

# MILITARY OCCUPATIONAL CODES: THEIR USES AND LIMITATIONS IN UNDERSTANDING OCCUPATIONAL EXPOSURE RISKS AND AS PREDICTORS OF DEPLOYMENT-RELATED LUNG DISEASE

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# BACKGROUND

- Clinical Question:  
Does the military MOS (Military Occupational Specialty) have any utility in understanding occupational and environmental exposures in the military?
- Study Hypothesis:  
Certain military MOS's help predict the development of deployment lung disease.



# BACKGROUND



# BACKGROUND

- Military Occupational Code (MOS): Army and Marines
- MOS maybe promising in understanding military occupational exposures
- MOS may not reflect deployment jobs



# BACKGROUND



- MOS history
  - Appears to come from British Army
  - Simple coding system
    - Organize training and experience
    - Fighting units
  - Currently a management tool
    - Training
    - Assignments
    - Promotions

# BACKGROUND

- MOS's of different services
  - All train in initial MOS and then may retrain
  - Army
    - MOS system
  - Marines
    - MOS system
  - Air Force
    - AFSC – Air Force Specialty Code
  - Navy & Coast Guard
    - Ratings – Enlisted
    - Designators - Officers



# BACKGROUND

- Initial MOS
  - Assigned at the recruiters office or in basic training
  - Must perform for two years
  - Apply for retraining after two years
- Primary MOS
  - Usually initial training
  - Majority of training
- Duty MOS
  - Reflects current assignment
    - Home station or deployment

# HOW ARE MOS'S DEFINED

- Army
  - Revised in 1965 and 1983 – changes in military
  - Organization
    - Ground operations – Troops, armored equipment
    - Support operations – Logistics, medical, air support
  - 9 character system
    - 1<sup>st</sup>/2<sup>nd</sup> → Career field (11 for Infantry)
    - 3<sup>rd</sup> → Divides career field (11B for rifle infantryman)
    - 4<sup>th</sup> → Skill level (1=private, 6=sergeant major)
    - 5<sup>th</sup> → Special qualification
    - 6<sup>th</sup>/7<sup>th</sup> → Additional skills
    - 8<sup>th</sup>/9<sup>th</sup> → Language





# HOW ARE MOS'S DEFINED



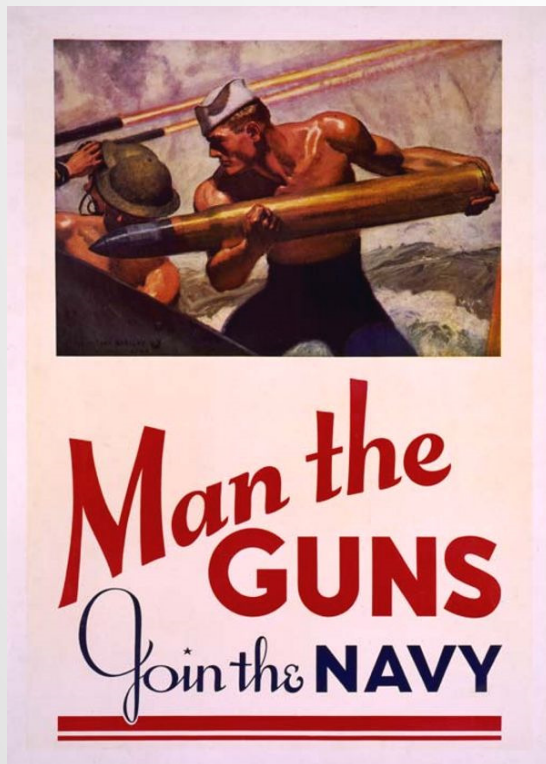
- Marines
  - Organization
    - Navy ground operations – Troops, armored equipment
    - Support operations – Logistics, medical, air support
  - 4 digit system
    - Very similar to the Army
    - Fewer job variations
    - Recent change to remove “man” to “marines” in job titles

# HOW ARE MOS'S DEFINED

- Air Force
  - Organization
    - AFSC (Air Force Specialty Code)
    - Air and Space operations – Pilots, aircrew, space operators, aircraft maint.
    - Support operations – Logistics, medical, legal, chaplain
    - Revision in 1993
  - 5 character system
    - 1<sup>st</sup> → Career group (3-support, 4-medical)
    - 2<sup>nd</sup> → Career field (4-primary care, 5-surgery)
    - 3<sup>rd</sup> → Career field sub-divided
    - 4<sup>th</sup> → Skill level (3-apprentice, 5-journeyman)
    - 5<sup>th</sup> → Specialty (1-operations)



# HOW ARE MOS'S DEFINED



- Navy
  - Organization
    - All Sea operations – Sailors, pilots, SEALs, space operators, aircraft maint.
    - Support operations – Logistics, medical
  - Ratings – Navy Enlisted Classification
    - 2-3 character
      - ABE – Aviation Boatswain's Mate - Aviation
  - Designators – Officers
    - Character system similar to the Air Force

# PREVIOUS USE OF MOS AS AN EPI TOOL

- Initial study: Looked at the development of PTSD in deployers vs. non-deployer
  - Study include MOS data – showed no effect
- Three other studies:
  - PTSD/depression for deployed occupations
    - Support, communications, health care, combat specialist, service, supply
  - PTSD, TBI, paralysis for MOS classifications in Combat Arms vs. All others.
  - Musculoskeletal issues based on MOS classification of
    - High intensity combat, moderate intensity combat, maintenance, driving, administrative, and all others

# METHODS

- Study Design:
  - Four person panel to determine which MOS's with higher likelihood of exposures
  - Limit the study to Army and Marines
  - Army MOS's likely with higher exposures
    - Infantry: 11B
    - Field Artillery: 13D
    - Special Forces: 18B, C, D
  - Marines MOS's likely with higher exposures
    - Infantry: 03
    - Artillery: 08
    - Military Police: 58

# METHODS

- Study Design:
  - Grading scheme → ID MOS's with the highest exposure risk for several hazardous exposures
  - Compare MOS's with a database of deployers at National Jewish Hospital with deployment lung diseases

## Center of Excellence on Deployment-Related Lung Disease

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**Department of Medicine**

- Division of Allergy & Clinical Immunology
- Division of Cardiology
- Division of Environmental & Occupational Health

As a nation, we depend upon our military personnel to defend us against serious threats to our freedom and well-being. Sadly, many who survive their deployment and return to the United States are left with considerable disabilities, including lung injury and diseases. One survey suggests that war fighters returning from Iraq and Afghanistan suffer asthma, bronchiolitis and other severe respiratory diseases at about twice the rate of veterans stationed elsewhere.

These conditions can cause tremendous individual suffering and cost the nation billions of dollars in lost wages, veterans benefits compensation and health care costs. Suspected causes are environmental exposures to garbage burn pits, dust storms, industrial emissions and fires. The long-term health consequences of these exposures remain largely unidentified, and current treatment options are limited and often rely on standard clinical practices that may not be optimal for these disabled soldiers, sailors, Marines and airmen, who were fit and vigorous before deployment.





# METHODS



- Grading Scheme
  - Will likely use 1-3 grade for likelihood of exposure
    - 1 – not likely
    - 2 – possible
    - 3 – very likely



# METHODS



- 4 person panel
  - 2 deployment veteran physicians
  - 2 physicians with extensive experience with deployers
- Panel will grade all MOS's individually
  - Score of 9-18 = low risk of exposure
  - Score of 18-27 = high risk of exposure

# METHODS



- Statistical Analysis
  - Use a yet to be determined statistical analysis to compare our MOS list and grading scheme to the data base at National Jewish
  - National Jewish data base includes:
    - MOS info
    - Deployment info
    - Demographics
    - Sx's
    - Dx's

# RESULTS

- After analysis determine if the MOS's classified as high risk exposure have higher rates of deployment lung disease



# THANK YOU!

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