Murtha Cancer Center
“The DoD Cancer Center of Excellence”

“Accelerating Progress against Cancer through Collaboration”

Smokeless Tobacco Use in the US Military

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Dr. S. Steve Lee
Dr. Kangmin Zhu
Objectives

• Understand the health effects of smokeless tobacco

• Understand the prevalence of smokeless tobacco use in the US military

• Understand the short and long term goal of the current study, “Smokeless Tobacco use in the US Military”
Tobacco Use

- Tobacco is the leading cause of preventable death in the United States
- Responsible for 480,000 death every year
- DoD spends more than $1.6 billion each year on tobacco-related medical care
- Smoking Cessation Effort
  - Increased legislation and social pressure
Cigarette Use, US Adults 1965-2010
Smokeless Tobacco Use

- **Smokeless tobacco (US adults):**
  - 1995: 13.2
  - 1998: 11.7
  - 2002: 12.2
  - 2005: 14.5
  - 2008: 13.6
  - 2011: 12.8

- **Smokeless tobacco (US Military):**
  - 1995: 2.3
  - 1998: 2.7
• Smokeless tobacco
  – Smokeless tobacco is tobacco that is not burned
  – Nicotine is absorbed through the lining of the mouth
  – Types
    • Chewing tobacco
    • Snuff-finely cut or powdered tobacco. Sold in different scent and flavors. Moist or dry.
    • Dip (moist snuff) most common
      – Long cuts
      – Fine cuts
      – Pouches
      – Ready cuts (cute of long cuts)
    • Snus-no need to spit
Background

• Harmful chemicals in smokeless tobacco
  – At least 28 carcinogens (1)
  – Most harmful-nitrosamine, directly related to the risk of cancer
  – Smokeless tobacco use is related to increased risk of oral cancer, esophageal cancer and pancreatic cancer
  – Smokeless tobacco may cause heart disease, gum disease, and oral lesions such as leukoplakia (precancerous white patches in the mouth)

• Nicotine addiction
  – Users of smokeless tobacco and users of cigarettes have comparable levels of nicotine in the blood

In 2011, manufacturers sold 122 million pounds of smokeless tobacco, 2.94 billion in sale revenue.

Five major smokeless tobacco manufacturer spent 451.7 million on advertising and promotions in 2010.

Moist snuff is by far the most popular form accounting 86% of total sales.

Skoal is the most popular brand in US while Grizzly, a discounted product, is the most popular among youth.

Tobacco companies have increased marketing of smokeless tobacco products as cigarette smoking decreased.
Smokeless Tobacco Use

- Smokeless tobacco (US adults)
- Smokeless tobacco (US Military)
• 12.8% of the military personnel used smokeless tobacco in the past 30 days vs. 2.7% US adults.

• Smokeless tobacco use differ between services
  – Marine 32%
  – Army 21%
  – Navy 17%
  – Air Force 13%

• Highest prevalence of smokeless tobacco use in young male age 18-25: 31%

• Healthy People 2020 objective: 0.5%
Millennium Cohort Study

- Largest longitudinal study undertaken by DoD in 2001 to evaluate potential risk factors of health outcomes in the military

- Baseline questionnaire 2001-2003: 77,047
- Follow up 2004-2006: 55,021

- Single question-smokeless tobacco use in the past year

- 11% (9% persistent user, 2% new user), 86% never used smokeless tobacco
- Combat exposure is related with higher use of smokeless tobacco
Smokeless Tobacco Use in the US Military

• What we know
  – Smokeless tobacco use is higher in the US military vs. US adults
  – Smokeless tobacco use differs between branches
  – Combat deployment is related with increased use of smokeless tobacco use
• What we do not know
  – Why US military has 5 times higher prevalence in smokeless tobacco use
  – Initiation point
  – Other factors related to smokeless tobacco use
  – Optimal cessation strategy
  – Effect of smokeless tobacco use on military readiness and health
Smokeless Tobacco Use in the US Military Project

- Murtha Cancer Center
  - MAJ Steve Lee, PI
  - COL Craig Shriver, Director
  - Dr. Kangmin Zhu, Associate Director for Military Epidemiology and Population Sciences
  - Dr. Jie Lin, Senior Cancer Epidemiologist

- USU Postgraduate Dental College
  - MG(Ret) Patrick Sculley

- Department of the Army
  - MG Thomas Tempel, Chief, DC
  - MAJ Paul Colthirst

- Department of the Air Force
  - MG Gerard Caron, Chief, DC
  - LTC Katherine Morganti
  - LTC Sullivan

- Department of the Navy
  - CDR Steve Matis
Short Term Goal-Pilot Study

• Pilot study
  – Study Sites
    • Fort Bragg-Army, San Antonio-Air Force, San Diego-Navy
  – Study Subjects
    • AD present to dental clinic for routine annual check up
  – Study Methods
    • Survey
    • 750 completed questionnaires
Short Term Goal-Pilot Study

– Detailed questionnaires
  • Demographics (branch, rank, race/ethnicity, gender, age, marital status, education)
  • Deployment and combat exposure
  • Smokeless tobacco, cigarette, cigar, alcohol, e-cigarette use
    – Initiation point (age and military specific), amount, duration of use, reason for use, use during deployment, increased use during deployment
  • Second hand smoking
  • Family member smoking history
  • Opinion on tobacco price in the military store
  • Knowledge check
  • Intention on quitting tobacco

– Pilot study to evaluate feasibility of larger study
Long term goal

• Expansion of the pilot study to other military installations

• Longitudinal cohort study

• Outcomes evaluation utilizing Military Healthcare System Database

• Sampling of buccal mucosa sample, blood sample to potentially identify possible biomarkers for early oral cancer/other cancer.
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Questions