Public Health Services at Fort Riley, Kansas &
The Assessment of Tobacco Use among Active-Duty Personnel

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Kansas State University
QuickTime™ and a decompressor are needed to see this picture.

http://www.youtube.com/watch?v=KYIoA_kXLxY&feature=related
Presentation Overview

- Demographics of Fort Riley
- Department of Public Health at Fort Riley
- Field Experience Objectives
- Patient Care Observation
- Outbreak Investigation
- Tobacco Use Study
Presentation Overview

- Demographics of Fort Riley
Fort Riley

- Located in Northeast Kansas between Junction City and Manhattan
- Total resident population of 9,000
- Daytime population of nearly 25,000
- 60% White
- 23% Black
- 13% Hispanic
- 4% other ethnic groups
- Median age of 21.9 years
- 63% males
- 37% females

Reference: US Census Bureau, 2000
Presentation Overview

- Demographics of Fort Riley
- Department of Public Health at Fort Riley
Public Health Services

- Environmental Health
- Occupational Health
- Industrial Hygiene
- Public Health Nursing
- Epidemiology
Presentation Overview

- Demographics of Fort Riley
- Department of Public Health at Fort Riley
- Field Experience Objectives
Field Experience Objectives

- Observe preventive medicine at a patient care level
- Investigate and managing a communicable and/or reportable disease
- Conduct a tobacco use prevalence study among active-duty personnel serving on Fort Riley Army Post
Presentation Overview

- Demographics of Fort Riley
- Department of Public Health at Fort Riley
- Field Experience Objectives
- Patient Care Observation
Patient Care Observation

Cold Weather Injury

www.actionemb.com/old_public/army/tabs.htm

www.dubaiforum.com/dubai-chat/lets-start-new..

expat21.wordpress.com

www.ohiohealth.com/bodymayo.cfm?id=6&action
Patient Care Observation

Tuberculosis

[Image of chest X-ray]

www.topnews.in/health/diseases/tuberculosis
Patient Care Observation

Tobacco Cessation

bipolarblast.wordpress.com

www.betterhealthnews.com

rdmblog.wordpress.com
Presentation Overview

- Demographics of Fort Riley
- Department of Public Health at Fort Riley
- Field Experience Objectives
- Patient Care Observation
- Outbreak Investigation
Disease Outbreak Investigation
Respiratory Syncytial Virus (RSV)

Incubation Period (4-7 days)
Disease Outbreak Investigation

RSV (+) Cases at Ft. Riley

# of Cases

Days

Jan-10
Jan-09
Presentation Overview

- Demographics of Fort Riley
- Department of Public Health at Fort Riley
- Field Experience Objectives
- Patient Care Observation
- Outbreak Investigation
- Tobacco Use Study
Tobacco use at Fort Riley

http://www.armytimes.com
Background

Tobacco use is the leading cause of disease death in the US with an estimated 443,000 deaths each year.

Smoking is known to increase the risk of:

- Stroke
- Cardiovascular disease
- Chronic obstructive pulmonary disease
- Lung cancer
- Several other forms of cancer

Smokeless tobacco use has been shown to increase the risk of:

- Oral cancer
- Pancreatic cancer
- Cardiovascular disease

Reference: CDC, 2008b
Background

Tobacco use trends

Cigarette smoking in the military:

- 1980 - 51%
- 1998 - 30%
- 2002 - 34%
- 2005 - 32%
- 2008 - 32%

Reference: Bray et al., 2006

(www.forward.com)
## Background

### Tobacco use prevalence

<table>
<thead>
<tr>
<th></th>
<th>Smoked Tobacco</th>
<th>Smokeless Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Civilian</strong></td>
<td>20% (18% in KS)</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Military</strong></td>
<td>32%</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Army</strong></td>
<td>38%</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Marines</strong></td>
<td>36%</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Navy</strong></td>
<td>32%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Air Force</strong></td>
<td>23%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Reference: Bray et. al., 2006; Heyman et. al., 2009; CDC, 2008b; Cokkinides et. al., 2009
Methods

Purpose

➢ To determine the prevalence of tobacco use and interest in tobacco cessation among active-duty personnel assigned to Fort Riley Army Post

➢ To examine the determinants of tobacco use and interest in tobacco cessation
Methods

Design and Procedures

Collaborative effort between Fort Riley Medical Activity of Preventive Medicine (e.g., Public Health) and Fort Riley Soldier Readiness Process (SRP) center

Sample was surveyed during a deployment Soldier Readiness Process, post-deployment health assessment, or periodic health assessment (PHA)
Methods

Instrument

- 24-item questionnaire
- Demographics (name, social security number, age, and unit)
- Pneumonia-related items (pneumococcal vaccine screen)
- Tuberculosis-related items (TB skin testing)
- Female, 26-years old and younger only (i.e., Are you pregnant, are you breastfeeding, HPV vaccine/Gardasil vaccine?)

Tobacco use questions:
- Do you use tobacco (yes or no)
- Smoke or chew
- Are you interested in quitting
# Results

<table>
<thead>
<tr>
<th>Factor</th>
<th>Value</th>
<th>SD^a</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (yrs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>26.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Range</td>
<td>17-58</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5635</td>
<td>91.2</td>
</tr>
<tr>
<td>Female</td>
<td>546</td>
<td>8.8</td>
</tr>
<tr>
<td><strong>Age Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-21</td>
<td>1397</td>
<td>22.6</td>
</tr>
<tr>
<td>22-24</td>
<td>1523</td>
<td>24.7</td>
</tr>
<tr>
<td>25-27</td>
<td>1048</td>
<td>17.0</td>
</tr>
<tr>
<td>28-32</td>
<td>976</td>
<td>15.8</td>
</tr>
<tr>
<td>33-58</td>
<td>1236</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>Unit/Brigade</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Bde</td>
<td>1406</td>
<td>22.7</td>
</tr>
<tr>
<td>2nd Bde</td>
<td>1428</td>
<td>23.1</td>
</tr>
<tr>
<td>Avn Bde</td>
<td>881</td>
<td>14.3</td>
</tr>
<tr>
<td>4th Bde</td>
<td>1265</td>
<td>20.5</td>
</tr>
<tr>
<td>No Unit</td>
<td>208</td>
<td>3.4</td>
</tr>
<tr>
<td>Partner Units</td>
<td>993</td>
<td>16.1</td>
</tr>
</tbody>
</table>

^aStandard Deviation

Table 1. Descriptive characteristics of participants of a tobacco use study among active-duty personnel at Fort Riley Army post.

Total Participants 6181
## Results

Table 1. Tobacco use at Fort Riley, Kansas (N = 6181).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Any Tobacco Use</th>
<th>Smoked Tobacco Use</th>
<th>Smokeless Tobacco Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prevalence (%)</td>
<td>AOR(^a) (95% CI(^b))</td>
<td>Prevalence (%)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>0.3 (0.3-0.4)(^c)</td>
<td>25</td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>Referent</td>
<td>41</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-21</td>
<td>55</td>
<td>2.1 (1.8-2.5)(^c)</td>
<td>47</td>
</tr>
<tr>
<td>22-24</td>
<td>54</td>
<td>2.0 (1.7-2.3)(^c)</td>
<td>43</td>
</tr>
<tr>
<td>25-27</td>
<td>52</td>
<td>1.8 (1.5-2.1)(^c)</td>
<td>43</td>
</tr>
<tr>
<td>28-32</td>
<td>46</td>
<td>1.5 (1.3-1.8)(^c)</td>
<td>35</td>
</tr>
<tr>
<td>33-58</td>
<td>36</td>
<td>Referent</td>
<td>26</td>
</tr>
<tr>
<td>Unit/Brigade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1(^{st}) Brigade</td>
<td>46</td>
<td>1.1 (1.0-1.3)</td>
<td>37</td>
</tr>
<tr>
<td>2(^{nd}) Brigade</td>
<td>50</td>
<td>1.2 (1.04-1.5)(^c)</td>
<td>41</td>
</tr>
<tr>
<td>Avn Brigade</td>
<td>44</td>
<td>1.2 (1.0-1.4)</td>
<td>37</td>
</tr>
<tr>
<td>4(^{th}) Brigade</td>
<td>63</td>
<td>1.7 (1.4-2.1)(^c)</td>
<td>48</td>
</tr>
<tr>
<td>No Unit</td>
<td>45</td>
<td>1.2 (0.9-1.7)</td>
<td>35</td>
</tr>
<tr>
<td>Partner-Units</td>
<td>39</td>
<td>Referent</td>
<td>33</td>
</tr>
<tr>
<td>Total Participants</td>
<td>49</td>
<td>39</td>
<td>19</td>
</tr>
</tbody>
</table>

\(^a\) Odds ratios were adjusted for sex, age group, and unit/brigade.

\(^b\) 95% CI = 95% confidence interval of the adjusted odds ratio (AOR).

\(^c\) Estimate is significantly different from the reference group at the 95% confidence interval.
Results

Figure 1. Adjusted prevalence of tobacco use by unit

<table>
<thead>
<tr>
<th>Brigade</th>
<th>Any Tobacco</th>
<th>Smoked Tobacco</th>
<th>Smokeless Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Brigade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Brigade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avn Brigade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Brigade</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Partner Units</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Results

Table 2. Interest in tobacco cessation among total tobacco users (N=3032).

<table>
<thead>
<tr>
<th>Factor</th>
<th>AOR(^a) (95% CI(^b))</th>
<th>AT(^d) (%)</th>
<th>ST(^e) (%)</th>
<th>SLT(^f) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.0 (0.7-1.5)</td>
<td>36</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>Female</td>
<td>Referent</td>
<td>36</td>
<td>37</td>
<td>31</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-21</td>
<td>0.6 (0.5-0.8)(^c)</td>
<td>28</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>22-24</td>
<td>0.9 (0.7-1.1)</td>
<td>36</td>
<td>40</td>
<td>23</td>
</tr>
<tr>
<td>25-27</td>
<td>1.0 (0.8-1.3)</td>
<td>39</td>
<td>43</td>
<td>33</td>
</tr>
<tr>
<td>28-32</td>
<td>1.2 (0.9-1.6)</td>
<td>44</td>
<td>48</td>
<td>37</td>
</tr>
<tr>
<td>33-58</td>
<td>Referent</td>
<td>39</td>
<td>45</td>
<td>28</td>
</tr>
<tr>
<td><strong>Unit/Brigade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1(^{st}) Brigade</td>
<td>1.9 (1.4-2.5)(^c)</td>
<td>40</td>
<td>43</td>
<td>35</td>
</tr>
<tr>
<td>2(^{nd}) Brigade</td>
<td>2.1 (1.6-2.8)(^c)</td>
<td>43</td>
<td>46</td>
<td>36</td>
</tr>
<tr>
<td>Avn Brigade</td>
<td>1.4 (1.02-1.9)(^c)</td>
<td>34</td>
<td>37</td>
<td>21</td>
</tr>
<tr>
<td>4(^{th}) Brigade</td>
<td>1.6 (1.2-2.2)(^c)</td>
<td>33</td>
<td>37</td>
<td>25</td>
</tr>
<tr>
<td>No Unit</td>
<td>1.7 (1.1-2.7)(^c)</td>
<td>39</td>
<td>42</td>
<td>17</td>
</tr>
<tr>
<td>Partner Units</td>
<td>Referent</td>
<td>27</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total tobacco users</strong></td>
<td></td>
<td>36</td>
<td>40</td>
<td>28</td>
</tr>
</tbody>
</table>

\(^a\) Odds ratios were adjusted for sex, age group, and unit/brigade.

\(^b\) 95% CI = 95% confidence interval of the adjusted odds ratio (AOR).

\(^c\) Estimate is significantly different from the reference group at the 95% confidence interval.

\(^d\) Any tobacco use

\(^e\) Smoked tobacco use

\(^f\) Smokeless tobacco use
Conclusions

- Active-duty personnel at Fort Riley represent a high-risk population for tobacco use
- Potential deploying and re-deploying effect
- There is substantial interest in cessation
- Results provide important information for local health care providers that can be used to tailor current prevention and cessation programs
- Additional research is needed to examine the difference of tobacco use found between units, to include tobacco use through an entire deployment cycle
Recommendations

Limit tobacco use

- Strict enforcement of tobacco use to include smokeless tobacco in all buildings
- Consideration of expanded limitation of all vehicles and in uniform on post
- Encouragement of smoke-free areas (i.e., medical campus)
- Limit tobacco use among leaders in the presence of subordinates

Eliminate non-smoker exposure

- Decrease social acceptability
- Deter initiation
- 47% decrease in 2nd hand exposure to non-smokers

Reference: CDC, 2007
Recommendaions

- Pricing: equal cost to off base
- Eliminate sales (at least in commissary like Navy and Marine Corps)
- Increase tobacco use surveillance at all SRP and medical care encounters
- Targeted intervention
  - Based on rapid response to surveillance
  - Advertise cessation at point of sale
Acknowledgements

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Anita Cortez, MA
Norayma Ornelas, BA
I WANT YOU TO PUT OUT THAT CIGARETTE
References


Cost of smoking for the DoD in dollars:

- Nearly $1 billion annually
- $584 million per year in health care costs
- $346 million annually in lost productivity
- 19% of smokers are prematurely discharged resulting $130 million in excess training costs

Reference: Heyler et al., 1998; Kleges et al., 2001
Background

Tobacco use trends

Tobacco cessation in the Military:

- 67% of smokers reported trying to quit in the past year
- 33% did not try to quit
- 14% successful
- 23% intended to quit in next 30 days
- 40% intended to quit in next 6 months

Reference: Bray et al., 2006