

Science-to-Society: Preventing Mental Health Problems and Substance Abuse



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Personal Evolution

- West Side Story
 - Discrimination – defective mindset
 - Adversity/stress
 - Violence
- Discovery science – the “why”
 - Dedicated life to researching problems so that no other child will feel this way
 - Needed to know more about individual differences in response to same input
- Quest to Translational Research
 - Bringing science to society
 - “Baby Talk”
 - Justice Department
 - Promise Neighborhoods
 - PATHS Study



CO-OPERATIVE FOR TRANSLATIONAL SOLUTIONS TO PREVENT RISKY BEHAVIORS (Co-Op)

- ❑ Evolved from an NIH-funded conference grant to promote translational prevention research.
- ❑ Includes senior scientists from across disciplines, educators, community organizations, practitioners, advocates and policy makers.
- ❑ Vision:
 - To improve child development & wellbeing by encouraging scientists to build bridges to child-serving organizations, advocacy groups and influencers of public policy and media.
 - To promote public understanding and adoption of the evidence to improve the chances for children to grow to lead healthy, successful adult lives.

State of the Science

We need to know more....

- ❑ Interdisciplinary research is needed to understand etiology
 - Prevention programs targeted to underlying generators of disorders are most effective
 - Also need to know more about implementation & sustainability

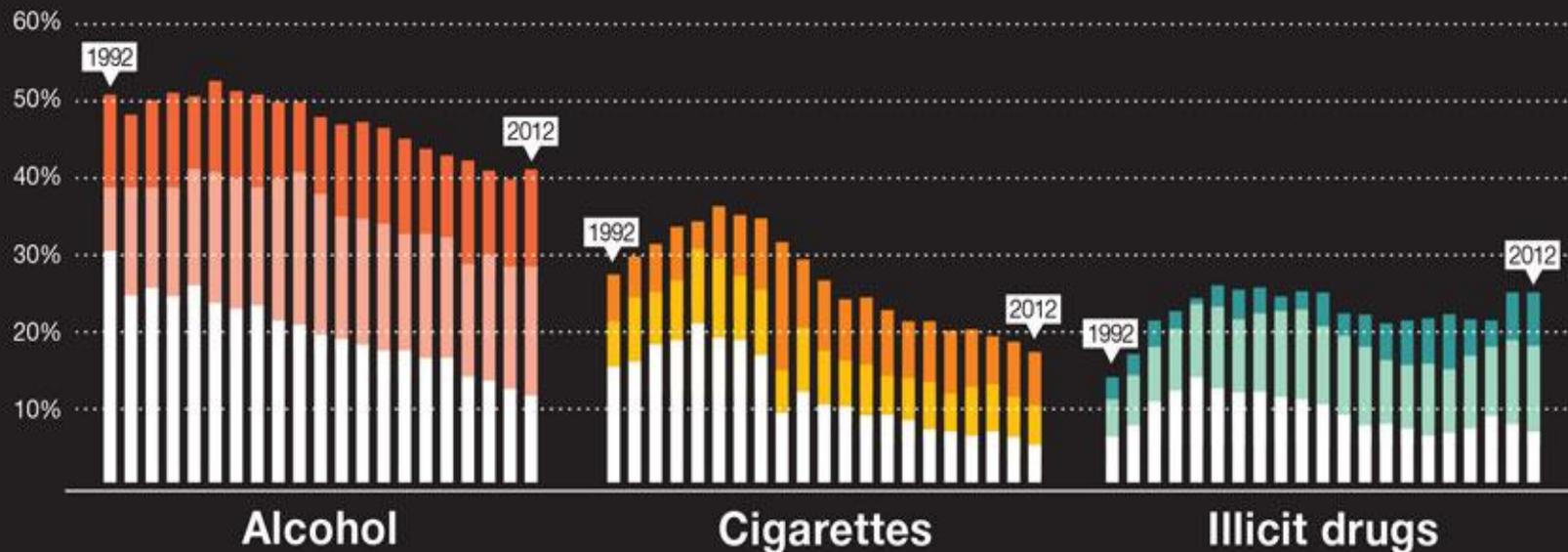
But we know enough...

- ❑ Very little of what we do know reaches the public and private sectors.
 - People don't even know what Prevention Science is.
- ❑ Public health, education, and criminal justice policies remain relatively unaffected by prevention science....

...even though we have the knowledge to exert an impact on a community and population level!

LAST TWO DECADES OF ALCOHOL, CIGARETTE, AND ILLICIT DRUG USE*

*Past 30 day use.



2012

 41.5% OF 12TH GRADERS
 27.6% OF 10TH GRADERS
 11% OF 8TH GRADERS

 17.1% OF 12TH GRADERS
 10.8% OF 10TH GRADERS
 4.9% OF 8TH GRADERS

 25.2% OF 12TH GRADERS
 18.6% OF 10TH GRADERS
 7.7% OF 8TH GRADERS

The cost of youth problem behaviors

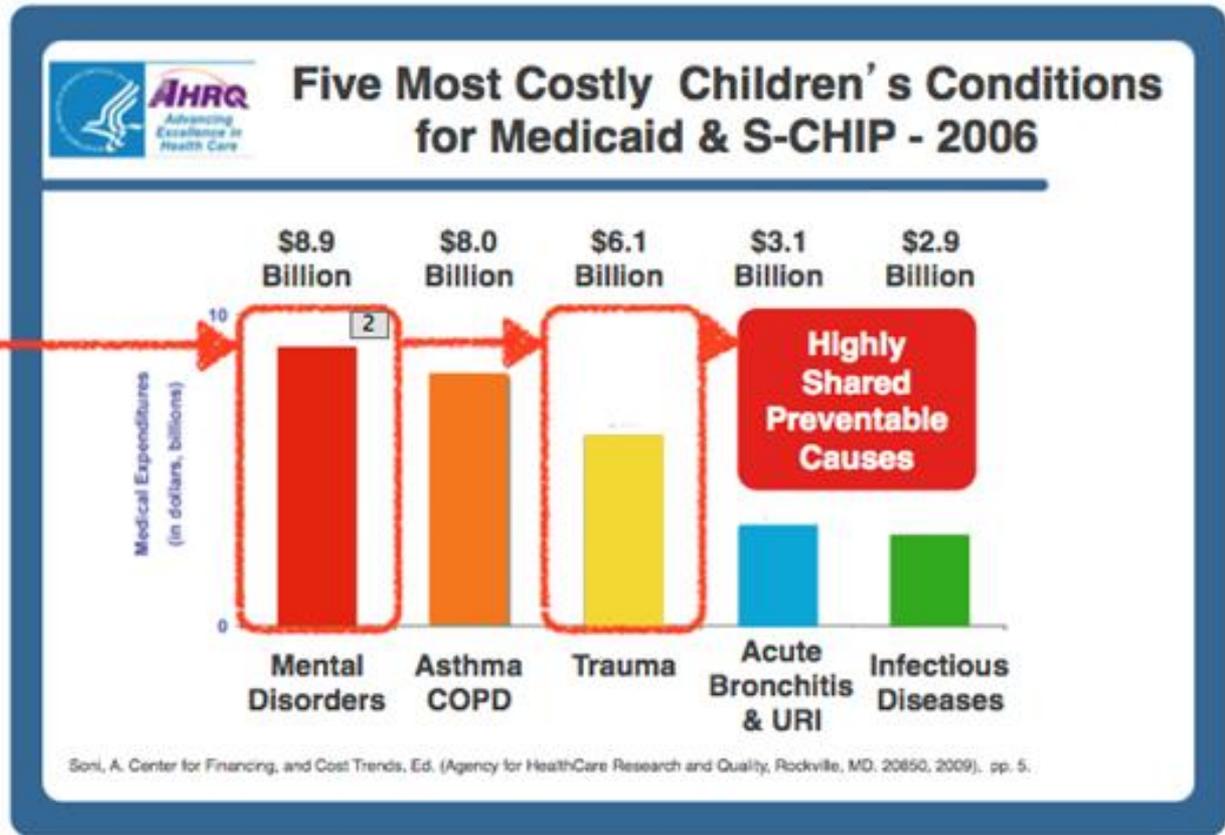
	National	Oregon
Antisocial behavior	165.8 billion	2 billion
Binge drinking	42 billion	516 million
Cocaine/heroin abuse	21.7 billion	267 million
High-risk sexual behavior	48.1 billion	591 million
Smoking	419 million	5.1 million
High school dropout	141.6 billion	1.7 billion
Suicide attempts	15.7 billion	193 million
Totals	\$ 435.3 billion	\$ 5.3 billion

Source: Miller, 2004. Permission to reprint pending.

There is an epidemic of mental, emotional, and behavioral disorders among children and young people that dwarfs the polio epidemic and nobody is immune.



1 Since children's mental illnesses are rising rapidly and MORE and MORE children are in poverty, what will happen to Medicaid Costs?



Treatment of mental disorders carries the highest cost of the top 5 most costly children's conditions, totaling \$8.9 billion for U.S. children ages 0 to 17.

Mental Health Problems

From adolescence into adulthood....

- Leading cause of disability in the U.S. for people ages 15 to 44 years
 - The burden of disease resulting from mental disorders exceeds that resulting from any other health condition.
 - The annual quantifiable cost of such disorders among young people was estimated in 2007 to be \$247 billion.
- Research shows that every \$1 invested in overall prevention services yields a return of almost \$10.



Drug Abuse and Addiction

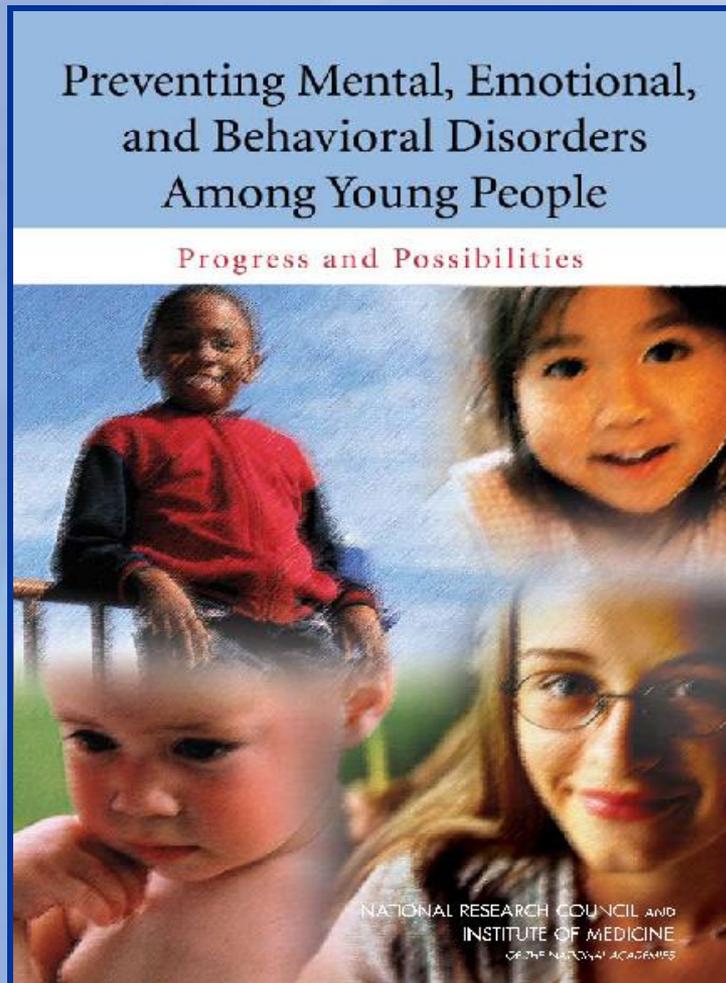
And into adulthood...

- The economic impact of addictions is staggering, estimated at \$500 billion annually.
- Every \$1 dedicated to drug and alcohol prevention saves \$7-\$20 in costs from crime, incarceration, emergency room care, school dropout rates, mental health treatment, broken families, productivity, and premature death.

The economic reality alone dictates that we must prevent that which is preventable.



The Institute of Medicine (IOM) Report



“The scientific foundation has been created for the nation to begin to create a society in which young people arrive at adulthood with the skills, interests, assets, and health habits needed to live healthy, happy, and productive lives in caring relationships with others.”

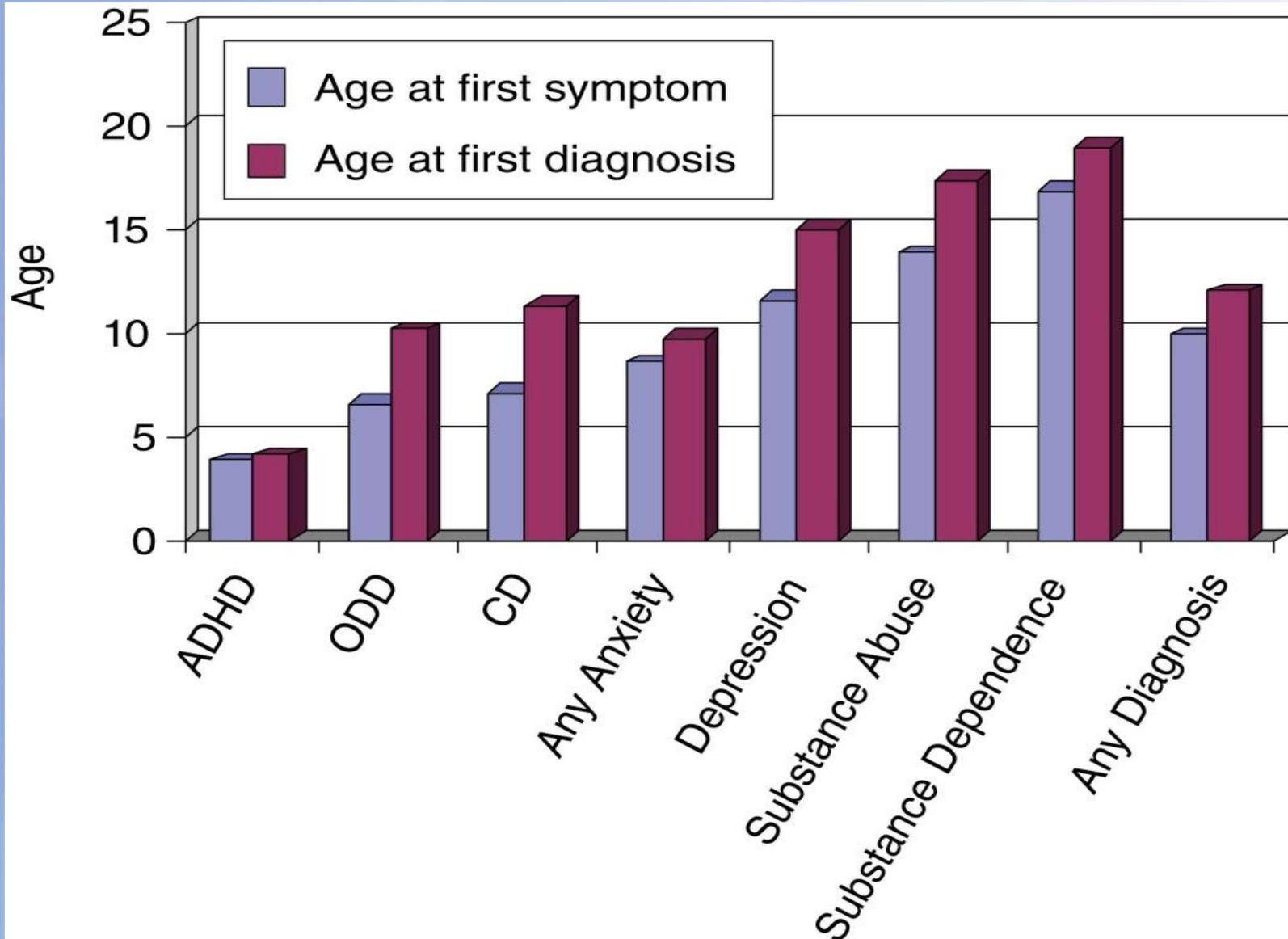
The Hard Facts

The fact is that PREVENTION SCIENCE is among the most rigorously proven science there is for helping humans with social, medical and educational problems.

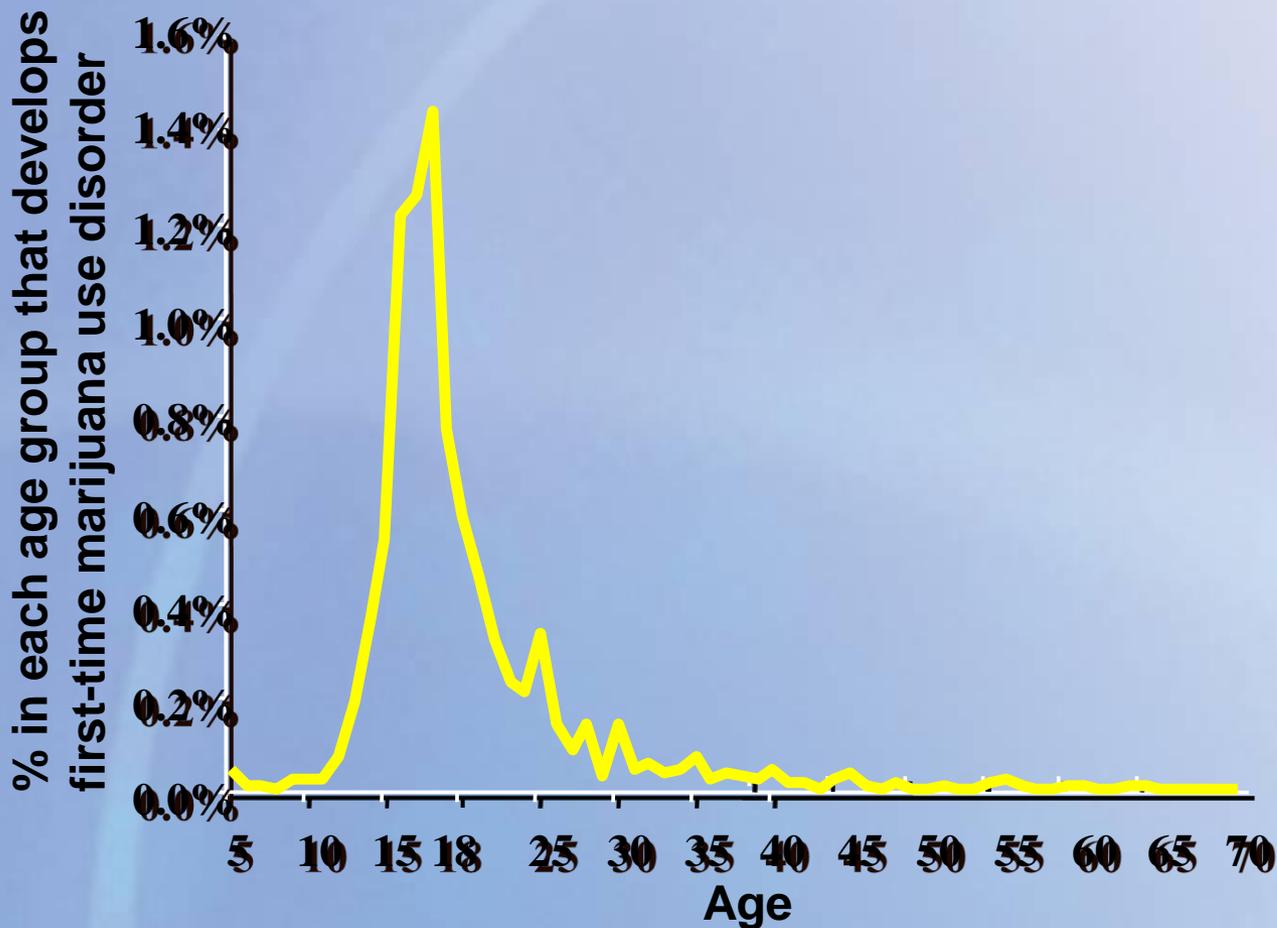
This fact is not generally known, though, because we do not have a \$4 billion mass marketing budget.

That's why we are here.

Early Warning Signs

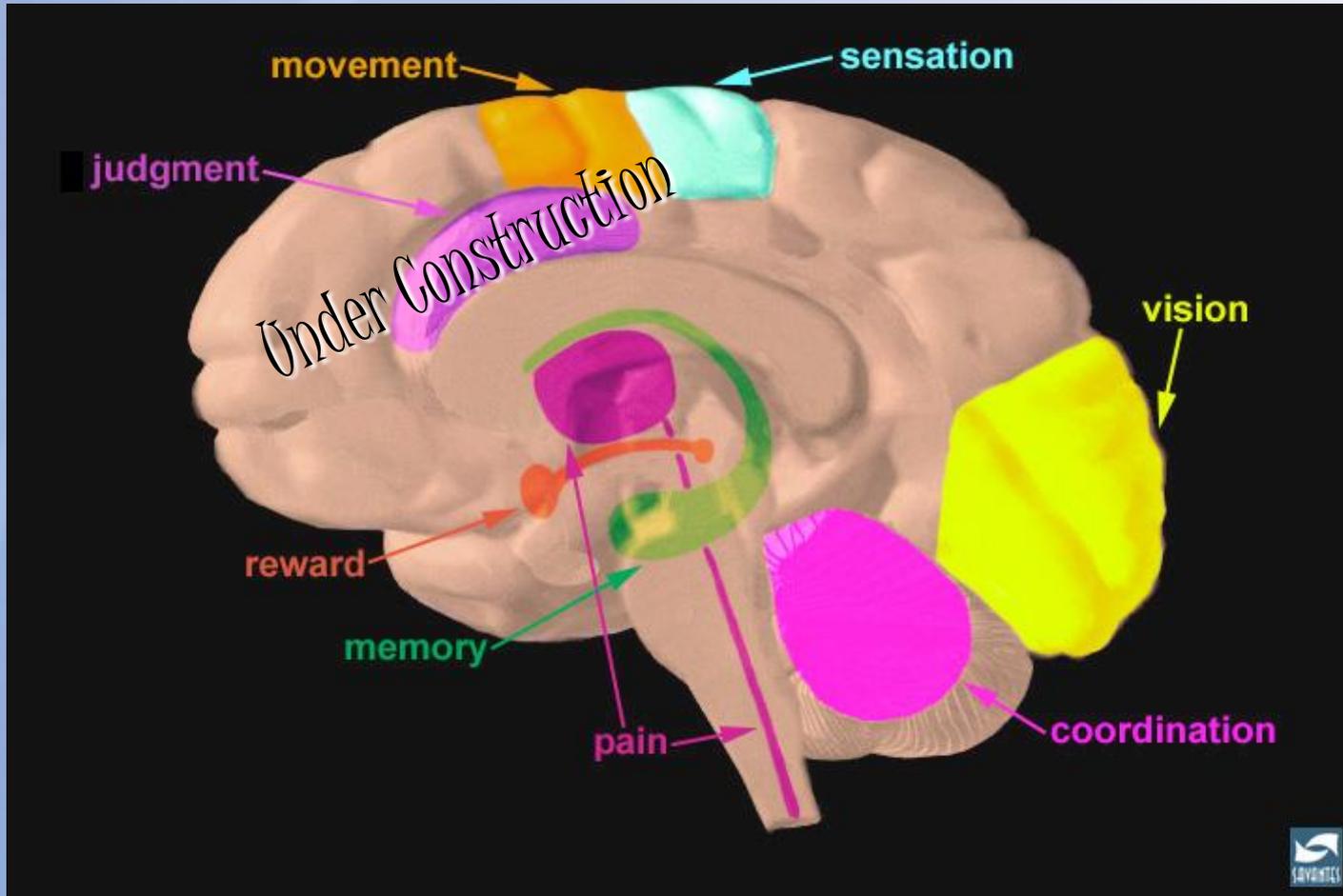


Developmental Nature of the Problem



Age at cannabis use disorder as per DSM IV

Protracted Period of Adolescence!

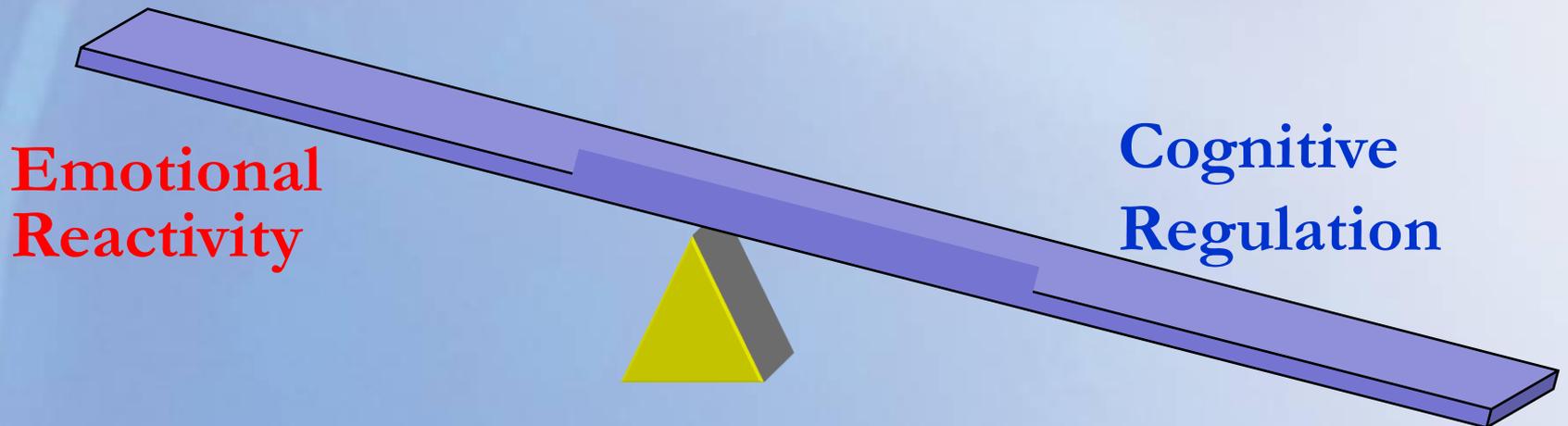


Even under normal conditions, the adolescent prefrontal cortex is not completely connected!

The “Imbalanced” Adolescent Brain

- Emotional responses are heightened
- Cognitive controls are immature

Double Jeopardy!



All of these problems are triggered by a common set of environmental conditions

Psychological and behavioral problems occur in the context of other problems in the social environment (e.g., poverty, discrimination, hazardous physical environment)

- At some level, they all involve **stress** and **adversity**.
 - Poverty is by far the most looming and impactful risk factor for all these problems.
 - Maltreatment, poor parenting, family dysfunction, deprivation, ill-equipped schools, inattention to special needs...



Among 25 Developed Countries...

- The United States has the second highest proportion of children living in poverty; now higher than it has been since the 1960s
- Health and social problems are closely related to inequality in rich countries

Worse

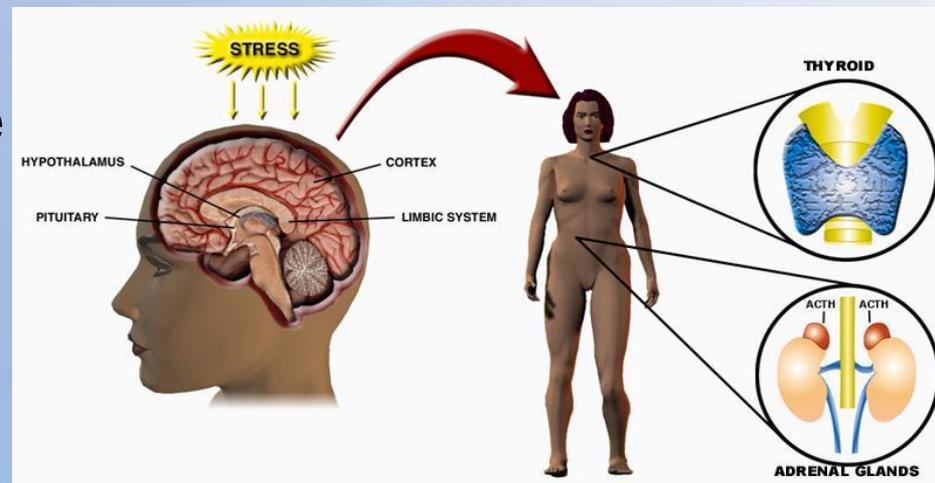
Index of health and social problems

Better



At the crux of the problem...

- Self regulation** of behavior and emotion underlies **all** aspects of mental and behavioral health and their disorder.
- Executive cognitive functions (ECFs), subserved by the brain's prefrontal cortex (PFC), are key to self-regulation
 - They begin to form in early childhood and coalesce in late 20s
 - PFC also regulates emotional and stress responses
 - Delays in the PFC lead to ECF and emotional regulatory deficits.
 - Stress/adversity perturbs the system and leads to delays & deficits in ECF.

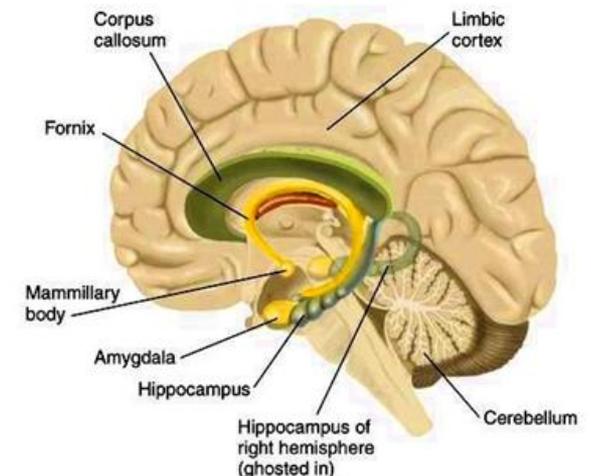


Counteraction

Evidence-based programs capitalize on the brain's vast plasticity in childhood and adolescence to:

- Nurture and rewire these systems
- Builds skills needed to develop academically and socially.
- Targets the entire range of problems.
- Leading to a final common pathway to successful adulthood.

► Major Components of the Limbic System



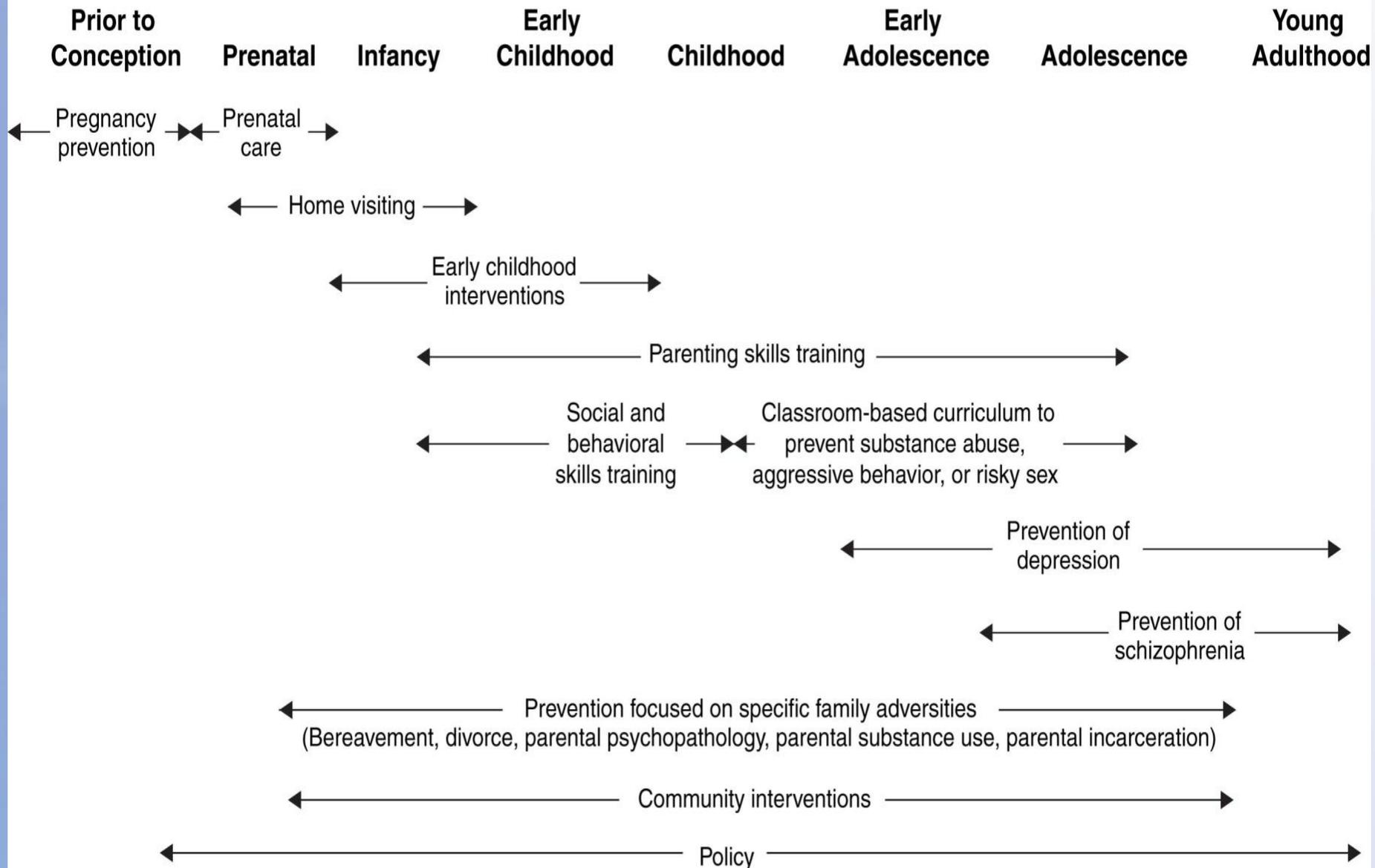
How Can We Apply What We Do Know?

Several decades of research have shown that:

- Evidence-based programs target etiological underpinnings, including socio-emotional and cognitive functions
- The potential lifetime benefits of preventing **MEB problems** are greatest with early intervention.
- They must be sustainable to exert long-lasting effects.
- Evidence-based interventions are available for the prenatal period through adolescence.
 - Most have been shown to prevent multiple problems.
 - Most important developmental targets are families & schools.
- Appropriately targeted interventions may be particularly impactful for disadvantaged children.

A science-to-society approach can produce results that were unimaginable a generation ago... if done well with proven solutions.

Interventions by Developmental Phase



Evidence-based Family Interventions

Program	Developmental Phase
Nurse Family Partnership	Prenatal through infancy
Healthy Start	Prenatal through infancy
Family Check-Up	Early childhood through early adolescence
Parent Management Training Oregon	Childhood
Incredible Years	Early childhood through childhood
Multisystemic Therapy	Adolescence
Multidimensional Foster Family Care	Early childhood and adolescence

Evidence-based school interventions affecting social, behavioral, and academic outcomes

- Good Behavior Game
- e-Circle Professional Development for Preschool Providers
- Providing Alternative Thinking Strategies/PATHS
- Positive Behavior Intervention and Support
- Positive Action
- Seattle Social Development Program



We have learned how to make a difference in children's lives!

1. Most evidence-based interventions have benefits long after they have been implemented.
 - a) For example, home visiting programs for the prenatal period through infancy have been shown to reduce delinquency when children reach their teenage years.
 - b) GBG reduces later drug use, violence, suicide, smoking, use of mental health services and more... costing only \$150/yr per child
 - c) PATHS improves social emotional functioning into adolescence
 - d) Community-wide comprehensive solutions reduce poverty, improve academics, increase employment, etc.
2. Most of these interventions prevent multiple problems later in adolescence & adulthood

Not only is it possible, but it is imperative!



How much might PAX GBG [alone] save for America's future?



Cost Savings

- PAX GBG costs about \$150 to protect our children for life from mental illness, behavioral problems, drug addiction, becoming criminals, trying suicide, and dying from tobacco or alcohol-related illnesses. And, it increases academic success—including university entry.
- PAX GBG pays back \$4,637 to individuals, taxpayers, and others per student exposed in first grade over 15 years.
- Assuming 4,000,000 first graders each year in the US, that saves **\$18 billion** every first grade cohort by age 21, after an investment of \$600 million (less after first five years).



Communities that Care (CTC)

- Coalition-based, community prevention operating system
 - uses a public health approach to prevent youth problem behaviors
- Helps key community players select and implement evidence-based prevention policies and programs to address risks faced by youth.
- Community-wide implementation of evidence-based programs occurs via a five-phase process over a 1-2 year period
- Results from a 7-state experimental trial involving 24 communities show that within 4 years of adopting the CTC system:
 - delinquent behaviors and of alcohol, tobacco, and smokeless tobacco use and the prevalence of alcohol use, binge drinking, smokeless tobacco use, and delinquent behavior were significantly reduced by 8th grade.
 - exposure to targeted risk factors increased less rapidly in CTC than in control communities.



In the long run...

A 2005 analysis found that early childhood programs for vulnerable populations would dramatically increase savings.

By 2050 there would be:

- ❖ an annual federal/state government budget savings of \$61 billion
- ❖ a GDP increase of \$107 billion
- ❖ a crime related savings of about \$155 billion in 2004 dollars

Institute of Medicine's Assessment

No concerted federal presence or clear national leadership currently exists to advance the use of prevention and health promotion approaches to benefit the mental and behavioral health of the nation's young people.

Infusing a prevention focus into the public consciousness requires development of a shared public vision and attention at a higher national level than currently exists.

What is Needed

1. A national effort to implement tested and effective programs, policies, and practices throughout the U.S.
2. This will require coordination of all of the federal agencies that have responsibility for reducing psychological, behavioral, and health problems.
3. Further research is needed to:
 - Better understand the underlying mechanisms and “triggers”
 - Determine how to widely and effectively adopt and then institutionalize these interventions.

Our priority should not be deciding on the next war against drugs, or homegrown terrorism...but fighting for the peace of mind that all our children can grow up healthy, well-adjusted, resilient and successful.