

# Findings from a Randomized Trial of Screening, Brief Intervention and Referral to Treatment (SBIRT) for Adolescents in a Health System



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# Setting



## KP Northern California

- 4 million members, 46% of commercial market share in region
- 500,000+ adolescent (11-18) members
- Diverse membership: race/ethnicity, cultural/linguistic, geographic, SES
- 21 hospitals, 233 medical office buildings
- 67,975 employees, 7,447 active physicians, 700 pediatricians
- Mature EHR
- Integrated system (medical, psychiatry, alcohol and drug treatment services)
- Capitated payment system
- Embedded research

# Teen SBI/RT in Pediatric Primary Care

## Limited but growing literature:

- Relatively few studies in pediatric primary care, even though it is an opportune place to screen – less stigma than in specialty care (Wisdom, 2011), and teens and parents are open to screening and intervention by PCPs (Yoast, 2007; Brown, 2009)
- BIs associated with lower rates and less frequent cannabis use (Walton, 2014; D’Amico, 2008); less use among current users and reduced initiation among non-users (De Micheli, 2004)
- Walton et al. found lower rates of and less frequent cannabis use associated with computer-delivered BIs, and lower rates of alcohol and other drug use and delinquency associated with therapist-delivered BIs (Walton, 2014)
- Harris et al. found reductions in any SU at 3 and 12 months, alcohol use and drinking cessation (*among drinkers*) and alcohol initiation (*among non-drinkers*) among the U.S. teens, and less cannabis use, more cannabis cessation (*among smokers*) and lower cannabis initiation (*among non-smokers*) among Czech teens. (Harris, 2012)

# National Guidelines for Adolescent Preventive Services

	<b>AAFP</b>	<b>AAP</b>	<b>AMA</b>	<b>BF</b>
Obesity	Yes	Yes	Yes	Yes
Contraception	Yes	Yes	Yes	Yes
<b>Substance use</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Alcohol use</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Tobacco use</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Hypertension	Yes	Yes	Yes	Yes
Depression/suicide	No	Yes	Yes	Yes
Eating disorders	No	Yes	Yes	Yes
School problems	No	Yes	Yes	Yes
Abuse	No	Yes	Yes	Yes
Hearing	Yes	Yes	No	Yes
Vision	No	Yes	No	Yes
<b>Periodicity of visits</b>	<b>Tailored</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>
<b>Target age, range,</b>	<b>13-18</b>	<b>11-21</b>	<b>11-21</b>	<b>11-21</b>

**USPSTF → “I” rating – insufficient evidence** to recommend brief behavioral interventions for alcohol (Jonas, 2012), and illicit drugs or non-medical use of prescription drugs (Patnode, 2014) for adolescents [*for patients without recognized signs or symptoms*]

## Address Common Barriers

## Facilitators

Lack of Training and Knowledge

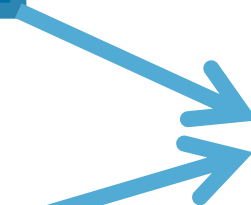


SBIRT Training for Providers

M.D. Time Constraints



Add CRAFFT + other AOD and AOD-related problem measures to Electronic Health Record



Behavioral Clinician SBIRT delivery

Competing Priorities

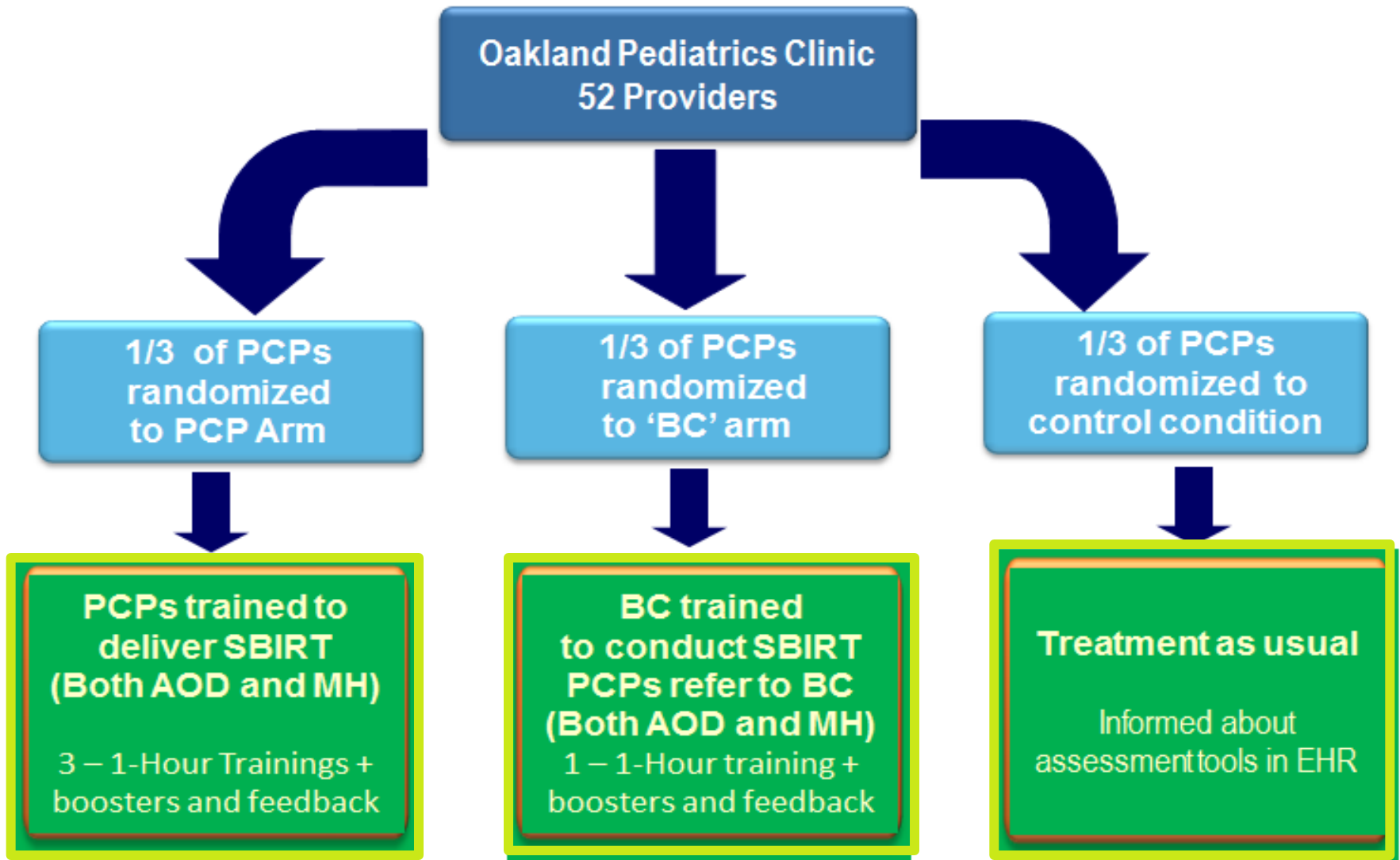


Technical Assistance, Quality Feedback Reports & Goals

# Adolescent SBIRT Trial in Pediatric Primary Care (NIAAA)

Pragmatic, cluster-randomized, hybrid effectiveness and implementation trial

Population base of adolescents – EHR data, 9,032 Total Adolescent Well-Visits



# Adolescent SBIRT Trial in Pediatric Primary Care (NIAAA)

- Which SBIRT model produces:
  - better **implementation outcomes** - screening, assessment, brief intervention and referral rates?

Original Investigation | November 2, 2015

## Implementation of Screening, Brief Intervention, and Referral to Treatment for Adolescents in Pediatric Primary Care

### A Cluster Randomized Trial

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Text Size: [A](#) [A](#) [A](#)

- better **patient outcomes** (substance use and mental health symptoms, related-school, legal & family problems), by gender, age and ethnicity?
- Which model results in better specialty behavioral treatment **initiation and engagement rates?**
- What are the **barriers** to, or **facilitators** of, SBIRT implementation?
- Which model of care is most **cost-effective?**



# Screening

PERMANENTE

# TEEN WELL CHECK

created by Ralph Rigaud

Name

DOB

Parent Questionnaire

Teen Questionnaire

Private Teen Questions

Hist

20. During the past year did you drink any alcohol?

YES

NO



21a. During the past year did you use marijuana?

YES

NO



21b. During the past year have you used any other drug to get high (such as prescription drugs, meth, ecstasy, glue or cocaine)?

YES

NO



22. During the past few weeks, have you OFTEN felt sad, down or hopeless?

YES

NO



23. Have you seriously thought about killing yourself, made a plan, or tried to kill yourself?

YES

NO



24a. Have you ever had sex (including oral, vaginal, or anal sex)?

YES

NO



24b. If yes, do you or your partner always use a condom when you have sex?

NO

YES



25. Are you attracted to guys, girls, or both?

Gyys

Girls

Both





## Current Questionnaires

CRAFFT QUESTIONNAIRE

Full CRAFFT Questionnaire (+AOD questions) in EHR “CRAFFT+”


## Further Assessment

Add




Remove

R

Adv	Question	Answer	Comment
	In the past 30 days, how many days have you used any of those substances?	<input type="text"/>	 ← number entry for answer
	Have you ever ridden in a CAR driven by someone (including yourself) who was "high" or had been using alcohol or drugs?		
	Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in?		
	Do you ever use alcohol or drugs while you are by yourself, ALONE?		
	Do you ever FORGET things you did while using alcohol or drugs?		
	Do your family or FRIENDS ever tell you that you should cut down on your drinking or drug use?		
	Have you gotten into TROUBLE while you were using alcohol or drugs?		
	If two or more YES answers to the CRAFFT questions above, please complete remaining questions		

*Patients' progress over time can be viewed in this CRAFFT+ flowsheet*

Select Flowsheets to View		
CRAFFT FLOWSHEET [952]		
<input type="text"/>		
<input type="text"/>		

CRAFFT FLOWSHEET	4/8/2011	8/17/2011
1. Days using substances in the past 30 days	6	
2. Ridden in a CAR driven by someone "high" or using alcohol or drugs?	No	
3. Using alcohol or drugs to RELAX, feel better about yourself, or fit in?	No	No
4. Using alcohol or drugs when ALONE	Yes	No
5. FORGET things you did while using alcohol or drugs?	Yes	Yes
6. Family or FRIENDS suggest cutting down on drinking or drug use?		Yes
7. Getting into TROUBLE while using alcohol or drugs?		No
8. Number of times using ALCOHOL in the past 6 mos		6
23. We have a lot of conflict in our family, related to my behavior		True

Place orders (Enc Date: 9/8/2011) - Wt: (Not entered for this visit) Ht: 1.778 m (5' 10")

Search  
 New order defaults: **Not using defaults**

**V Codes**

***(V65.42D) BI for alcohol or drug problem performed***

***(V65.49ZZZZU) BI for a mental health problem performed***

- Snapshot
- Chart Review
- Results Review
- Allergies
- Medications
- Flowsheets
- Problem List
- History
- Letters
- Demographics
- CIPS
- Prev Health Prompt
- Patient Report
- eConsult No Lock
- Order Entry**
- Imm/Injections
- Doc Flowsheets
- Work/Activity Status
- Forms
- Visit Navigator

Diagnoses Level of service:

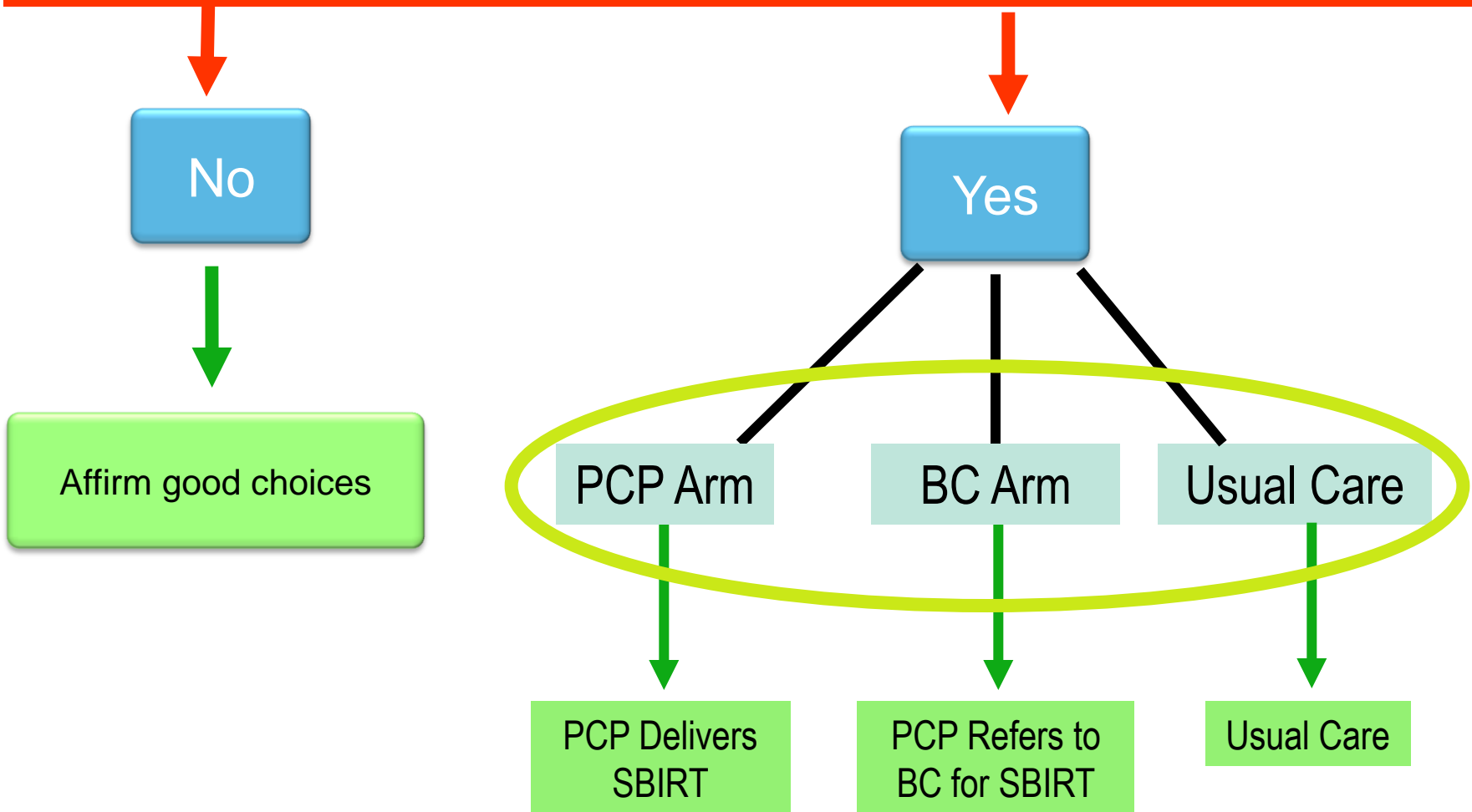
P	Diagnosis	Code
1.	COUNSELING, SUBSTANCE USE AND ABUSE	V65.42D

New Problem <span style="float: right;"><input type="checkbox"/> Show Resolved <input type="button" value="Edit"/> <input type="button" value="Resolve"/></span>			
Link	Problem	Code	Noted
<input type="checkbox"/>	SICK SINUS SYNDROME	427.81A	9/1/11
<input type="checkbox"/>	SICKLE CELL TRAIT	282.5A	6/8/10
<input type="checkbox"/>	LIFE CARE PLAN, CHRONIC ILLNESS.	V65.49BAEM	6/1/11

Auth Prov: SABA, KATRINA NELSEN (M.D.) [10058008] | Pharmacy: HAY MAIN - | No unsigned orders

# Workflow

**AT RISK = Eligible for Further Assessment with CRAFFT +**  
Endorsed an AOD or Mood Screening Question from the Teen Well Check Questionnaire  
*or*  
Pediatrician's clinical judgment that teen is at risk



# Study Findings

# Results: Substance Use and Mood Symptom Endorsement

- **1871** patients screened positive on at least one of the mood or substance use symptom questions or were deemed eligible for further assessments, brief interventions and referrals based on pediatrician assessment
  - **650** were administered the Teen Well Check Questionnaire during both the index and follow-up visits.
- Endorsement of symptoms increased between visits for all patients.
- The BC arm had lower odds of symptom endorsement on average compared with UC; no differences between the PCP and the UC or BC arms.
- Asian, African-American and Hispanic had lower odds of symptom endorsement compared with Whites, while older patients were more likely to endorse symptoms than younger ones.

	AOR	95% Confidence Interval		p-value
<b>Time</b>	10.88	7.27	16.30	<.0001
<b>Treatment Arms (reference: UC)</b>				
<b>BC</b>	0.60	0.40	0.89	0.0113
<b>PCP</b>	0.80	0.54	1.20	ns

Adjusts for patient gender, age, and race/ethnicity

## Results: CRAFFT+ Further Assessment

- No UC arm pediatricians administered the CRAFFT, although it was embedded in the EHR and available to all study physicians
  - CRAFFT was only administered in the BC (n=163/671) and PCP (n=149/584) arms during the index visit
- Among patients in the intervention arms, only 65 patients were administered the CRAFFT at both index and follow-up visits
- No significant differences in CRAFFT scores between visits or intervention arms (AOR=0.69, 95% CI=0.44, 1.10)
- Patient characteristics were not significant

## Results: Specialty Treatment Initiation

- Treatment initiation defined as at least one visit to either substance use or mental health treatment within 6 months of the respective referral
- 18% (333/1871) of patients were referred to specialty treatment
  - **26.7% (89/333) initiated specialty treatment**
- Patients in the BC arm had higher odds, and those in the PCP arm had lower odds, of treatment initiation, than those in UC
- BC arm patients had higher odds of treatment initiation when compared directly with the PCP arm (AOR=3.99, 95% CI=2.05-8.07)
- Black teens had lower odds of treatment initiation compared with White patients; no gender or age differences

	AOR	95% Confidence Interval		p-value
<b>Treatment Arms (reference: UC)</b>				
<b>BC</b>	1.83	1.00	3.38	0.0524
<b>PCP</b>	0.53	0.28	0.99	0.0467

Adjusts for patient gender, age, and race/ethnicity



## Results: Specialty Treatment Engagement

- Treatment engagement defined as initiating treatment and having at least one additional visit within 30 days
  - **92% (82/89) of those who were referred and initiated treatment engaged in treatment**
- No differences were found between the PCP and BC arms in treatment engagement compared with UC
- Patient characteristics were not significant in predicting treatment engagement

	AOR	95% Confidence Interval		p-value
<b>Treatment Arms (reference: UC)</b>				
<b>BC</b>	1.19	0.20	6.98	0.8388
<b>PCP</b>	2.45	0.27	53.67	0.4638

Adjusts for patient gender, age, and race/ethnicity

- No differences were found when comparing the BC and PCP intervention arms (AOR=0.27, 95% CI=0.01-2.93)

# Summary of Findings

## Substance Use and Mental Health Symptoms

- Self-reported substance use and mood symptoms increased between visits for all patients.
- The BC arm had lower odds of symptom endorsement on average at follow-up, compared with UC; no differences between the PCP and the UC or BC arms.
- Asians, African Americans and Hispanics were less likely to endorse symptoms at follow-up.
- Older patients were more likely to endorse symptoms

## CRAFFT + Further Assessments

- CRAFFT+ only administered in the intervention arms; few patients with CRAFFT + assessments at both time points
- There were no significant differences in CRAFFT scores between visits or intervention arms

## Treatment Initiation and Engagement

- 18% of patients were referred to specialty substance use or mental health treatment
- Of those, 26.7% initiated specialty treatment
  - BC arm patients were more likely to initiate specialty treatment than either PCP or Usual Care patients; .PCP arm patients were less likely to initiate treatment than those in UC
- 92% of those who were referred and initiated engaged in treatment
  - No differences were found in treatment engagement (at least 2 visits within 30 days) across the arms.
- Black teens had lower odds of treatment initiation
- Patient characteristics were not significant in predicting treatment engagement

# Discussion

- SBIRT delivered by an embedded Behavioral Clinician seemed to be more effective in reducing self-reported substance use and mood symptoms than Usual Care;
- Pediatrician-delivered SBIRT did not result in lower self-reported symptoms, compared to Usual Care.
- Pediatricians seemed to be less effective at getting teens to initiate specialty treatment; facilitating a successful referral to treatment may take more time and skills (e.g.,MI) than many busy physicians have. `
- Mixed model?
- Relatively few referred teens started treatment, but if they did, engagement rates were high.
- Consistent with other studies, African-American teens were less likely to start treatment – programs needs to look at better engagement strategies.

# Substance Use Research at Division of Research

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**Thank you**

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