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<b>1. REPORT DATE (DD-MM-YYYY)</b> 11/09/18		<b>2. REPORT TYPE</b> Presentation		<b>3. DATES COVERED (From - To)</b> 09/11-13/18	
<b>4. TITLE AND SUBTITLE</b> Prevention of Alcohol Related Incidents in the US Air Force				<b>5a. CONTRACT NUMBER</b>	
				<b>5b. GRANT NUMBER</b>	
				<b>5c. PROGRAM ELEMENT NUMBER</b>	
<b>6. AUTHOR(S)</b> Talcott, Gerald W				<b>5d. PROJECT NUMBER</b>	
				<b>5e. TASK NUMBER</b>	
				<b>5f. WORK UNIT NUMBER</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> 59th Clinical Investigations and Research Support 1100 Wilford Hall Loop, Bldg 4430 JBSA – Lackland, TX 78236-9908 210-292-7141				<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b> 18095	
<b>9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> 59th Clinical Investigations and Research Support 1100 Wilford Hall Loop, Bldg 4430 JBSA – Lackland, TX 78236-9908 210-292-7141				<b>10. SPONSOR/MONITOR'S ACRONYM(S)</b>	
				<b>11. SPONSOR/MONITOR'S REPORT NUMBER(S)</b>	
<b>12. DISTRIBUTION/AVAILABILITY STATEMENT</b> Approved for public release. Distribution is unlimited.					
<b>13. SUPPLEMENTARY NOTES</b> HQ MOMRP, Ft. Detrick, MS, September 11 - 13, 2018					
<b>14. ABSTRACT</b>					
<b>15. SUBJECT TERMS</b>					
<b>16. SECURITY CLASSIFICATION OF:</b>			<b>17. LIMITATION OF ABSTRACT</b>	<b>18. NUMBER OF PAGES</b>	<b>19a. NAME OF RESPONSIBLE PERSON</b>
a. REPORT	b. ABSTRACT	c. THIS PAGE			SSgt Erin Toth
					<b>19b. TELEPHONE NUMBER (Include area code)</b> 210-292-7141

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# **Title: Prevention of Alcohol Related Incidents in the US Air Force**

**Award Number: W81XWH-14-1-0367**

**Award Period of Performance: August 2014 – August 2019**

**Award Amount: \$3,772,062.00**

**Contract Officer Representative: Michelle Lane, Grants Officer**

**Funding Agency: Department of Defense**

**Presenter: Gerald (Wayne) Talcott, Ph.D., ABPP, Col USAF (ret)**

**Co-Director Center for Addiction and Prevention Research**

**University of Virginia**

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# Investigators & Acknowledgements

- **MPIs:**

- Gerald W. Talcott, Ph.D., ABPP, Col USAF (ret) & Bob Klesges Ph.D.

- **Co-Investigators:**

- Melissa Little, Ph.D., University of Virginia; Jon Ebbert, M.D., Mayo Clinic; James Murphy, Ph.D. & Meghan McDevitt-Murphy, Ph.D., University of Memphis; Karen Derefinko, Ph.D., University of Tennessee Health Science Center; and Ann Hryshko-Mullen Ph.D., ABPP, LtCol, USAF, (ret), Wilford Hall Ambulatory Surgical Center.

- **Acknowledgements:**

- This study is a collaborative endeavor between the U.S. Air Force and the University of Virginia via a Cooperative Research and Development Agreement (CRADA, 17-361-59MDW-C18002).
- The authors gratefully acknowledge the support of 2nd Air Force, Commanders of Air Force Technical Training and Military Training Instructors and Leaders.

- **Disclaimer:**

- The views expressed are those of the authors and do not reflect the official views or policy of the Department of Defense or its Components. The voluntary, fully informed consent of the subjects used in this research was obtained as required by 32 CFR 219 and DODI 3216.02\_AFI 40-402.



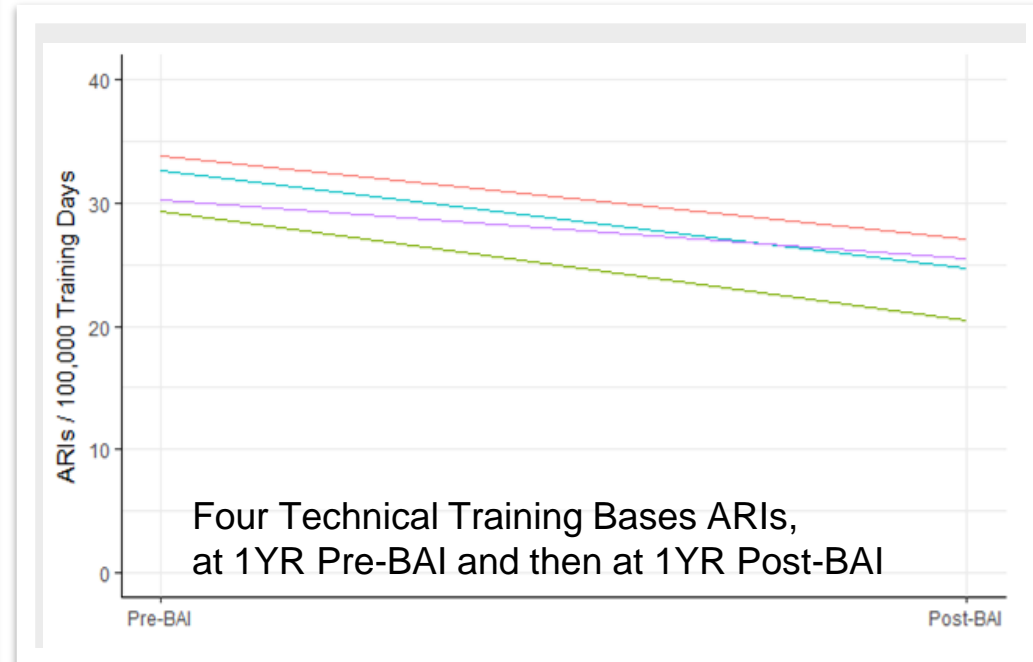
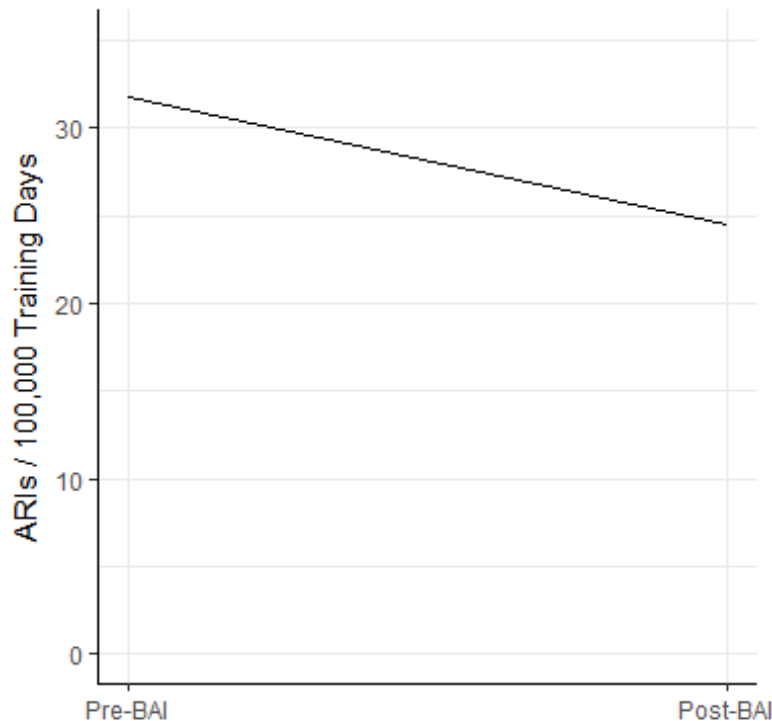


# Study Background

- **What led to the development of this study?**
  - 2AF/CC desire to reduce alcohol related incidents (ARIs) in Technical Training
  - ARIs result in administrative action and possible discharge
    - 80+% of sexual assaults are alcohol related in Technical Training
- **How does project leverage existing efforts for the military?**
  - UVA staff designed and delivers a universal Brief Alcohol Intervention (Jan 2010)
  - Administered in Week one of Technical Training
  - 40 minutes intervention/50 Airmen per group
  - AF conducts random breathalyzers for underage Airmen
  - Track ARIs throughout Technical Training
- **Current study adds another intervention designed to decrease ARIs**
  - Administered at the end of Technical Training



# One-Year Pre-BAI\* vs. One-Year Post-BAI



Mixed Poisson model to compare pre-BAI rates of ARIs per training day to post-BAI rates. The models included a random effect to account for repeated measures at individual bases. Statistically significant at the traditional alpha = 0.05 level of statistical significance ( $p = 0.024$ ).

\*BAI – Brief Alcohol Intervention



# Cost of Alcohol Misconduct Prevention Program (AMPP)

- 33,560 Airmen at JBSA
- FY2011 – FY2013 Q1
- ROI \$4.09 saved for every \$1.00 spent
- \$9, 869/ARI avoided
- Benefits from AMPP: \$2,381.660

MILITARY MEDICINE, 182, 1/2:e1562, 2017

## Economic Analyses of an Alcohol Misconduct Prevention Program in a Military Setting

Tao Li, MD, PhD<sup>1\*</sup>; Teresa M. Waters, PhD<sup>1</sup>; Erin K. Kaplan, PhD<sup>1</sup>; Cameron M. Kaplan, PhD<sup>1</sup>; Kwame A. Nyarko, PhD<sup>1</sup>; Karen J. Derefinko, PhD<sup>1</sup>; Gerald W. Talcott, PhD<sup>2</sup>; Robert C. Klesges, PhD<sup>3</sup>

**ABSTRACT** Objective: The economic burden associated with alcohol misuse, in particular early attrition or discharge associated with alcohol-related incidents (ARIs), is significant in military settings. We assessed the potential economic benefit of a brief alcohol intervention program, the Alcohol Misconduct Prevention Program (AMPP), initially implemented at Joint Base San Antonio-Lackland Technical Training site for the U.S. Air Force (USAF) from October 1, 2010, to December 31, 2012. Methods: We conducted cost-effectiveness and cost-benefit analyses of the AMPP from the perspective of the USAF. Program effectiveness was measured as the number of ARIs avoided after the AMPP implementation, and program benefit was measured as the potential cost savings related to reductions in ARIs. One-way sensitivity analyses were conducted to evaluate the robustness of base case results. Results: The AMPP resulted in the avoidance of 59 ARIs which cost \$9,869 for every ARI avoided. For every dollar invested in the AMPP, the USAF saved \$4.09 in a conservative model without health effects, and saved \$6.17 taking into account the potential health benefits. Our findings of favorable cost benefit were robust across sensitivity analyses. Conclusions: Investing in the AMPP at other military bases is likely to produce substantial economic benefit.

### INTRODUCTION

Episodic binge drinking and other forms of alcohol misuse pose substantial public health concerns.<sup>1-3</sup> In the United States, 12.1% and 4.5% of lost disability-adjusted life-years for men and women, respectively, are attributable to alcohol use.<sup>4</sup> Total costs associated with alcohol consumption, including health care, lost productivity, and law enforcement, are estimated at 2.7% of gross domestic product, an economic burden substantially higher than other high-income countries.<sup>5</sup> In 2010, over 40% of costs related to binge drinking was paid by the U.S. Government.<sup>6</sup>

Alcohol misuse is also a prevalent problem in the U.S. military. According to the 2011 Health-Related Behaviors Survey of Active Duty Military Personnel, 17.5% of military personnel were moderate drinkers (4–14 drinks/week in the past year for males; 4–7 drinks/week in the past year for females), and 8.4% were heavy drinkers (>14 drinks/week in the past year for males and >7 drinks/week in the past year for females).<sup>7</sup> Nearly 6% of military personnel aged 18 to 20 were heavy drinkers, compared to 2.5% of civilians of the same age.<sup>7</sup>

Heavy alcohol use in military settings has been shown to be associated with behavioral and performance issues, including being passed over for promotion, driving under

the influence of alcohol or other alcohol-related arrests, alcohol-related injuries or accidents, and physical fights.<sup>8</sup> Alcohol misuse also creates a significant economic burden in military settings.<sup>9,10</sup> Excessive alcohol use among active duty service members cost the Department of Defense (DoD) an estimated \$892 million in 2006, of which \$108 million was attributed to alcohol-related early attrition (i.e., premature discharge).<sup>10</sup>

Patterns of heavy alcohol use are also seen in the United States Air Force (USAF). A 2007 study of Air Force recruits with an average age less than 21 years found that more than 52% of males and 35% of females were binge drinkers.<sup>11</sup> These individuals were more likely to report negative outcomes related to alcohol, such as fighting while drinking or injuring someone or having been injured as a result of drinking.<sup>11</sup>

Because of the significant consequences associated with alcohol misuse in the USAF, key USAF leadership requested the development of a brief intervention to reduce alcohol-related incidents (ARIs) among Airmen in advanced Technical Training. An ARI is an officially adjudicated sanction within the USAF and refers to either underage drinking or drinking associated with an infraction (such as driving under the influence of alcohol, domestic assault, destruction of property, or contributing to the delinquency of a minor).<sup>12</sup> Penalties for an ARI can be severe and are a significant contributor to early attrition from USAF training.<sup>13</sup>

The brief intervention developed to reduce ARIs, called the Alcohol Misconduct Prevention Program (AMPP), consisted of two parts: (1) a 1-hour group-based brief alcohol intervention delivered to all Airmen (USAF personnel are called Airmen regardless of gender or rank) during the first part of Technical Training when they were under the tobacco and alcohol ban and (2) random alcohol breathalyzer

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The opinions expressed in this document are solely those of the authors and do not represent an endorsement by or the views of the U.S. Air Force, the Department of Defense, or the U.S. Government.  
doi: 10.7202/5818191-1-10-00098

e1562

MILITARY MEDICINE, Vol. 182, January/February 2017

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Li, T., Waters, T. M., Kaplan, E. K., Kaplan, C., Nyarko, K., Derefinko, K. J., Talcott, G. W., Klesges, R. C. (2017). Economic analyses of an alcohol misconduct prevention program in a military setting. *Military Medicine*, 182, 1/2:e1562 – 1567.





# Research Questions, Hypotheses, Preliminary Work

- BAI given at Week 1 of Technical Training (**Effective**)
- Developed the MARC (Making Responsible Choices) an intervention using Behavioral Economics
  - Takes advantage of participants decision to change their lives (e.g. military service).
- Design
  - Two group-randomized clinical trial: Randomize Squadrons
  - BAI + MARC (Making Responsible Choices)
  - BAI + non-alcohol related health promotion intervention
  - Participation: 30,000
  - Primary outcomes are adjudicated ARIs at 1-year and 2-year follow-up
  - Take advantage of willingness to change.





# Your Future

**What Are Your Future Short Term and Long Term Goals?**

**Career**

**Finances**

**Personal Life/Fitness**



**NOW**



**LATER**

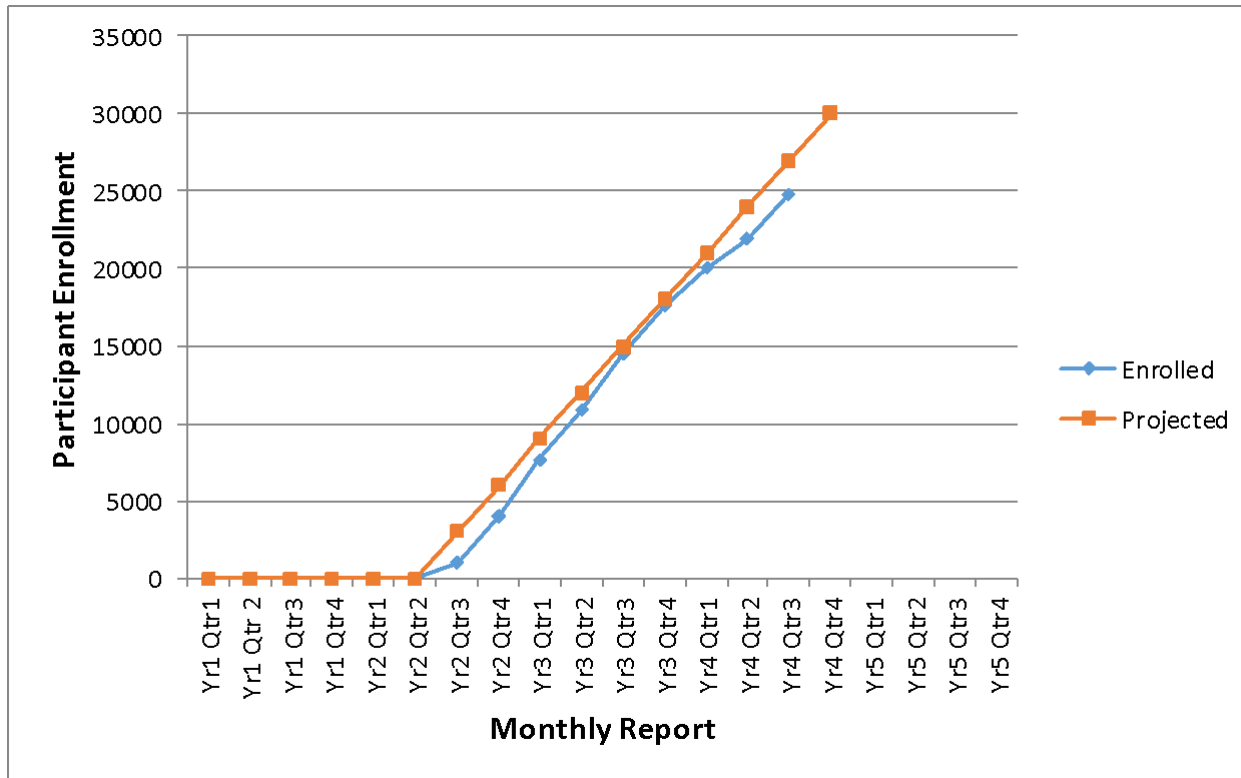


**Don't give up what you want  
the most**

**For what you want right now.**



# Recruitment and Retention

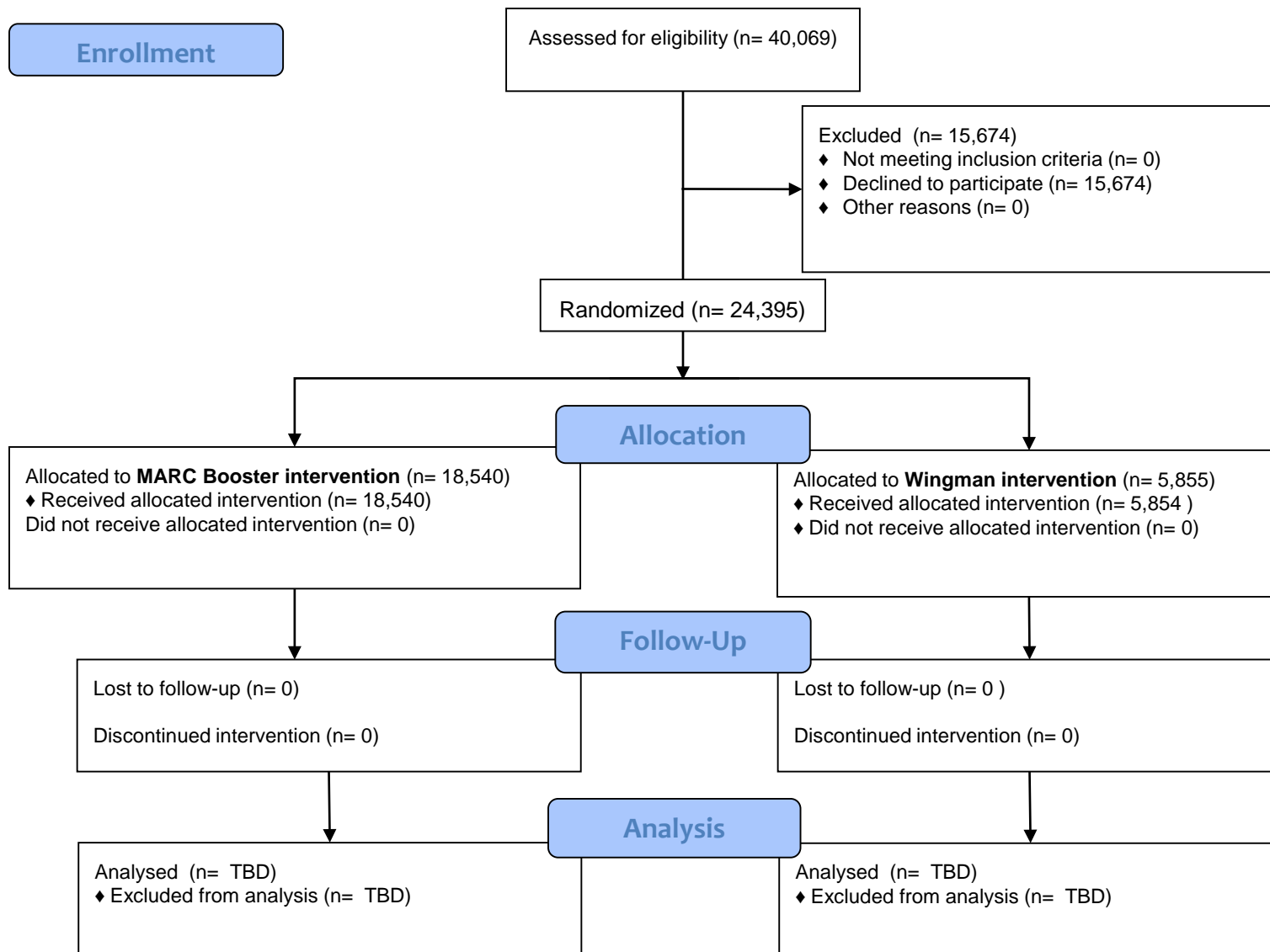


**Percent of participants that complete study**

**81.3%**



# CONSORT Diagram





# Progress to Date

- Delivering intervention at 5 bases
- Recruitment
  - Goal: 30,000
  - Assessed: 40,069
  - Recruited: 24,395
    - End of Technical Training instead of beginning of training
- One Year Follow-up
  - 20,058 participants reached their one year follow-up window
  - 158 Article 15s





# Current and Anticipated Challenges

- Challenges:
  - Dependent measure was Article 15s at one and two-year follow-up
    - Using Air Force Legal Database
    - Not enough Article 15s (N = 158) to test for differences between interventions .007%
- Actions:
  - Move MARC intervention earlier in Technical Training (30 Sept 18)
    - Collect ARIs during Technical Training as dependent measure
    - Interventions will be conducted at Lackland and Sheppard AFBs
    - Funding for one year
    - Can test whether intervention adds to the effect of the BAI

**END OF BRIEFING**

