Dual Diagnosis– Understanding the Unique Challenges Facing Children Suffering from Co-occurring Behavioral Health and Addiction Disorders

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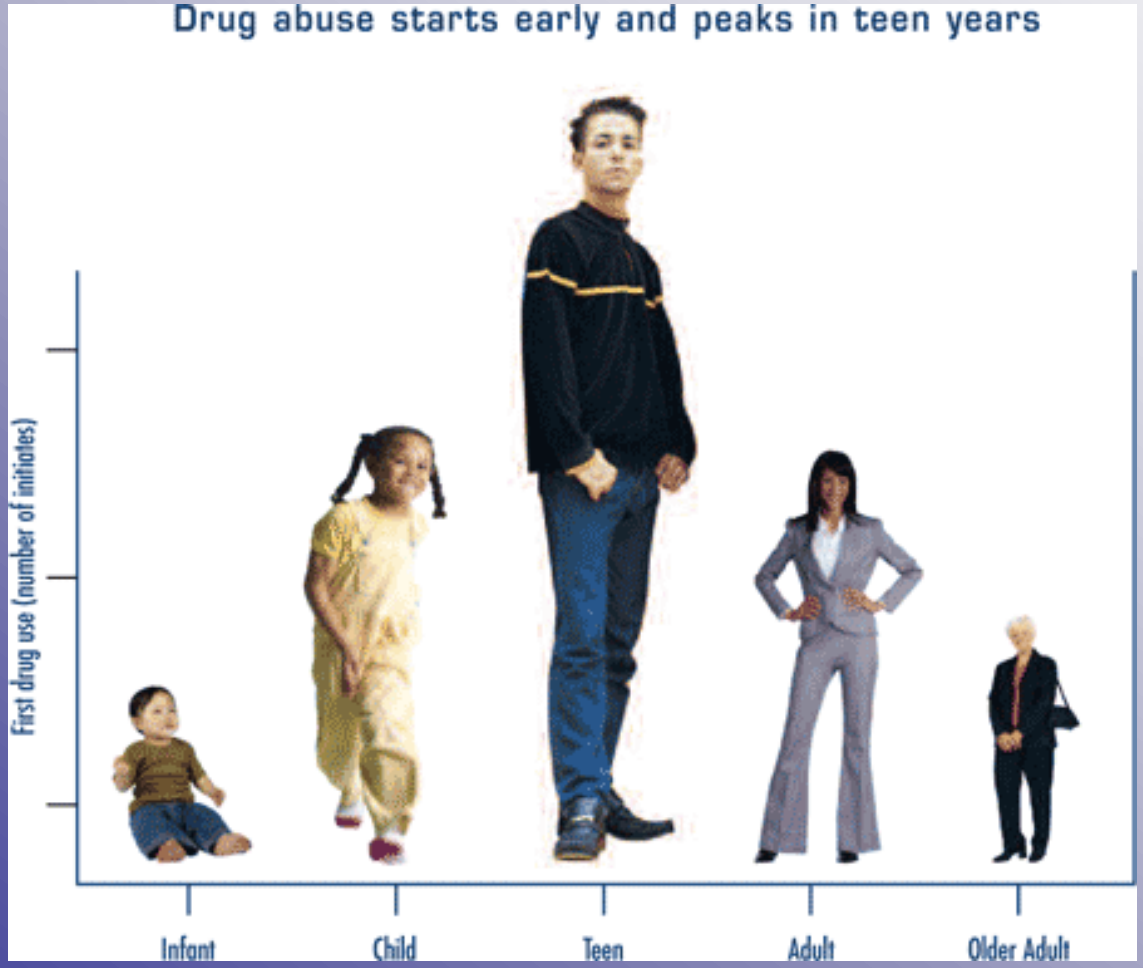
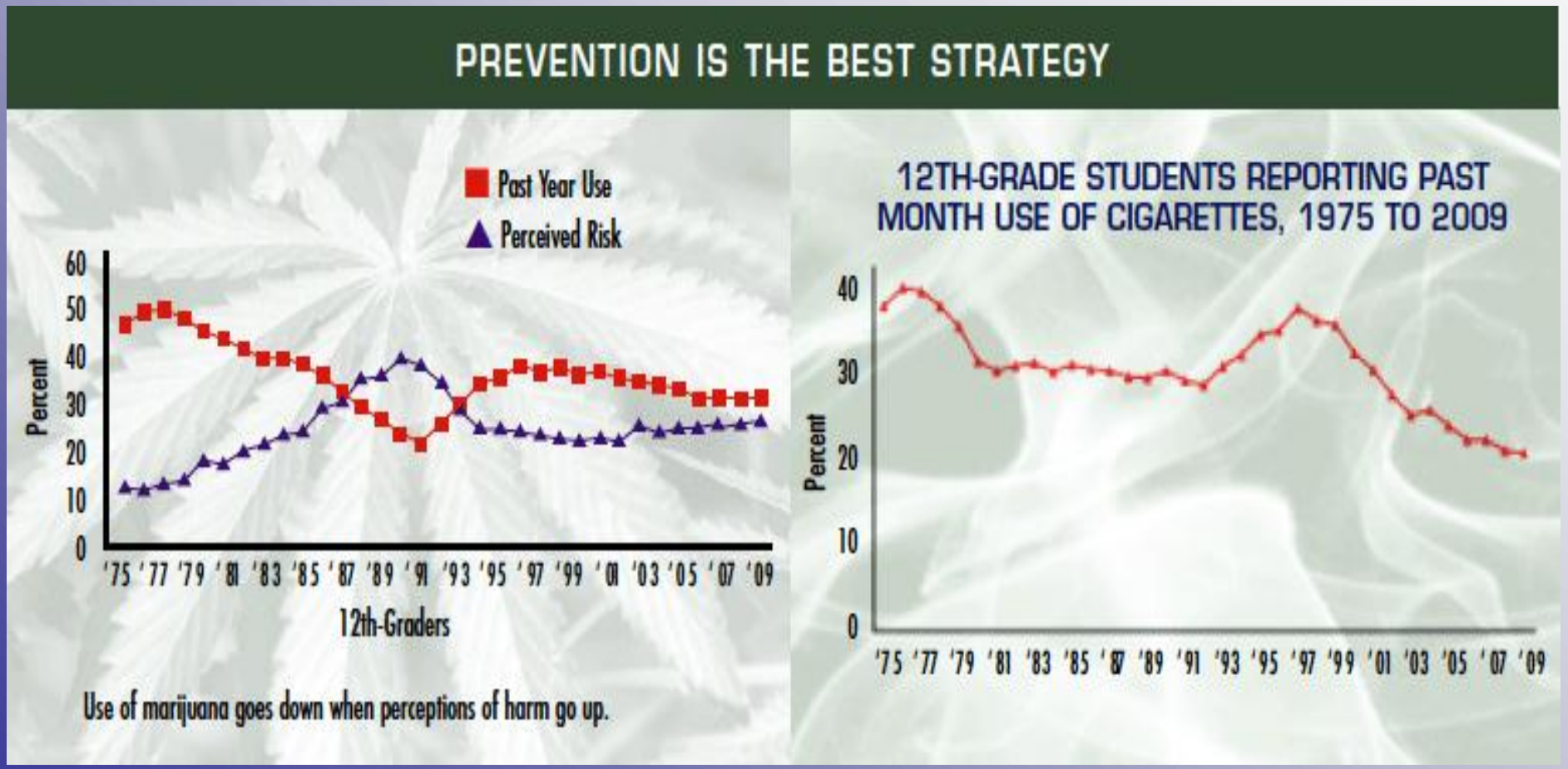
We know the parents are really the problem!

Early Intervention and Prevention are Important because . . . .

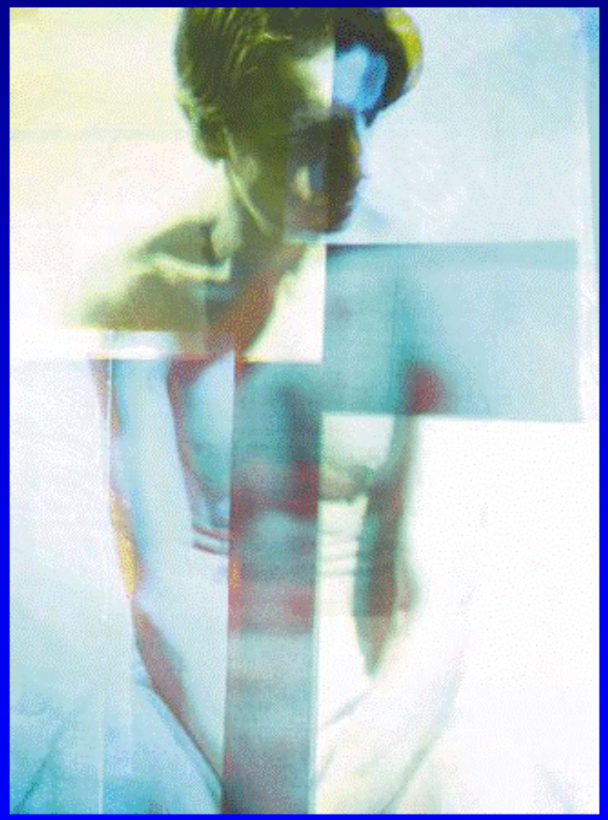


Link Between Perception and Use



Why do Mental Illnesses and Substance Abuse Co-occur?

- **Self-medication**
  - substance abuse begins as a means to alleviate symptoms of mental illness
- **Causal effects**
  - Substance abuse may increase vulnerability to mental illness
- **Common or correlated causes**
  - the risk factors that give rise to mental illness and substance abuse may be related or overlap



NIDA

Examples of Treating Adolescents with Co-occurring Disorders

- An integrated approach to treating issues

Integrated Co-Occurring Treatment Model (ICT)-Ohio Dept. of MH, State and Center for Innovative Practices, child Guidance and Family Solutions

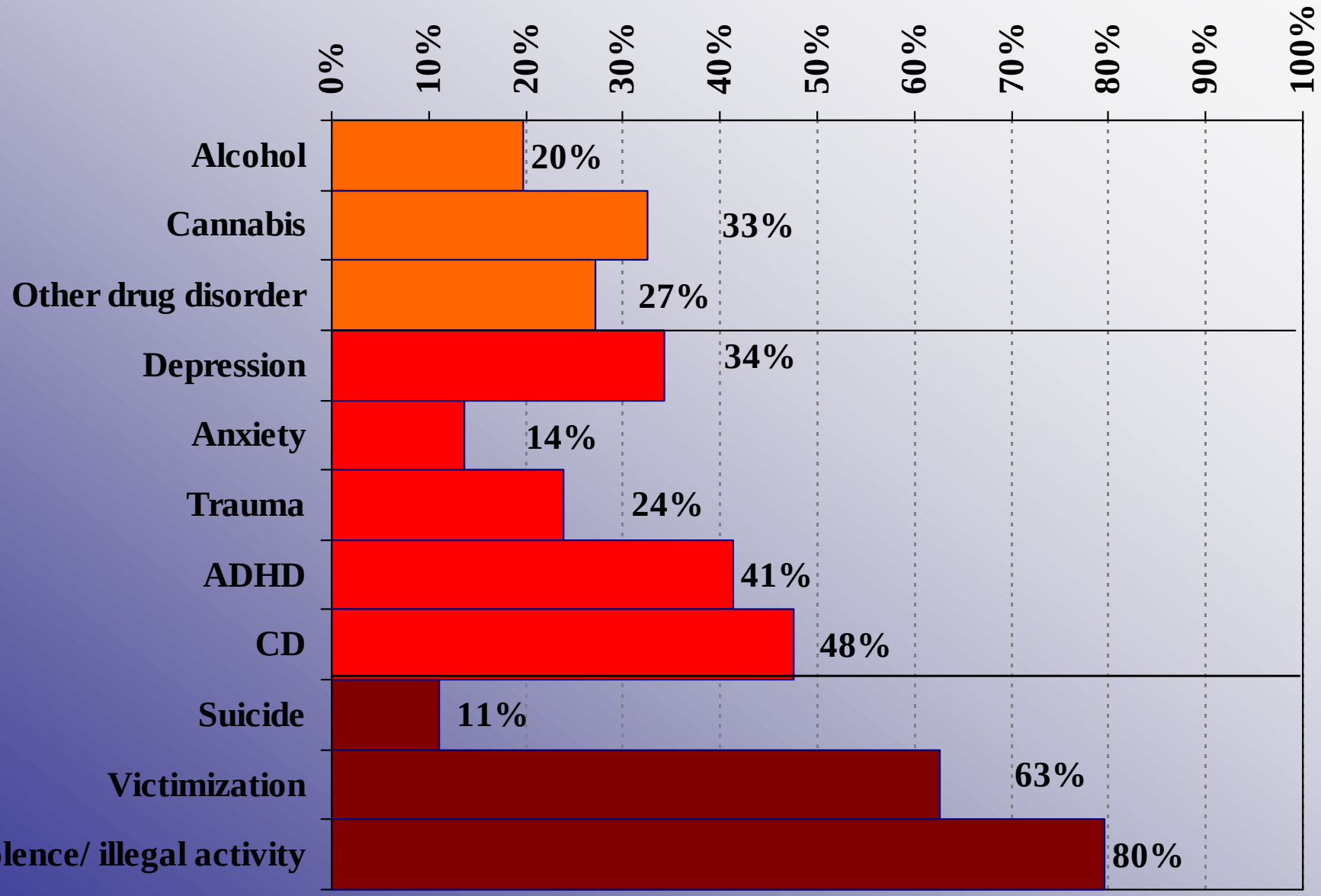
- Gender and Cultural Competence

Voices, Stephanie Covington

- Continuing Care

Assertive Continuing Care, Susan Godley, et al

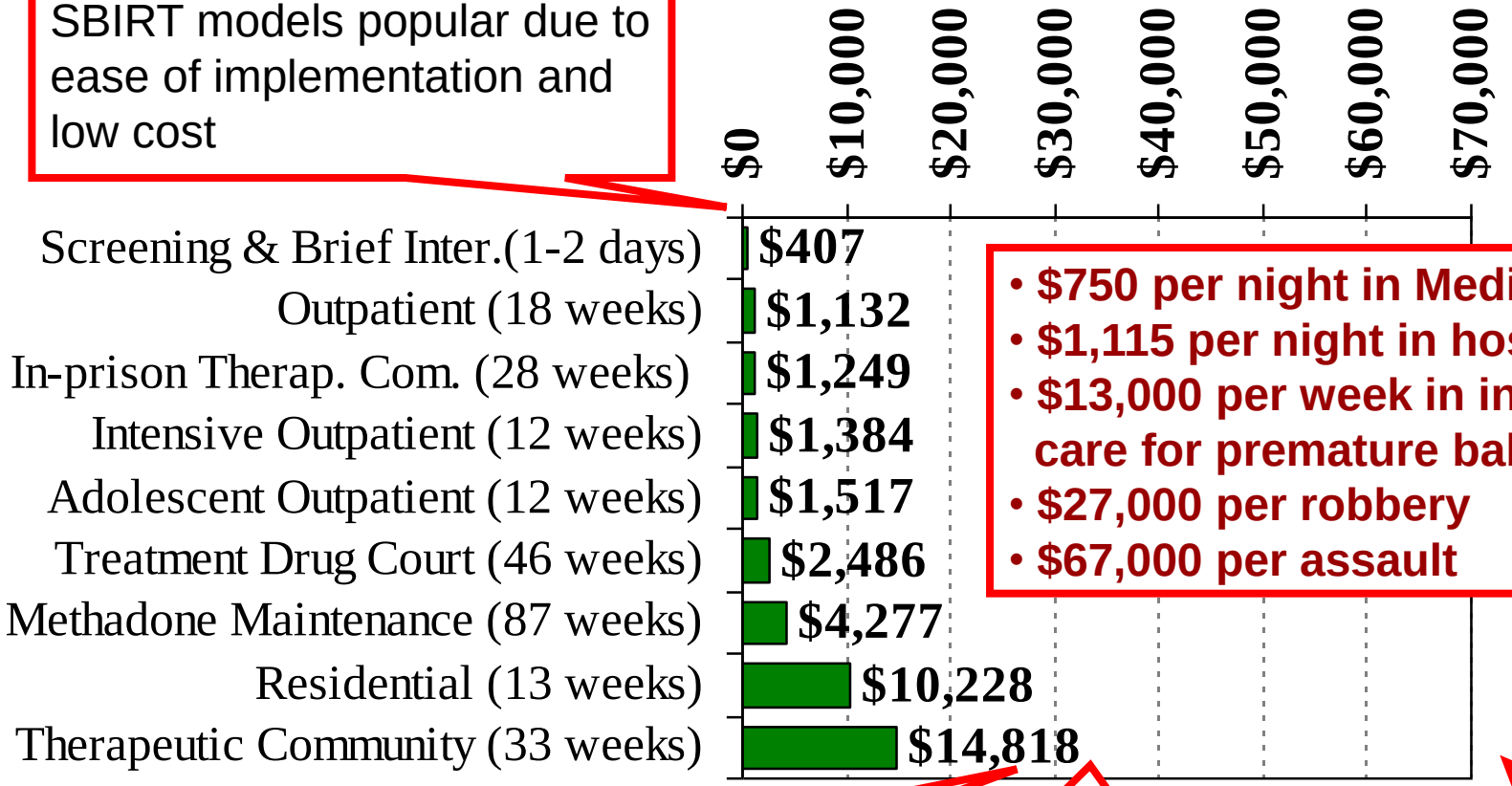
Multiple Clinical Problems are the NORM!



Source: CSAT 2009 Summary Analytic Data Set (n=20,826)

The Cost of Substance Abuse Treatment is Trivial Relative to the Costs Treatment Reduces

SBIRT models popular due to ease of implementation and low cost



- $750 per night in Medical Deto
- $1,115 per night in hospital
- $13,000 per week in intensive care for premature baby
- $27,000 per robbery
- $67,000 per assault

$22,000 / year to incarcerate an adult

$30,000/ child-year in foster care

$70,000/year to keep a child in detention

Source: French et al., 2008; Chandler et al., 2009; Capriccioso, 2004 in 2009 dollars

Investing in Substance Abuse Treatment Results in a Positive Return on Investment (ROI)

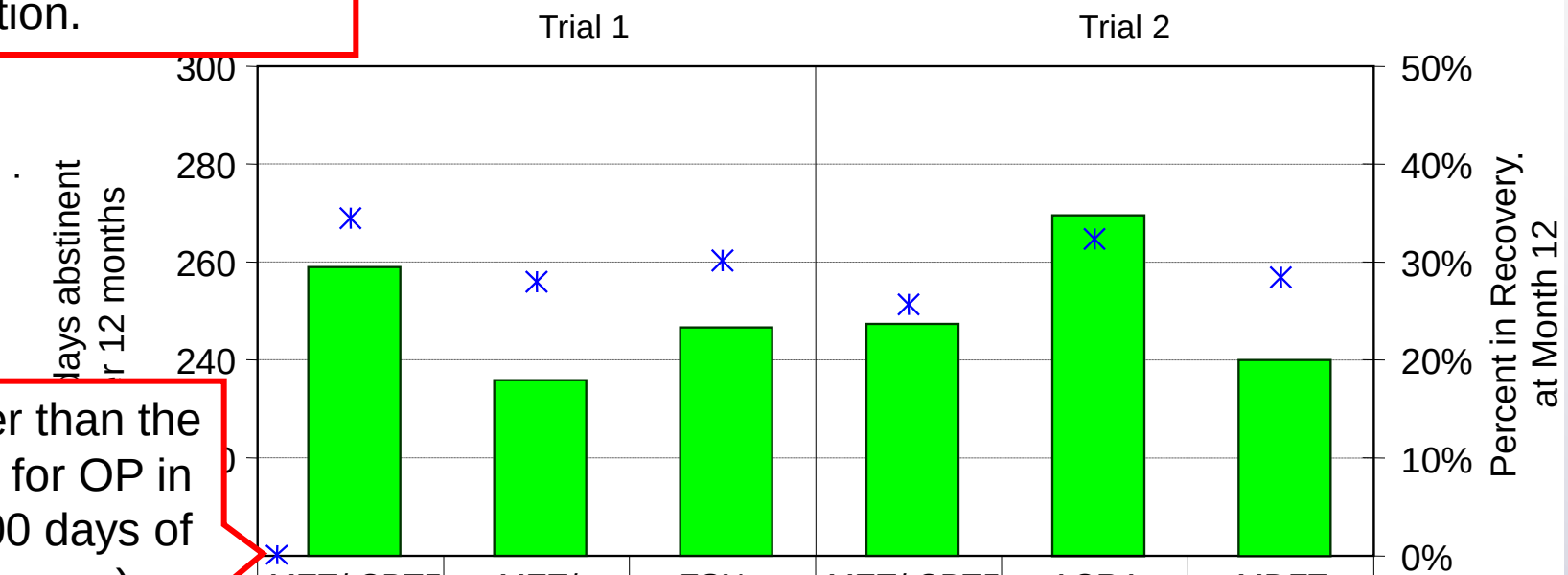
- Substance abuse treatment has an ROI of between $1.28 to $7.26 per dollar invested.
- Consequently, for every treatment dollar cut in the proposed budget, the actual costs to taxpayers will increase between $1.28 and $7.26.
- How will this happen? Individuals needing substance abuse treatment will not disappear but instead interface with much more expensive systems such as emergency rooms and prisons.
- Bottom line = The proposed $55 million dollar cut will cost Illinois taxpayers between $70 and $400 million within the next 1 to 2 years.

Source: Bhati et al., (2008); Ettner et al., (2006)

Similarity of Clinical Outcomes : Cannabis Youth Treatment (CYT)

Not significantly different by condition.

But better than the average for OP in ATM (200 days of abstinence)



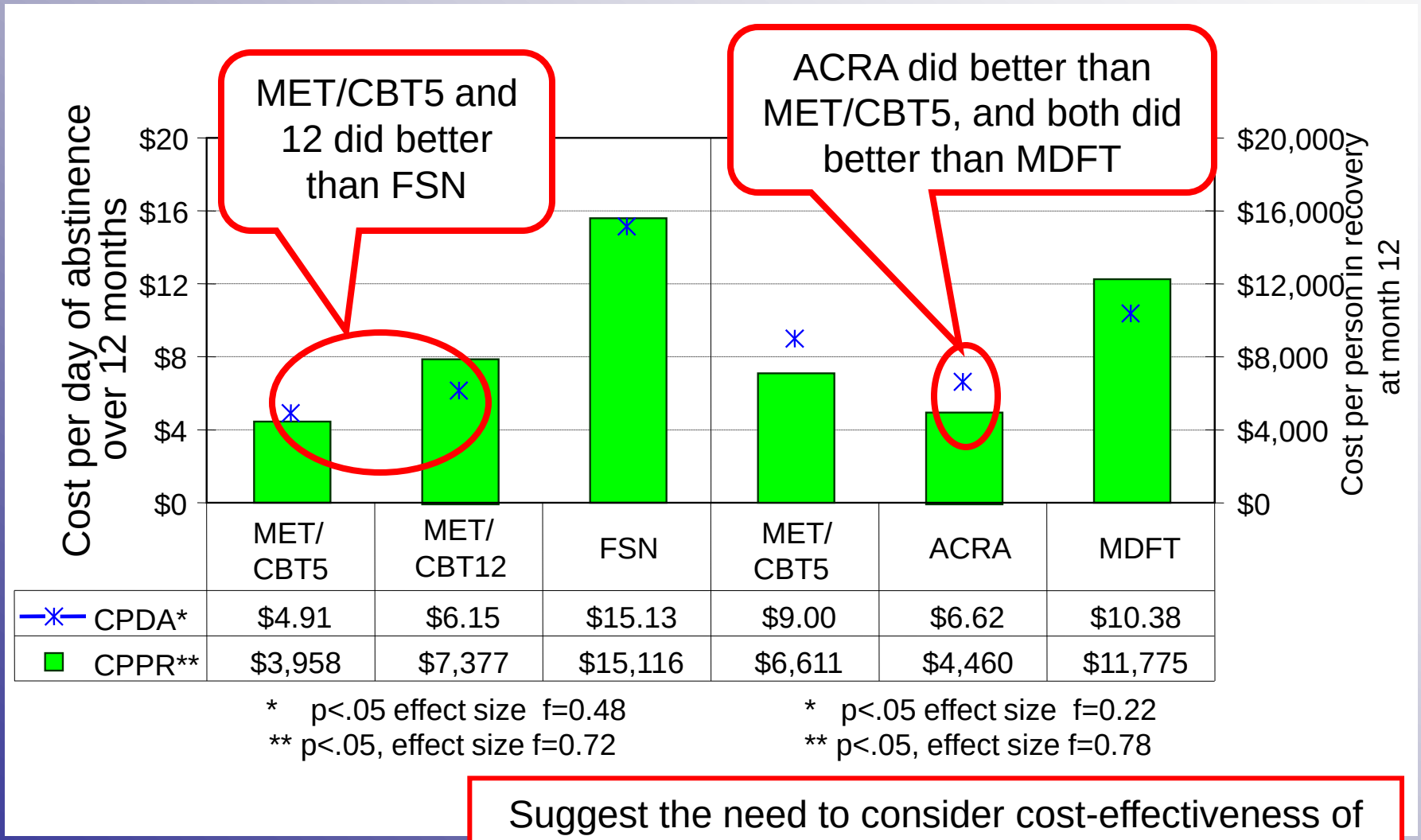
	MET/ CBT5 (n=102)	MET/ CBT12	FSN (n=102)	MET/ CBT5 (n=99)	ACRA (n=100)	MDFT (n=99)
Total Days Abstinent*	269	256	260	251	265	257
Percent in Recovery**	0.28	0.17	0.22	0.23	0.34	0.19

* n.s.d., effect size f=0.06
** n.s.d., effect size f=0.12

* n.s.d., effect size f=0.06
** n.s.d., effect size f=0.16

Source: Dennis et al., 2004

Moderate to large differences in Cost-Effectiveness by Condition



Suggest the need to consider cost-effectiveness of treatment approaches

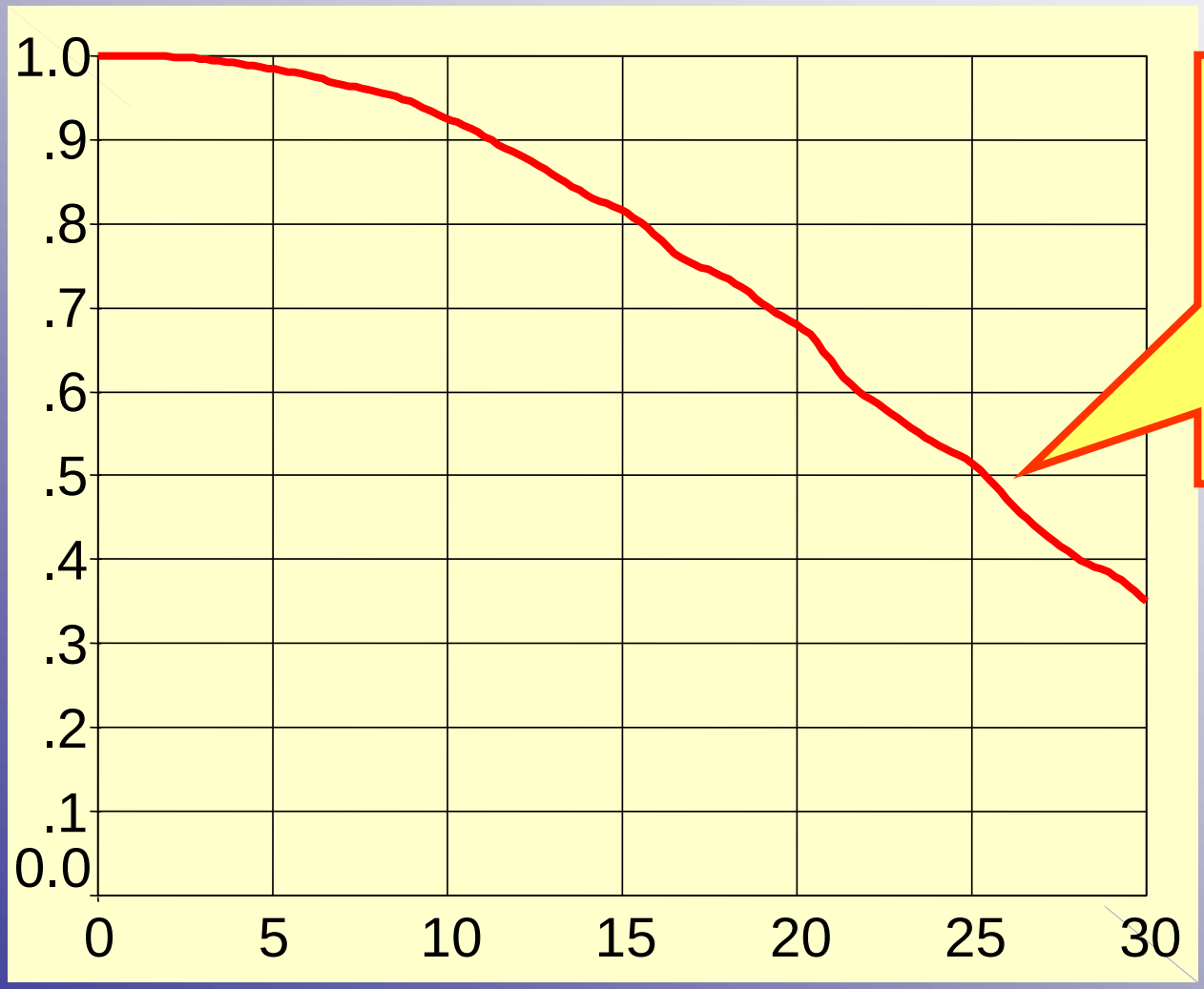
Source: Dennis et al., 2004

Average% Use Levels of Care TEDS-A 2009

	Detox	Residential	IOP	OP
Natl	3.7	15.6	15.6	65.1
IN	0.0	2.0	1.0	98.8

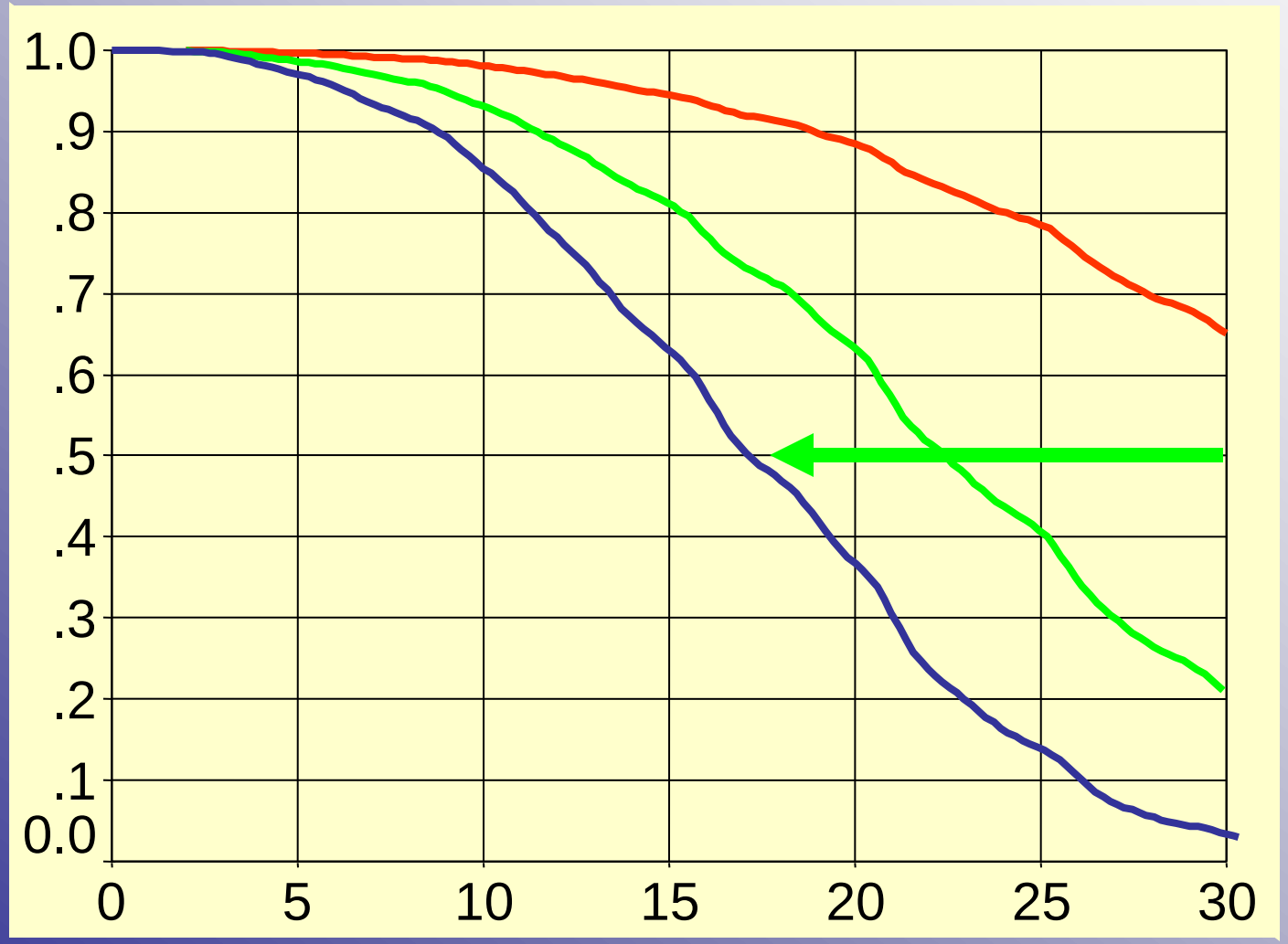
Standardized screening/assessment, appropriate level of care, continuum of system → better outcomes, fewer readmissions, cost savings

Substance Use Careers Last for Decades



Source: Dennis et al., 2005

Substance Use Careers are Shorter with Sooner Treatment



Year to 1st Tx Groups

20+

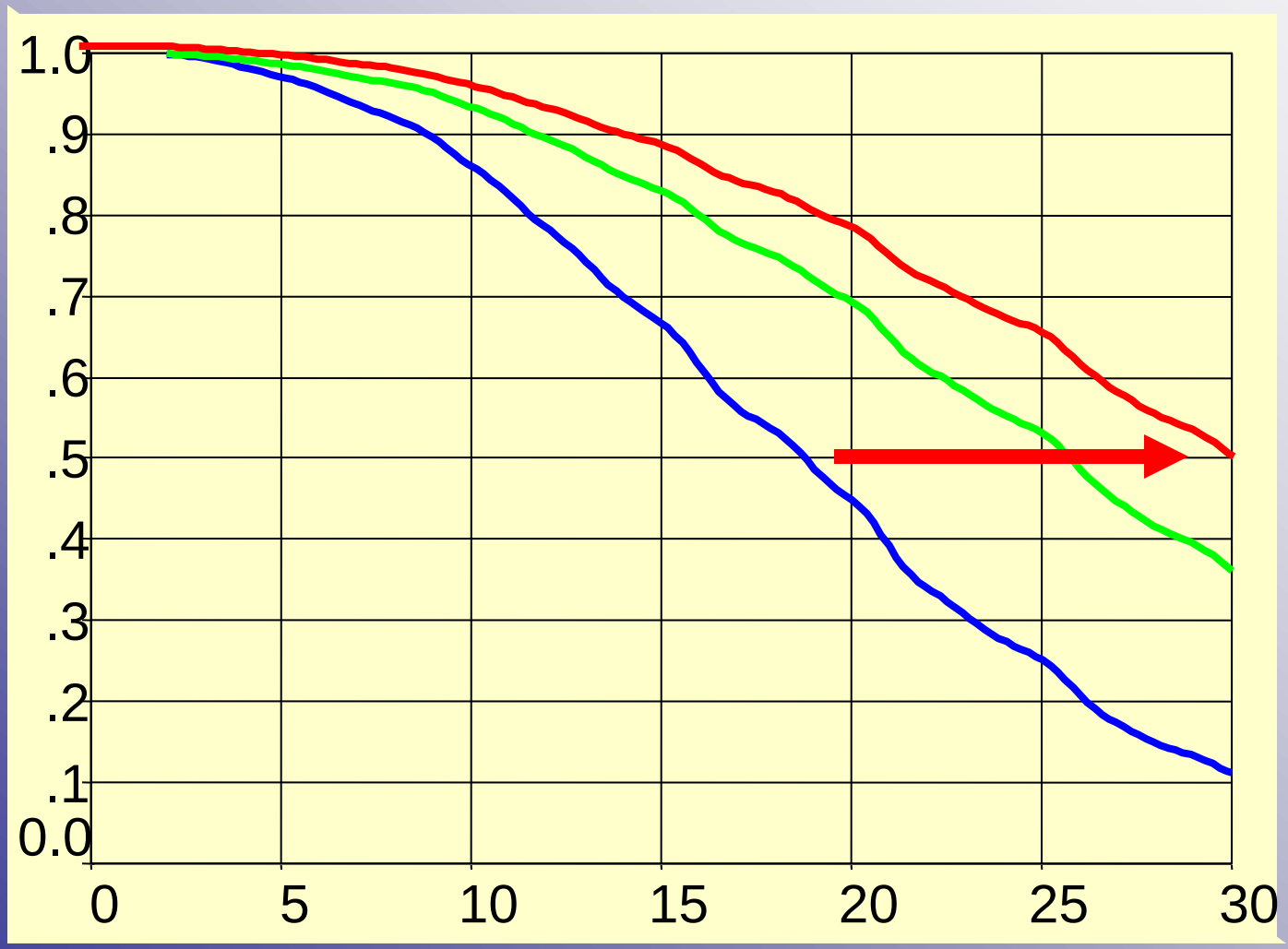
10-19*

0-9*

* p<.05 (different from 20+)

Source: Dennis et al., 2005

Substance Use Careers are Longer the Younger the Age



Source: Dennis et al., 2005

Interventions Associated With No or Minimal Change in Substance Use or Symptoms

- Passive referrals
- Educational units alone
- Probation services as usual
- Unstandardized outpatient services as usual

Interventions associated with deterioration

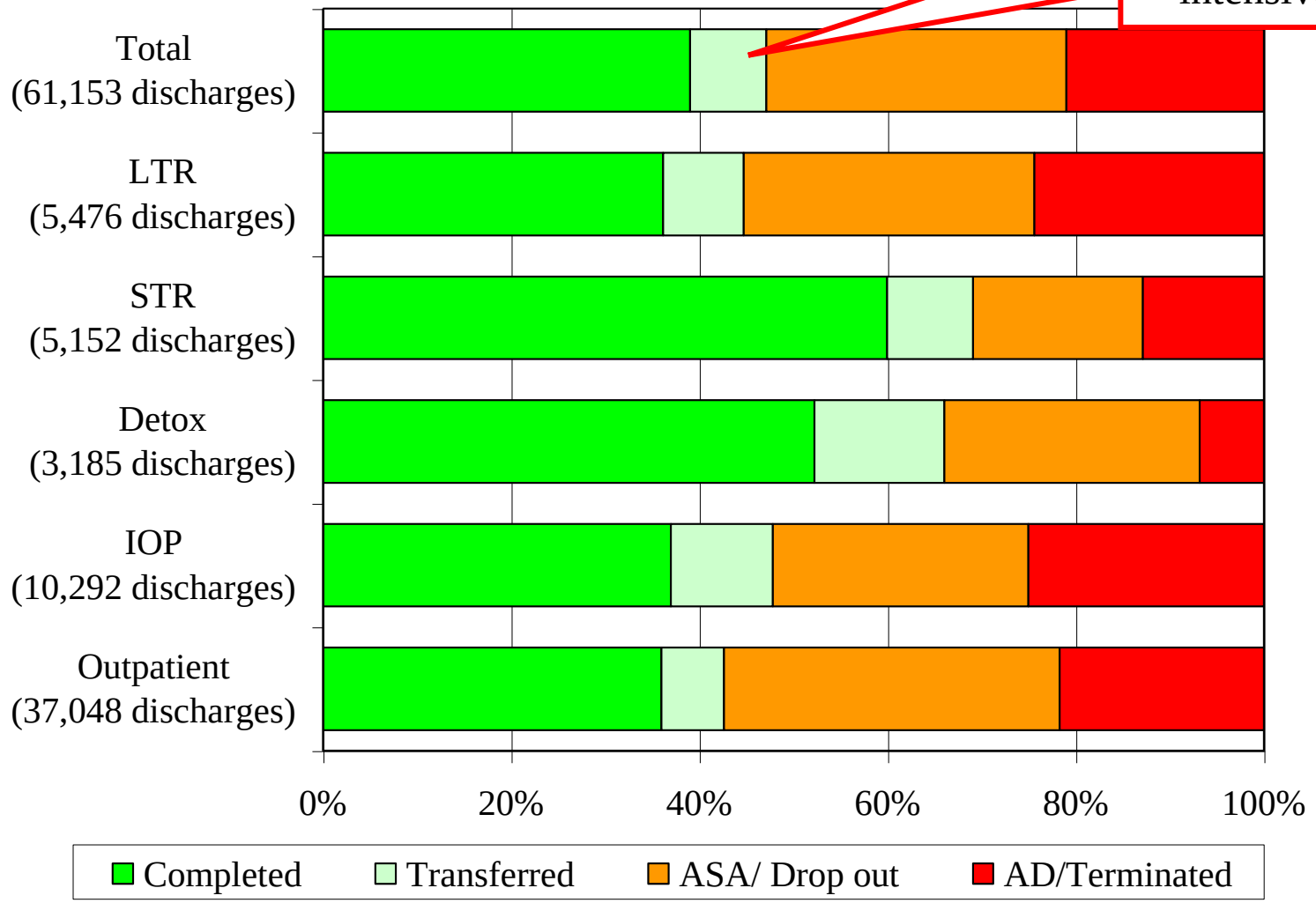
- Treatment of adolescents with/in adult units

Do you know what happens in group treatment?

Which EBP is this?

53% Have Unfavorable Disc

Despite being widely recommended, only 10% step down after intensive treatment



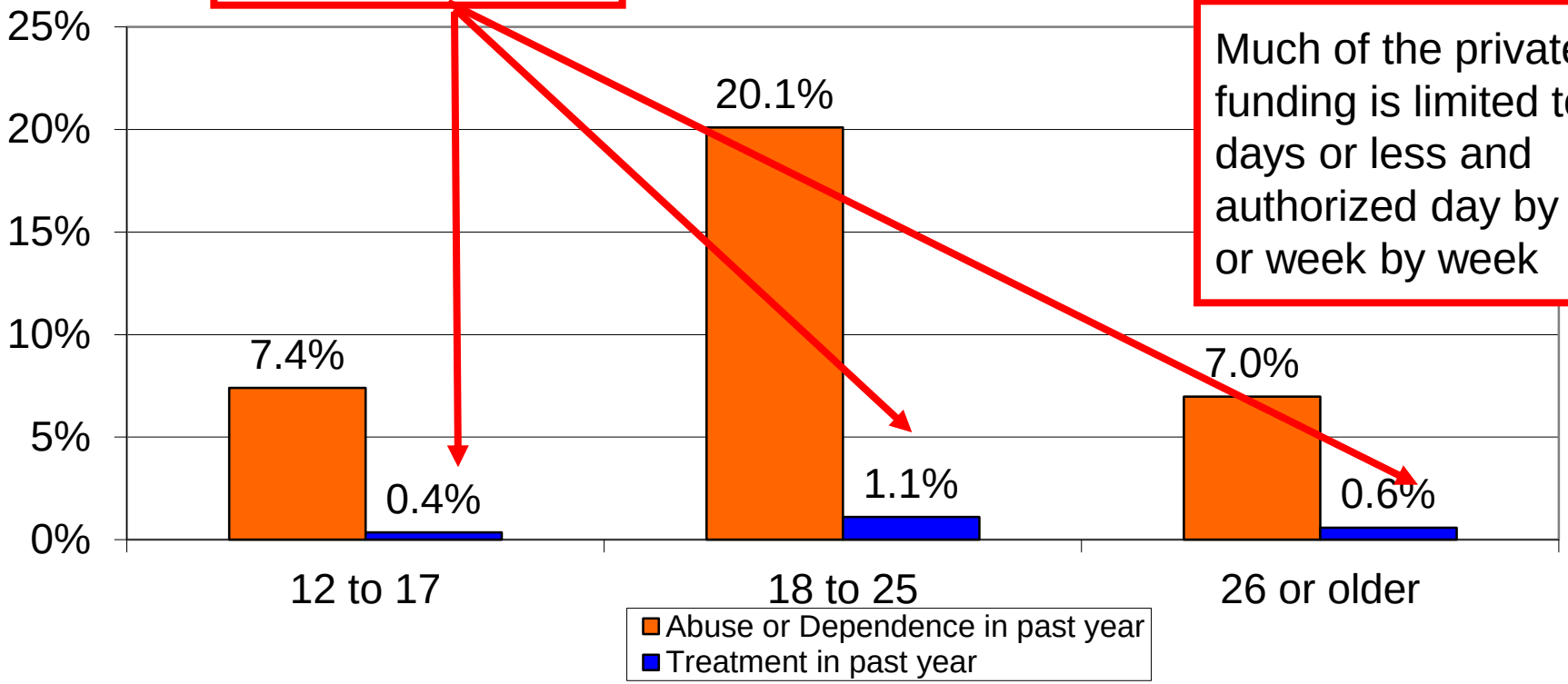
Source: Data received through August 4, 2004 from 23 States (CA, CO, GA, HI, IA, IL, KS, MA, MD, ME, MI, MN, MO, MT, NE, NJ, OH, OK, RI, SC, TX, UT, WY) as reported in Office of Applied Studies (OAS; 2005). Treatment Episode Data Set (TEDS): 2002. Discharges from Substance Abuse Treatment Services, DASIS Series: S-25, DHHS Publication No. (SMA) 04-3967, Rockville, MD: Substance Abuse and Mental Health Services Administration. Retrieved from http://wwwdasis.samhsa.gov/teds02/2002_teds_rpt_d.pdf .

Substance Use Disorders are Common, US Treatment Participation Rates Are Low

Few Get Treatment:
1 in 20 adolescents,
1 in 18 young adults,
1 in 11 adults

Over 88% of adolescent and young adult treatment and over 50% of adult treatment is publicly funded

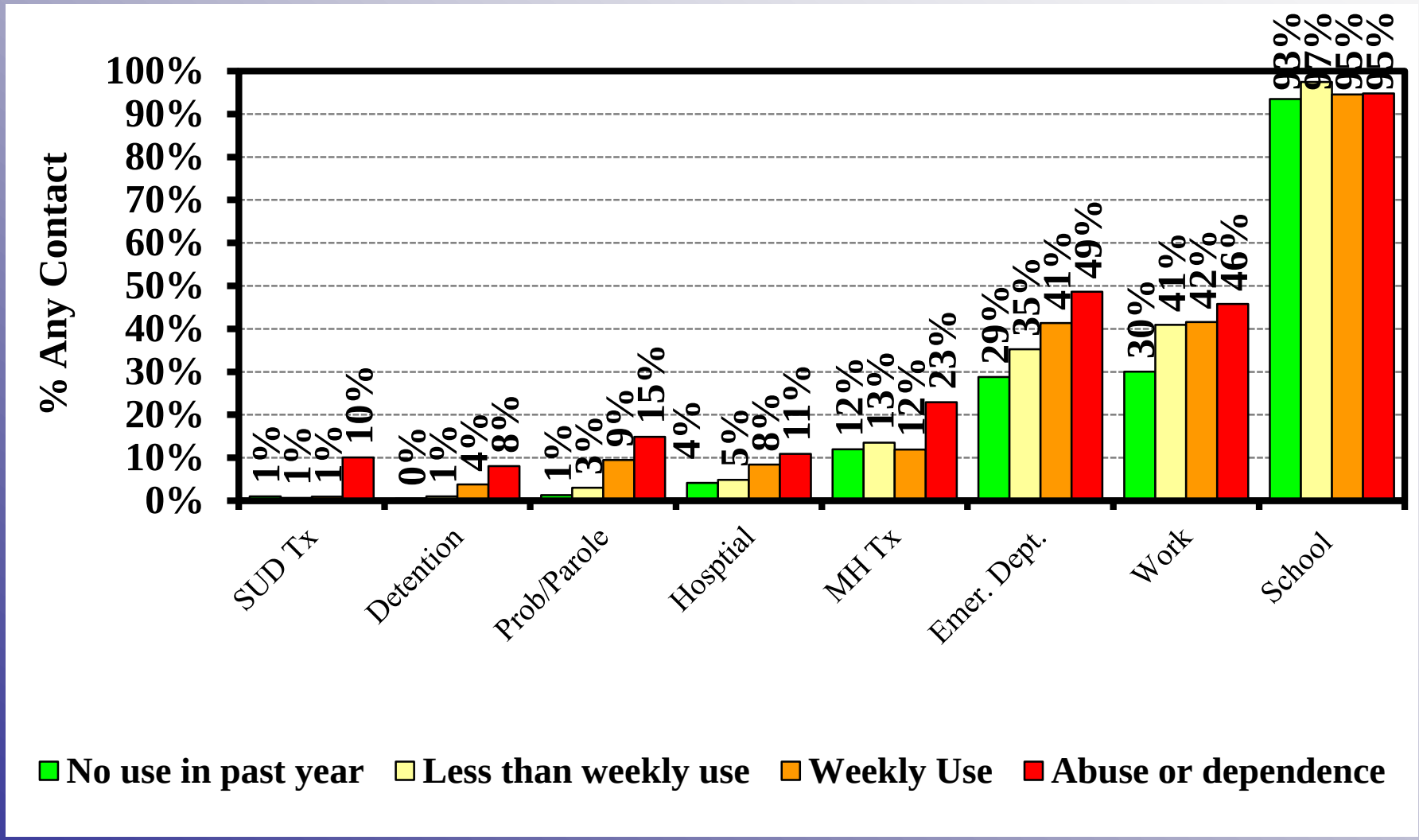
Much of the private funding is limited to 30 days or less and authorized day by day or week by week



Source: SAMHSA 2010. National Survey On Drug Use And Health, 2010 [Computer file]

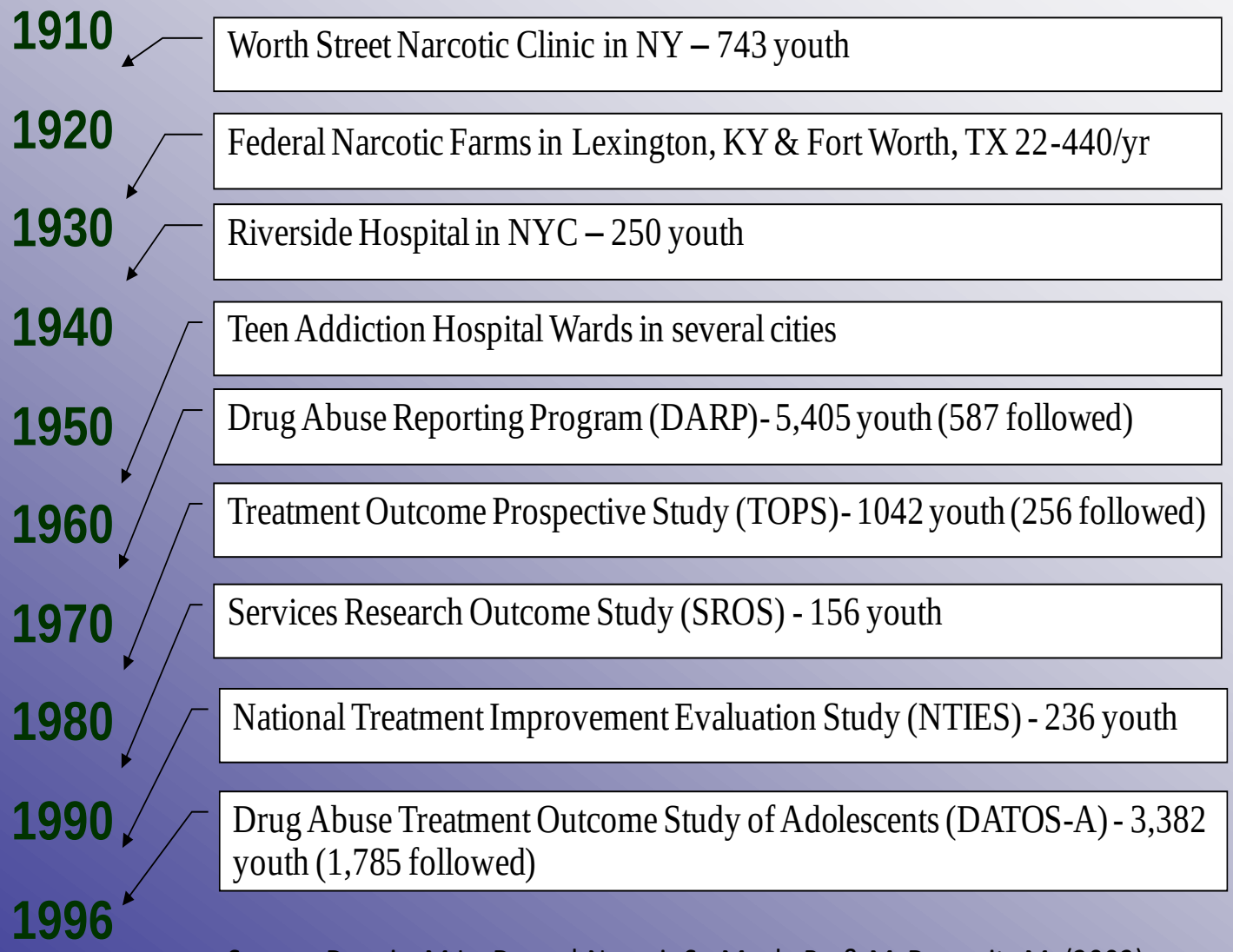
Potential AOD Screening & Intervention Sites

Adolescents (age 12-17)



Source: SAMHSA 2010. National Survey On Drug Use And Health, 2010 [Computer file]

Early Adolescent Treatment Work



Source: Dennis, M.L., Dawud-Noursi, S., Muck, R., & McDermeit, M. (2003)

The Current Renaissance of Adolescent Treatment Research

Feature	1930-1997	1997-2012
Tx Studies*	17	Over 300
Random/Quasi	9	44
Tx Manuals*	0	30+
QA/Adherence	Rare	Common
Std Assessment*	Rare	Common
Participation Rates	Under 50%	Over 80%
Follow-up Rates	40-50%	85-95%
Methods	Descriptive/Simple	More Advanced
Economic	Some Cost	Cost, CEA, BCA

** Published and publicly available*

Programs often LACK Evidenced Based Assessment to Identify and Practices to Treat:

- Substance use disorders (e.g., abuse, dependence, withdrawal), readiness for change, relapse potential and recovery environment
- Common mental health disorders (e.g., conduct, attention deficit-hyperactivity, depression, anxiety, trauma, self-mutilation and suicidal thoughts)
- Crime and violence (e.g., inter-personal violence, drug related crime, property crime, violent crime)
- HIV risk behaviors (needle use, sexual risk, victimization)
- Child maltreatment (physical, sexual, emotional)
- Recovery environment and peer risk

Assessment for ALL disorders is needed because. . .

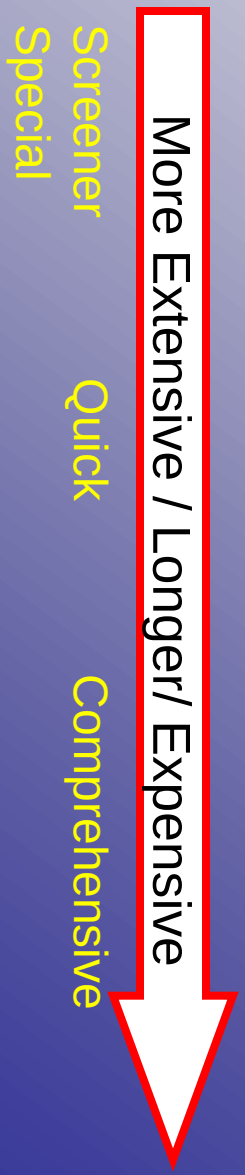
- Having one disorder increases the risk of developing another disorder;
- The presence of a second disorder makes treatment of the first more complicated;
- Treating one disorder does NOT lead to effective management of the other(s);
- Treatment outcomes are poorer when co-occurring disorders are present.

Adolescents with SUD. . .

(Meyers et al)

- Are largely undiagnosed
- Are distributed across diverse health & social service systems
- Have been adjudicated delinquent;
- Have histories of child abuse, neglect and sexual abuse;
- Have high co-morbidity with psychiatric conditions;

In practice we need a Continuum of Measurement (Common Measures)



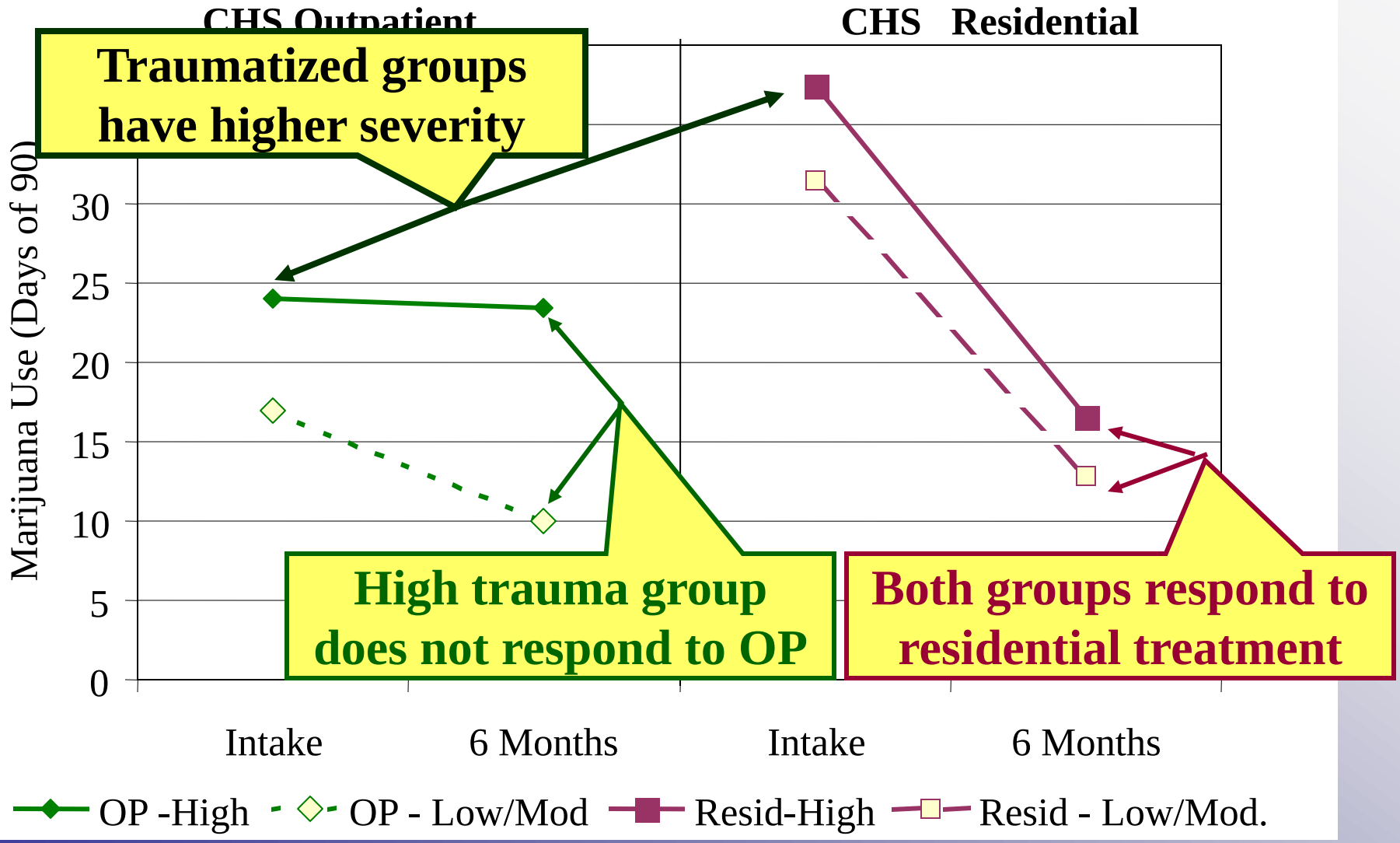
- Screening to Identify Who Needs to be "Assessed" (5-10 min)
  - **Focus on brevity, simplicity for administration & scoring**
  - **Needs to be adequate for triage and referral**
  - **GAIN Short Screener for SUD, MH & Crime**
  - **ASSIST, AUDIT, CAGE, CRAFT, DAST, MAST for SUD**
  - **SCL, HSCL, BSI, CANS for Mental Health**
  - **LSI, MAYSI, YLS for Crime**
- Quick Assessment for Targeted Referral (20-30 min)
  - **Assessment of who needs a feedback, brief intervention or referral for more specialized assessment or treatment**
  - **Needs to be adequate for brief intervention**
  - **GAIN Quick**
  - **ADI, ASI, SASSI, T-ASI, MINI**
- Comprehensive Biopsychosocial (1-2 hours)
  - **Used to identify common problems and how they are interrelated**
  - **Needs to be adequate for diagnosis, treatment planning and placement of common problems**
  - **GAIN Initial (Clinical Core and Full)**
  - **CASI, A-CASI, MATE**
- Specialized Assessment (additional time per area)
  - **Additional assessment by a specialist (e.g., psychiatrist, MD, nurse, spec ed) may be needed to rule out a diagnosis or develop a treatment plan or individual education plan**
  - **CIDI, DISC, KSADS, PDI, SCAN**

The New Age of Adolescent Services

Pooled Data now < 25,000

- Treatment of adolescents with adult models and/or mixed with adults does not work and is actually associated with drop out and increased use
- Need to modify models to be more developmentally appropriate for youth
- Need to assess and treat a wider range of problems including victimization, co-occurring mental health needs, and education needs
- Need to modify materials to be more concrete and use examples relevant to youth
- ***Don't stop asking questions!***

Victimization and Level of Care Interact to Predict Outcomes

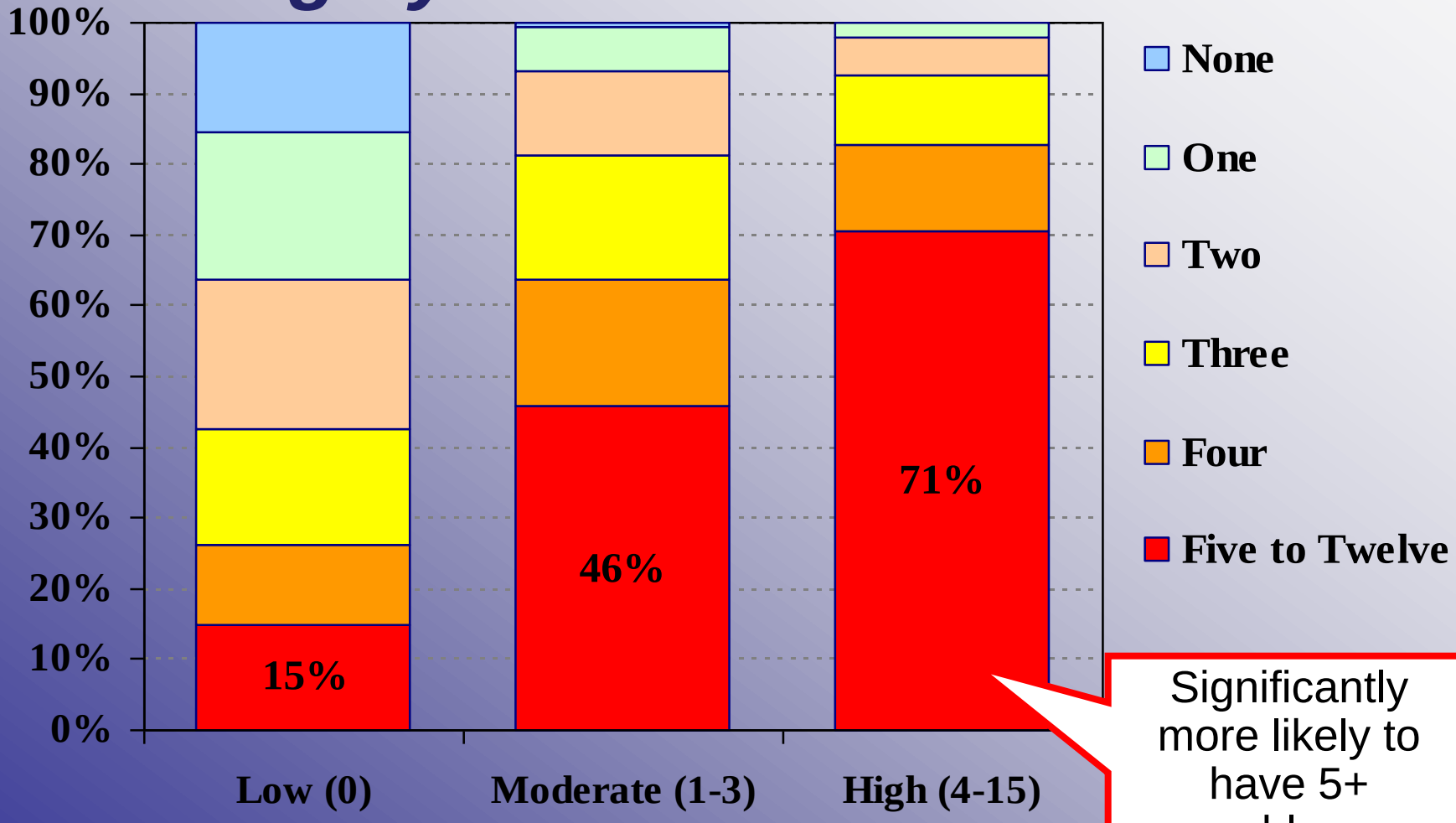


Source: Funk, et al., 2003

Traumatic Victimization

- 40 – 90% have been victimized
- 20-25% report in past 90 days, concerns about reoccurrence
- Associated with higher rates of
  - substance use
  - HIV-risk behavior
  - Co-occurring disorders

The Number of Major Clinical Problems is highly related to Victimization

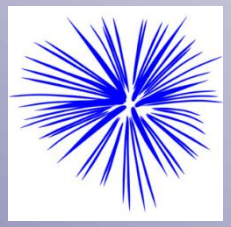


Significantly more likely to have 5+ problems (OR=13.9)

Source: CSAT 2009 Summary Analytic Data Set (n=21,784)

***Tanner-Smith, E.E., Wilson, S.J, & Lipsey, M.W. (

). The comparative effectiveness of outpatient treatment for adolescent substance abuse: A meta-analysis. Journal of Substance Abuse Treatment , in press.***



Interventions that Typically do Better than Practice in Reducing Recidivism (29% vs. 40%)

- Aggression Replacement Training
- Brief Strategic Family Therapy
- Reasoning & Rehabilitation
- Moral Reconation Therapy
- Thinking for a Change
- Interpersonal Social Problem Solving
- Multisystemic Therapy
- Functional Family Therapy
- Multidimensional Family Therapy
- Adolescent Community Reinforcement Approach
- MET/CBT combinations and Other manualized CBT

NOTE: There is generally little or no differences in mean effect size between these brand names

Source: Adapted from Lipsey et al 2001, Waldron et al, 2001, Dennis et al, 2004

Implementation is Essential (Reduction in Recidivism)

Program Type Grouped by Rank	Program Implementation: Amount of Service, Quality of Delivery		
	Low	Medium	High
Group 1 (best)	24%	34%	46%
Group 2	16%	30%	40%
Group 3	6%	20%	32%
Group 4 (poorest)	0%	12%	24%

The best is t
have a stron
program
implemente
well

Thus one should optimally pick the strongest intervention that one can implement well

The effect of a well implemented weak program is as big as a strong program implemented poorly

Source: Adapted from Lipsey, 1997, 2005

% Change: Abstinence at 6-months post-initial assessment

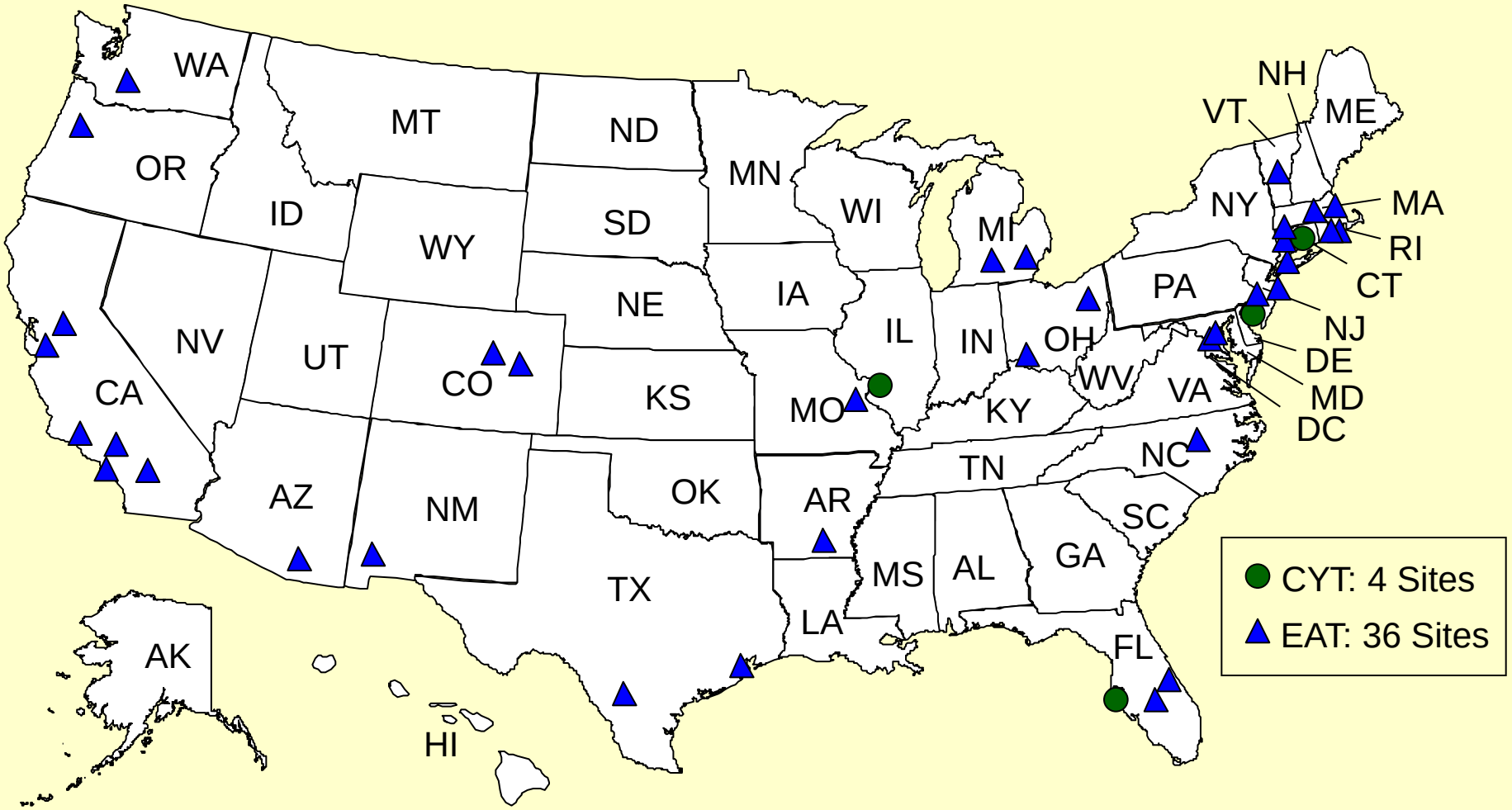
*MET/ CBT 5	*ACRA/ ACC	**TARGET YOUTH	**SEE YOUTH
60.6	69.3	12.6	21.1

* GAIN Mandated

** GAIN Optional

Source: SAIS System (GPRA)

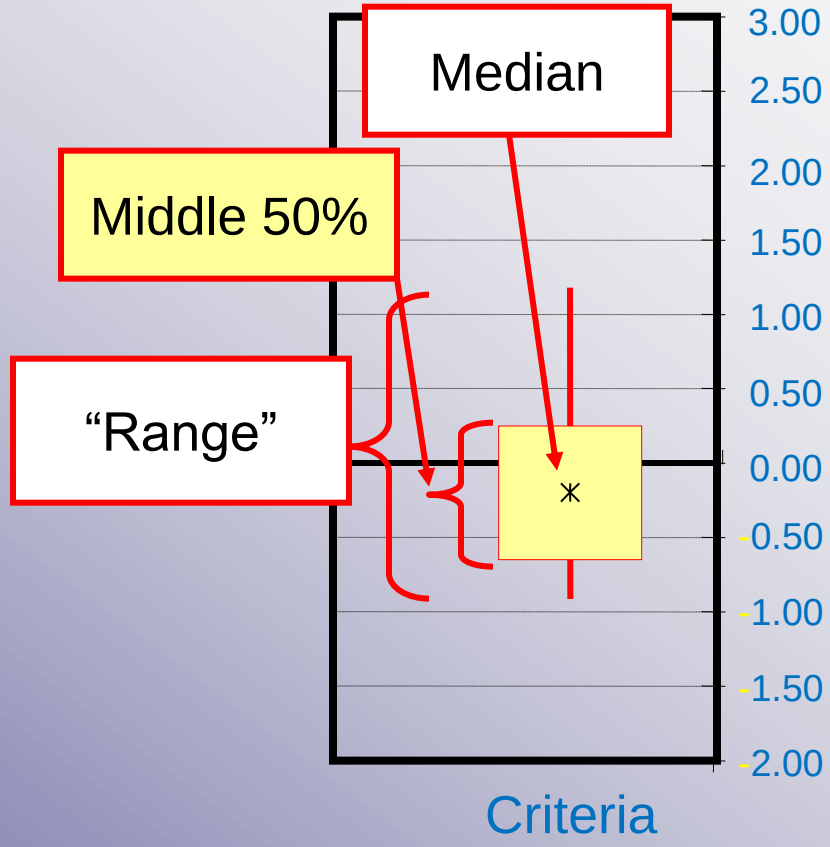
36 Site Type IV Replication MET/CBT5



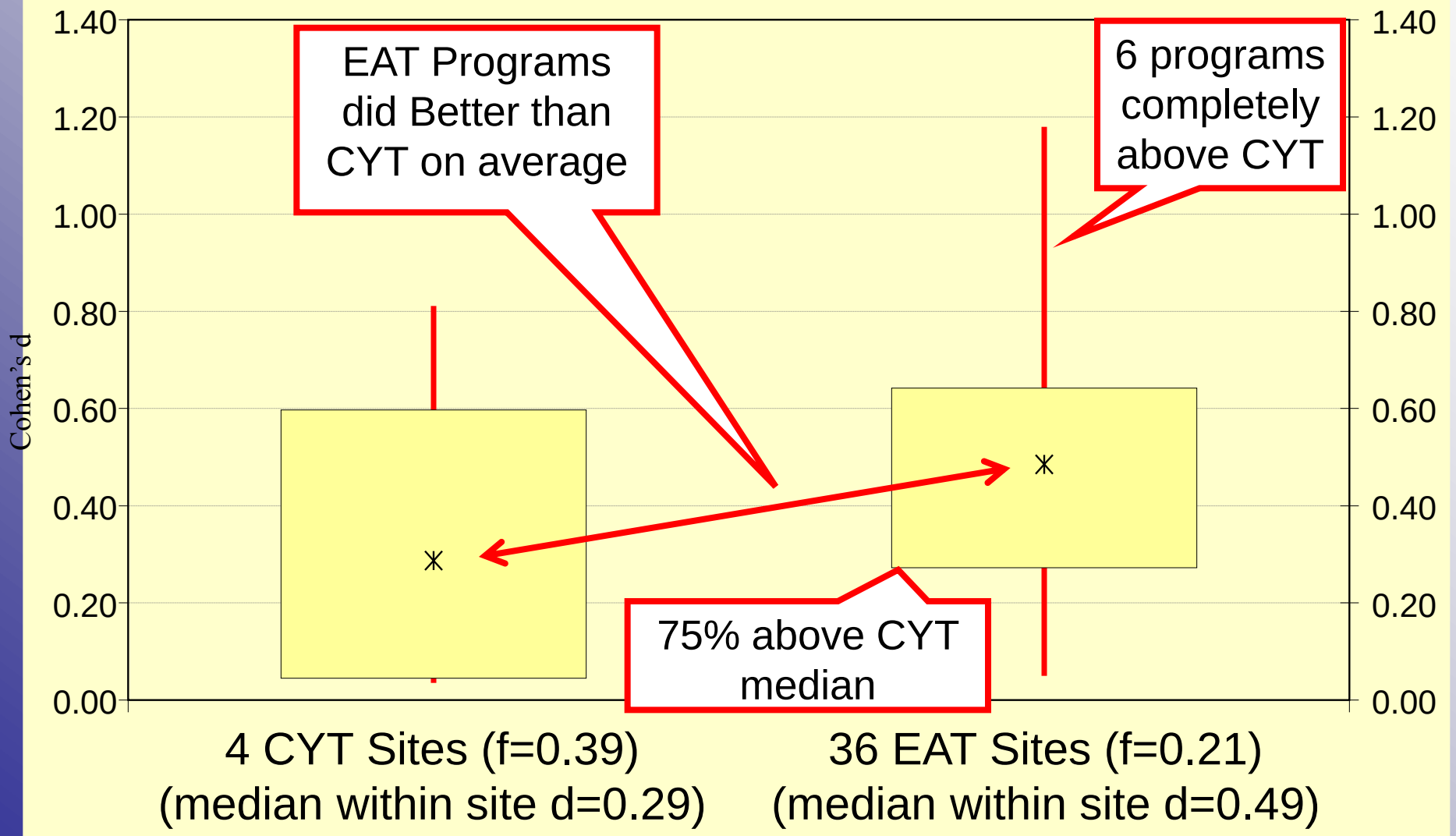
Source: Dennis, Ives, & Muck, 2008

Replication and Site Effects

- Treatment can vary by implementation within site/clinic
- We want to compare the range of implementation in practice with the clinical trials
- In order to compare sites, we will at both the central tendency (median) and distribution using a Tukey Box Plot like the one shown here.

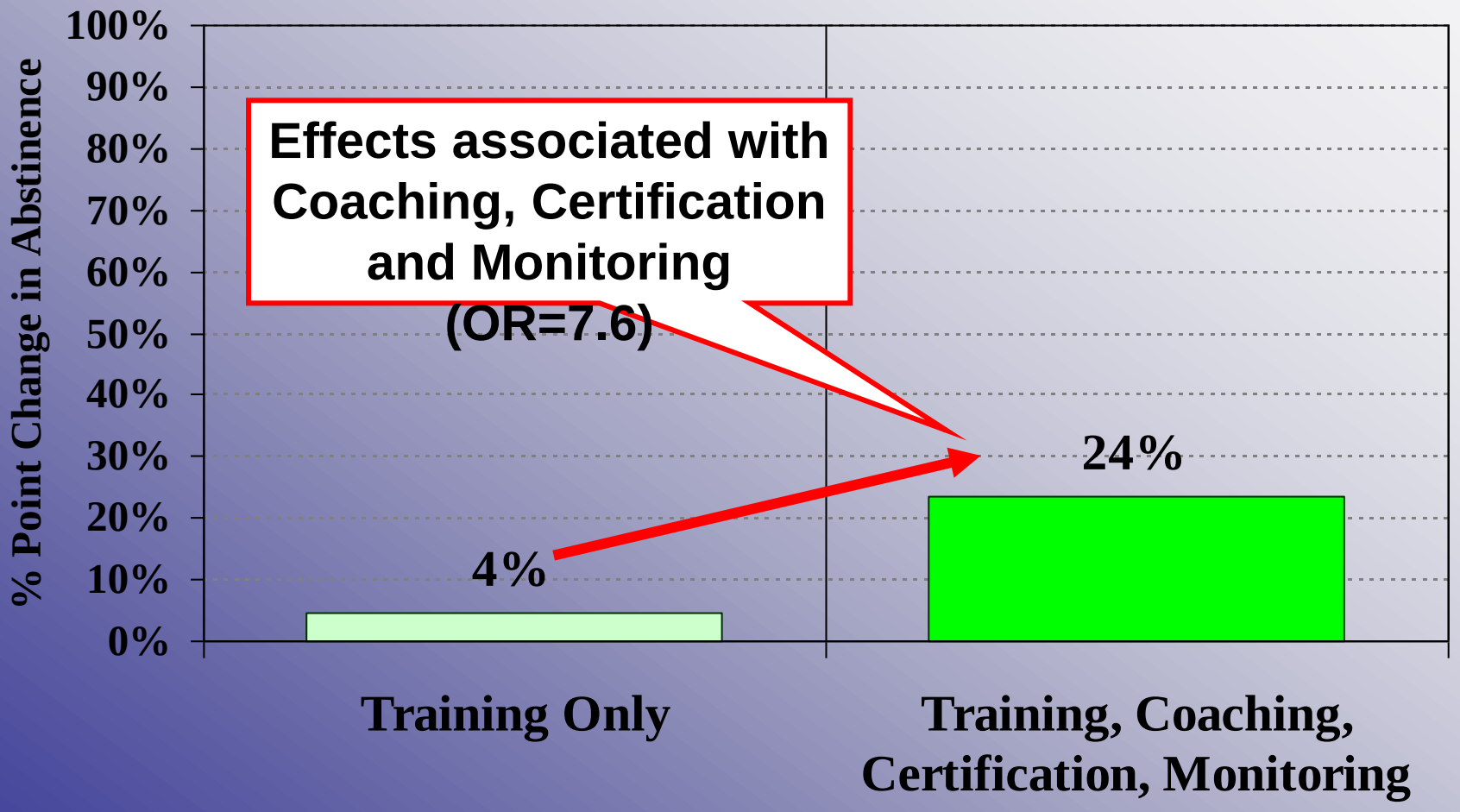


Range of Effect Sizes (d) for Change in Days of Abstinence (intake to 12 months) by Site



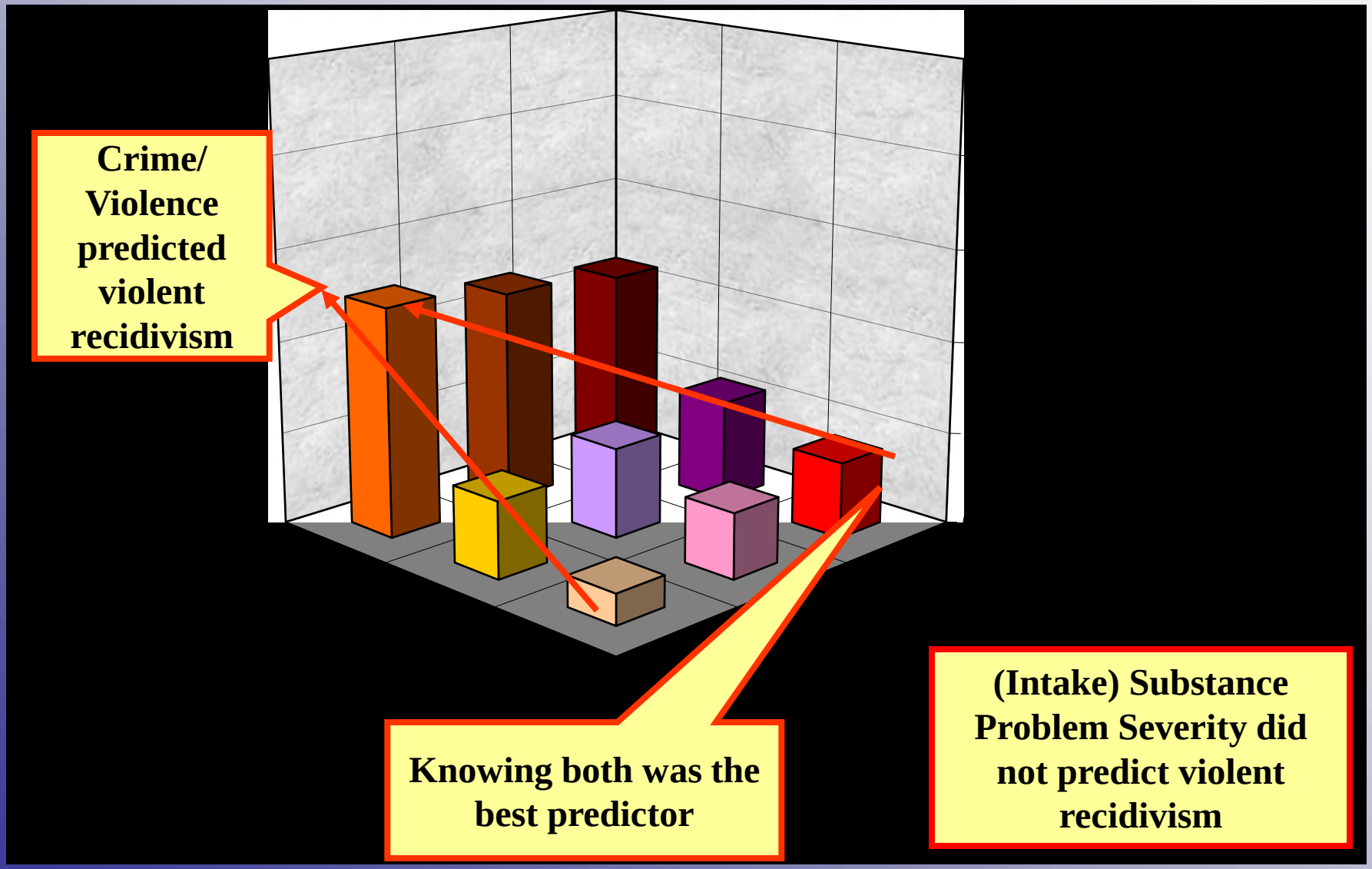
Source: Dennis, Ives, & Muck, 2008

Change in Abstinence by level of Quality Assurance: Adolescent Community Reinforcement Approach (A-CRA)



Source: CSAT 2008 SA Dataset subset to 6 Month Follow up (n=1,961)

Crime/Violence and Substance Problems Interact to Predict Violent Crime or Arrest



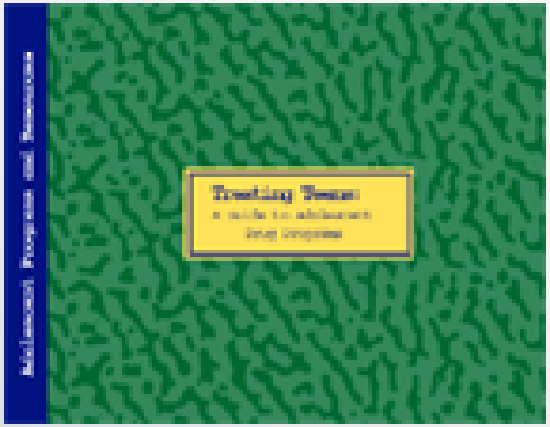
Source: CYT & ATM Data

Overlap with Crime and Violence (cont.)

- **Crime levels peak between ages of 15-20 (periods of increased stimulation and low impulse control in the brain)**

- **Adolescent crime is still the main predictor of adult crime**

Treating Teens:



A Guide to Adolescent Drug Programs

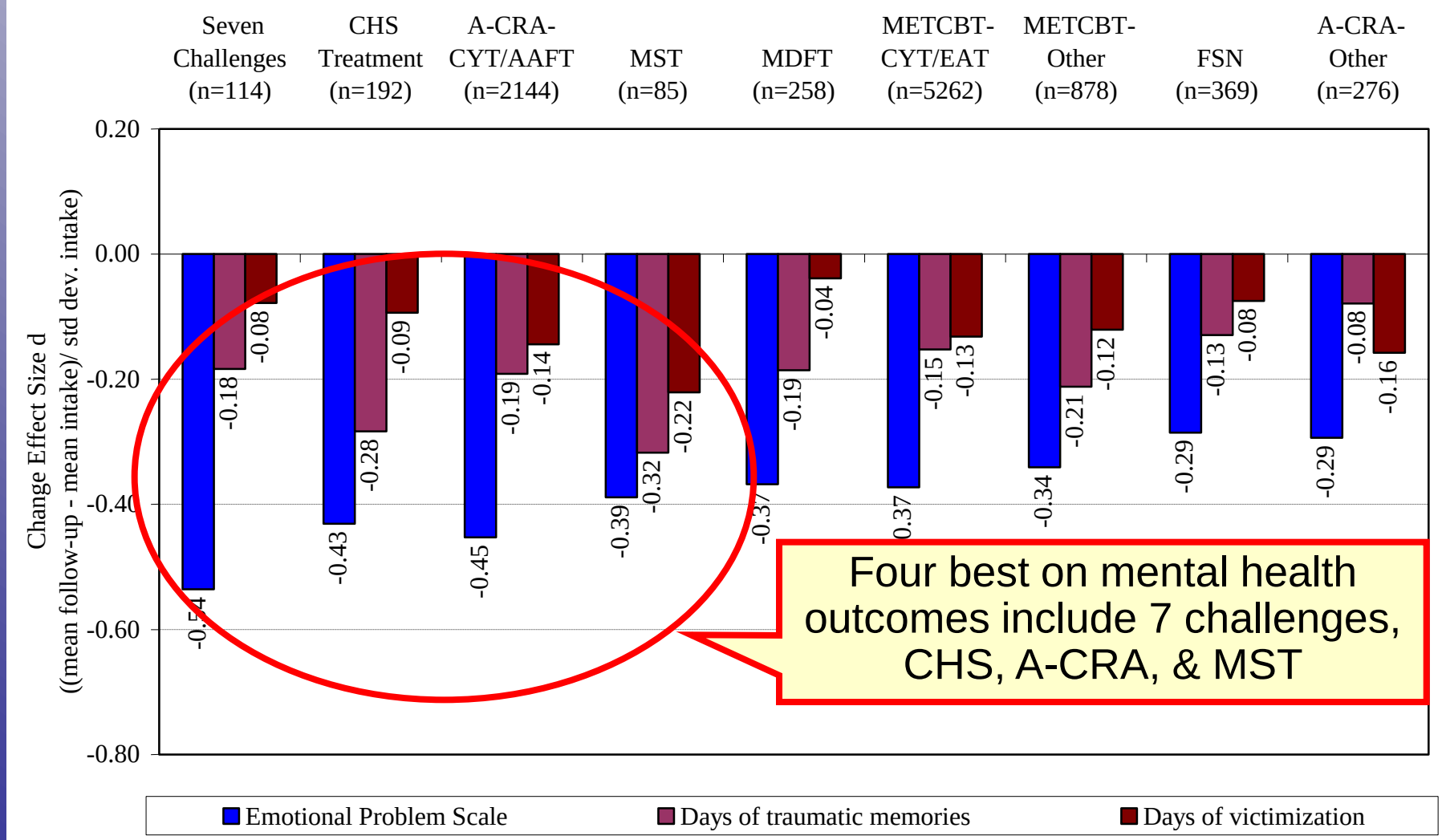
http://drugstrategies.com/treatingteens.html

Co-occurring Mental Health Symptoms

A Comparison of Nine Treatment Approaches

- **Seven Challenges**
- **Chestnut Health Systems**
- **Adolescent Community Reinforcement Approach**
- **Multi-Systemic Therapy**
- **Multi-Dimensional Family Therapy**
- **Motivational Enhancement Therapy-Cognitive Behavioral Therapy 5 sessions**
- **Family Support Network**

Change (post-pre) Effect Size for Emotional Problems by Type of Treatment

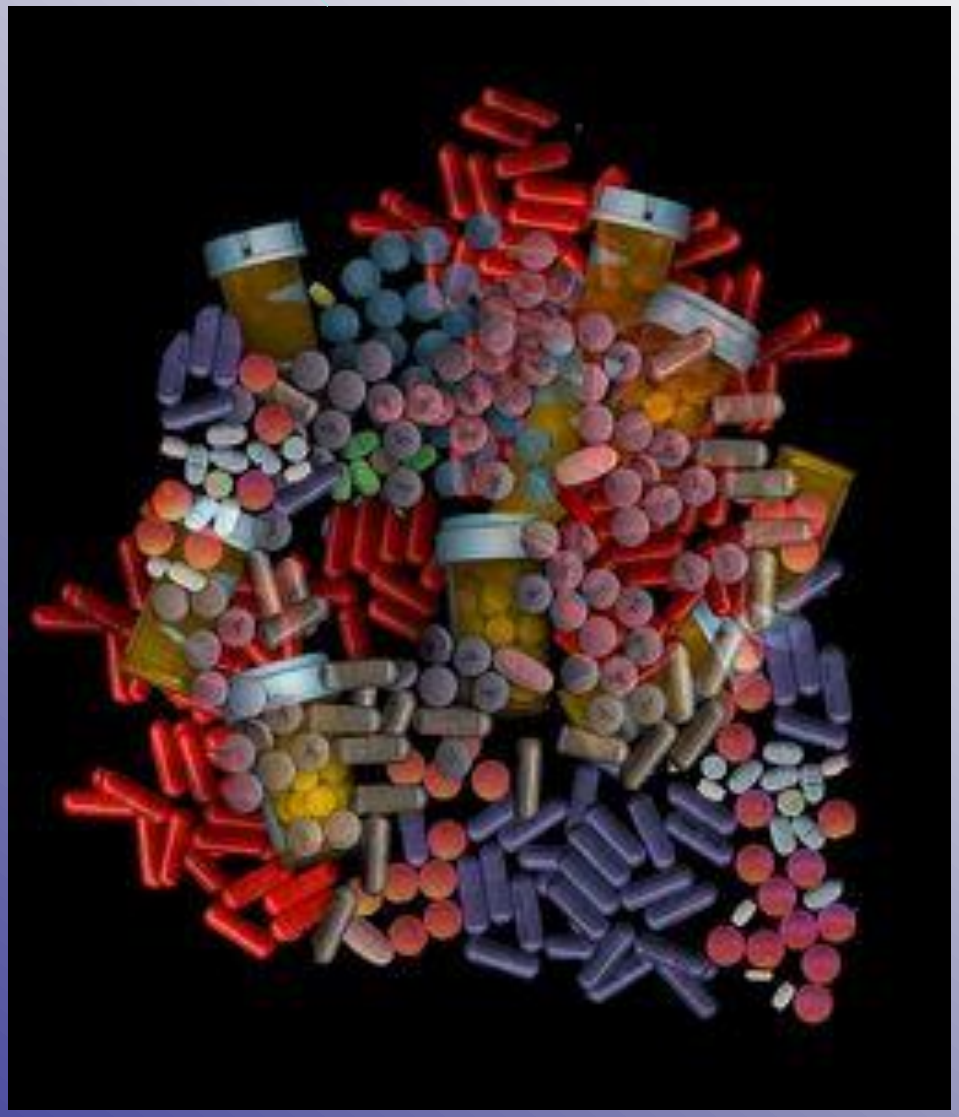


Workforce Implications

- All programs reduced **mental health / trauma problems** with 4 doing particularly well: Seven Challenges, CHS, A-CRA, & MST
- A-CRA with a mix of BA/MA did as well as MST which targets MA level therapists and family therapists that are often in short supply
- Seven Challenges, with a mix of para-professional (non-degreed), BA/MA therapists did as well as A-CRA and MST
- While it is not the most effective, the shortest & least expensive (MET/CBT5) still has positive effects

Farm Party Anyone?

Ever evolving Cyclical nature of use



What the Brain Science Presented Will <u>Not Do</u>

- Make you an expert in the science of the brain (or return to your brain everything you have forgotten since undergraduate school).
- Assist you in obtaining funding for PET/FA/fMRI or other technologies to screen all of your youth.
- Provide all of the information about the adolescent brain that is useful to know.
- ***<u>Settle the argument: addiction is/is not a disease</u>***
- No quiz will follow the presentation.

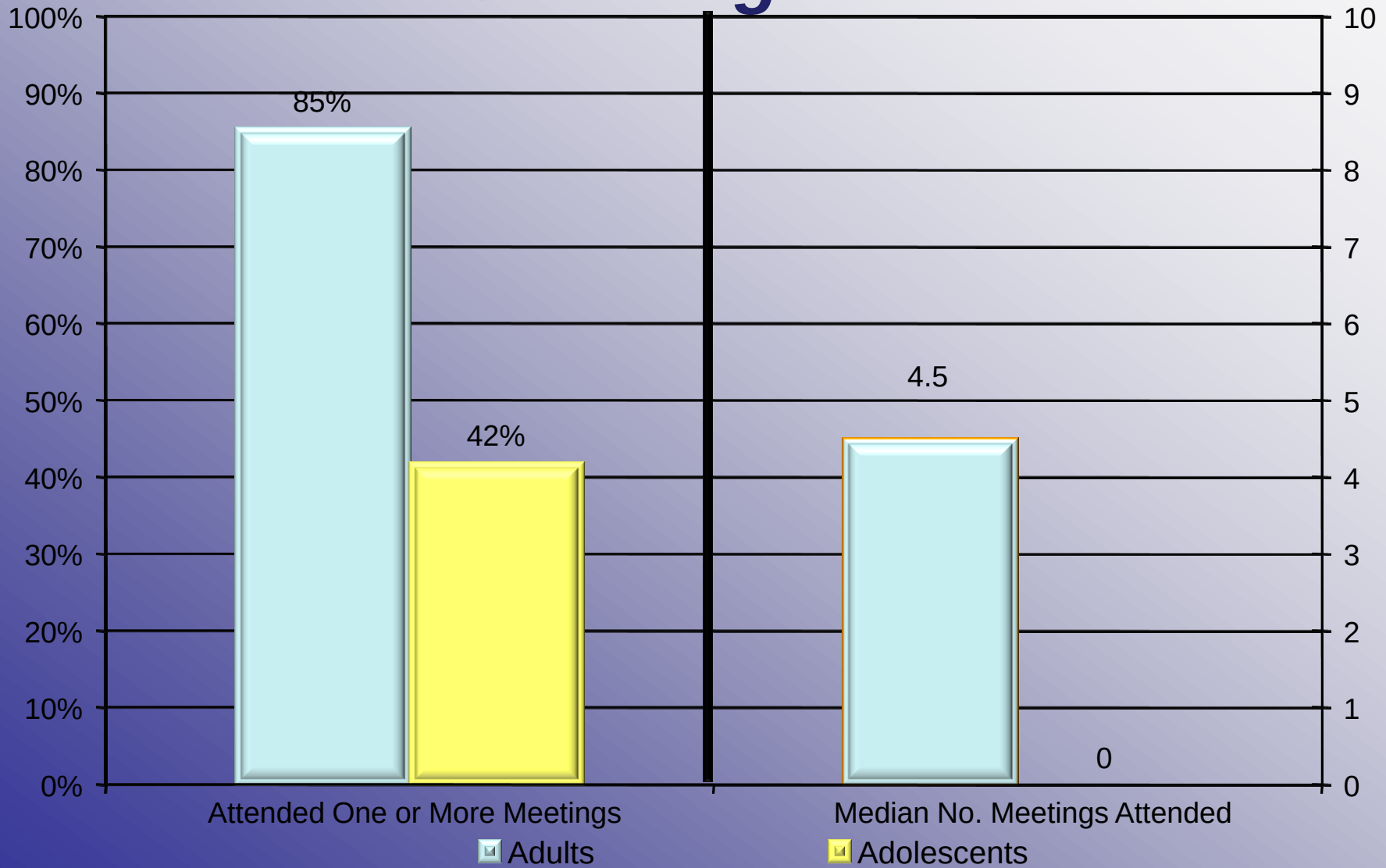
Continuing Care

- The continuation of services in a seamless flow is imperative for successful client outcomes

- All too often, they fall through the cracks in the system

= 14 days

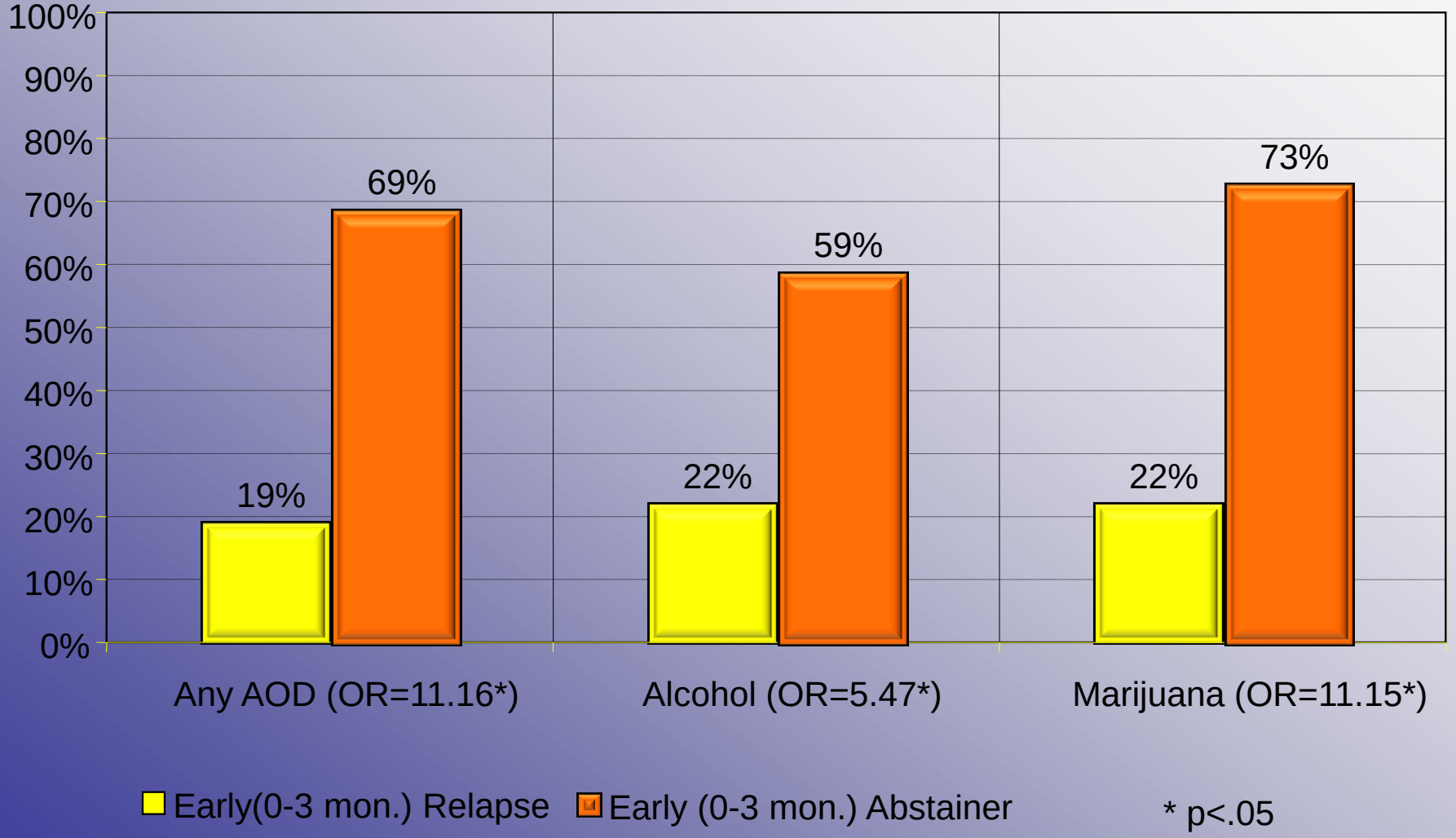
Do adolescents attend 12 step meetings after residential discharge?



Assertive Continuing Care

- The Assertive Continuing Care Protocol (ACC) is a continuing care intervention specifically designed for adolescents following a period of residential treatment.
- ACC is delivered primarily through home visits.
- ACC case managers are assertive in their attempts to engage participants.
- Case managers deliver the Adolescent Community Reinforcement Approach (ACRA) procedures

Early (0-3 mon.) Abstinence Then Improves Sustained (4-9 mon.) Abstinence



Source: Godley et al 2002, 2007

Self-Management and Recovery Training: (SMART) Recovery

- Origins in Rational Emotive Therapy
- Portable, applicable in real world, online groups
- Group Modality
  - Led by trained facilitators
  - Open enrollment
  - Uses common elements of CBT
  - Considered easy to learn and use
  - http://www.smartrecovery.org/intro/

Technological Approaches CONTINUING CARE/Ongoing Supportive Services

- **University of Arizona – pod casting, texting, geo-fencing**
  - **90 – 95% Engagement, Utilization, Satisfaction**

- **Recovery Services for Adolescents and their Families (RSAF) CSAT Research Project (Cell phone, Texting, Web Site, CRAFT for Parent Groups)**

- **Dick Dillon , St. Louis – Second Life**
  - **Continuing Care Participation Increased from 40% to 90% over 6 months**

Summary

- Know what treatment services are provided (EBP?, Appropriate for identified problems?, Implemented with fidelity?)
- Understand brain science and addiction
- Ensure EBPs used that can be done well given limitations (staff experience/training, cost, belief in approach)
- Push for appropriate services and demand outcome data and ongoing

  CLINICAL SUPERVISION
- DO NOT Ignore Continuing

  Care/Supportive Services! =

Contact Information

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Normal Adolescent Development

Normal Adolescent Development

Based on the stage of their brain development, adolescents are more likely to:

- act on impulse
- misread or misinterpret social cues and emotions
- get into accidents of all kinds
- get involved in fights
- engage in dangerous or risky behavior

Normal Adolescent Development

Adolescents are less likely to:

- think before they act
- pause to consider the potential consequences of their actions
- modify their dangerous or inappropriate behaviors

Normal Adolescent Development

- **Movement Towards Independence**
- Struggle with sense of identity
- Feeling awkward or strange about one's self and one's body
- Focus on self, alternating between high expectations and poor self-esteem
- Interests and clothing style influenced by peer group
- Moodiness

Normal Adolescent Development

Movement Towards Independence, Cont.

- Improved ability to use speech to express one's self
- Realization that parents are not perfect; identification of their faults
- Less overt affection shown to parents, with occasional rudeness
- Complaints that parents interfere with independence
- Tendency to return to childish behavior, particularly when stressed

Normal Adolescent Development

- **<u>Future Interests and Cognitive Changes</u>**

- Mostly interested in present, with limited thoughts of the future
- Intellectual interests expand and gain in importance
- Greater ability to do work (physical, mental, emotional)

Normal Adolescent Development

- **Sexuality**
- Display shyness, blushing, and modesty
- Girls develop physically sooner than boys
- Increased interest in sex
- Movement toward heterosexuality with fears of homosexuality
- Concerns regarding physical and sexual attractiveness to others
- Frequently changing relationships

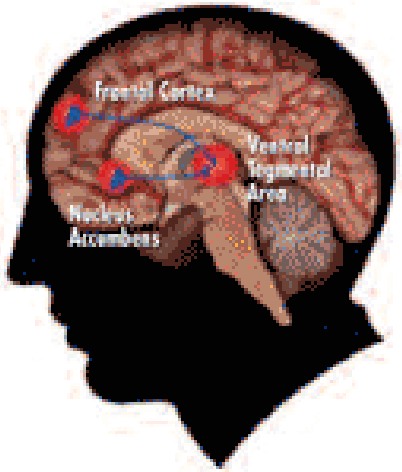
Normal Adolescent Development

- **Morals, Values, and Self-Direction**
- Rule and limit testing
- Capacity for abstract thought
- Development of ideals and selection of role models
- More consistent evidence of conscience
- Experimentation with sex and drugs (cigarettes, alcohol, and marijuana)

Time for a Break
Do I Want a Cookie or Cocaine?

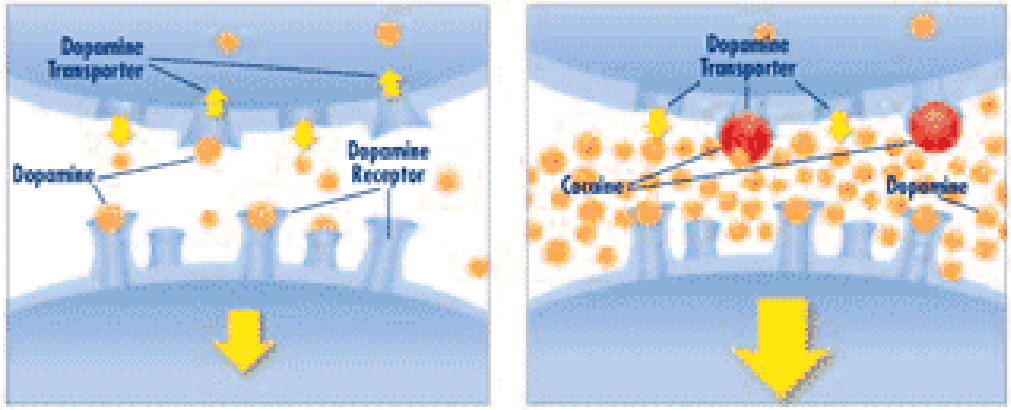
ALL DRUGS OF ABUSE TARGET THE BRAIN'S PLEASURE CENTER

Brain reward (dopamine) pathways



These brain circuits are important for natural rewards such as food, music, and art.

All drugs of abuse increase dopamine

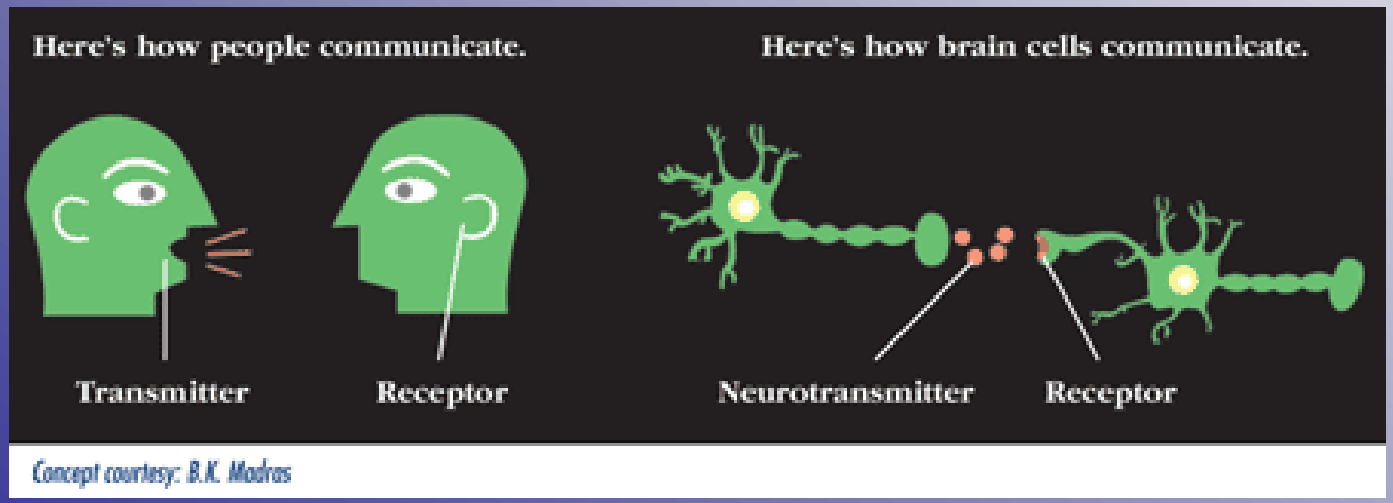


FOOD COCAINE

Typically, dopamine increases in response to natural rewards such as food.
When cocaine is taken, dopamine increases are exaggerated, and communication is altered.

How Does the Brain Communicate?

- Neuron to Neuron
- Neurotransmitters - The Brain's Chemical Messenger
- Receptors - The Brain's Chemical Receivers
- Transporters - The Brain's Chemical Recyclers



They had the audacity to hi-jack Christmas

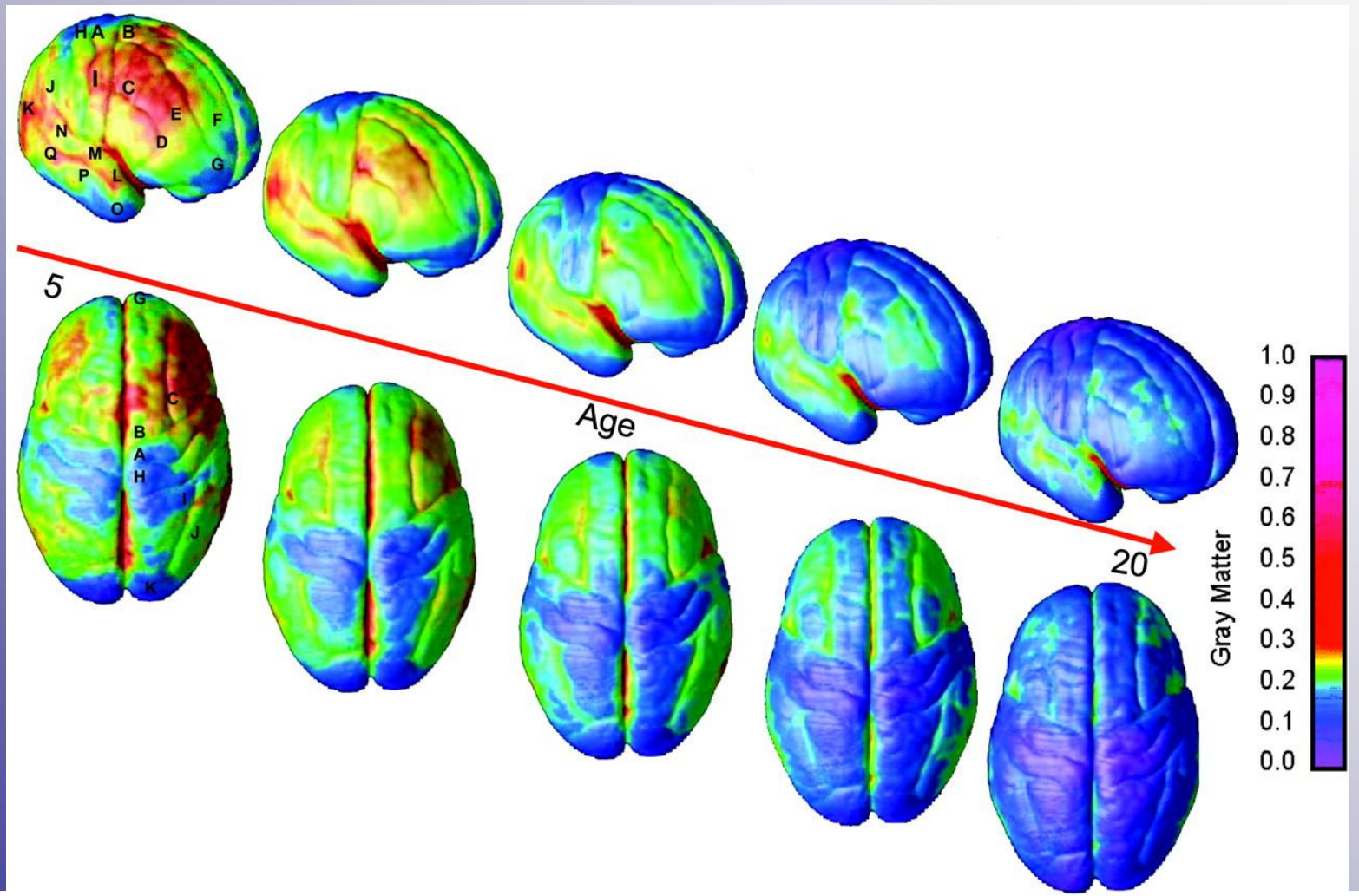
Everyone who has watched futurama knows slugs will feed on your brain

Drugs seem so sweet when you meet them – hey her clip is pink, she doesn't want to hurt anyone

Like falling in love for the fist time

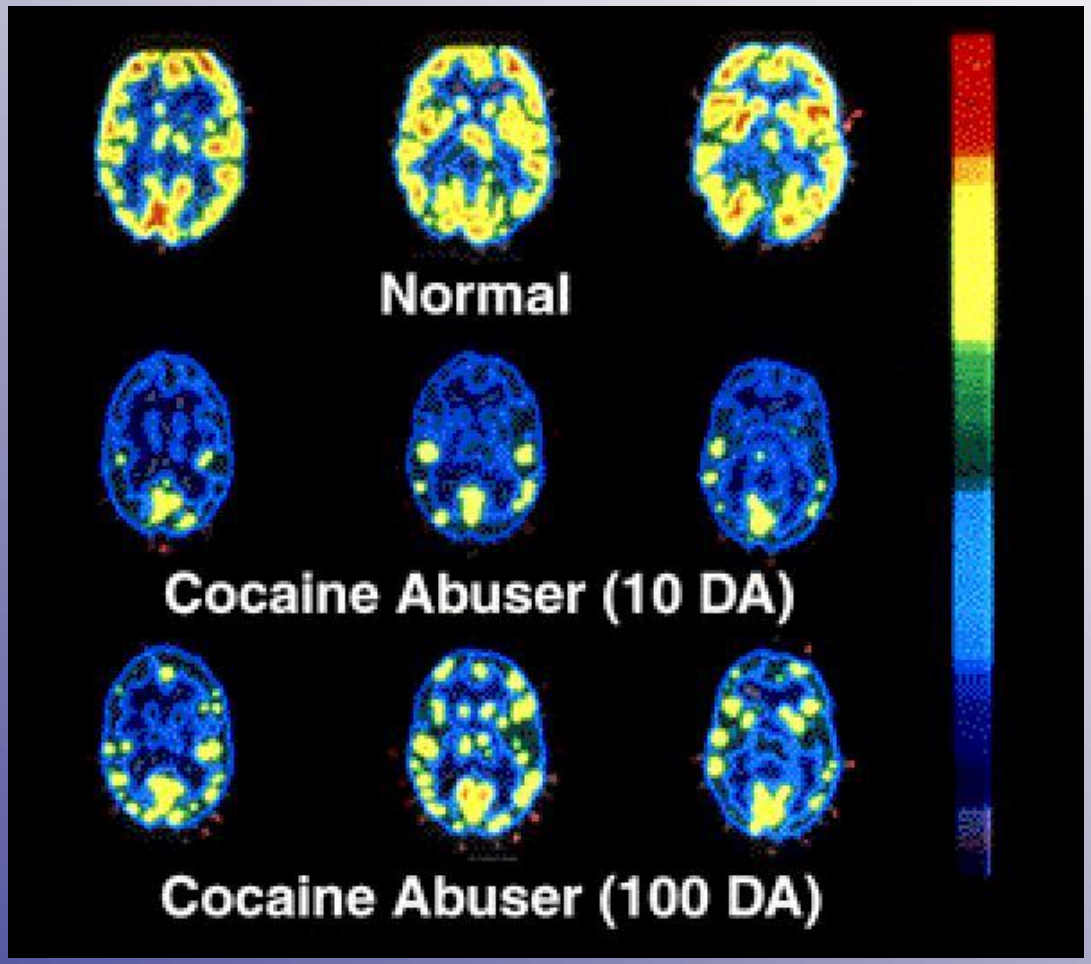
How did this happen? She was so good to me! The colors are pretty.

Right lateral and top views of the dynamic sequence of maturation over the cortical surface



Gogtay N et al. PNAS 2004;101:8174-8179

Brain Activity on PET Scan After Cocaine Use



Be VERY Careful with interpretation of data/ imaging studies!