

# Addiction Medicine: The Urgent Need for Trained Physicians



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**National Institutes of Health**

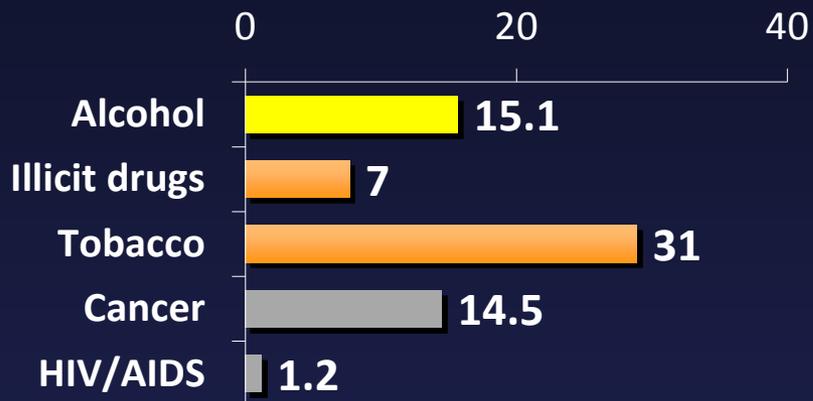
**January, 30, 2018**



# Cost and Scope of Alcohol-Related Problems

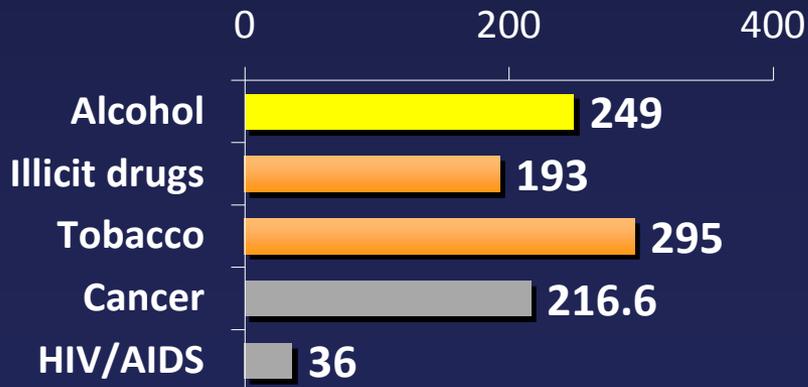
## Prevalence of disorder/disease

Millions in the US



## Cost to society

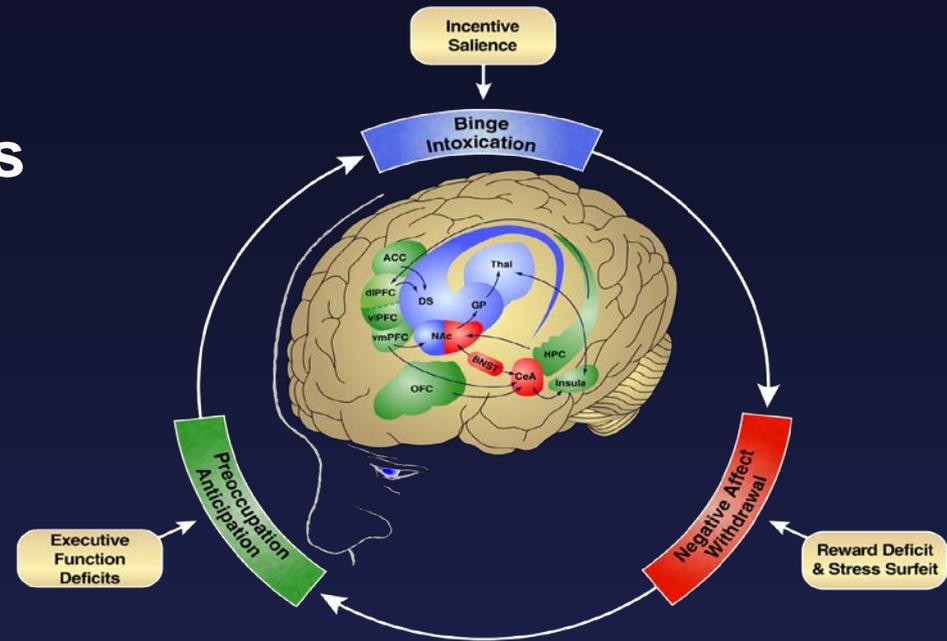
Billions of dollars



- ~88,000 people die annually from alcohol-related causes in the U.S.
- 3<sup>rd</sup> leading preventable cause of death in U.S.
- ~ 50% of U.S. liver disease deaths attributable to alcohol misuse
- 15.1 million adults have AUD
- Increase in emergency department visits and hospitalizations related to alcohol in last 10 years

# Addiction is a Chronic Brain Disease

- Decades of research shows that addiction is a **chronic brain disease**
- **Frequently co-occurs with other mental health conditions**
- **Has many features in common with medical conditions** such as diabetes, hypertension, and obesity
  - Chronic
  - Potential for recurrence and recovery
  - Influenced by genetic, epigenetic, developmental, and environmental factors
  - Requires a comprehensive approach to treatment



# Alcohol Treatment Gap

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- **<10%** of people with AUD get **any** treatment
- **<4%** of patients with AUD use an FDA-approved medication to treat their disorder
- Individuals with AUD **more often seek primary care for an alcohol related medical problem** than AUD itself
- NIAAA is developing a new product to help individuals find evidence-based treatment

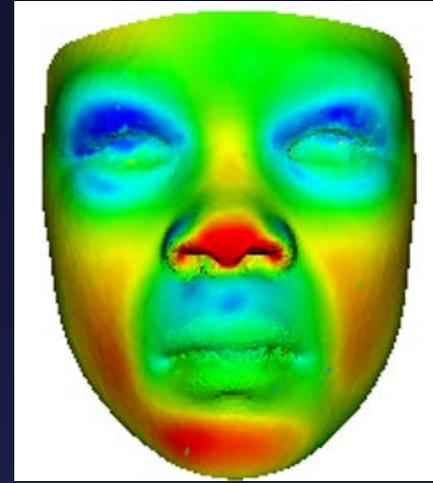


# Fetal Alcohol Spectrum Disorders and Advances in FASD Research

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## Fetal alcohol syndrome

- Growth Deficiency
- Microcephaly
- Characteristic facial features
- Cognitive and/or Behavioral Impairment
- Fetal Alcohol Syndrome-U.S. prevalence 2: 8/1000
- Fetal Alcohol Spectrum Disorders- U. S. Prevalence: **1-5%**

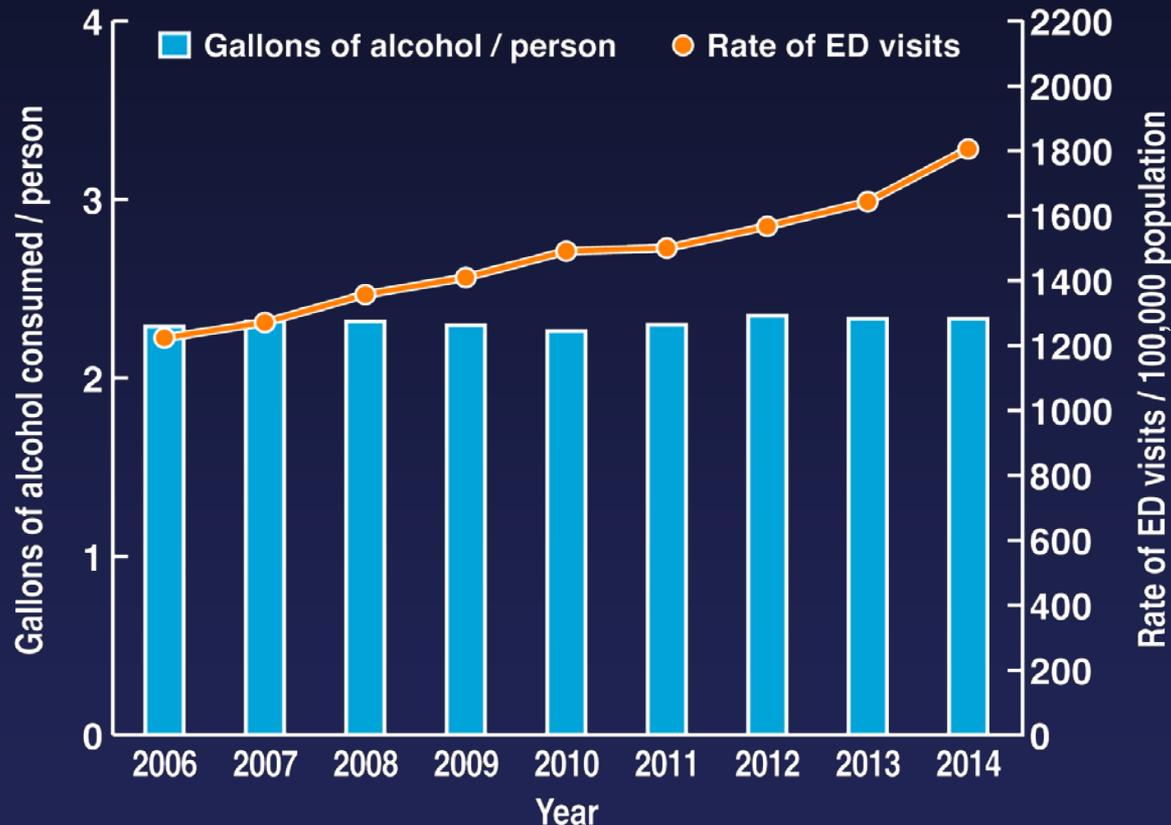


NIAAA funded researchers developed 3-D photography and image analysis techniques to enhance detection of alcohol-induced facial features in children prenatally exposed to alcohol.

Facial signatures captured through this method can be visualized as heat maps as shown: **Red indicates where facial features are contracted; blue where they are expanded, and green where they are similar in the individual with FAS compared to age-matched controls.**

The new technique will help identify individuals within the FASD spectrum with facial features too subtle for detection by the human eye.

# Emerging Issues – Increase in Alcohol-Related Emergency Department Visits



The rate of ED visits involving alcohol in the U.S. population aged  $\geq 12$  increased 47% between 2006 and 2014, yet per capita consumption increased  $< 2\%$  during the same time period. The number of alcohol-related ED visits increased from 3,080,214 to 4,976,136. Increases were larger for women.

# Preventing and Treating AUD

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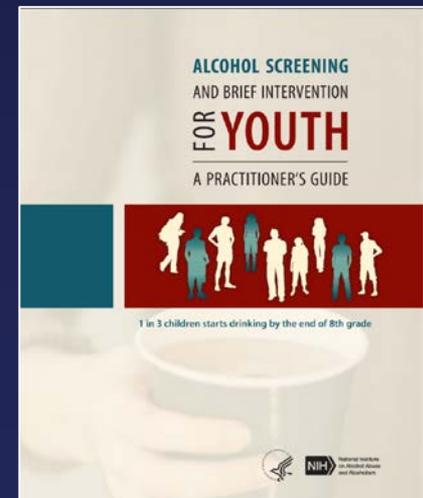
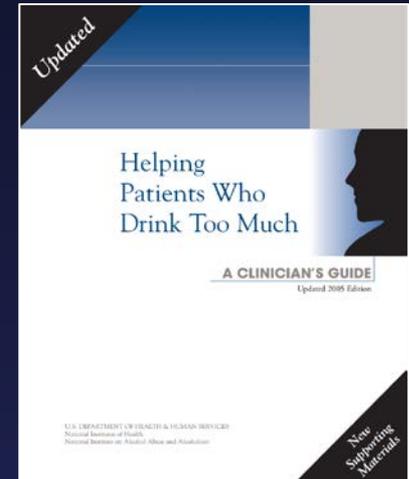
There are evidence-based interventions for preventing and treating AUD:

- **Screening, Brief Intervention, and Referral to Treatment (SBIRT)**
- **Minimum Legal Drinking Age of 21**
- **Professionally-led behavioral interventions**
- **FDA-approved medications**
- **Mutual support groups, such as Alcoholics Anonymous**



# Alcohol Screening and Brief Intervention (SBI) is an Effective Prevention Strategy

- Alcohol screening and brief intervention (SBI) in primary care reduces alcohol misuse among adults; recommended by U.S. Preventive Services Task Force
- Mounting evidence that screening is effective for preventing and reducing youth alcohol misuse
- One of the highest ranking preventive services among 25 effective services (Solberg et al, 2008)
- NIAAA developed “**Helping Patients Who Drink Too much: A Clinician's Guide**” and a 2-question youth alcohol screener, “**Alcohol Screening and Brief Intervention for Youth,**” to help clinicians identify alcohol misuse in adults and youth, respectively



# **Alcohol Misuse and Harm: Effective Prevention Interventions**

- **Individually-oriented (Screening and Brief Intervention- SBI)**
- **Family**
- **School**
- **Web-Based**
- **Environmental**
- **Policies (e.g., taxes, outlet density, driving while intoxicated laws, and minimum legal drinking age laws)**
- **Multi-Component Community Interventions**

# Effective Professionally-Led Behavioral Interventions

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- **Cognitive–Behavioral Therapy:** to change the thought processes that lead to alcohol misuse and develop skills to cope with situations that trigger problem drinking
- **Motivational Enhancement Therapy:** to enhance motivation to change drinking behavior by aligning changes in behavior with life goals
- **Community Reinforcement:** to facilitate changes in a person's life to make abstinence more rewarding than drinking
- **Marital and Family Counseling:** incorporates family into treatment to help repair and improve family relationships



# Medication Therapies

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- Medications are often used in combination with behavioral interventions
- **Three** FDA-approved medications for the treatment of AUD:
  - **Disulfiram (Antabuse®)** blocks the breakdown (metabolism) of alcohol by the body, increasing acetaldehyde, and causing unpleasant symptoms such as nausea and flushing of the skin
  - **Naltrexone (oral: Revia® and injectable: Vivitrol®)** diminishes the rewarding effects of alcohol to help people reduce heavy drinking
  - **Acamprosate (Campral®)** reduces the negative emotional state associated with protracted abstinence from alcohol and may also reduce craving, making it easier to maintain abstinence



# Alcohol Treatment Gap

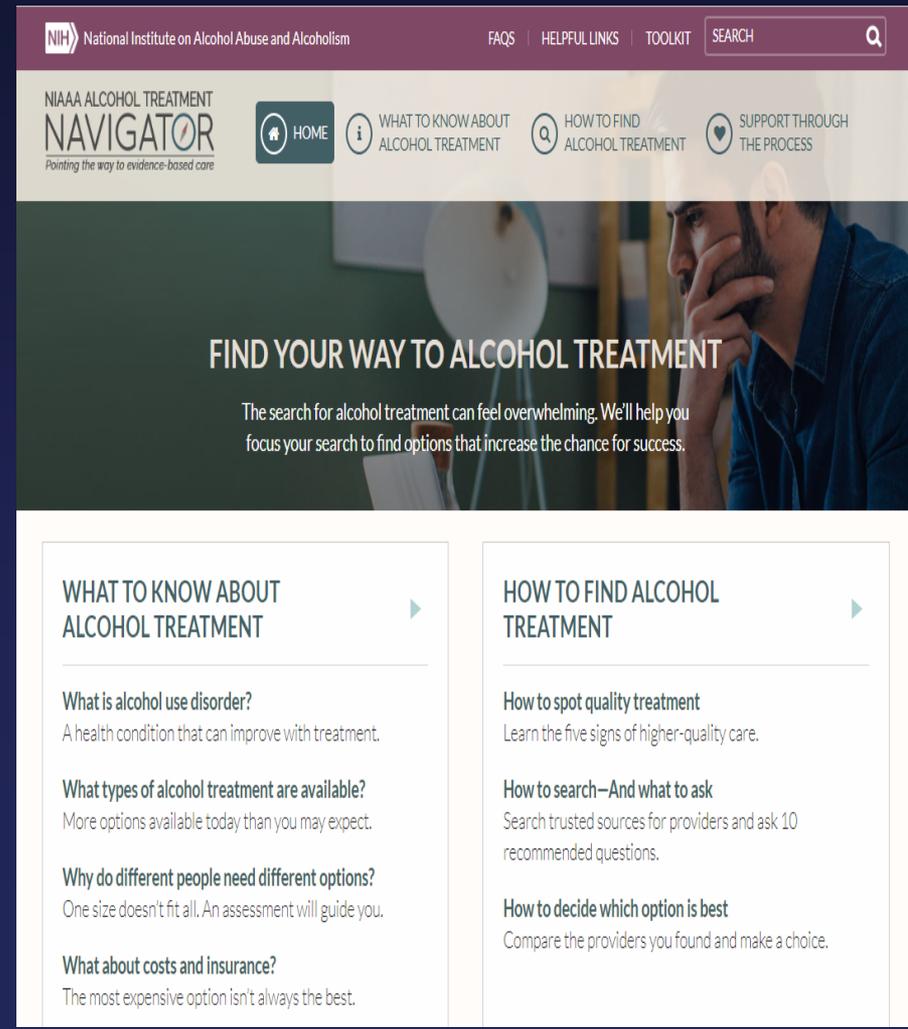
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# Brand New – NIAAA Treatment Navigator

- To assist people in finding AUD treatment, NIAAA has developed the **NIAAA Alcohol Treatment Navigator<sup>SM</sup>**
- One-of-a kind resource that:
  - ✓ Outlines the features of evidence-based AUD treatment
  - ✓ Describes the varied routes to recovery
  - ✓ Provides a strategy for locating qualified treatment specialists
- Launched October 3, 2017  
<https://alcoholtreatment.niaaa.nih.gov>



# Wearable Alcohol Biosensor Challenge

- Winning prototype submitted by **BACtrack**, a company known for designing and selling portable breath alcohol testers for consumer use

## **BACtrack Skyn:**

- Worn on the wrist
- Detects alcohol in sweat
- Continuous BAC monitoring
- Stores data to a smartphone via Bluetooth

- Second place winner, Milo, launched Kickstarter campaign marketing their alcohol biosensor **PROOF™**; research package in development

- **A second challenge recently closed (12/10/16 - 5/15/17)**

- To design a wearable sensor using technologies that detect alcohol non-invasively in blood or interstitial fluid:

**5 promising submissions received**

A poster for a challenge from the National Institute on Alcohol Abuse and Alcoholism (NIAAA). On the left is a graphic of a hand with circuitry. The text on the right asks 'ARE YOU UP TO THE CHALLENGE?' and describes the goal: 'Create a wearable alcohol biosensor that can monitor blood alcohol levels in real time'. It lists prizes: 'First Prize: \$200,000' and 'Second Prize: \$100,000'. The submission deadline is 'Submit Prototype by: Dec. 1, 2015'. A 'LEARN MORE' button is in the bottom right. The NIH logo is in the bottom left.

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Create a **wearable alcohol biosensor** that can monitor blood alcohol levels in real time

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LEARN MORE

NIH  
National Institute on Alcohol Abuse and Alcoholism



# Growing the Addiction Medicine Workforce

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- Many **providers do not perform screening**, are not aware of evidence-based treatments or where to refer people
- A study of 54 primary care clinics found 88% **had no policies or requirements to ask patients about alcohol use**, and those with policies had **no consistent evidence-based methods** for screening or referral (Mertens et al., 2015)
- **Goal:**
  - **Improve physician training in substance use prevention and treatment at all levels**, from undergraduate and graduate medical education through residency, fellowship, and beyond
  - **Integrate prevention, early intervention, and treatment into routine medical care**



# Integrating Addiction Medicine into Medical Education

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- NIAAA grant to SUNY Buffalo to “translate addiction into clinical practice” in collaboration with American Board of Addiction Medicine
  - Paved the way for **integrating addiction medicine into postgraduate medical education** at 37 academic medical centers
  - Provided **model for residency training** in addiction medicine
  - Laid groundwork for recognizing **addiction medicine as a subspecialty** by American Board of Medical Specialties
- NIAAA, NIDA, and other federal agencies **engaged with White House** on a national effort **to grow the addiction medicine workforce**
- Next steps: Identify **medical school curriculum** needs and enhance addiction medicine questions on **medical board exams**



# Thank You!

## Special Thanks:

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