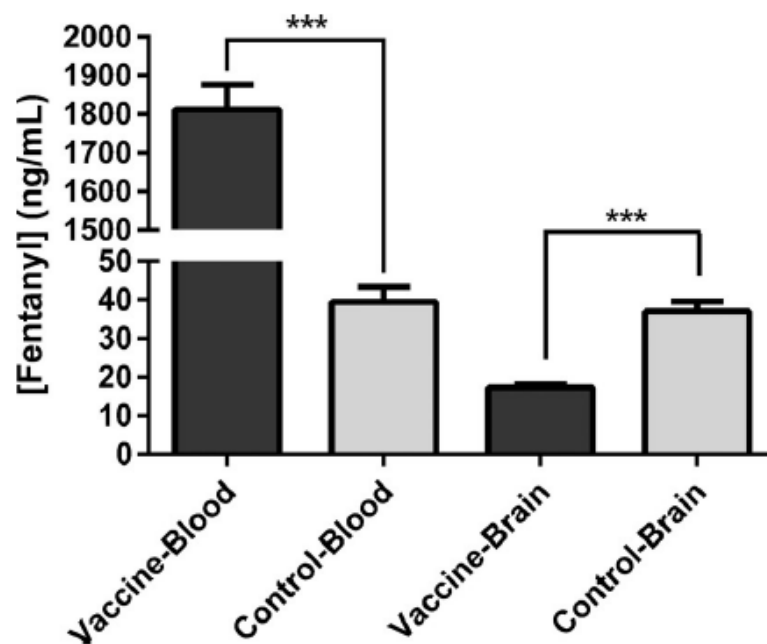
FDA approval still pending



Conjugate Vaccine that Ablates Lethal Doses of Fentanyl Class Drugs



Biodistribution Of Fentanyl In Blood and Brain Samples



Bremer PT et al., *Angew. Chem. Int. Ed.* 2016, 55, 3772–3775.

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Treatment Interventions

(New Targets & New Strategies)

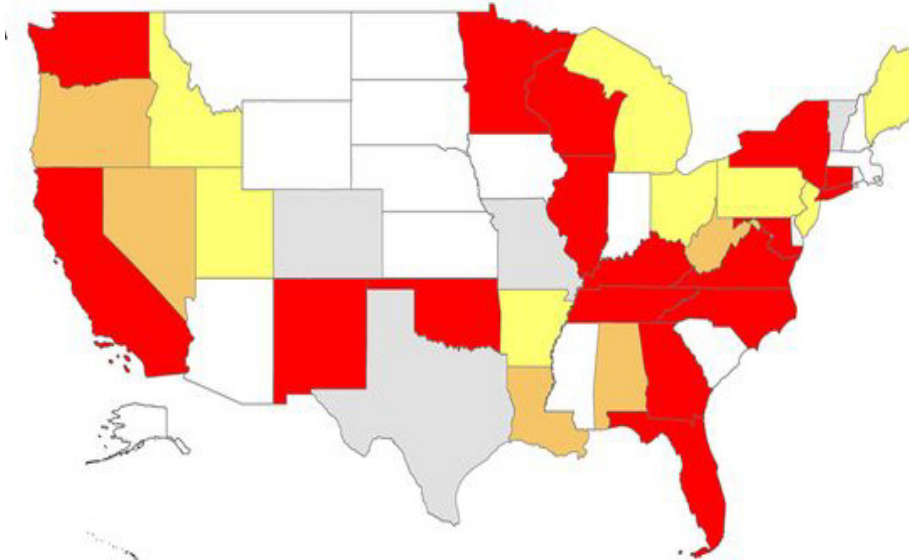
HIV and Drugs

Prevention
Treatment



The Other Consequence of IDU:HCV

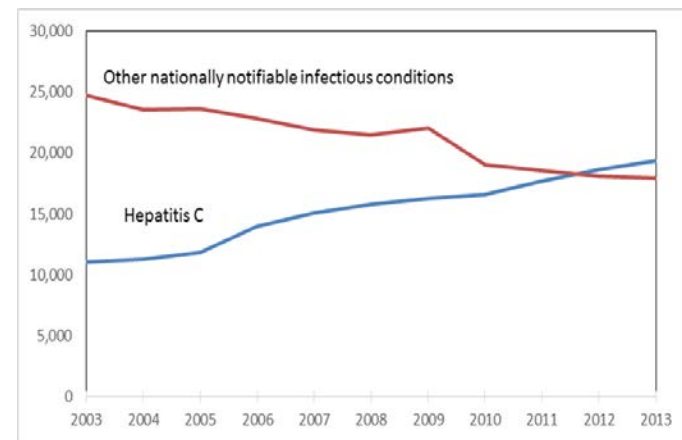
Increases in Incidence of HCV Between 2006 and 2012



% change incidence



- *Increases in HCV from IDU increases*
- *HCV deaths increased from 11,000 in 2003 to **19,358** in 2013 and this is likely to be an underestimation.*

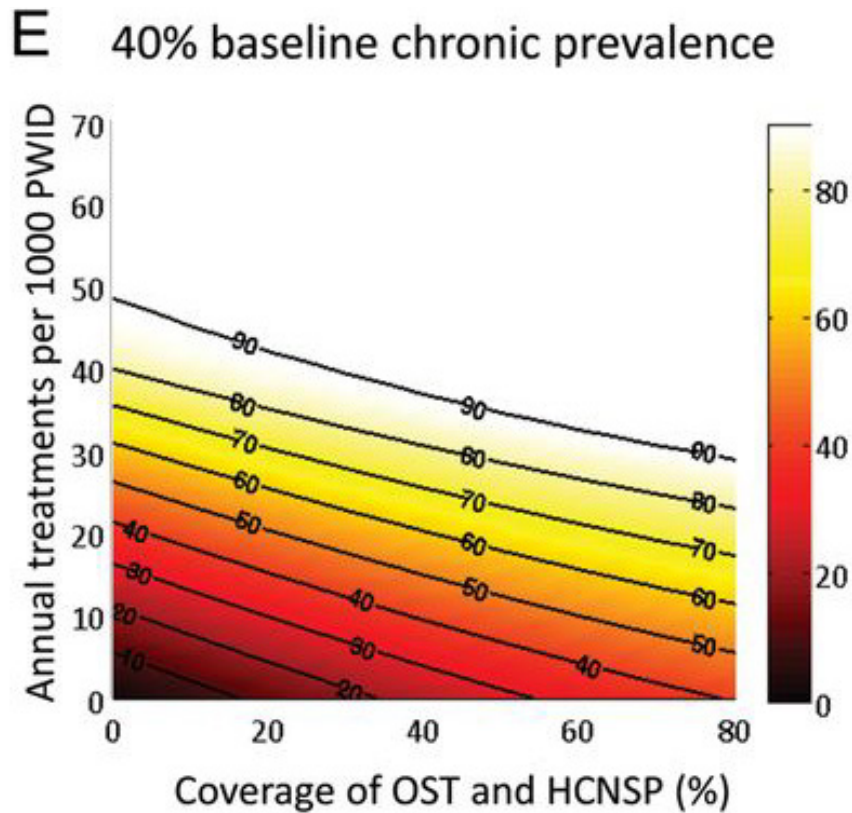


HCV deaths and deaths from other notifiable infectious diseases, 2003- 2013

Anil G. Suryaprasad et al. Clin Infect Dis. 2014.

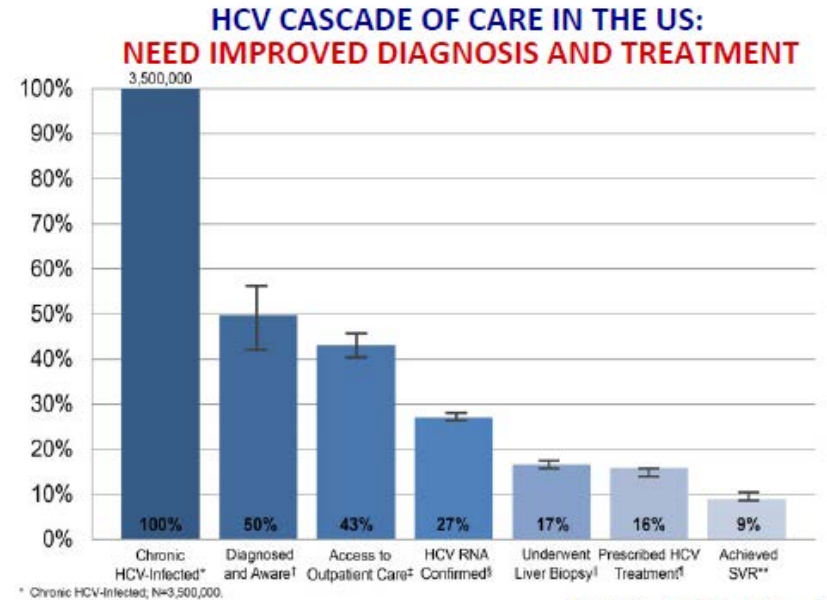
Holmberg SD et al. Continued rising mortality HCV in USAs, 2003-2013. Oct 2015,

Relative reductions in prevalence (%) at 10 years with combinations of antiviral treatment (y-axis) and MAT + NSP (x-axis)



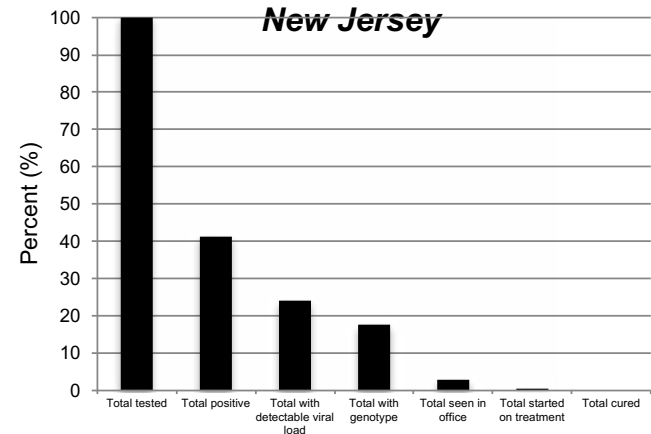
HCV treatment is needed to achieve >80% reduction in prevalence within 10 years. Scaling up MAT and NSP will substantially decrease the treatment rate required

Martin NK, Clinical Infectious Diseases 2013.



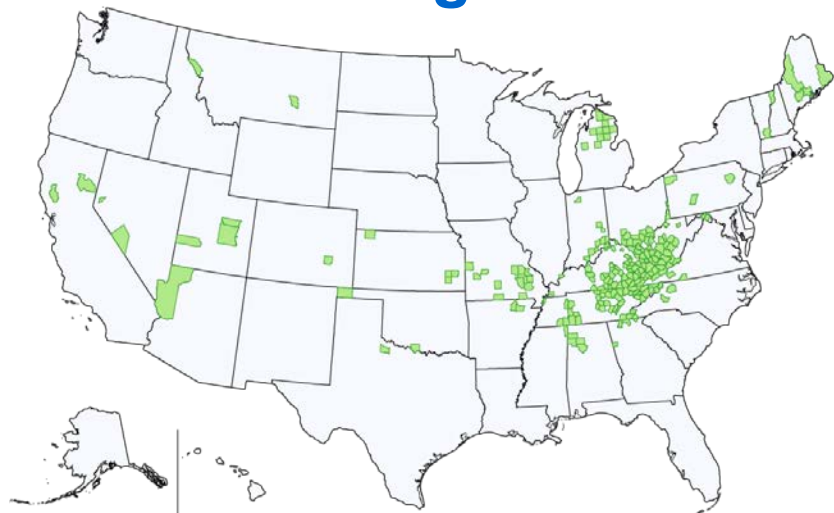
Yehia BR et al., Plos One 2014; 9(7): e101554.

**Linkage to Care for Suburban Heroin Users HCV+
New Jersey**



Akyar et al., Emerg Infect Dis. May 2016;22(5):907-909.

Vulnerability To HIV/HCV Infections Among IDU



■ **Ranked index**
Top 220 counties

26 states with 1 or more vulnerable counties

Partnership Between NIDA and Appalachian Regional Commission

Fund grants to address increased IDU and consequences in OD, HIV and HCV

- One-year research planning grants to:
 - Improve understanding problem's scope
 - Identify resources, obstacles
- Goal: build foundation for better intervention programs, larger-scale research efforts
- Applications now being accepted
 - RFA-DA-16-015: **Due April 28**



<http://grants.nih.gov/grants/guide/rfa-files/RFA-DA-16-015.html>

Impact of New HIV Priorities on NIDA's Recompetition for HIV/AIDS Funding

Extramural

- OAR reviewed FY14 grants eligible for renewal in FY16 (1,207 grants)
- 242 grants were judged low priority for total of \$65.2M (placed in a NIH common HIV fund)
- \$14.2M were from NIDA.

Intramural

- OAR reviewed FY14 intramural project eligible for renewal in FY16 (56 projects)
- Of those 26 projects were judged low priority totaling \$6.6M
- \$3.3M were from NIDA

New NIDA FOAs

Increased Knowledge and Innovative Strategies to Reduce HIV Incidence-iKnow Projects (R01) (PAR-16-117) (with NIAID and NIMH)

*Issued: March 3, 2016; Open date: April 15, 2016;
Application Due Date (s) :May 16, 2016; May 9, 2017; May 8, 2018.*

1. Devise optimal strategies to improve the identification of persons unaware of their HIV-1 infection and successfully link them to HIV testing, treatment, and prevention interventions.
2. Develop and examine the feasibility and acceptability of novel integrated interventions of biomedical and behavioral strategies to reduce HIV transmission in these populations.

Novel Strategies for Targeting HIV-CNS Reservoirs without Reactivation (R21) (RFA-MH-17-100); (R01) (RFA-MH-17-101) (with NIMH and NINDS)

*Issued: April 6, 2016/April 7, 2016; Open date: August 9, 2016;
Application Due Date: September 9, 2016*

Applications focused on identifying HIV-1-infected cells in the CNS that are latently infected; developing strategies for targeting these latently infected cells; and aiming to achieve viral silencing leading to inhibition of viral production, without pro-viral reactivation.

UNGASS
2016

SPECIAL SESSION OF THE UNITED NATIONS GENERAL ASSEMBLY ON THE WORLD DRUG PROBLEM

ACHIEVING THE 2019 GOALS - A BETTER TOMORROW FOR THE WORLD'S YOUTH

