

U.S. Army Injury Surveillance 2020 Summary



U.S. ARMY PUBLIC HEALTH CENTER



Clinical Public Health and Epidemiology
Injury Prevention Branch

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- This document provides a summary of injury medical encounter surveillance data for Active Duty Soldiers from Calendar Year (CY) 2020
- Injuries are defined using the U.S. Army Public Health Center (APHC) Taxonomy of Injuries¹
- 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 Paper²
- Injury rates were lower during 2020 than in previous reporting years, due a combination of a revised injury incidence rule³ and lower healthcare utilization during the COVID-19 pandemic.

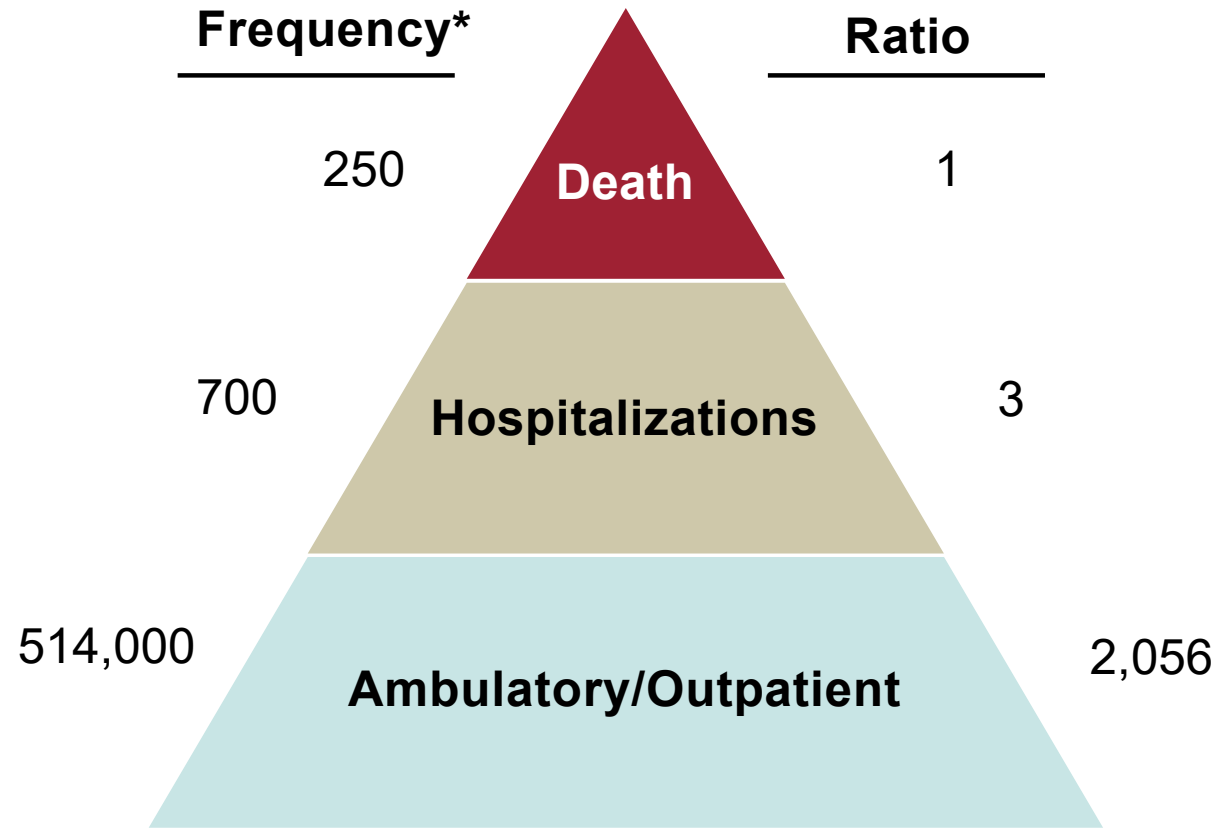
¹APHC. 2017. Public Health Information Paper (PHIP) No. 12-01-0717: A Taxonomy of Injuries for Public Health Monitoring & Reporting. December 2017. <http://www.dtic.mil/docs/citations/AD1039481>

²APHC. 2022. Technical Information Paper (TIP) No. 12-120-0322; Annual Injury Surveillance Report 2020 Summary

³APHC. 2021. Fiscal Year (FY) 2022 UPDATE: Public Health Information Paper No. 12-01-0717, A Taxonomy of Injuries for Public Health Monitoring and Reporting, DTIC Accession No. AD1150155



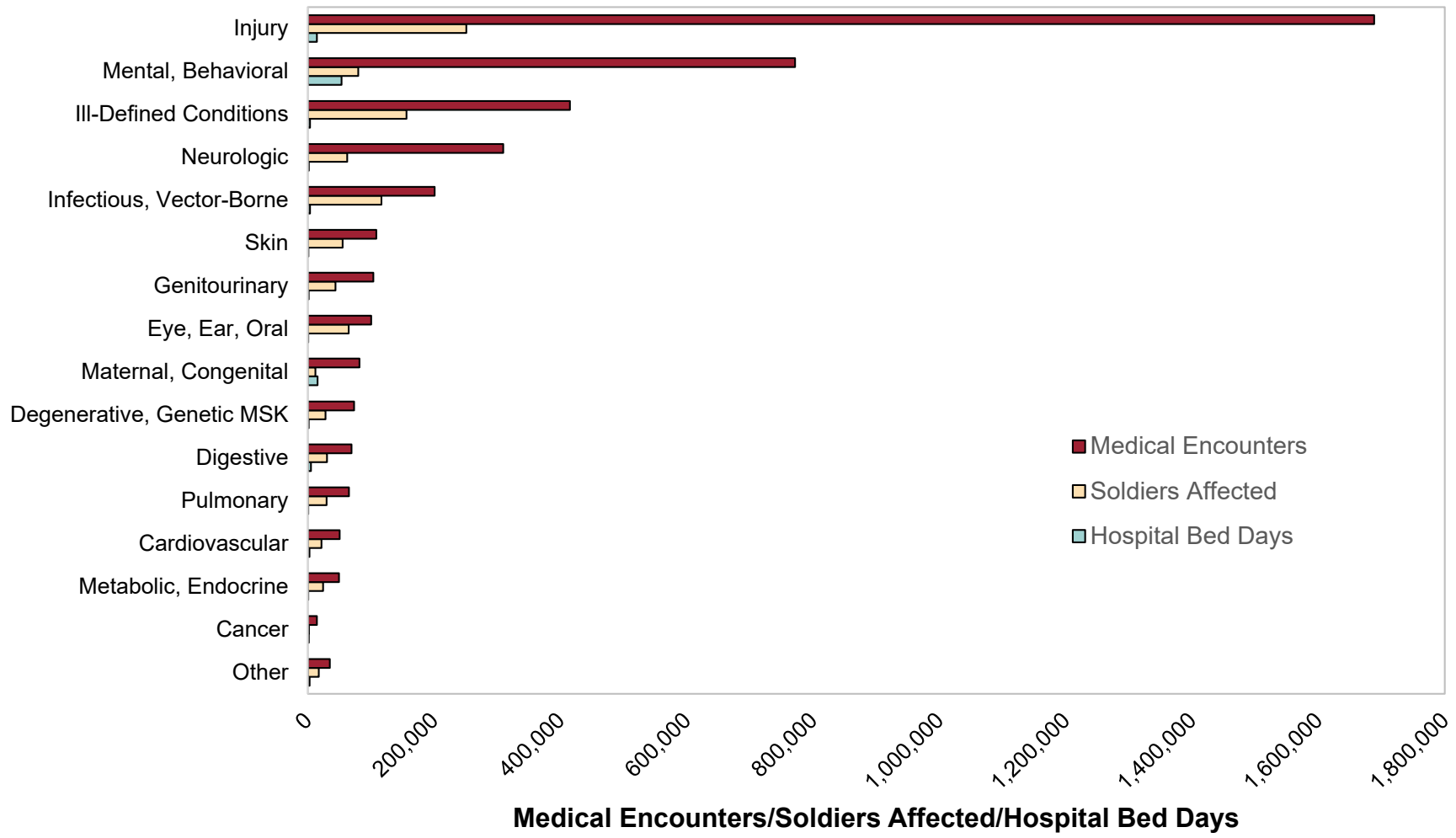
Injury Pyramid U.S. Army Active Duty, 2020



*Frequencies are rounded and represent incident injury visits
 Data source: Military Health System Data Repository (MDR) and Armed Forces Medical Examiner System (AFMES); injuries defined using the APHC Taxonomy of Injuries
 APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil

Relative Burden of Injuries and Diseases U.S. Army Active Duty, 2020

Major Diagnostic Group



Diagnosis group "Other" includes adverse effects of drugs, blood disorders, and other neoplasms (not cancer)
 Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
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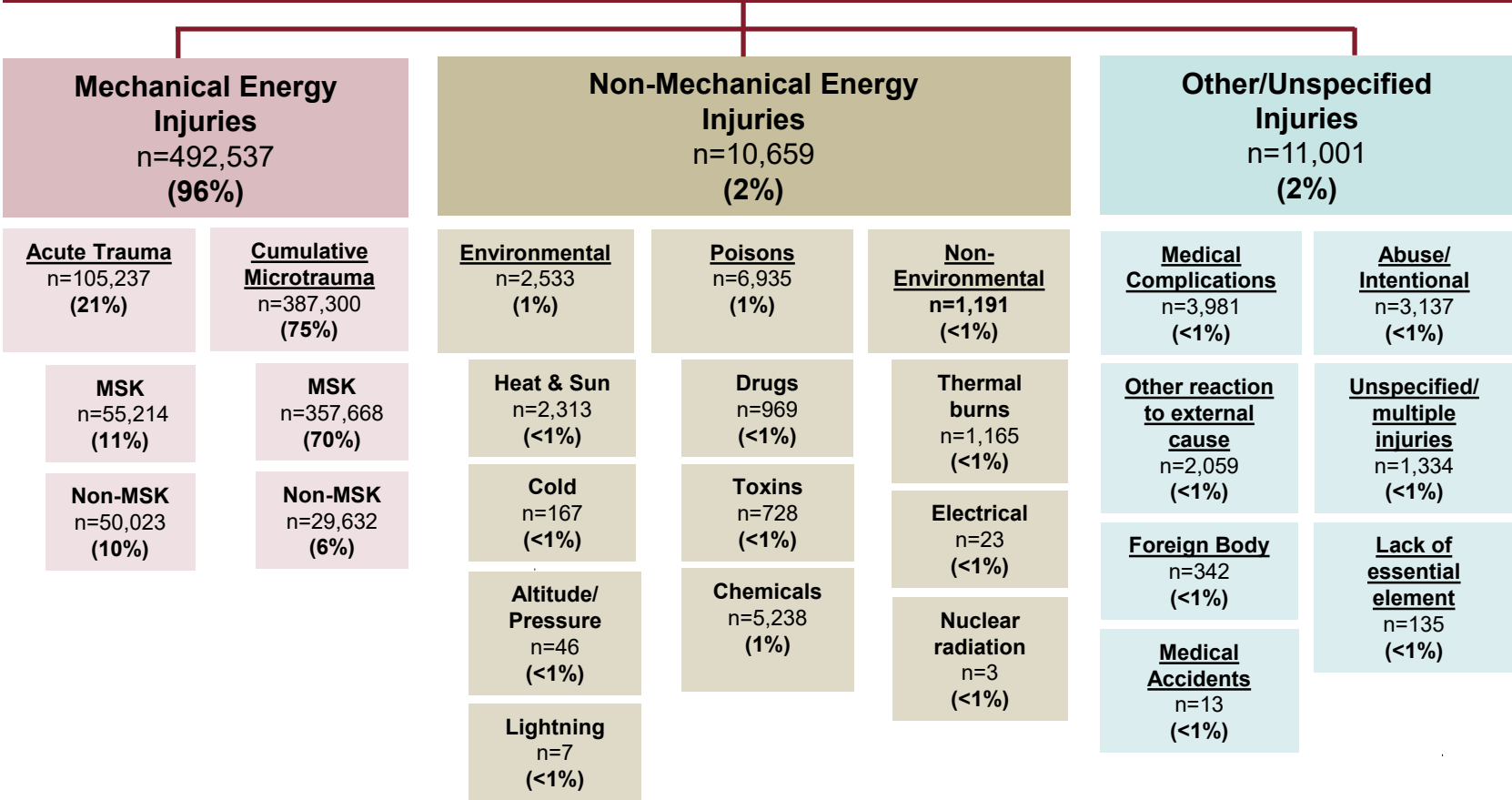


Taxonomy Distribution of Injuries

U.S. Army Active Duty, 2020



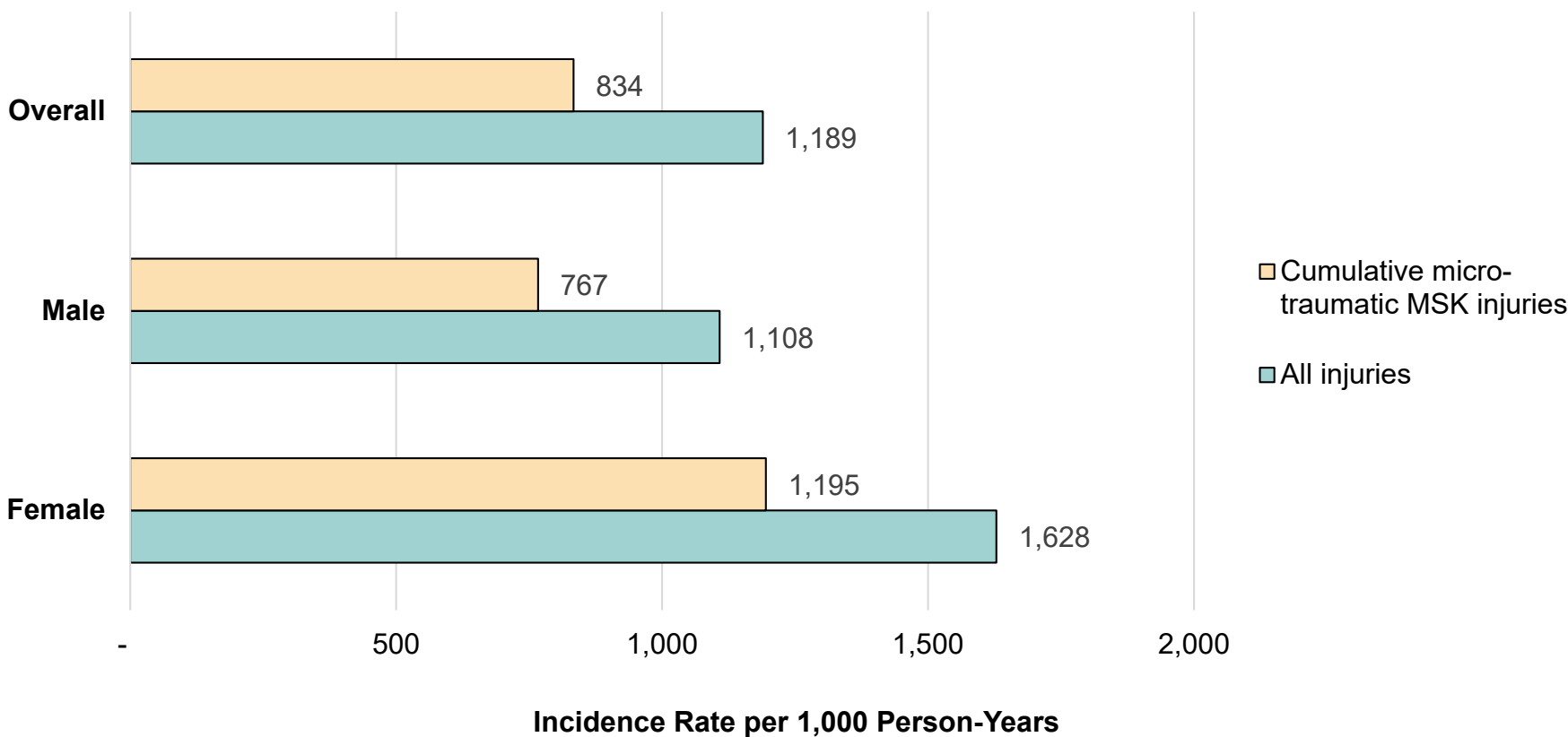
ALL ACTIVE DUTY ARMY INITIAL INJURIES, N = 514,197



*MSK = damage to tissue(s) of the musculoskeletal system (i.e., bone, cartilage, muscle, tendon, fascia, joint, ligament, bursa, or synovium)
 Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
 APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil

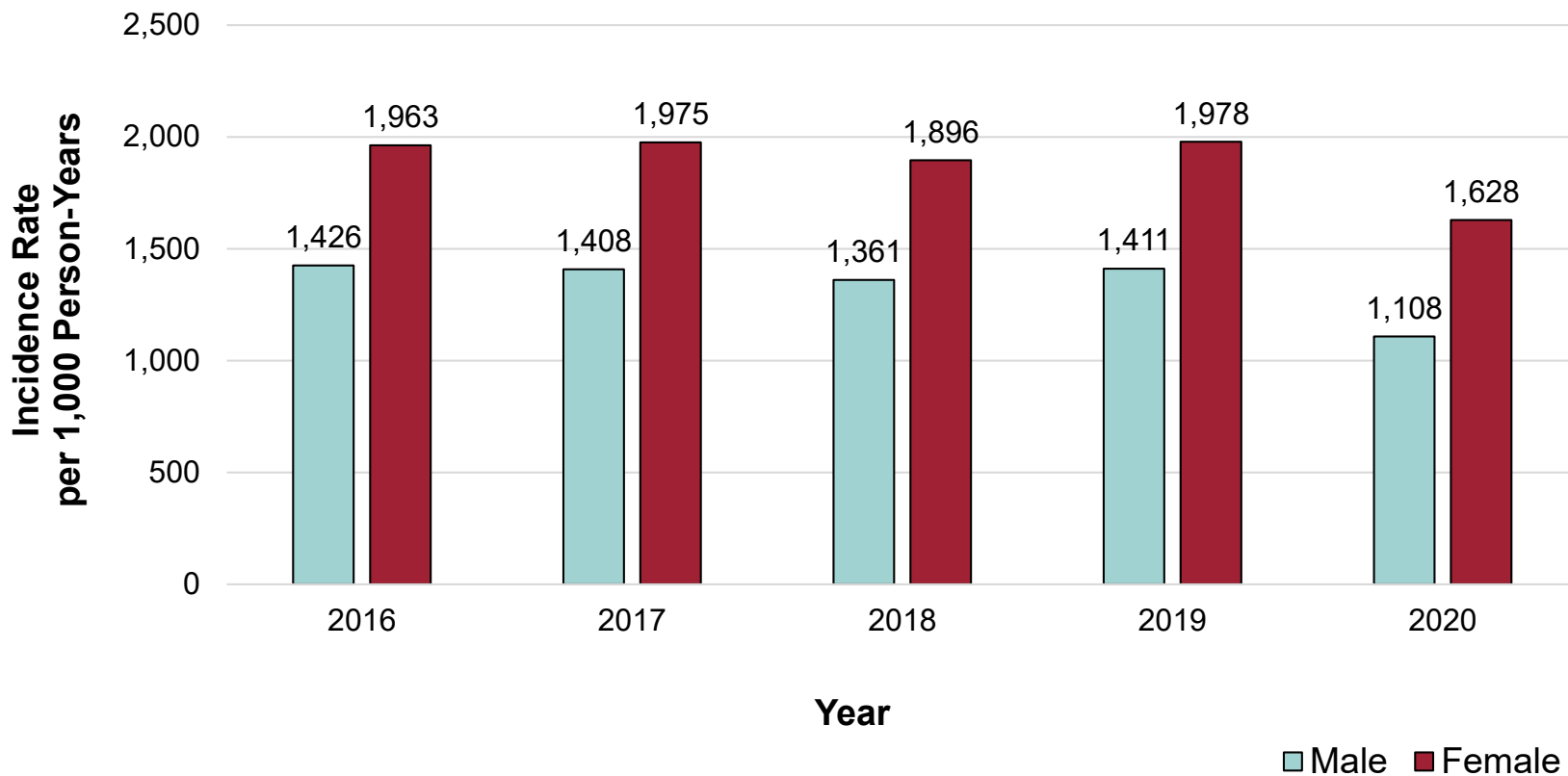


All Injury and Cumulative Micro-traumatic Musculoskeletal (MSK) Incident Injury Visit Rates by Sex U.S. Army Active Duty, 2020



Rates for all injuries and cumulative micro-traumatic MSK injuries were both significantly higher among females ($p < 0.001$).
Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil

Incident Injury Visit Rates by Sex U.S. Army Active Duty, 2016 – 2020



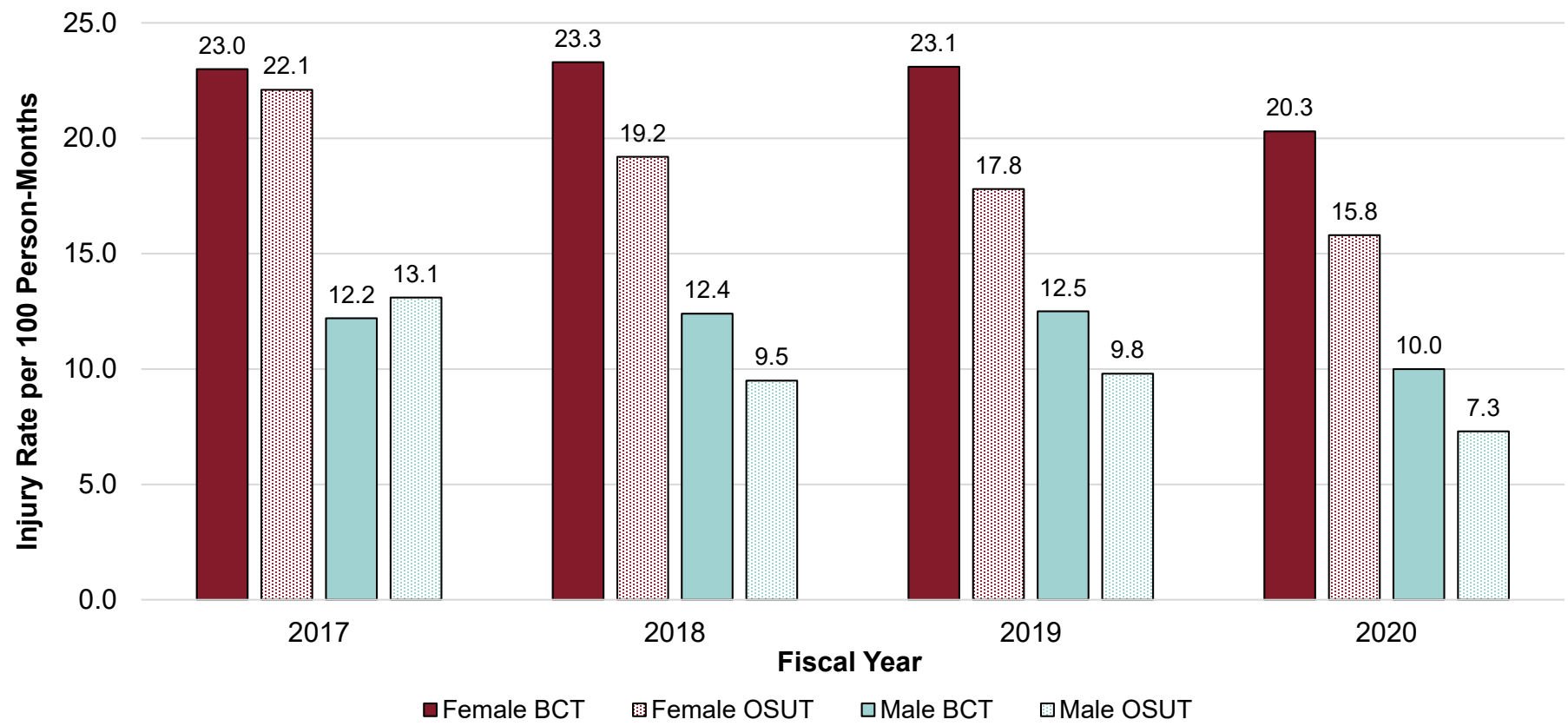
The rates of incident injuries among female Soldiers were consistently and significantly higher than male Soldiers from 2016 to 2020 ($p < 0.001$). Rates were significantly lower in 2020 compared to previous years ($p < 0.01$).

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

Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries

APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil

Incident Injury Visit Rates by Sex U.S. Army Trainees, FY2017–FY2020



Incident injury rates among female trainees in Basic Combat Training (BCT) and One Station Unit Training (OSUT) were significantly higher than male trainees from 2017-2020 ($p < 0.001$). In 2018, 2019, and 2020, injury rates during BCT were significantly higher than rates during OSUT for both males and females ($p < 0.001$).

Reference: APHC. 2021. Public Health Report No. S.0079146-21 Injury Surveillance and Longitudinal Studies for Gender Integration in the Army: Sixth Annual Assessment, 2021.

Data source: Defense Medical Surveillance System (DMSS); injuries defined using the Army Public Health Center (APHC) Taxonomy of Injuries APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil



Incident Mechanical Injuries by Body Region and Acute/Overuse*

U.S. Army Active Duty, 2020



| Body Region | Acute Traumatic | Cumulative Micro-traumatic (Overuse) | All |
|--------------------|-----------------|--------------------------------------|----------------|
| Lower Extremity | 38,644 (7.5) | 170,261 (33.1) | 208,905 (42.4) |
| Spine & Back | 7,860 (1.5) | 125,798 (24.5) | 133,658 (27.1) |
| Upper Extremity | 32,944 (6.4) | 68,864 (13.4) | 101,808 (20.7) |
| Head, Face, & Neck | 19,048 (3.7) | 12,158 (2.4) | 31,206 (6.3) |
| Torso | 6,166 (1.2) | 651 (0.1) | 6,817 (1.4) |
| Other | 575 (0.1) | 9,568 (1.9) | 10,143 (2.1) |
| Total (%) | 105,237 (21.4) | 387,300 (78.6) | 492,537 (100) |

*In order of most frequently injured body region
 Injuries defined using the APHC Injury Taxonomy; Acute traumatic and cumulative micro-traumatic (Overuse) injuries
 Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
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Incident Mechanical Injury Diagnoses by Body Region U.S. Army Active Duty, 2020

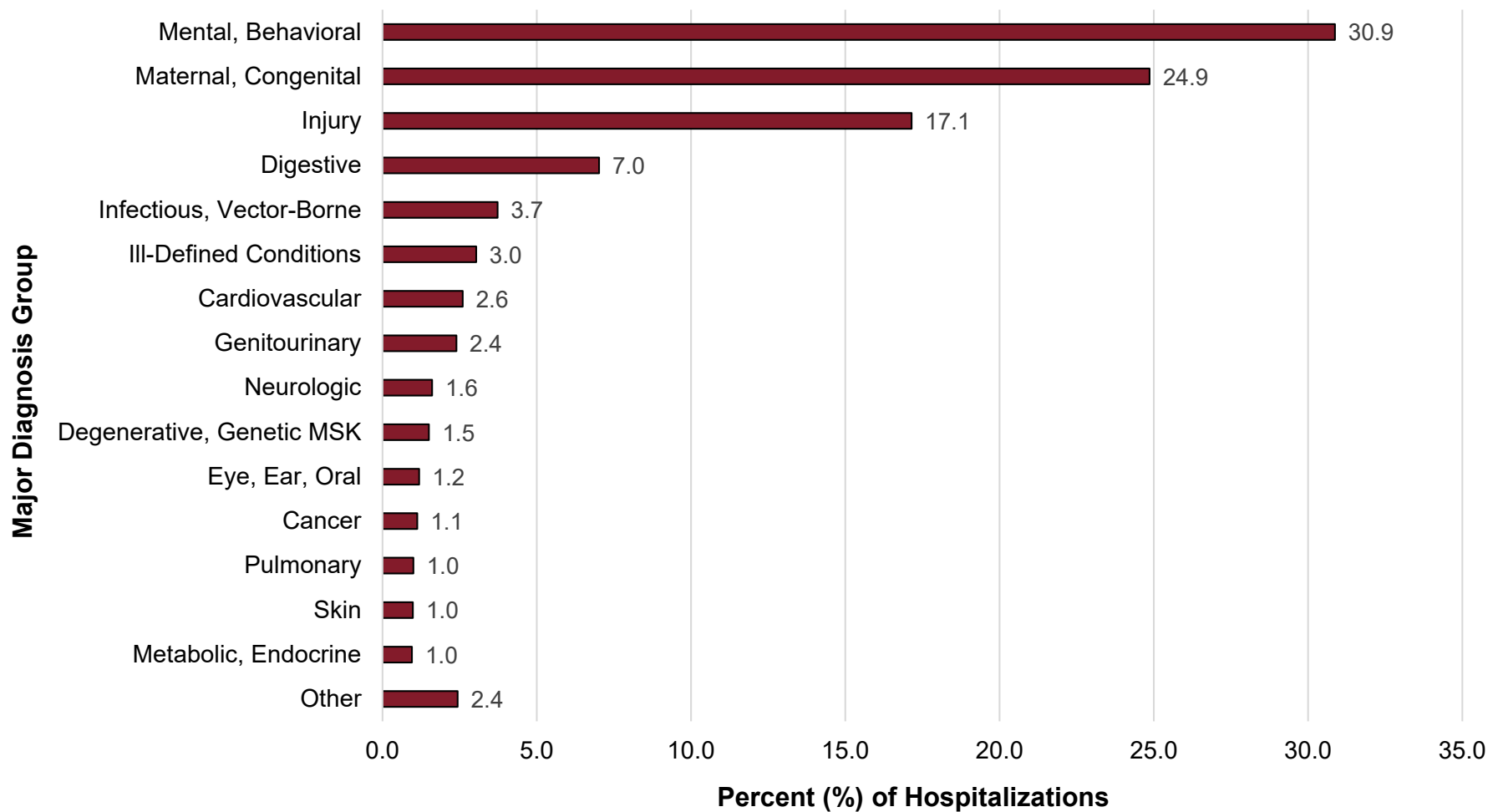


| Diagnosis | Head, Face, and Neck | | Spine and Back | | Torso | | Upper Extremity | | Lower Extremity | | Other | | Total | Percent Total (%) |
|--|----------------------|------------------|----------------|----------------|--------------|------------|-----------------|---------------|-----------------|----------------|------------|--------------|----------------|-------------------|
| | Acute (ACT) | Cumulative (CMT) | ACT | CMT | ACT | CMT | ACT | CMT | ACT | CMT | ACT | CMT | | |
| MSK Tissue Damage, Other | 36 | 126 | 2055 | 114759 | 133 | 4 | 3202 | 62899 | 5364 | 163232 | 128 | 9463 | 361,401 | 73.0 |
| Tissue Damage, Other | 6930 | 12008 | 1414 | 0 | 1668 | 0 | 3856 | 0 | 2943 | 0 | 387 | 1 | 29,207 | 5.9 |
| Sprain/Joint Damage | 9 | 0 | 1102 | 0 | 385 | 0 | 3660 | 419 | 13637 | 1643 | 36 | 28 | 20,919 | 4.2 |
| Nerve | 22 | 0 | 17 | 11023 | 4 | 376 | 2781 | 2932 | 744 | 672 | 0 | 0 | 18,571 | 3.8 |
| Contusion/Superficial | 3711 | 24 | 0 | 0 | 1463 | 14 | 4078 | 53 | 4786 | 2529 | 0 | 0 | 16,658 | 3.4 |
| Strain/Tear | 1428 | 0 | 2709 | 0 | 1358 | 0 | 3014 | 2554 | 4507 | 5 | 24 | 6 | 15,605 | 3.2 |
| Fracture | 778 | 0 | 433 | 16 | 414 | 257 | 4224 | 7 | 3886 | 2180 | 0 | 70 | 12,265 | 2.5 |
| Open Wound | 2849 | 0 | 0 | 0 | 292 | 0 | 6161 | 0 | 2092 | 0 | 0 | 0 | 11,394 | 2.3 |
| Internal Organ and Blood Vessel | 3236 | 0 | 101 | 0 | 407 | 0 | 54 | 0 | 15 | 0 | 0 | 0 | 3,813 | 0.8 |
| Dislocation | 40 | 0 | 29 | 0 | 27 | 0 | 1318 | 0 | 458 | 0 | 0 | 0 | 1,872 | 0.4 |
| Crush | 8 | 0 | 0 | 0 | 14 | 0 | 499 | 0 | 188 | 0 | 0 | 0 | 709 | 0.1 |
| Amputation | 1 | 0 | 0 | 0 | 1 | 0 | 97 | 0 | 24 | 0 | 0 | 0 | 123 | 0.0 |
| Total | 19,048 | 12,158 | 7,860 | 125,798 | 6,166 | 651 | 32,944 | 68,864 | 38,644 | 170,261 | 575 | 9,568 | 492,537 | 100.0 |
| Percent Total (%) | 3.9 | 2.5 | 1.5 | 25.5 | 1.3 | 0.1 | 6.7 | 14.0 | 7.8 | 34.6 | 0.1 | 1.9 | | 100 |

Injuries defined using the APHC Injury Taxonomy; Acute traumatic and cumulative micro-traumatic (overuse) injuries
 Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
 APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil



Major Diagnosis Groups Resulting in Hospitalizations U.S. Army Active Duty, 2020



Total number of hospitalizations = 17,119

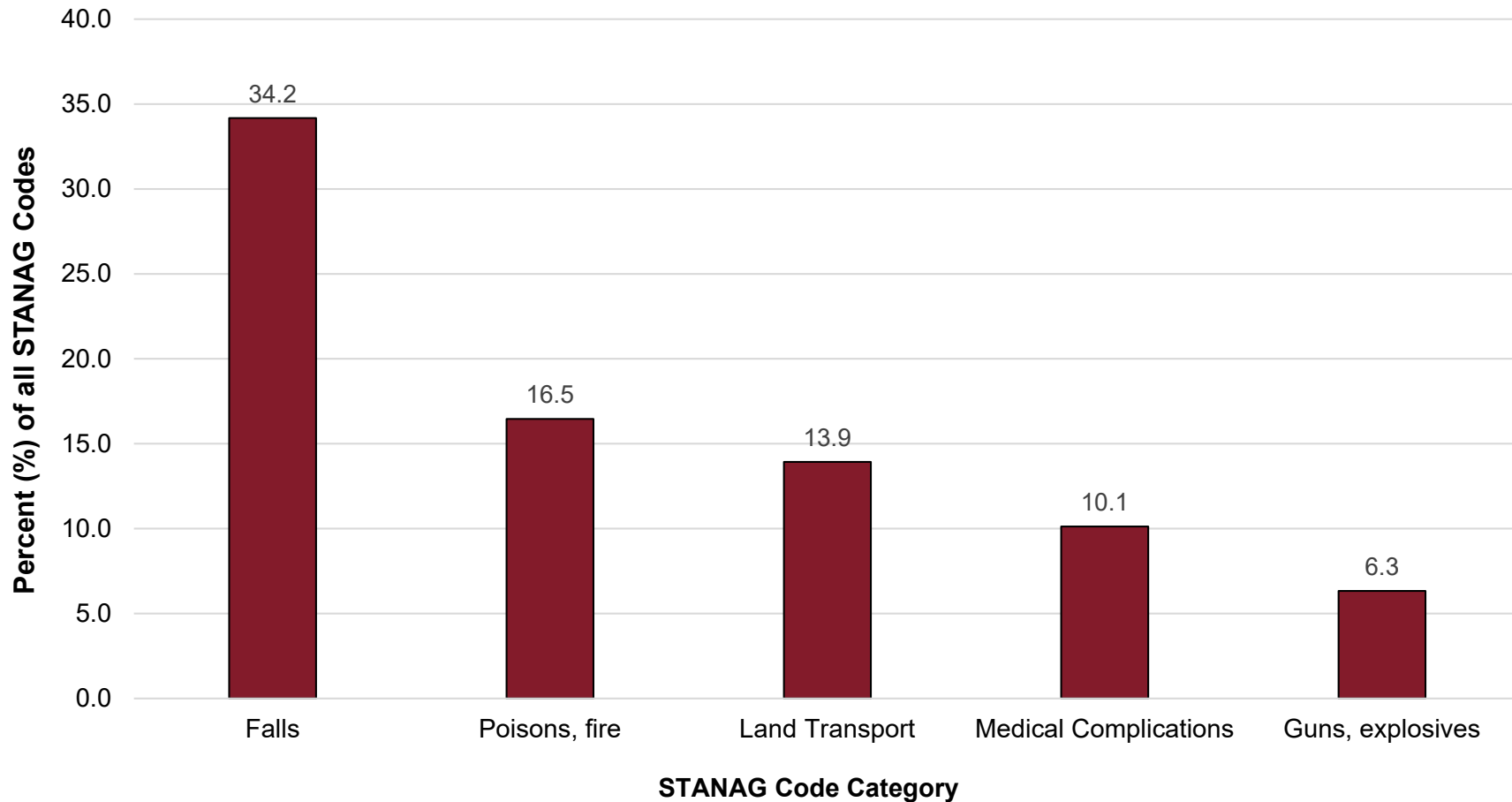
Diagnosis group "Other" includes adverse effects of drugs, blood disorders, and other neoplasms (not cancer)

Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries

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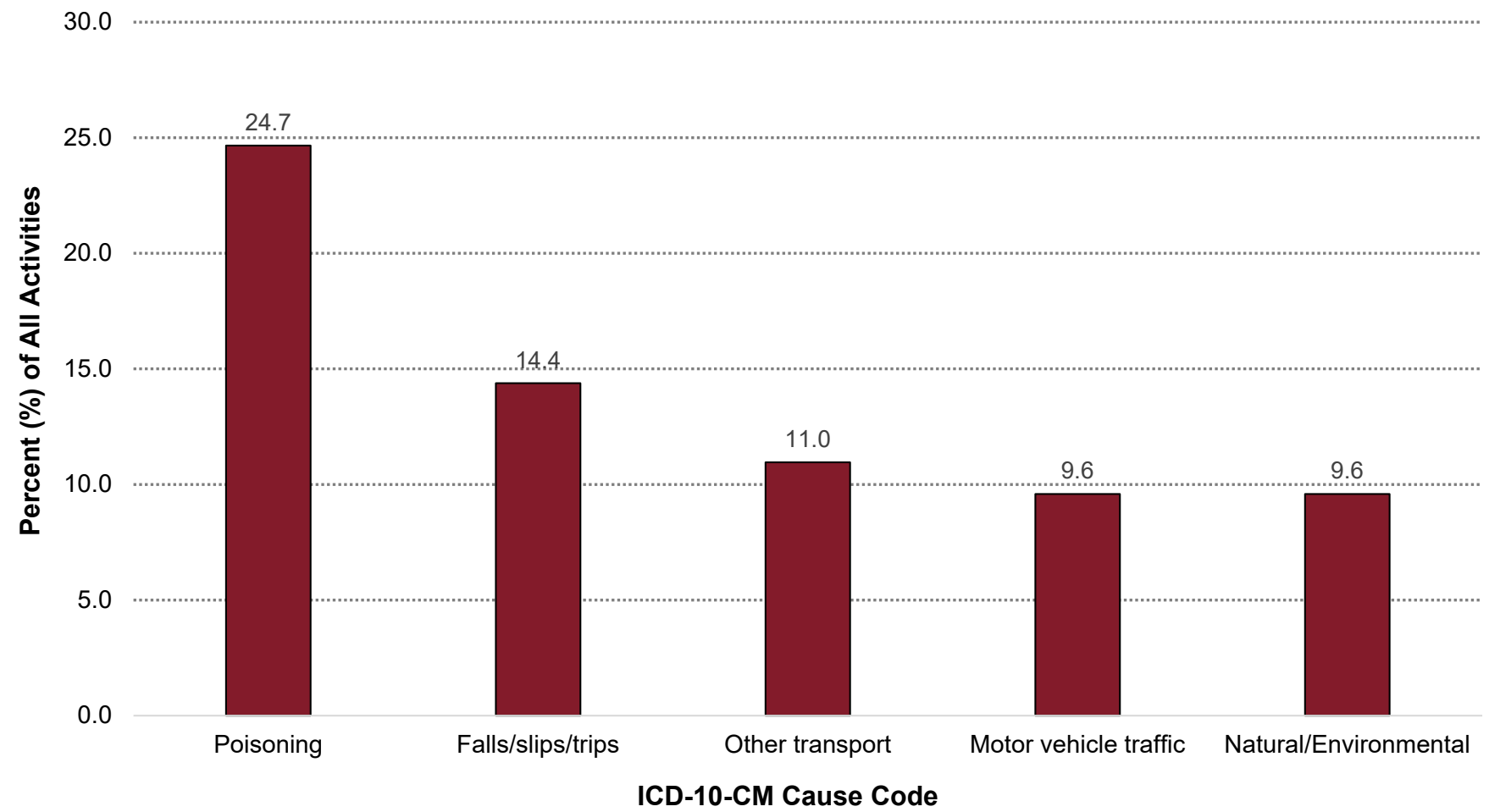
Leading Standardized Agreement (STANAG) Cause Codes for Injury Hospitalizations U.S. Army Active Duty, 2020



Total number of STANAG-coded injury hospitalizations = 79; may not be representative of the distribution of causes for all injuries
 Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
 APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil



Leading Causes of Unintentional Injury Hospitalizations U.S. Army Active Duty, 2020

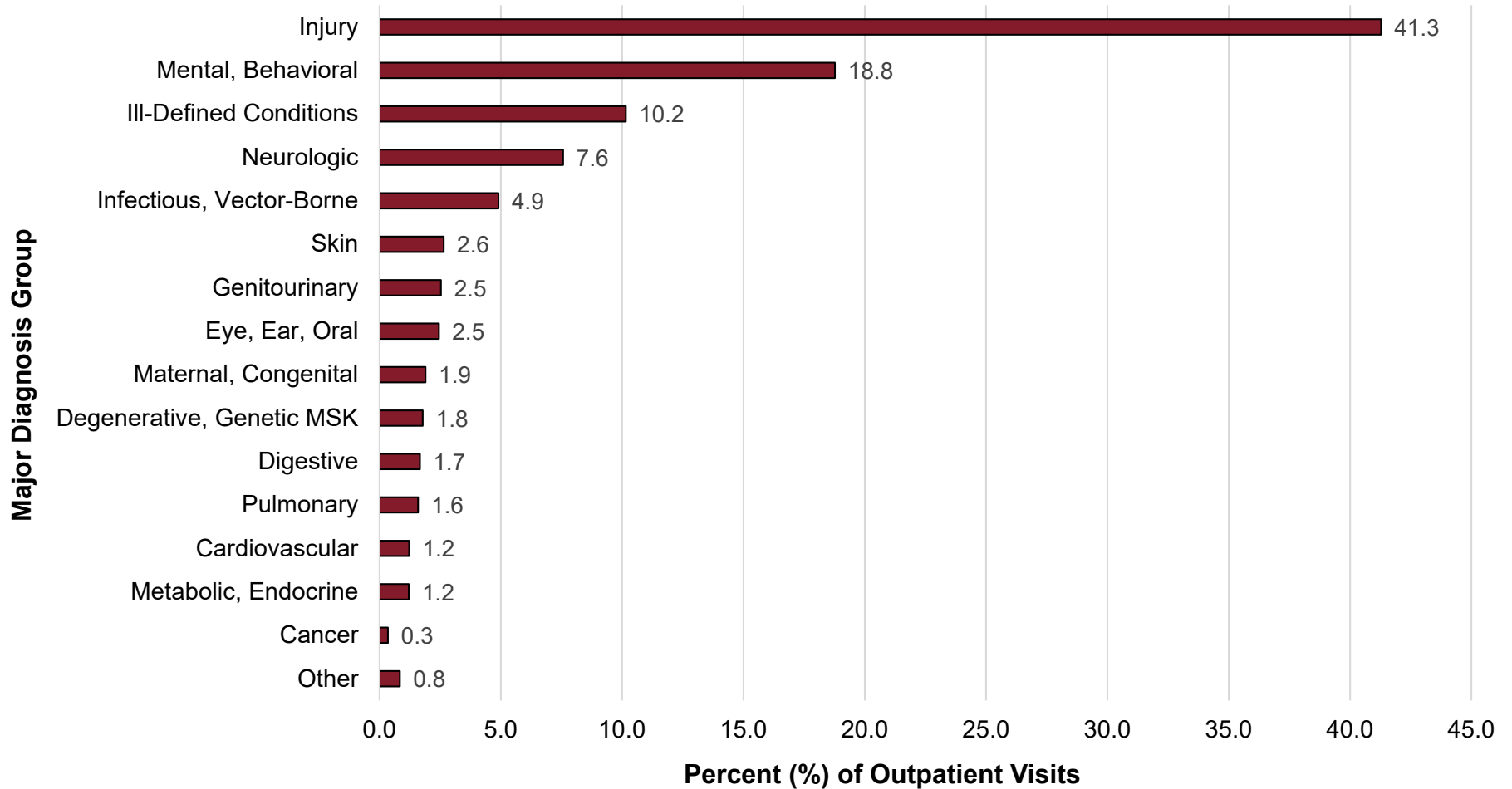


Total number of cause-coded unintentional injury hospitalizations = 146 (21%); may not be representative of the distribution of causes for all injuries

Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
 APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil



Major Diagnosis Groups Resulting in Outpatient Visits U.S. Army Active Duty, 2020



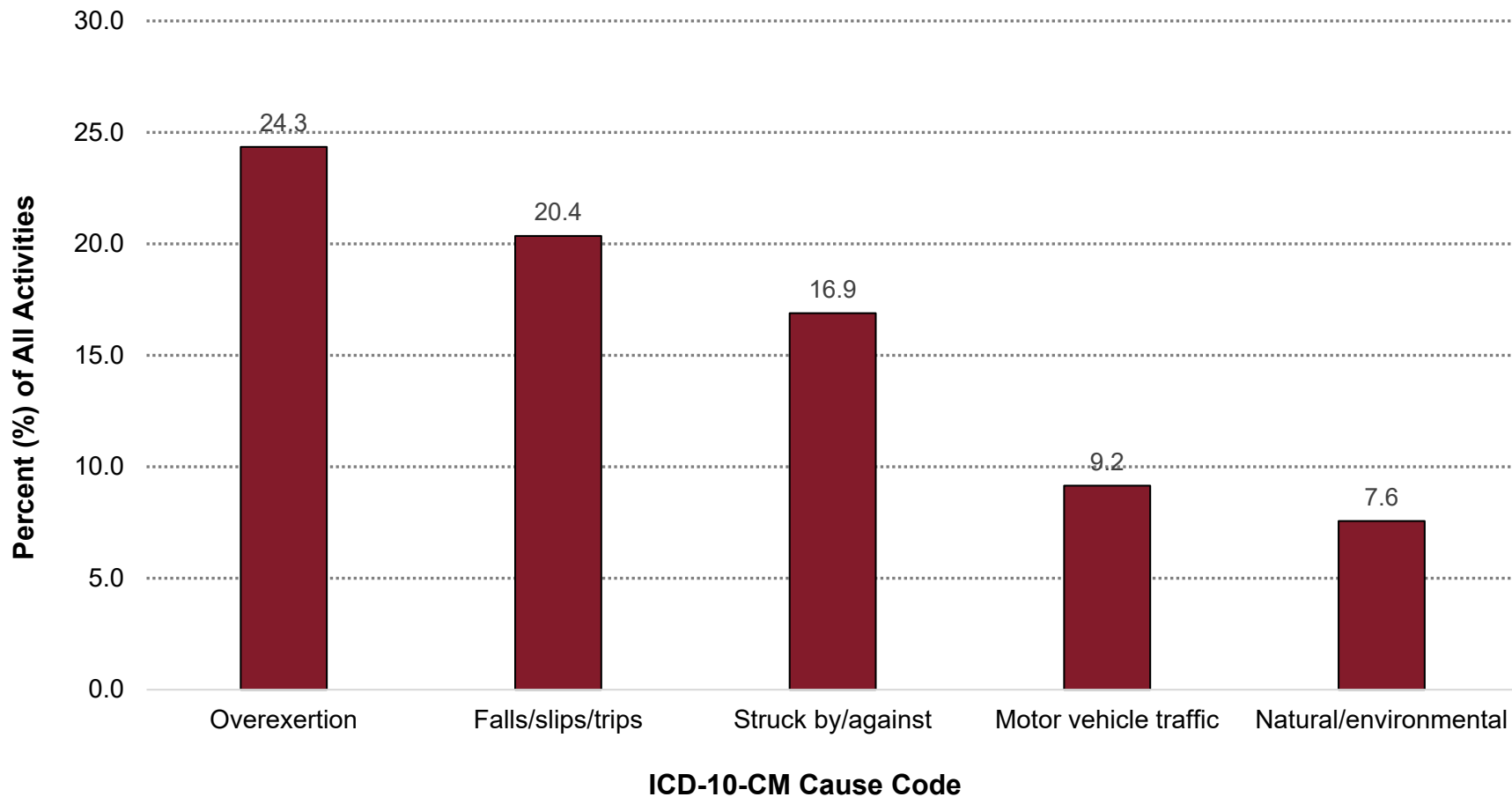
Total number of outpatient visits = 4,117,157

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

Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries

APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil

Leading Causes of Unintentional Injury Outpatient Visits, U.S. Army Active Duty, 2020

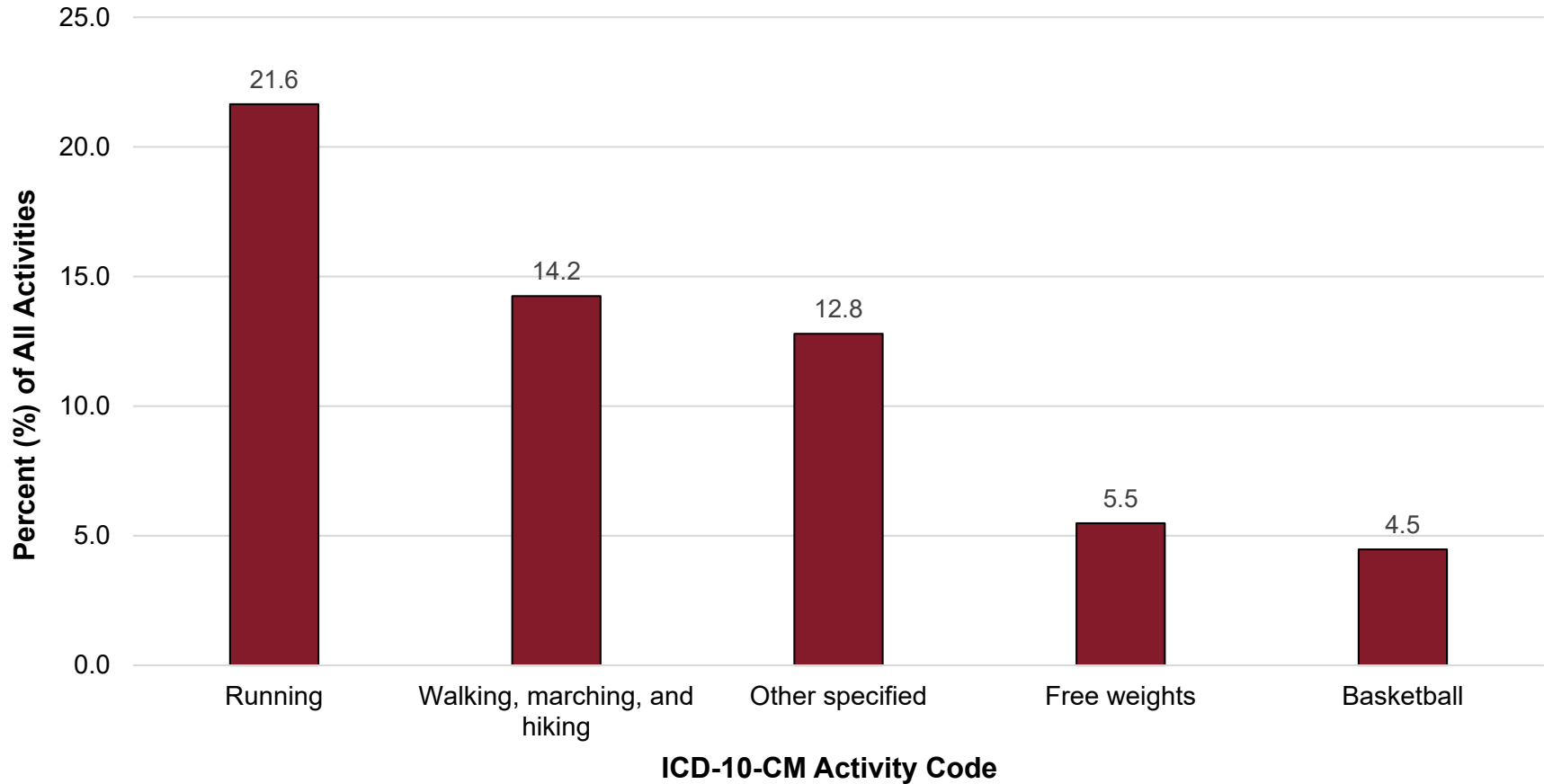


Total number of cause-coded unintentional injury outpatient initial visits =49,700(10%); may not be representative of the distribution of causes for all injuries

Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
 APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil



Leading Activities Associated with Unintentional Injury Outpatient Visits, 2020

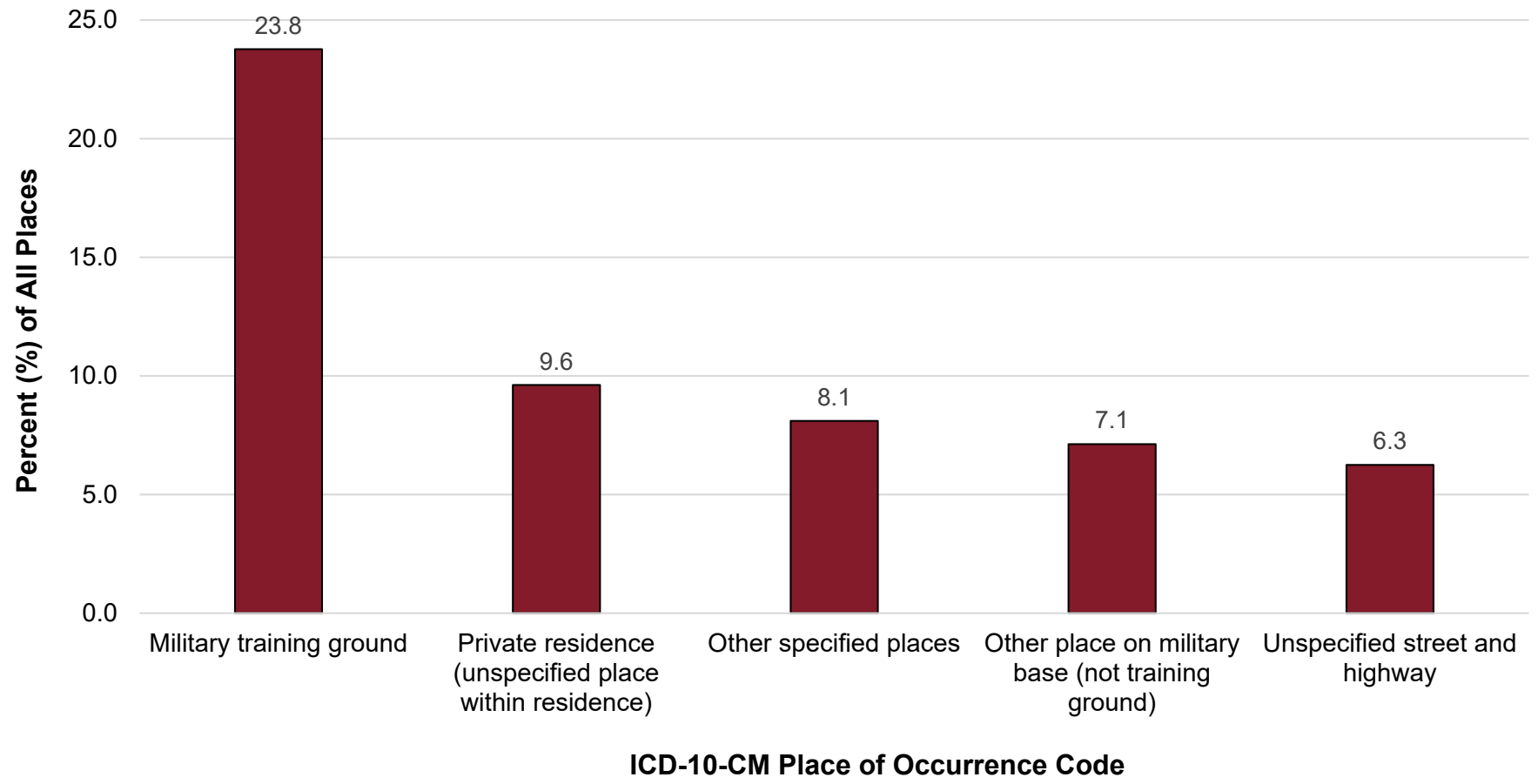


Total number of unintentional outpatient encounters with place of occurrence codes = 24,545 (5%); may not be representative of the distribution of activities for all injuries

Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil



Leading Places Associated with Unintentional Injury Outpatient Visits



Total number of unintentional outpatient encounters with place of occurrence codes = 13,965 (3%); may not be representative of the distribution of places for all injuries
 Data source: Military Health System Data Repository (MDR); injuries defined using the APHC Taxonomy of Injuries
 APHC Injury Prevention, email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil



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

Email: usarmy.apg.medcom-aphc.mbx.injuryprevention@mail.mil

Additional details and interpretation are available in an accompanying 2020 Technical Information Paper. See <https://phc.amedd.army.mil/news/Pages/PeriodicPublications.aspx>; select Active Duty Army Injury Surveillance Summary.