

# U.S. Army Injury Surveillance 2016 Summary



Clinical Public Health and Epidemiology  
Injury Prevention

Website: <https://phc.amedd.army.mil/topics/discond/ptsaip/Pages/default.aspx>

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# Disclaimer

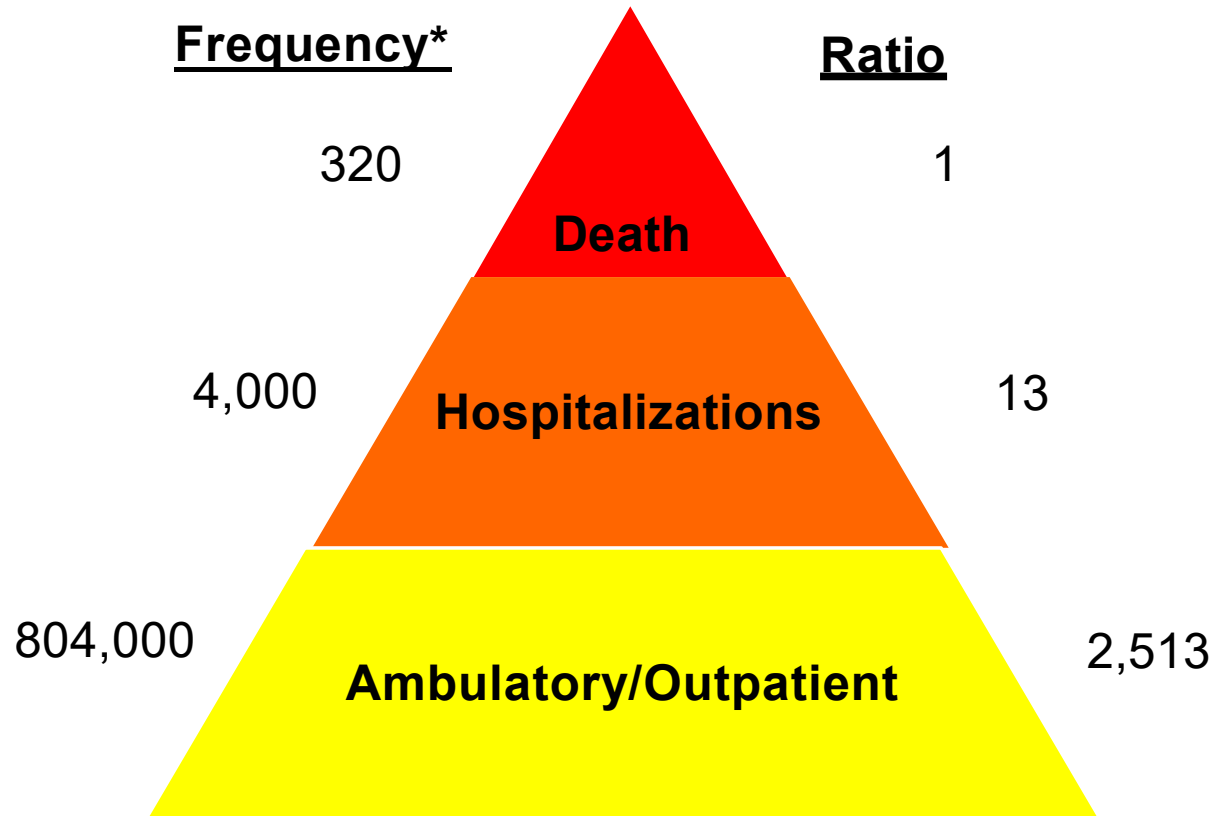


The views expressed in this presentation are those of the author(s) and do not necessarily reflect the official policy of the Department of Defense, Department of the Army, U.S. Army Medical Department or the United States.

- This document provides a summary of injury medical encounter surveillance data for Active Duty Soldiers from Calendar Year (CY) 2016
- Injuries are defined using the U.S. Army Public Health Center (APHC) Taxonomy of Injuries<sup>1</sup>
- This summary highlights Army Active Duty injury rates and distribution of injuries resulting from the applied Taxonomy of Injuries
- For additional details about data contained in these slides, please see the associated Technical Information Paper<sup>2</sup>

<sup>1</sup>APHC Public Health Information Paper (PHIP) No. 12-01-0717: A Taxonomy of Injuries for Public Health Monitoring & Reporting. December 2017. <http://www.dtic.mil/docs/citations/AD1039481>

<sup>2</sup>APHC Technical Information Paper (TIP) No. 12-110-0520: Annual Injury Surveillance Report 2016 Summary. July 2019. <https://www.dtic.mil/docs/citations/AD1104193>



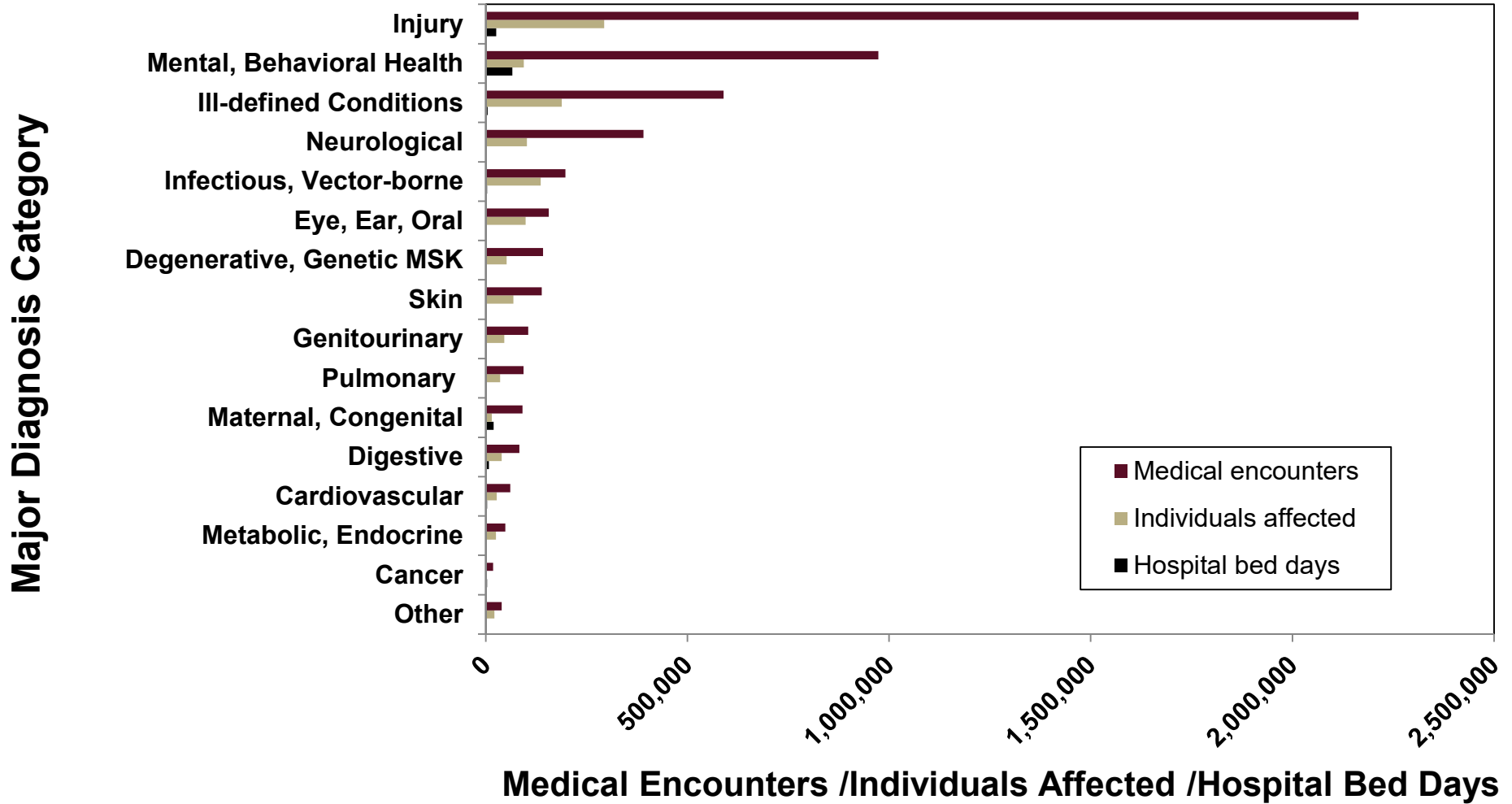
\*Frequencies are rounded

Data sources: Defense Medical Surveillance System (DMSS) and Armed Forces Medical Examiner System (AFMES); injuries defined using the APHC Taxonomy of Injuries

Prepared by Defense Health Agency Army Satellite, U.S. Army Public Health Center, Injury Prevention Program



# Relative Burden of Injuries and Diseases U.S. Army Active Duty, 2016



Diagnosis group "Other" includes adverse effects of drugs, blood disorders, and other neoplasms (not cancer)

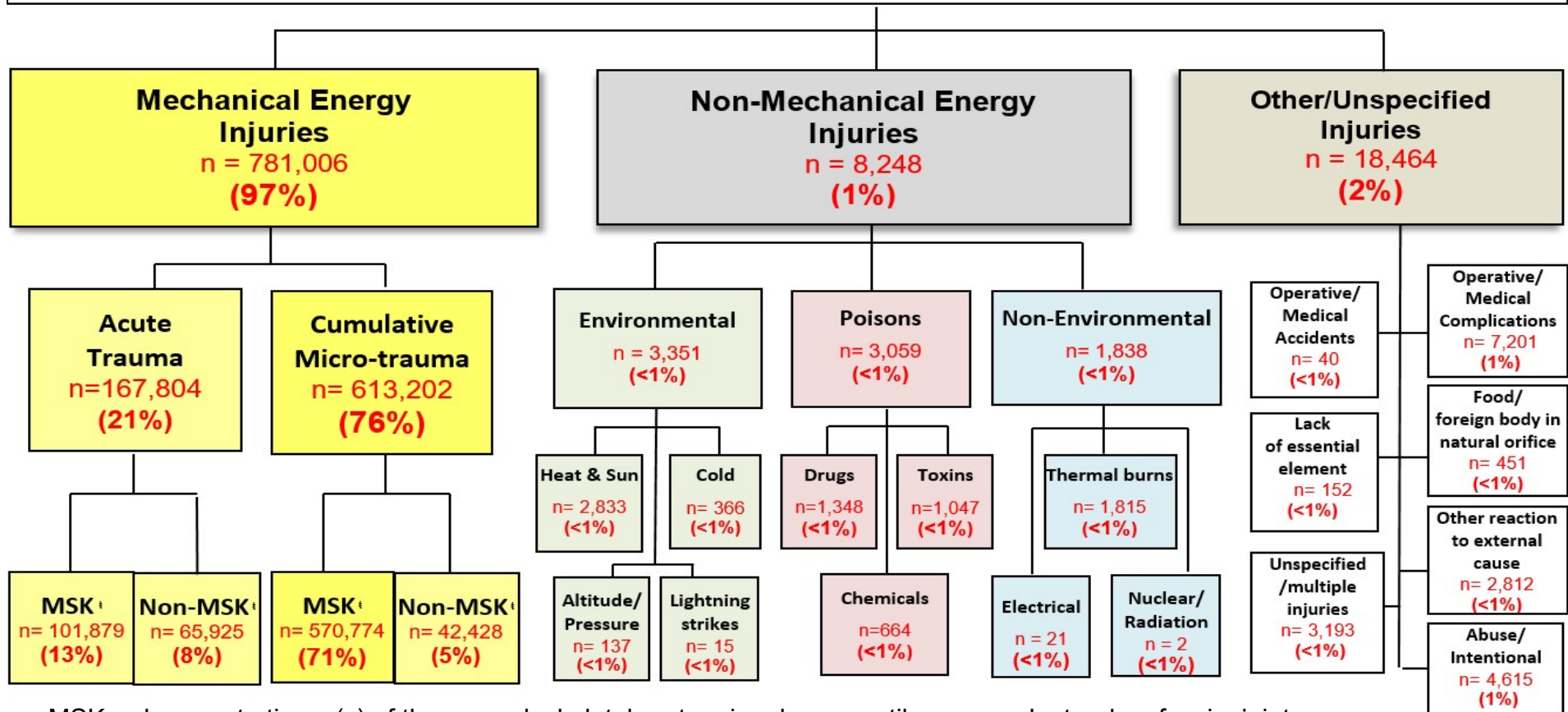
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### TAXONOMY OF INJURIES

**All Army Injuries: N = 807,718**

All Active Duty initial medical encounters, 2016



MSK = damage to tissue(s) of the musculoskeletal system i.e., bone, cartilage, muscle, tendon, fascia, joint, ligament, bursa, synovium

Data source: Defense Medical Surveillance System (DMSS)

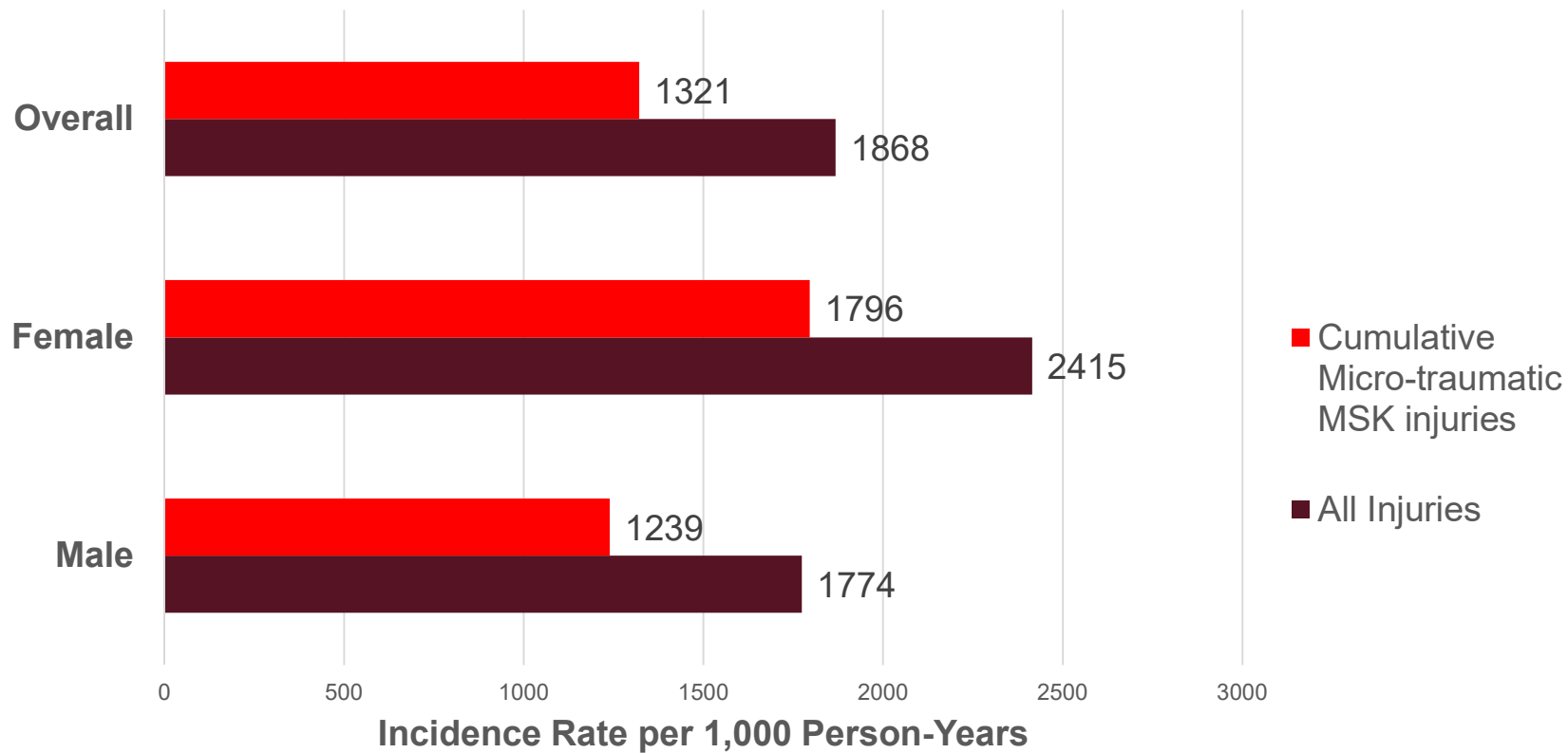
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# All Injury and Cumulative Micro-traumatic Musculoskeletal (MSK) Incident U.S. Army Active Duty, 2016



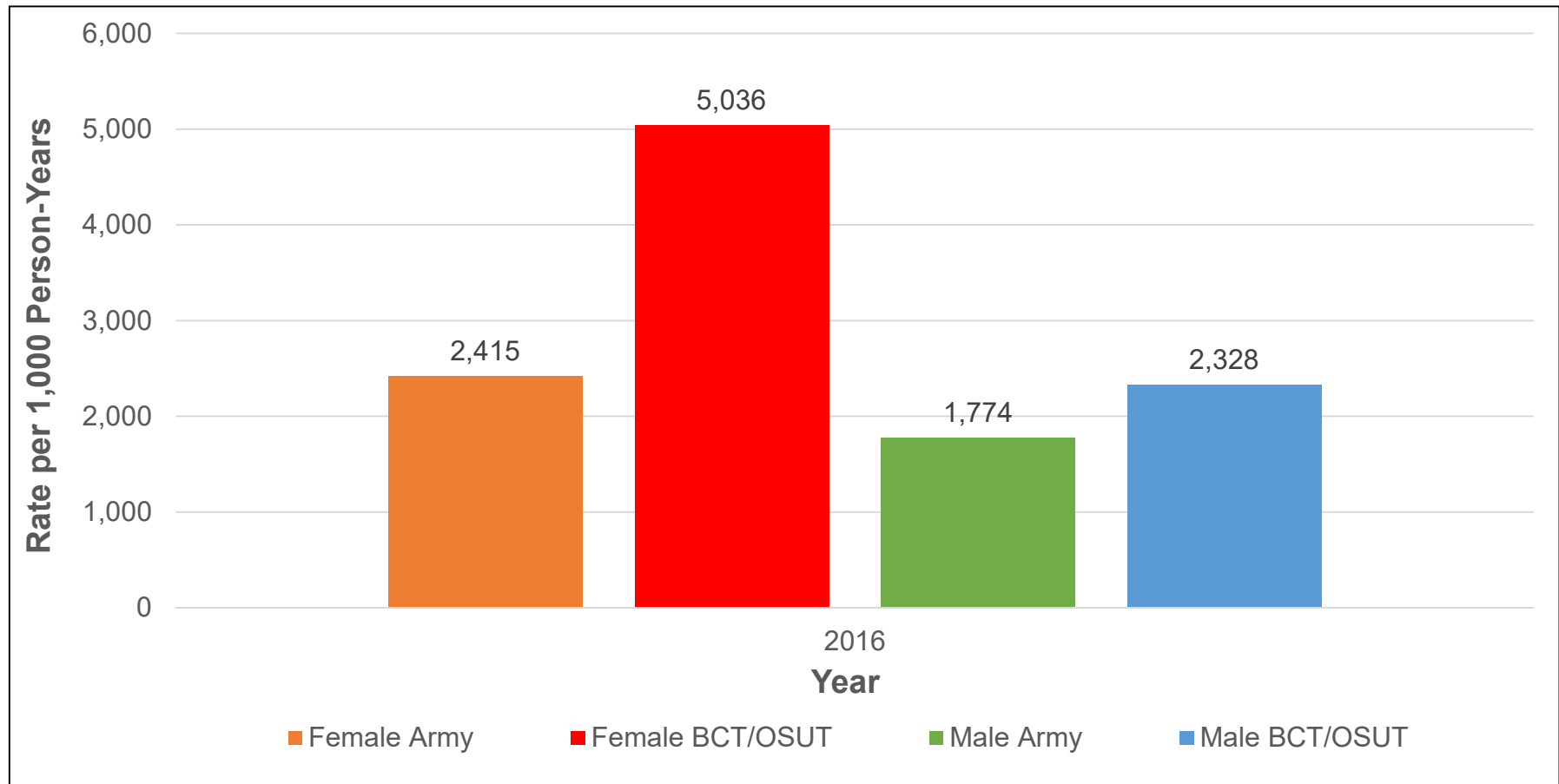
## Injury Visit Rates by Sex



Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APMC Taxonomy of Injuries  
Prepared by Defense Health Agency Army Satellite, U.S. Army Public Health Center, Injury Prevention



# Overall Incident Injury Visit Rates U.S. Army Active Duty vs. Trainee, 2016



Active Duty injury adjusted to remove deployed injury and deployed person-time

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Taxonomy of Injuries

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# Incident Mechanical Injuries by Body Region and Acute/Overuse U.S. Army Active Duty, 2016



| Body Region       | Acute Traumatic<br>(Trauma) | Cumulative<br>Micro-traumatic<br>(Overuse) | All                   |
|-------------------|-----------------------------|--|-----------------------|
| Lower Extremity   | 69,740 (41.6%)              | 288,891 (47.4%)                            | 361,273 (46.3%)       |
| Spine & Back      | 9,068 (5.4%)                | 176,350 (28.9%)                            | 185,418 (23.7%)       |
| Upper Extremity   | 53,830 (32.1%)              | 115,201 (18.9%)                            | 169,724 (21.7%)       |
| Head, Face & Neck | 25,367 (15.1%)              | 16,324 (2.7%)                              | 41,691 (5.3%)         |
| Torso             | 9,298 (5.5%)                | 823 (0.1%)                                 | 10,121 (1.3%)         |
| Other             | 501 (0.3%)                  | 12,244 (2.0%)                              | 12,779 (1.6%)         |
| <b>Total</b>      | <b>167,804 (100%)</b>       | <b>609,833 (100%)</b>                      | <b>781,006 (100%)</b> |

Injuries defined using the APHC Injury Taxonomy

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Taxonomy of Injuries

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# Incident Mechanical Injury Diagnoses by Body Region Visits U.S. Army Active Duty, 2016

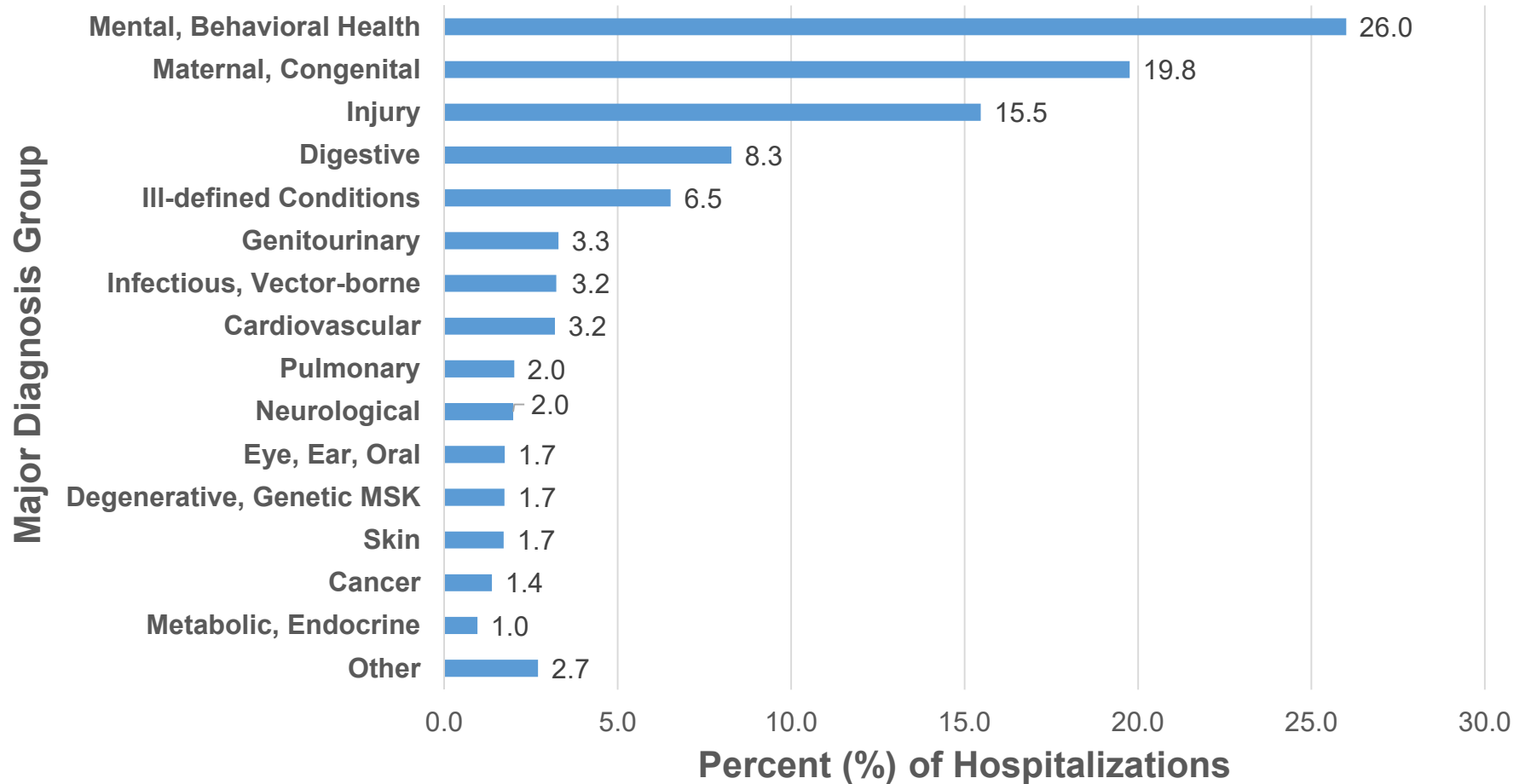


| Diagnosis                     | Head, Face & Neck |                  | Spine & Back |                | Torso        |             | Upper Extremity |                | Lower Extremity |                | Other       |               | Total          | % Total         |
|-------------------------------|-------------------|------------------|--------------|----------------|--------------|-------------|-----------------|----------------|-----------------|----------------|-------------|---------------|----------------|-----------------|
|                               | Acute (ACT)       | Cumulative (CMT) | ACT          | CMT            | ACT          | CMT         | ACT             | CMT            | ACT             | CMT            | ACT         | CMT           |                |                 |
| MSK Tissue Damage             | 36                | 0                | 55           | 159,080        | 52           | 3           | 3,736           | 106,303        | 5,580           | 282,817        | 165         | 12,138        | <b>569,965</b> | <b>73.0%</b>    |
| Sprain/Joint Damage           | 8                 | 0                | 2,775        | 0              | 911          | 0           | 8,384           | 693            | 29,235          | 2,642          | 53          | 34            | <b>44,735</b>  | <b>5.7%</b>     |
| Tissue Damage, Other          | 6,350             | 16,274           | 1,619        | 0              | 1,627        | 0           | 4,006           | 0              | 3157            | 0              | 230         | 3             | <b>33,266</b>  | <b>4.3%</b>     |
| Strain/Tear                   | 2,619             | 0                | 3,477        | 0              | 2,125        | 0           | 6,285           | 4,348          | 11,916          | 13             | 53          | 7             | <b>30,843</b>  | <b>3.9%</b>     |
| Nerve                         | 32                | 0                | 26           | 17,253         | 4            | 447         | 3,989           | 4,407          | 1,111           | 1,078          | 0           | 0             | <b>28,347</b>  | <b>3.6%</b>     |
| Contusion/Superficial         | 5,823             | 50               | 0            | 0              | 2,553        | 21          | 6,453           | 123            | 7,371           | 2,772          | 0           | 0             | <b>25,166</b>  | <b>3.2%</b>     |
| Fracture                      | 1,023             | 0                | 969          | 17             | 830          | 352         | 9,421           | 20             | 7,630           | 2,211          | 0           | 96            | <b>22,569</b>  | <b>2.9%</b>     |
| Open Wound                    | 4,348             | 0                | 0            | 0              | 426          | 0           | 8,060           | 0              | 2,654           | 0              | 0           | 0             | <b>15,488</b>  | <b>2.0%</b>     |
| Internal Organ & Blood Vessel | 5,109             | 0                | 107          | 0              | 709          | 0           | 120             | 0              | 20              | 0              | 0           | 0             | <b>6,065</b>   | <b>0.8%</b>     |
| Dislocation                   | 5                 | 0                | 40           | 0              | 45           | 0           | 2,661           | 0              | 827             | 0              | 0           | 0             | <b>3,578</b>   | <b>0.5%</b>     |
| Crush                         | 8                 | 0                | 0            | 0              | 14           | 0           | 524             | 0              | 204             | 0              | 0           | 0             | <b>750</b>     | <b>0.1%</b>     |
| Amputation                    | 6                 | 0                | 0            | 0              | 2            | 0           | 191             | 0              | 35              | 0              | 0           | 0             | <b>234</b>     | <b>&lt;0.1%</b> |
| <b>Total</b>                  | <b>25,367</b>     | <b>16,324</b>    | <b>9,068</b> | <b>176,350</b> | <b>9,298</b> | <b>823</b>  | <b>53,830</b>   | <b>115,894</b> | <b>69,740</b>   | <b>291,533</b> | <b>501</b>  | <b>12,278</b> | <b>781,006</b> |                 |
| <b>% Total</b>                | <b>3.2%</b>       | <b>2.1%</b>      | <b>1.2%</b>  | <b>22.6%</b>   | <b>1.2%</b>  | <b>0.1%</b> | <b>6.9%</b>     | <b>14.8%</b>   | <b>8.9%</b>     | <b>37.3%</b>   | <b>0.1%</b> | <b>1.6%</b>   |                | <b>100%</b>     |

Injuries defined using the APHC Injury Taxonomy; Acute traumatic (Trauma) and cumulative micro-traumatic (Overuse) injuries  
 Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Taxonomy of Injuries  
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# Major Diagnosis Groups Resulting in Hospitalizations U.S. Army Active Duty, 2016



Total number of hospitalizations = 29,561

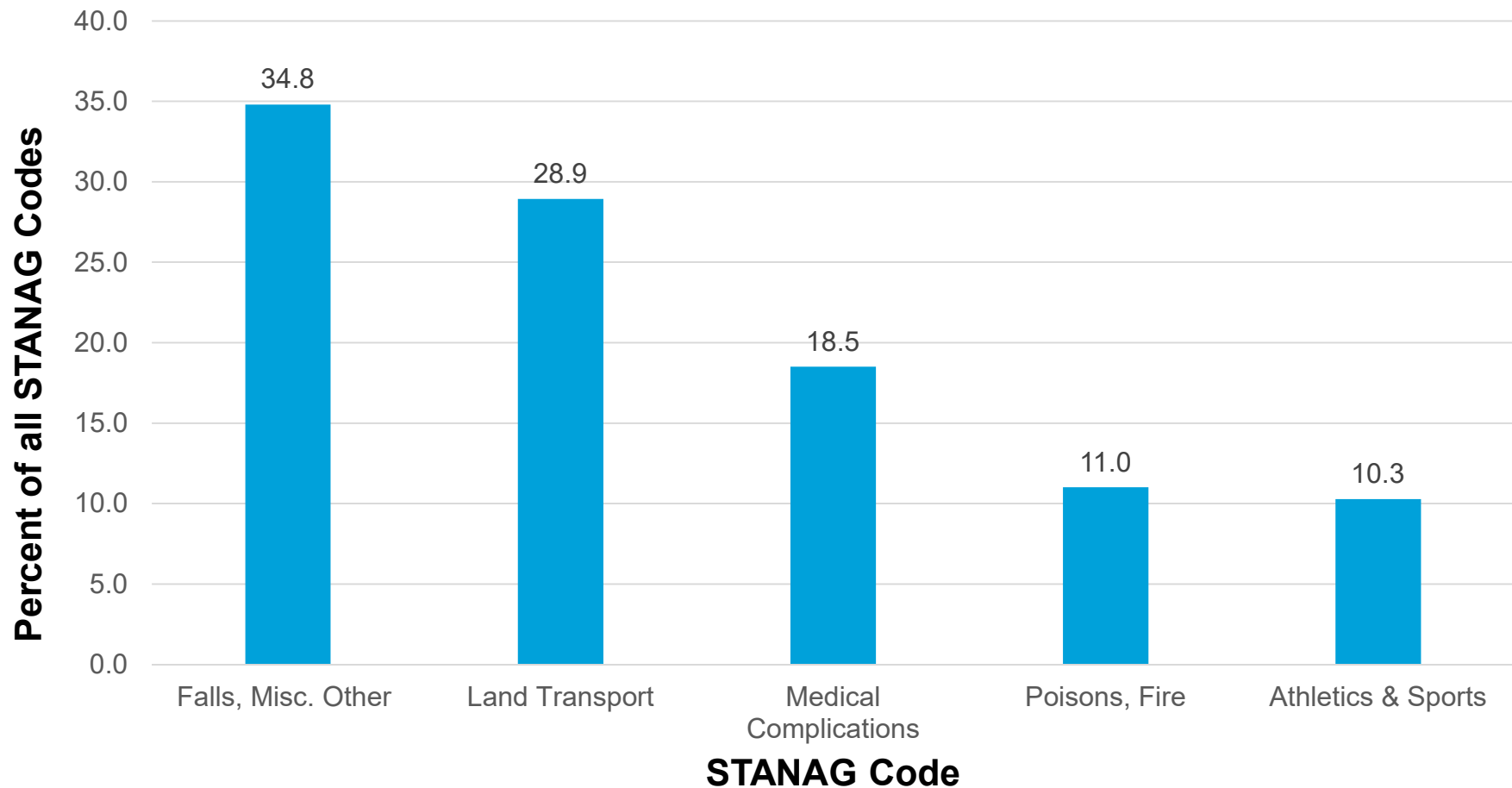
Diagnosis group "Other" includes adverse effects of drugs, blood disorders, and other neoplasms (not cancer)

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Taxonomy of Injuries

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# Leading Standardized Agreement (STANAG) Cause Codes for Injury Hospitalizations U.S. Army Active Duty, 2016



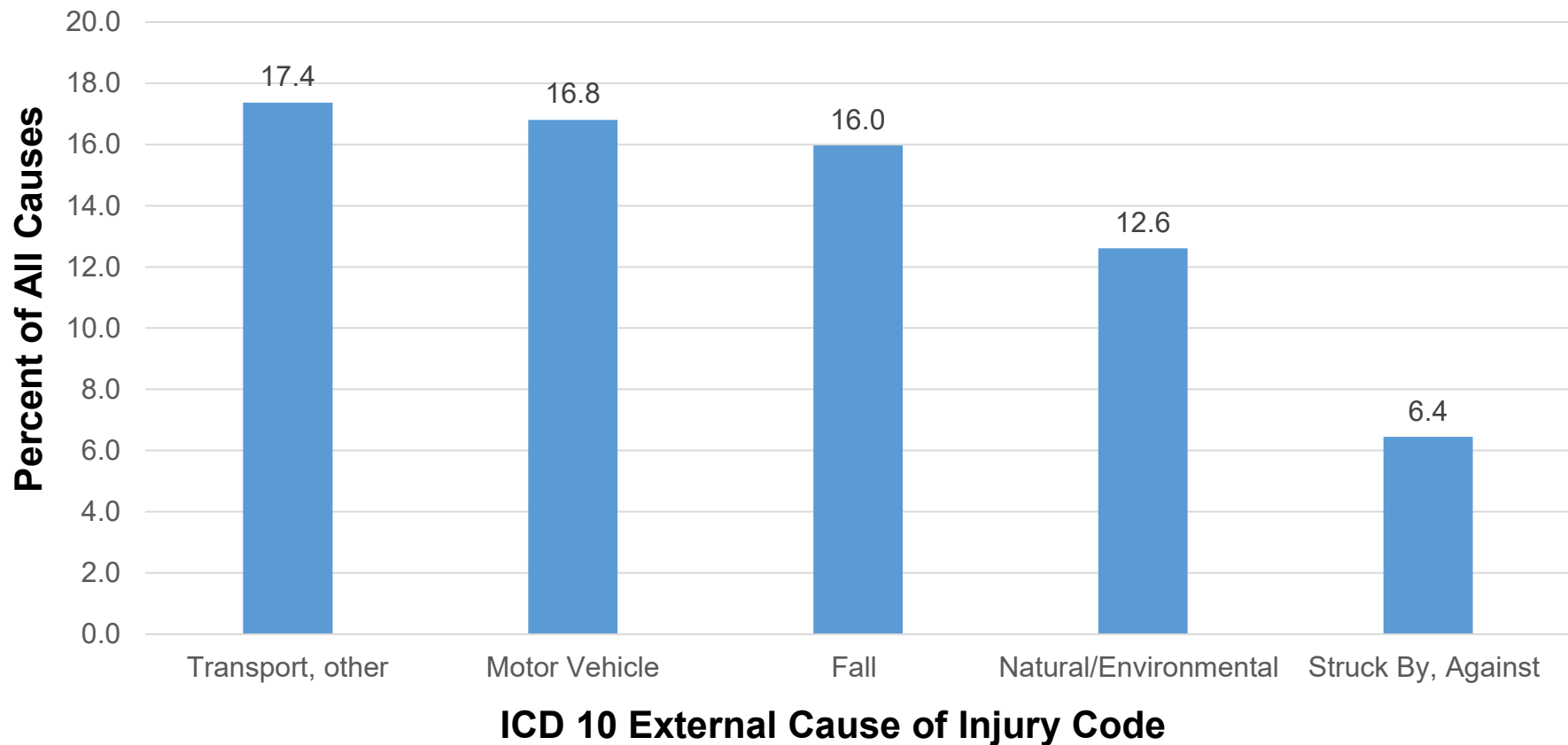
Total number of STANAG-coded injury hospitalizations = 681; may not be representative of the distribution of causes for all injuries

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Taxonomy of Injuries

Prepared by Defense Health Agency Army Satellite, U.S. Army Public Health Center, Injury Prevention



# Leading External Causes of Unintentional Injury Hospitalizations U.S. Army Active Duty, 2016



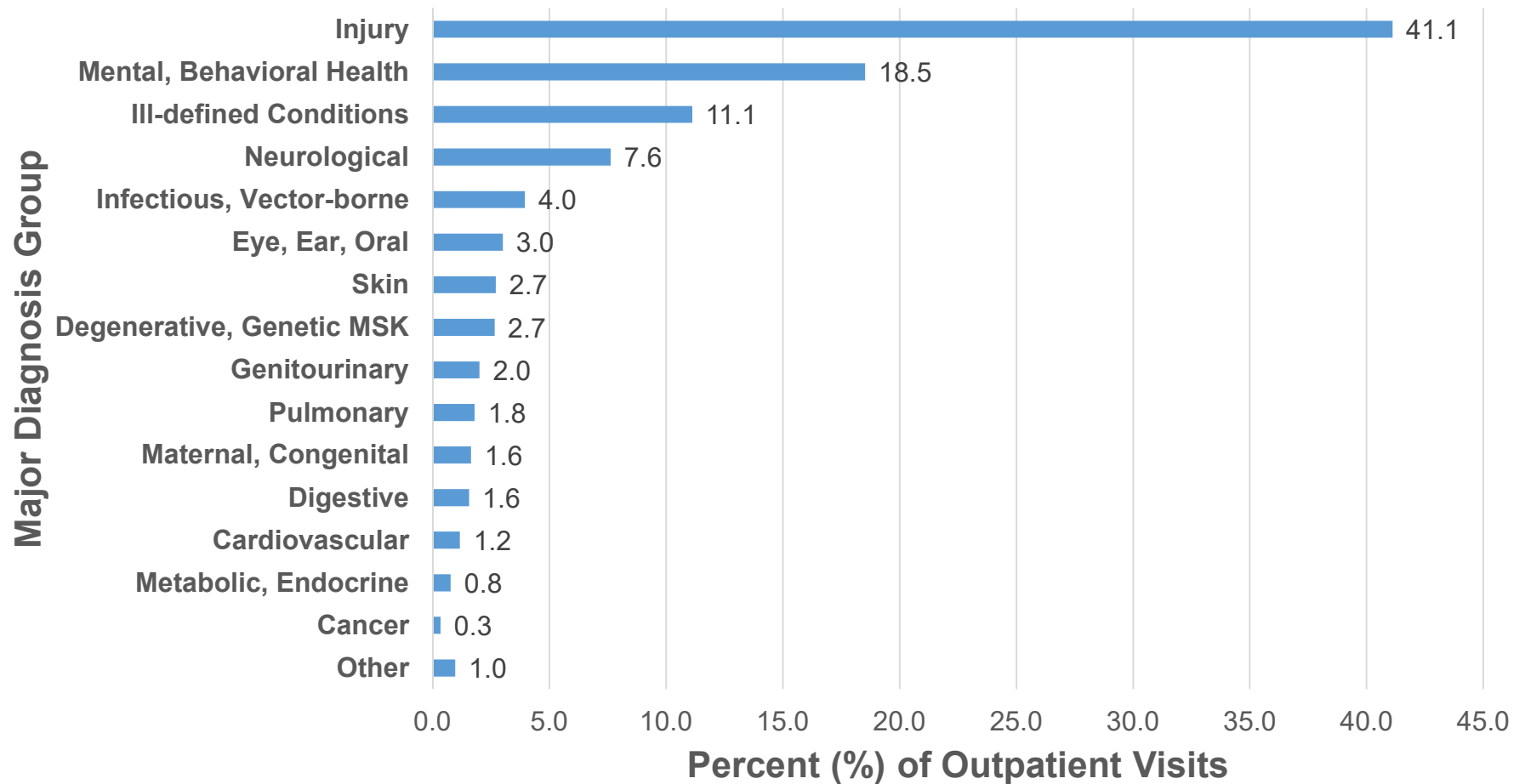
Total number of cause-coded unintentional injury hospitalizations = 357; may not be representative of the distribution of causes for all injuries

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Taxonomy of Injuries

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# Major Diagnosis Groups Resulting in Outpatient Visits U.S. Army Active Duty, 2016



Total number of outpatient visits = 5,631,500

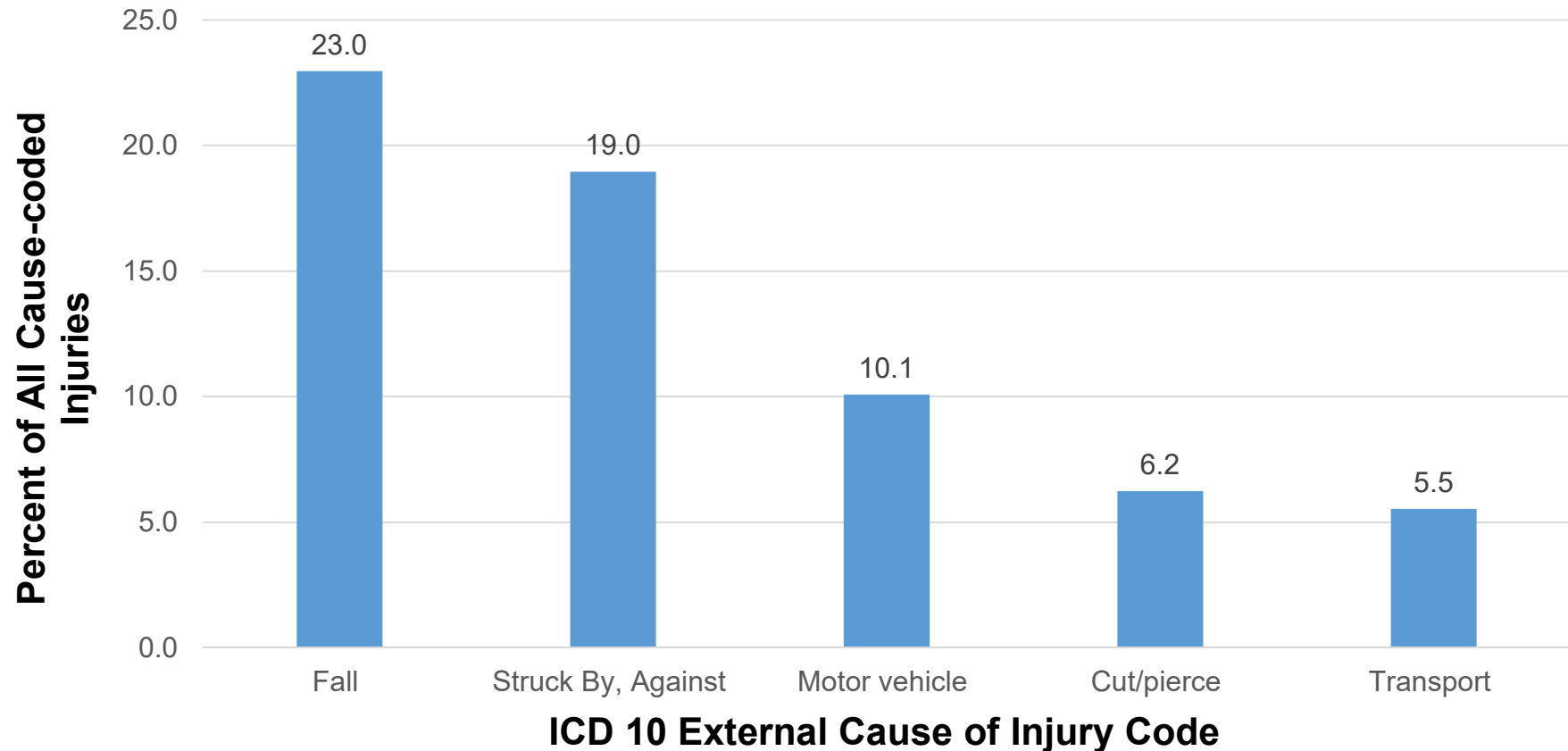
Diagnosis group "Other" includes adverse effects of drugs, blood disorders, and other neoplasms (not cancer)

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Taxonomy of Injuries

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# Leading External Causes of Injury Outpatient Visits U.S. Army Active Duty, 2016



Total number of cause-coded unintentional outpatient visits = 56,385; may not be representative of the distribution of causes for all injuries

Top five causes shown; "Overexertion" code was not available until October 2016.

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the APHC Injury Taxonomy

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# Points of Contact



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