Strategic Vision – Population Health and Vision in the Military

MODERATOR

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Prevent Blindness
Bringing Americans to Eye Care

Focus on Eye Health National Summit

A Lifetime of Vision
July 17, 2019 | National Press Club | Washington D.C.
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Strategic Vision – Population Health and Vision in the Military
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• The views expressed in this presentation are those of the author and does not reflect the official policy of the Defense Health Agency, Department of Defense, or the U.S. Government.

• Presenter has no conflicts to disclose.

• All data presented is unclassified
Overview

- DoD/VA Vision Center of Excellence background
- Population Overview
- Ocular Injuries
- Visual Dysfunction after TBI
- Disease/Non-battle Injuries (DNBI)
- Human Performance Considerations
DoD/VA Vision Center of Excellence

- NDAA 2008 directed the establishment of a Center of Excellence in the prevention, diagnosis, mitigation, treatment, and rehabilitation of military eye injuries, including visual dysfunction related to traumatic brain injury
- Directed a registry of information for the tracking of the diagnosis, interventions and follow up for eye injuries incurred while serving on active duty
- Ongoing collaboration with Veterans Affairs for continuity of care
Population Overview

All Services, Active Component 2001-2017

- Population in millions

Service Breakdown, Active Component 2001-2017

- Army, 37.1%
- Navy, 24.7%
- Air Force, 24.5%
- Marines, 13.6%

Data from the Defense Medical Epidemiology Database, The Armed Forces Health Surveillance Branch, Defense Health Agency, Silver Spring, Maryland [2001-2017]
Population Overview

Data from the Defense Medical Epidemiology Database, The Armed Forces Health Surveillance Branch, Defense Health Agency, Silver Spring, Maryland [2001-2017]
Ocular Injuries

• Significant impact on readiness and retention
  • Occupational requirements
• Battle and Battle-related Injuries
  • Documentation
  • Evacuation chain
• Garrison/Training environment

Photo by Petty Officer 2nd Class Timothy Black
Fleet Combat Camera Pacific
## Ocular Injuries

**TABLE IA. Incident Eye Injury**

<table>
<thead>
<tr>
<th>Type of Eye Injury</th>
<th>2000–2017Q1 Ambulatory</th>
<th>2000–2017Q1 Hospitalized</th>
<th>2000–2017Q1 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>270,505</td>
<td>5,237</td>
<td>275,742</td>
</tr>
<tr>
<td>Superficial</td>
<td>193,658</td>
<td>701</td>
<td>194,359</td>
</tr>
<tr>
<td>Non-Superficial</td>
<td>76,847</td>
<td>4,536</td>
<td>81,383</td>
</tr>
<tr>
<td>High risk of blindness</td>
<td>5,144</td>
<td>943</td>
<td>6,087</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Annualized</th>
<th>Hospitalized</th>
<th>Annualized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>15,681</td>
<td>304</td>
<td>15,985</td>
</tr>
<tr>
<td>Superficial</td>
<td>11,227</td>
<td>41</td>
<td>11,267</td>
</tr>
<tr>
<td>Non-Superficial</td>
<td>4,455</td>
<td>263</td>
<td>4,718</td>
</tr>
<tr>
<td>High risk of blindness</td>
<td>298</td>
<td>55</td>
<td>353</td>
</tr>
</tbody>
</table>

Ocular Injury Initiatives

• Prehospital and Prolonged Field Care
  • Clinical Practice Guideline

• Ocular Laser Exposures
  • Diagnosis, treatment and documentation

• Expeditionary Eye Care
  • Most current recommendations across subspecialties
Defense and Veterans Eye Injury and Vision Registry (DVEIVR)

• Provides the DoD and VA vision care community with a health registry consisting of DoD and VA ocular clinical and related data
• Enable tracking of eye injuries of active duty Service Members to inform
  • Coordination of care
  • Longitudinal analysis
• Ongoing outcome analysis of diverse injury types to inform treatment recommendations
Ocular Injuries – Prevention

- Spectacles must be capable of defeating a 0.15 caliber, 5.8 grain, T-37 shaped fragment simulating projectile at 640 feet per second which is much better than the current ANSI standards for high velocity impact requirements.
- Spectacles must weigh 1.7 ounces or less
- Goggles must be capable of defeating a the T-37 projectile at 550 feet per second and weigh 5.1 ounces or less
- Must absorb 99.9 percent of UVA and UVB light

Tri-Service Vision Conservation & Readiness Division, Army Public Health Center
Visual Dysfunction after TBI

• Over 375,000 TBIs reported by the Defense and Veterans Brain Injury Center since 2000
• Dysfunctions range from accommodative dysfunction and convergence insufficiency to visual field loss
• Dysfunctions vary by severity of TBI
• Variations in documentation and interventions
Disease/Non-battle Injuries

• Significant effects on readiness in all environments
• Acute and chronic conditions
• Frequent cause of medical evacuation
• Challenges in defining magnitude and risk factors

Photo by Tech. Sgt. Robert Cloys
386th Air Expeditionary Wing Public Affairs
**Burden of Ocular and Vision Conditions 2018**

Data from the Defense Medical Surveillance System, The Armed Forces Health Surveillance Branch, Defense Health Agency, Silver Spring, Maryland [2018]
Burden of Ocular and Vision Conditions 2018

[Bar chart showing the distribution of medical encounters and hospital bed days by disease category.]

Data from the Defense Medical Surveillance System, The Armed Forces Health Surveillance Branch, Defense Health Agency, Silver Spring, Maryland [2018]
Human Performance

- Sub-optimal visual acuity due to refractive error affects target discrimination and marksmanship performance
- Tactical athlete
- Static and dynamic visual acuity in sports
- Preference for contact lens use in activity
- Risk of CL use in operational settings
- Potential interaction with other readiness indicators

Annual Lifetime Prevalence of Selected Refractive Errors, Active Component, U.S. Armed Forces, 2001–2018

- Myopia
- Astigmatism
- Hyperopia
Human Performance

Photo by Airman 1st Class Joseph Barron
100th Air Refueling Wing Public Affairs

Photo by Pfc. Rashene Mincy
55th Combat Camera
Questions

https://vce.health.mil/
dha.ncr.dod-va.mbx.vce@mail.mil
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