• 27-year Collaboration with U.S. Air Force
• Strive to Provide Health Promotion Solutions
• Develop and Evaluate Interventions
• 20 Staff and Faculty, Cooperative Research and Development Agreements
• Funded by University and External Grants
  • National Institutes of Health
  • Congressionally Directed Medical Research Program
• Staff are University Employees
• We Reach Thousands of Airmen Every Year
Existing Collaborations

- University of Virginia
  - Weight Loss
  - Behavioral Economics
- University of Arizona
  - Sleep
- University of North Carolina
  - Weight Gain Prevention
- University of Kentucky
  - Health Economics
- University of Memphis
  - Problematic Alcohol Use

- DMDC Data Sharing MOA
  - Follow-up Information for Consented Airmen
- Defense Health Agency MOA
  - Healthcare Data
- Air Force Medical Service
  - Tobacco Cessation
Clinical Health Psychology

A professionally recognized specialty that investigates and implements clinical services across diverse populations and settings to promote health and well-being and to prevent, treat and manage illness and disability.

American Psychological Association

Population Health

Field of population health includes health outcomes, patterns of health determinants, and policies and interventions that link these two.

Community Prevention Division
Office of the Air Force Surgeon General
Air Force Suicide Prevention Program

• Cohort study: 5,260,292 Airmen
  • Before Prevention Program: 1990 – 1996
  • After: 1997 – 2002 Intervention
• Multilayered population intervention
  • 11 Separate Initiatives
• Results: 33% relative risk reduction in suicide
• Other outcomes ranged: 18 – 54%

Air Force Suicide Rate 1990 - 2002

Comparison of effects of risk for suicide and related adverse outcomes in US Air Force population before (1990-6) and after implementation of programme (1997-2002)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Relative risk (95% CI)</th>
<th>Risk reduction (1−relative risk)</th>
<th>Excess risk (relative risk−1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide</td>
<td>0.67 (0.57 to 0.80)</td>
<td>33%</td>
<td>—</td>
</tr>
<tr>
<td>Homicide</td>
<td>0.48 (0.33 to 0.74)</td>
<td>51%</td>
<td>—</td>
</tr>
<tr>
<td>Accidental death</td>
<td>0.82 (0.73 to 0.93)</td>
<td>18%</td>
<td>—</td>
</tr>
<tr>
<td>Severe family violence</td>
<td>0.46 (0.43 to 0.51)</td>
<td>54%</td>
<td>—</td>
</tr>
<tr>
<td>Moderate family violence</td>
<td>0.70 (0.69 to 0.73)</td>
<td>30%</td>
<td>—</td>
</tr>
<tr>
<td>Mild family violence</td>
<td>1.18 (1.16 to 1.20)</td>
<td>—</td>
<td>18%</td>
</tr>
</tbody>
</table>

Active-Duty Suicide Rate Hit Record High in 2020

“What they have been doing hasn’t been working and they need to do something different and more sustained.”

Julie Cerel, Suicide Prevention and Exposure Lab at the University of Kentucky

Suicides Per 100,000 Active-Duty Troops

"What they have been doing hasn’t been working and they need to do something different and more sustained."

Julie Cerel, Suicide Prevention and Exposure Lab at the University of Kentucky

Defense One, Oct 6, 2021: Online Article
Target Rich Environment for Prevention

- Embedded Mental Health Teams
  - Unit Circulation
  - Education
  - Limited Scope Counseling

- RAND Evaluation
  - High Turnover of Counselors
  - Lack of Knowledge of Military Mission
  - Services Hard to Get To, Even When in Unit
Change is Hard: Readiness Begins in Training

- Tobacco Use
- Problematic Alcohol Use
- Overweight
- Insufficient Sleep
Project Development Process

1. Identify Population of Interest
2. Organizational structure
3. Locate key leverage points (TRICARE beneficiaries, Technical training Airmen)
4. Health risk behaviors that matter (e.g., Readiness)
5. Identify target problem (e.g., tobacco use?)

6. Intervention Development (tailored to specific population in specific environment at a particular time)
7. Pilot testing with target population
8. Review, revise/replicate
9. Brief results to key leaders
10. Grant to Deploy intervention and evaluate effectiveness
11. Disseminate if possible
Air Force 7: Preventing Alcohol Related Incidents (ARI) in the Air Force

- ‘Air Force 7’: Preventing Alcohol Related Incidents (ARI) in the Air Force
- All Airmen Flow through Technical Training
- Second Air Force and Wing/Group Commander Approval
- Brief Access to Airmen (2 hours)
- Approximately 30,000 a Year Flow through Technical Training
- Heavy Drinking is a Problem Nationally for 19 – 25 Year Olds
- Approximately 40% Underage: Drinking Violates Uniform Code of Conduct
- Punishment from ARI Can Result in Discharge from Air Force

DoD Grant W8/XWH-141-0378
Air Force 7: Preventing Alcohol Related Incidents (ARI) in the Air Force

- Intervention Development
  - Univ. of Memphis, Dr. Jim Murphy
    - Brief Alcohol Interventions for College Students
  - Technical Training: Tailored Intervention (+Random Urinalysis)
    - Piloted for 10K Airmen at Training Base in San Antonio
    - Significant Reduction in ARIs
    - Cost Savings $2,381,660 over 18 Months
- Briefed Second Air Force and Wing Commanders
- Grant to Deploy Intervention and Evaluate Effectiveness
- Disseminate: Currently at all Major Technical Training Bases

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3DoD Grant W8/XWH-141-0378
A study was Conducted on the Effects of Sleep Deprivation on Readiness of Members of the Armed Forces

In Response To: Section 749 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92); March 2021
Model of Sleep Health

Sheppard Trainee Sleep Survey: Step 1

Data from 2020 survey of Tech Trainees at Sheppard AFB
Trainee Sleep Survey Results

83% rated sleep less than “good”

45% reported < 6 hours per night

Data from 2020 survey of Tech Trainees at Sheppard AFB
Build And Assess Immediate Benefit of Sleep Health Intervention: Step 2

- Conducted focus groups with Sheppard Airmen
- Visited dorms to evaluate physical sleep environment
- Reviewed the scientific literature on sleep health
- Created a Sleep Health intervention tailored to Sheppard trainees
Measurement Strategy

**Outcomes:**
- Sleep quality
- Sleep knowledge
- Motivation
- Change in behavior

**Follow-up Assessment at 2 weeks**

**Sleep Survey** → **Pre-Assessment** → **Intervention** → **Post-Assessment** → **In-processing Airmen** → **Out-processing Airmen**

60 Minutes

- **Completed:** 90
- **Target:** 300 Airmen
Sleep Intervention: Step 3

• Continue Intervention until 300 Airmen have Completed
  • 200 in Sleep Health group
  • 100 in Tobacco group

• Analyze Results at 2-week Follow-up
  • Did Airmen Make any Changes?
  • Did Sleep Improve?

• Step 4: Based on Results, Submit 5-year Grant Proposal (Summer ’22) to Expand Reach, Intensity and Measure Effectiveness

NOTE:
Plan to complete pilot study (Feb 2022) and Submit a Funding Proposal to DoD (July 2022)
• Weekly Seminar Designed to Acquaint Interns and Postdoctoral Fellows in CHP to Critical Components of Addressing Population Health in the Air Force
• Population Health Readings and Research Review
• Organizational Structure of the Air Force with Emphasis on Leverage Points
• Discuss Implications of Mental Health READINESS on the Air Force
• Air Force Mental Health Program Managers Discuss Programs Impact on the Population
• Presentations of Recent Briefings to Senior Air Force Leadership
• Psychology Interns are Required to Develop and Present
  • Brief Talker Addressing a Health Risk that Impacts AF READINESS
  • Table-top Briefing with Talker that addresses Nature of the Health Risk with Realistic Approaches
    • Requires Brief Literature Review, Awareness of AF Prevalence Data and Current Initiatives
  • Formal Presentation of Need to Address a Chosen Health Risk Behavior
    • Literature Review
    • AF Prevalence Data, Targeted Population and Cultural Awareness
    • Goal is to Make the Case for Need to Intervene on a Particular Health Risk Behavior with a Specific Population
  • Formal Presentation to Senior Leader Identifying a Problem, Scope of Problem, and Recommendations to Address the Health Risk Behavior
• Center for Addiction and Prevention Research Center (CAPR) Team Member
  • 10 Hours Weekly
• Mentorship
• Paper Writing and Pilot Study Development:
  • Pilot Study Creation and Progress
• Grant Coordinator Meeting and New Grant Development:
  • Meet with Coordinators to Discuss Existing Projects’ Progress/Challenges
  • Work on new Grant Development
Postdoctoral Fellow
Apprentice Experience

• Pilot Studies
  • Sleep Health Study (SANDMAN)
  • Texting Alcohol Choice/Awareness Messages in Technical Training
  • Develop Process for Weight Loss Service Referrals (Clinical Referrals)
  • Stress and Coping in the Training Environment
  • Healthy Gestational Weight Management for AD Women/Beneficiaries

• Motivational Interviewing Seminar
• CAPR Administrative Meeting
• Briefing Development and Delivery to Air Force Leadership
• Secured Letters of Support from 59MDW/Wing Commander (Wilford Hall Ambulatory Surgical Center)
• TRICARE is Healthcare for Military, Retirees, and Family Members
  • 9.6 Million Beneficiaries
  • Dispersed Literally Around the World
  • Higher Prevalence of Tobacco Use than Civilian Population
• Quit Lines have been Shown to Be Effective
  • We Validated a TRICARE Quit Line with AF3
• Problem: Even Though Quit Rates Were 22% for one-year Abstinence, Large Numbers of Motivated Participants Failed to Quit
• Re-Engagement: What If We Offered Opportunity to Repeat Treatment at 3-months for Those Who Didn’t Quit?
Enhancing the Efficacy of a Smoking Quit Line in the Military (AF8)

- Intervention Development: Used Proactive Counseling + NRT (AF3)
  - 22% Quit at 12-month Follow-up

- Innovation: Re-engagement at 3-month Follow-up
  - Randomized to Rate Reduction, to Repeat, or Choice
  - 3-month Follow-up Offered Opportunity to Re-engage for Smokers
    - 37% (n=134) Agreed to Re-engage
    - 15.7% of those who Re-engaged had Quit at 12-month Follow-up
    - 56.2% of Those Quit at 3-months Were Quit at 12-month Follow-up

- Monthly Meetings with Air Force Health Promotions Office


2 Klesges, R.C. et. al. The Impact of Reengagemetn on Long Term Smoking Cessation in Military Personnel, Retirees, and Dependents: A Randomized Clinical Trial. (in preparation)
End of Briefing