

# Screening and Brief Physician Advice to Reduce Teens' Risk of Substance-Related Car Crashes: An International Trial

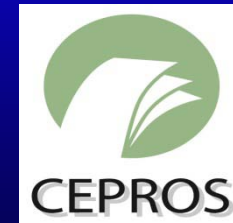
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# Background & Significance

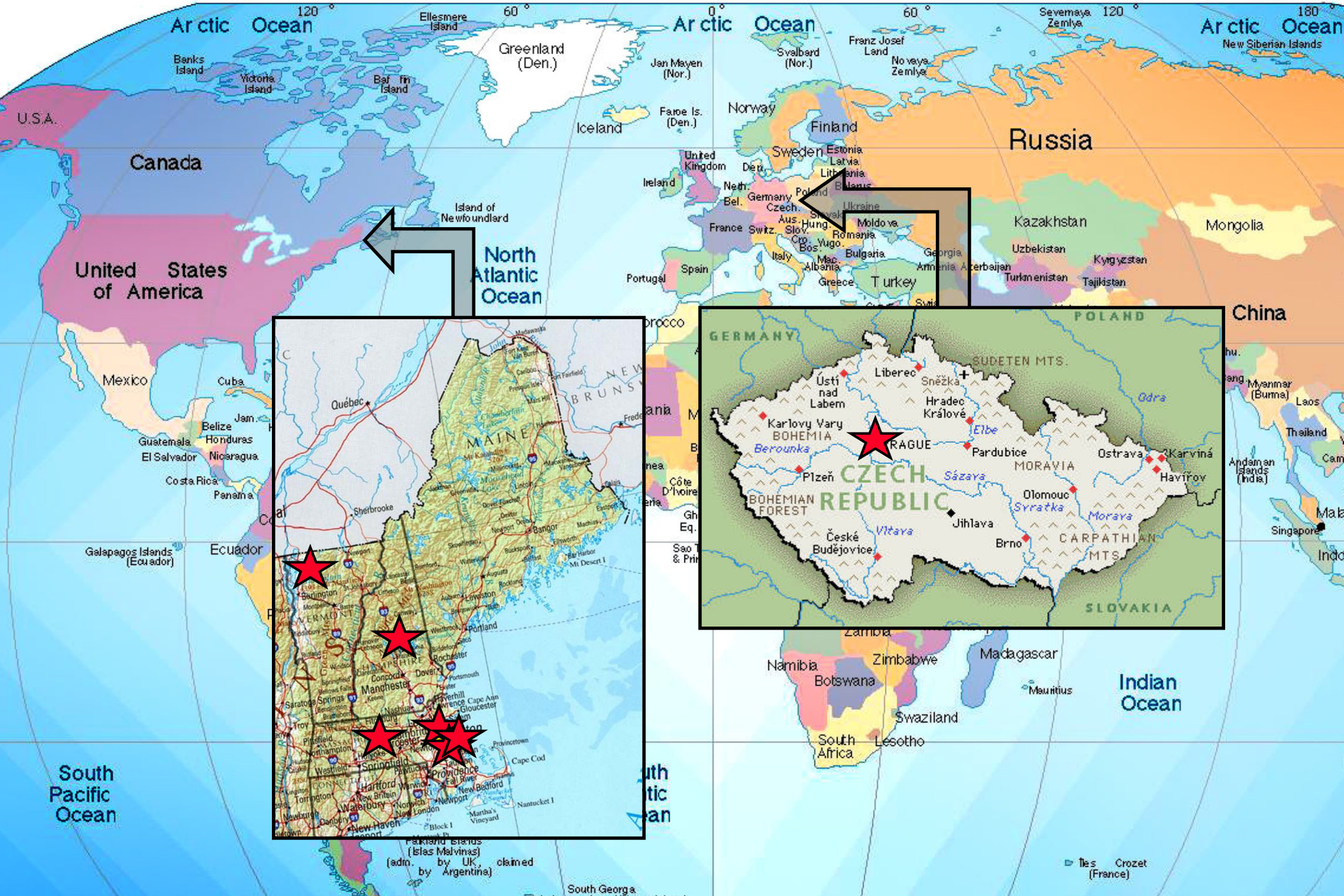
- Motor vehicle crashes are a leading cause of death/injury for adolescents worldwide<sup>1</sup> and substance use is often involved
- Primary care *provider* screening and guidance may help to reduce adolescent substance-related riding/driving risk, thus preventing associated injury or death

# Objective

To test the effects of a computer-facilitated Screening and provider Brief Advice (**cSBA**) system on adolescents' substance-related riding and driving behavior at 3 and 12 months follow-up.

# Hypothesis

Compared to Treatment-As-Usual (TAU), cSBA youth will report lower rates of any *Riding* with an impaired driver or *Driving* while impaired at 3 months follow-up, but effect would be reduced by 12 months follow-up.



Arctic Ocean

Arctic Ocean

Arctic Ocean

Banks Island  
Victoria Island  
Bar In Island

Greenland (Den.)

Iceland

Jan Mayen (Nor.)

Svalbard (Nor.)

Franz Josef Land

No vays Zemlya

Severna Zemlya

New Siberian Islands

U.S.A.

Canada

United States of America

North Atlantic Ocean

Faroe Is. (Den.)

Norway

Finland

Russia

United Kingdom

Sweden

Estonia

Latvia

Lithuania

Belarus

Poland

Czech

Slovak

Hungary

Romania

Bulgaria

Ukraine

Moldova

Georgia

Armenia

Azerbaijan

Turkey

Kazakhstan

Mongolia

Uzbekistan

Kyrgyzstan

Tajikistan

France

Spain

Portugal

Ireland

Neth. Bel.

Germany

Aus.

Slov.

Yugo.

Mac.

Albania

Greece

Swit.

China



★

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South Pacific Ocean

South Atlantic Ocean

Indian Ocean

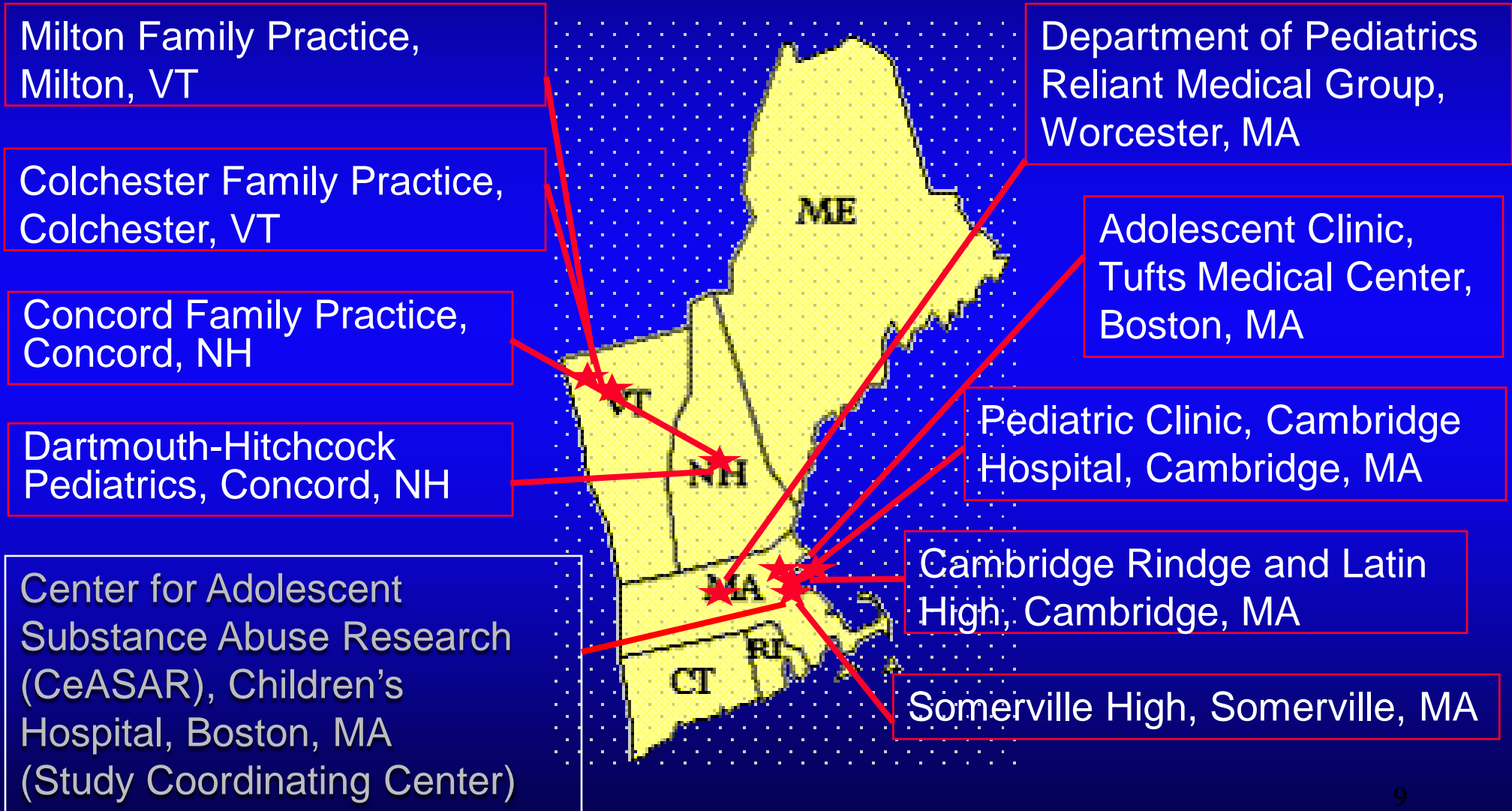
Des Crozet (France)

Parkland Islands (Islas Malvinas) (adm. by UK, claimed by Argentina)

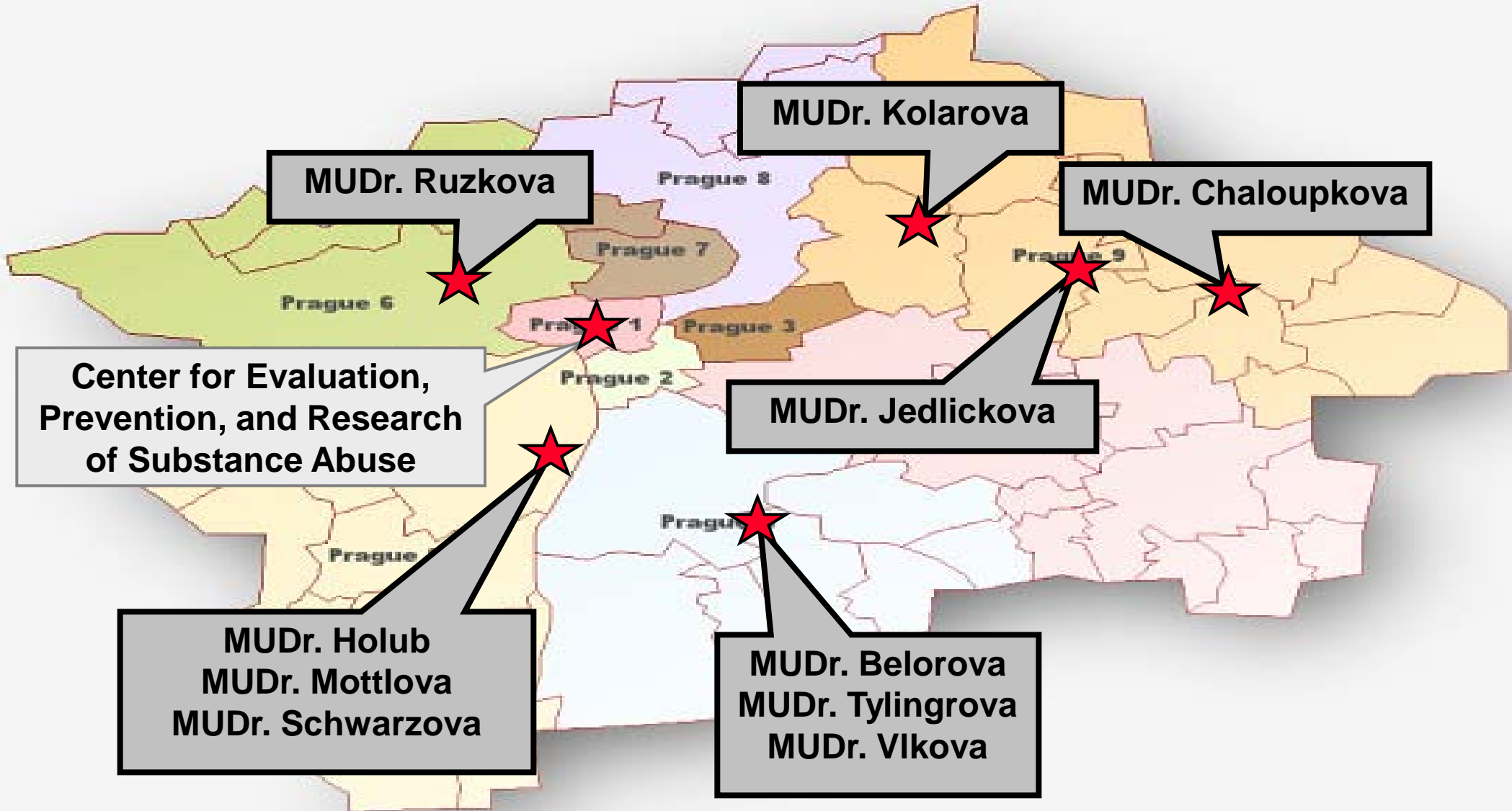
South Georgia



# The New England Partnership for Substance Abuse Research (NEPSAR)

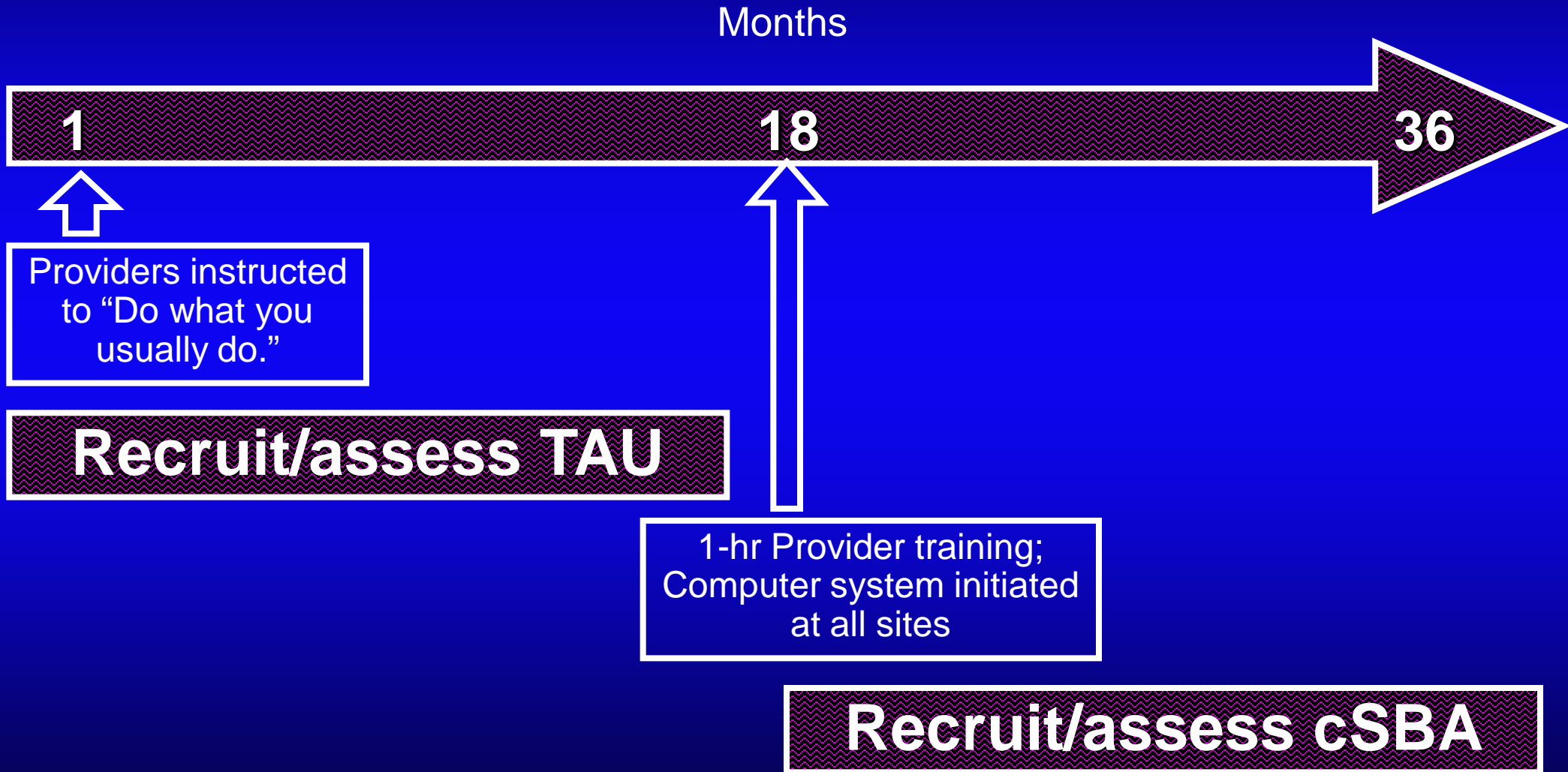


# Offices of Study Pediatricians in Prague



# Study Design (2005-2009)

## Before/After Comparative Effectiveness Trial



# Intervention: cSBA

Computer-facilitated system included:

- CRAFFT screen\* and display of patient's score and risk level
- 10 pages of scientific information and true-life stories showing harmful effects of substance use and related riding/driving risk
- Provider Report sheet with CRAFFT results and 'talking points' to prompt 2-3 minute discussion with teen; given to provider before visit

\* Knight JR, Sherritt L, Shrier LA, Harris SK, Chang G. Validity of the CRAFFT substance abuse screening test among<sup>12</sup> general adolescent clinic patients. Arch Pediatr Adolesc Med, 2002(Jun);156(6):607-614.

Have you ever ridden in a car driven by someone (including yourself) who was "high" or had been using alcohol or drugs?

Yes

No

Select your answer and click NEXT to continue.

**NEXT »**

## Drinking alcohol causes accidents.

### Accidents are the leading cause of death among young people.

- Motor vehicle crashes are the leading cause of death among youth ages 15 to 20 years.
- 16,000 people are killed annually due to drunk driving and drugged driving (National Highway Traffic Safety Administration).

### Alcohol

- All states have a zero-tolerance law for anyone under the age of 21, which means you **lose your license** if caught drinking and driving.
- Alcohol decreases coordination, slows reflexes, distorts vision.
- Drivers who have been drinking are **6X** more likely to cause an accident.
- Among teens, 46% of all motor vehicle fatalities involve alcohol.

NEXT »



August 20, 2003. 16-year-old Jennelle and 15-year-old Kristin were killed in this car after it hit a tree. The driver, a 19-year-old boy, faced nine charges including drunken driving and motor vehicle homicide. Three other teens were injured.

(Photo courtesy of Boston Globe staff photographer Bill Brett)

<sup>1</sup>National Center for Statistics and Analysis. Traffic Safety Facts 2004 Data

<sup>2</sup>U.S. Department of Health & Human Services Alcohol Alert Number 67; January 2006

<sup>3</sup>National Institute on Alcohol Abuse and Alcoholism (NIAAA) Alcohol Research & Health, Volume 28, Number 3; 2004/2005

<sup>4</sup>National Highway Traffic Safety Administration FARS data, 2004. <http://www.nhtsa.dot.gov/> Accessed April 18, 2007.

Study id: 411252

Date: 4/28/2009

## CRAFFT Results

	Yes	No
1. Have you ever used alcohol?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A. Have you used alcohol in the past 12 months?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Have you ever used marijuana?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A. Have you used marijuana in the past 12 months?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Have you ever used any other drugs to get high?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A. Have you used "other drugs" in the past 12 months?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. Have you ever ridden in a car driven by someone (including yourself) who was "high" or had been using alcohol or drugs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
R. Do you ever use alcohol or drugs to relax, feel better about yourself, or fit in?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A. Do you ever use alcohol or drugs while you are by yourself (alone)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F. Do you ever forget things you did while using alcohol or drugs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F. Do your family or friends ever tell you that you should cut down on your drinking or drug use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T. Have you ever gotten into trouble while you were using alcohol or drugs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## CRAFFT Summary

Score: 2

Risk Category: HIGH

## Plan:

No plan has been determined

# CONTRACT FOR LIFE

## A Foundation for Trust and Caring

*This Contract is designed to facilitate communication between young people and their parents about potentially destructive decisions related to alcohol, drugs, peer pressure, and behavior. The issues facing young people today are often too difficult for them to address alone. SADD believes that effective parent-child communication is critically important in helping young adults to make healthy decisions.*

### YOUNG PERSON

I recognize that there are many potentially destructive decisions I face every day and commit to you that I will do everything in my power to avoid making decisions that will jeopardize my health, my safety and overall well-being, or your trust in me. I understand the dangers associated with the use of alcohol and drugs and the destructive behaviors often associated with impairment.

By signing below, I pledge my best effort to remain free from alcohol and drugs; I agree that I will never drive under the influence; I agree that I will never ride with an impaired driver; and I agree that I will always wear a seat belt.

Finally, I agree to call you if I am ever in a situation that threatens my safety and to communicate with you regularly about issues of importance to both of us.

---

YOUNG PERSON

### PARENT (or Caring Adult)

I am committed to you and to your health and safety. By signing below, I pledge to do everything in my power to understand and communicate with you about the many difficult and potentially destructive decisions you face.

Further, I agree to provide for you safe, sober transportation home if you are ever in a situation that threatens your safety and to defer discussions about that situation until a time when we can both have a discussion in a calm and caring manner.

I also pledge to you that I will not drive under the influence of alcohol or drugs, I will always seek safe, sober transportation home, and I will always wear a seat belt.

---

PARENT/CARING ADULT



#### Students Against Destructive Decisions

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[www.sadd.org](http://www.sadd.org)

Available at:  
<http://www.sadd.org/contract.htm>



*Jdeme z diskotéky a ty jsi pil!*



*Jak by ses v takové situaci zachoval(a) ty?  
Jakou má cenu riskovat?*

# Control: Treatment as Usual (TAU)

- Could already include substance-related riding/driving risk screening and advice
- Some sites in the USA already used paper/electronic templates with CRAFFT or other such screening tool

# Methods Summary

- **Participants:** 12-18 yrs old arriving for routine care
- **Measure:** 10 items on past-3-months frequency of riding/driving risk behavior, e.g.:
  - “How many times did you ride with a driver who had been ... drinking alcohol?” or “...using marijuana or any other drug?”*
- **Data collection:** Baseline, 3, 12 month follow-ups
- **Analysis:** GEE multiple logistic regression modeling to compute adjusted Relative Risk Ratios; used SUDAAN® software (multi-site cluster sampling design)

# Sample Sizes

**USA**

**CZR**

2096

Baseline

589

1516 (72%)

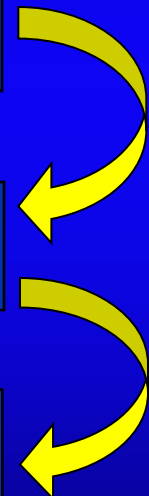
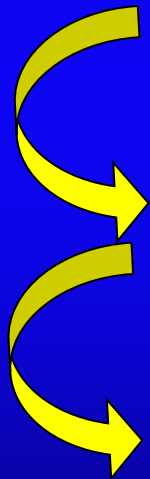
3-Mo. Post

516 (88%)

1523 (73%)

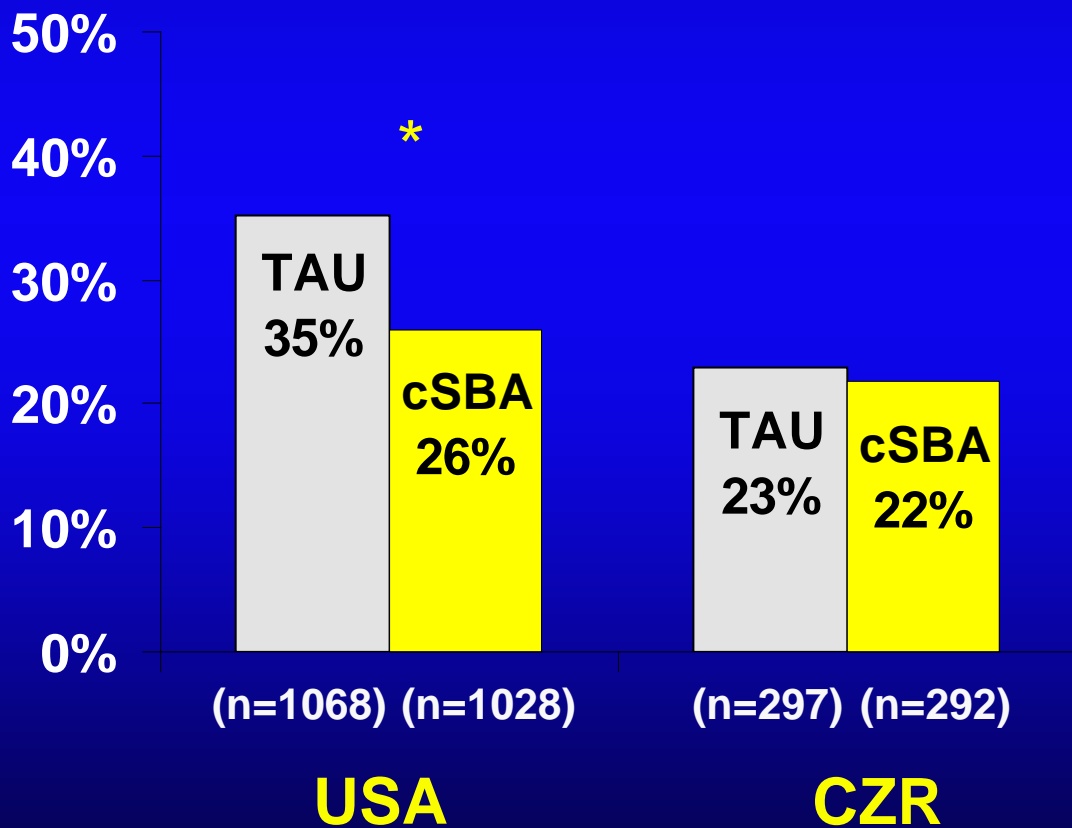
12-Mo. Post

532 (90%)

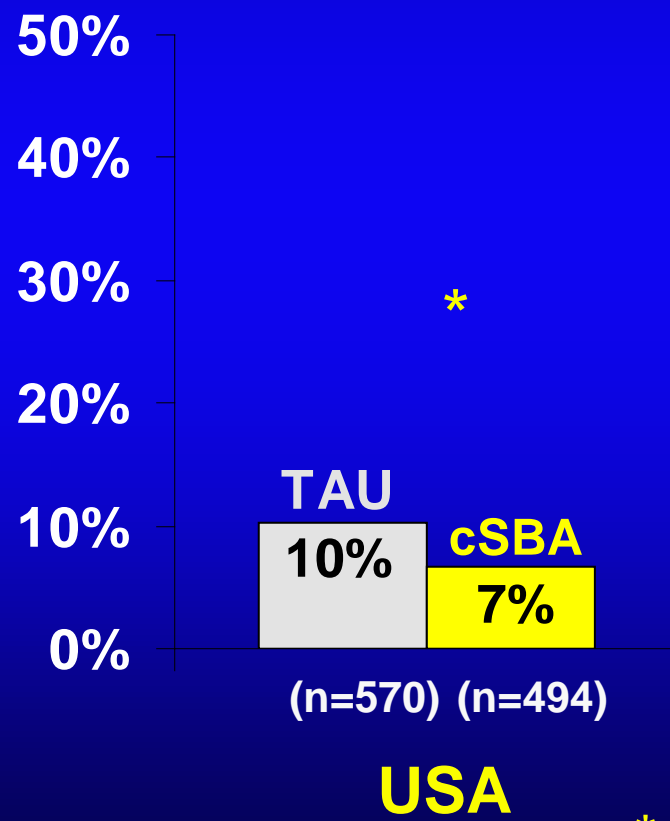


# Baseline Past-3-Months Rates

## RIDING (12-18 yr olds)

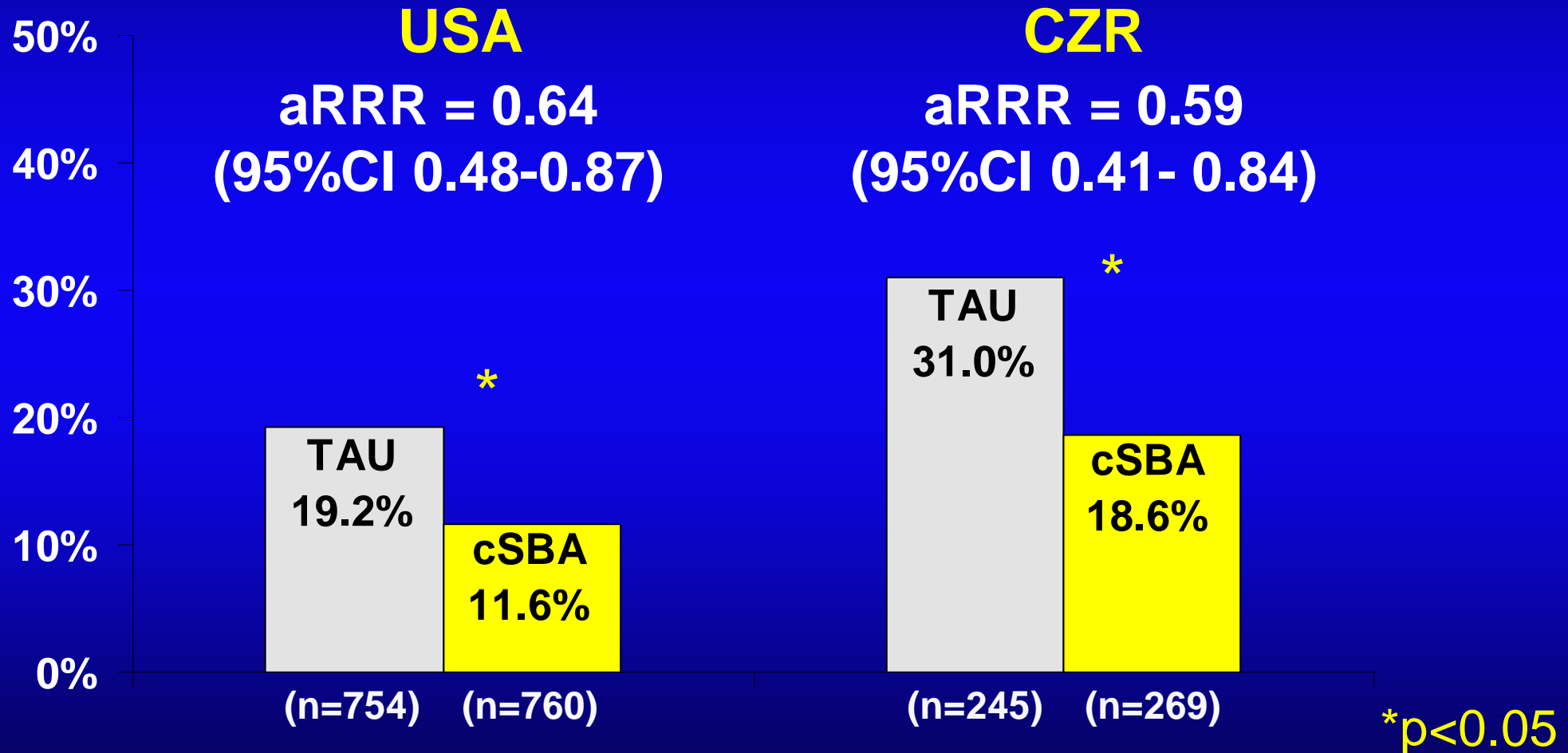


## DRIVING (16+ yr olds)



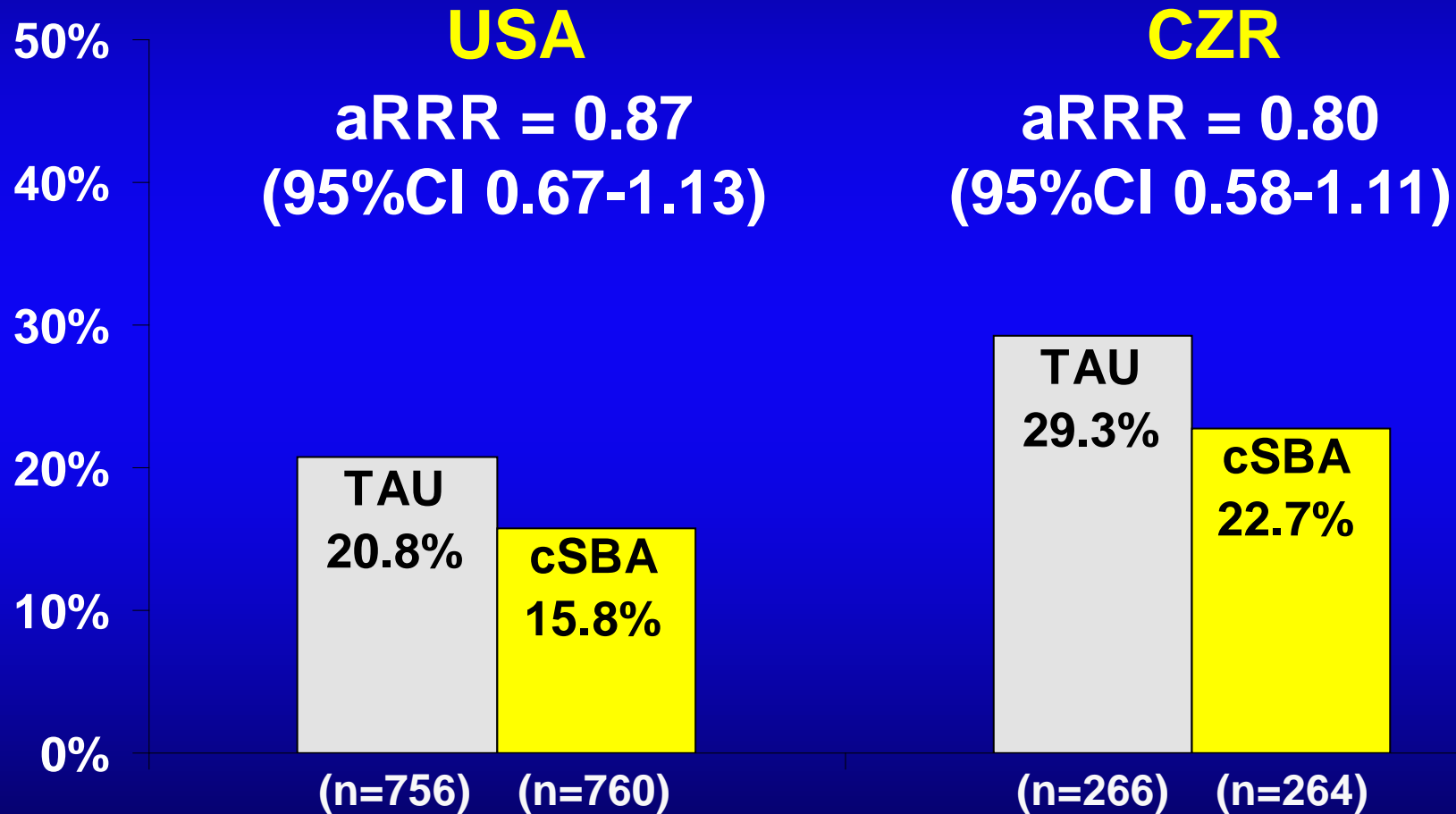
\* p<.05

# Results: Percent Riding at 3 Months



aRRR=adjusted Relative Risk Ratio (95% Confidence Interval);  
Adjusted for baseline riding, substance use, age, gender, race/ethnicity, SES, visit type, provider characteristics, peer/family SU

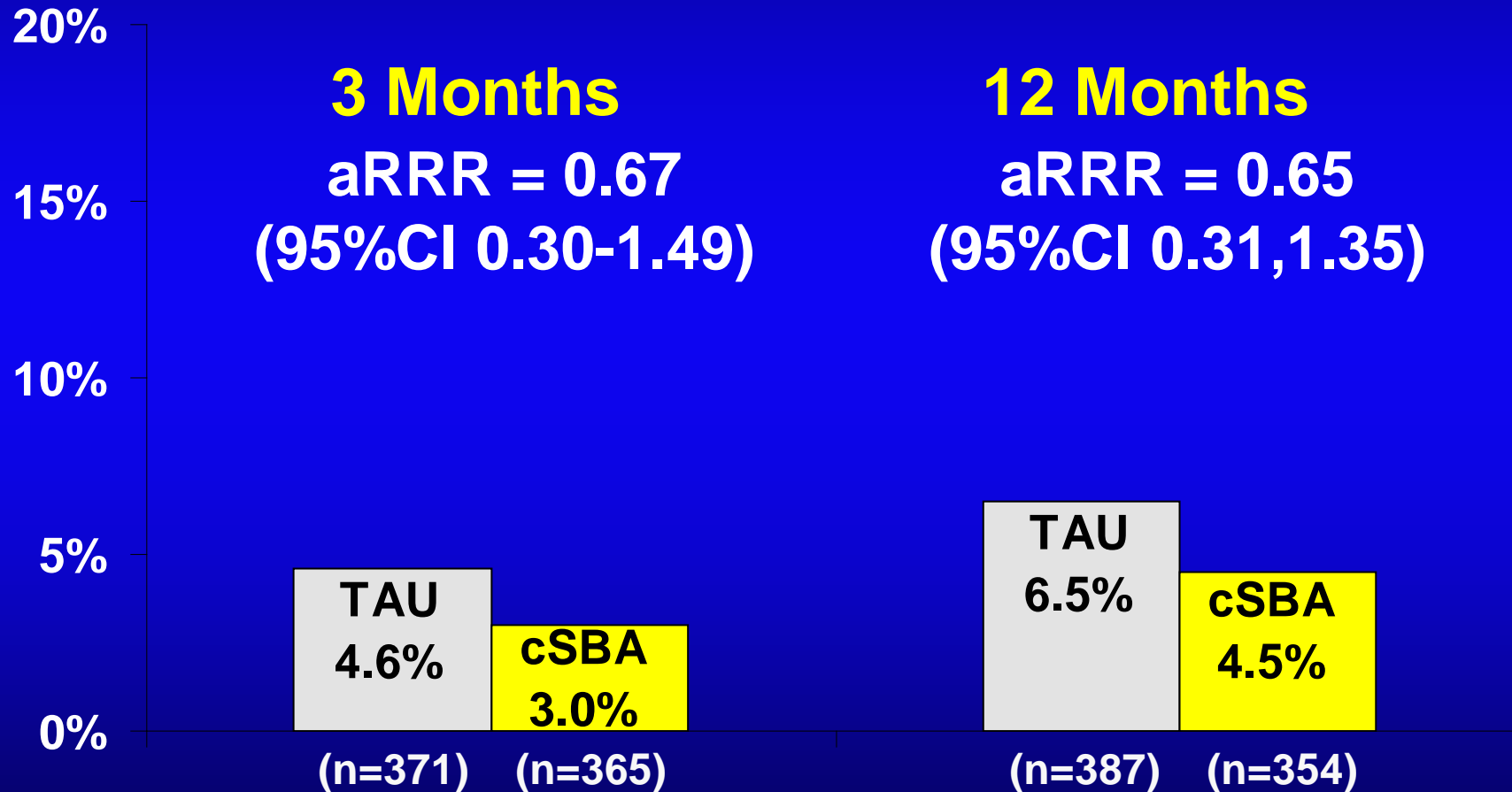
# Results: Percent Riding at 12 Months



aRRR=adjusted Relative Risk Ratio (95% Confidence Interval);

Adjusted for baseline riding, substance use, age, gender, race/ethnicity, SES, visit type, provider characteristics, peer/family SU

# Results: Percent Driving at Follow-up (USA only)



aRRR=adjusted Relative Risk Ratio (95% Confidence Interval);

Adjusted for baseline driving, substance use, age, gender, race/ethnicity, SES, visit type, provider characteristics, peer/family SU



# Discussion

- Our study provides preliminary evidence that a primary care intervention can help to reduce substance-related riding risk among youth
- Future studies needed to replicate findings and test strategies to extend effect (e.g., monthly emails)
- Effect on driving risk warrants further study with larger samples of driving-age teens

# Limitations

- Sites only in New England and Prague
- Quasi-experimental design; US groups not equivalent at baseline
- Self-reported data

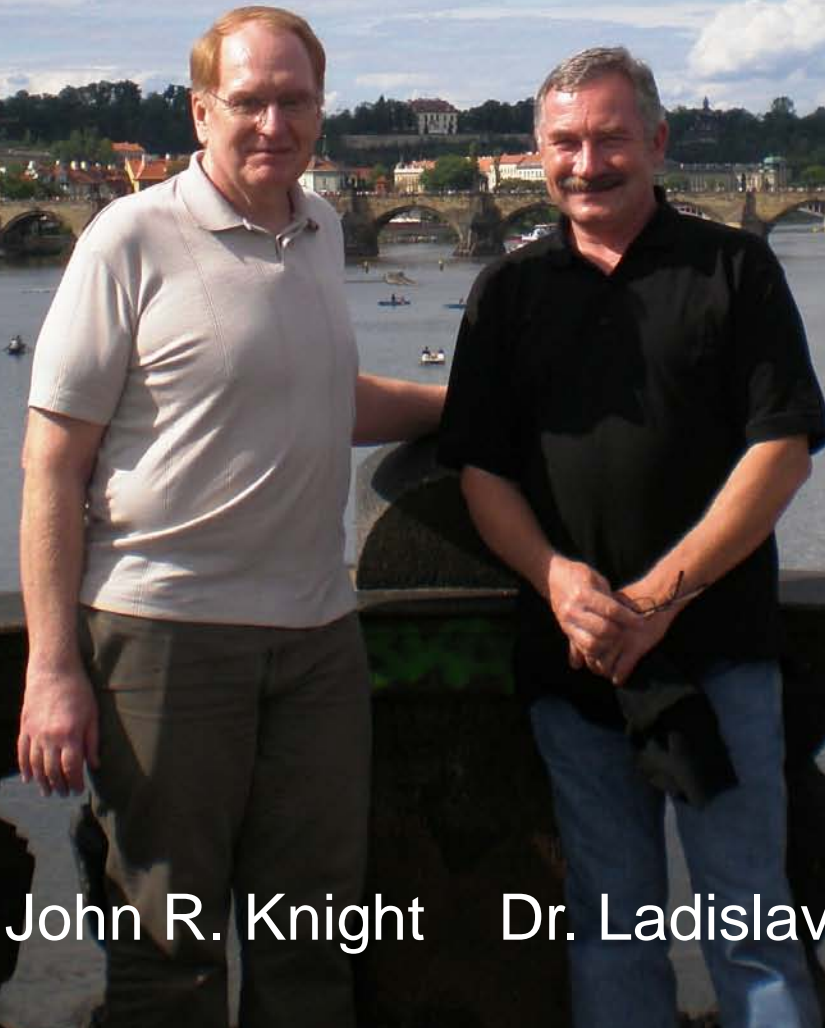
# Implications

- >30,000 motor vehicle fatalities each year in US, with about 40% involving alcohol<sup>1</sup>
- Adolescents/young adults have highest motor vehicle fatality rate of any age<sup>1</sup>
- A brief primary care intervention could help reduce key threat to youth safety and survival

# Conclusion

Computer-facilitated screening and primary care provider brief advice can help to reduce adolescents' substance-related riding/driving risk

[www.ceasar.org/isbirt](http://www.ceasar.org/isbirt)



Dr. John R. Knight    Dr. Ladislav Csémy