

UNCLASSIFIED



U.S. Air Force Injury Surveillance 2021 Summary

Prepared for the Defense Safety Oversight Council (DSOC)
Military Injuries Working Group (MIWG)
February 2024

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Background

- This document provides a summary of injury medical encounter surveillance data for Active Duty Personnel in Calendar Year (CY) 2021.
- Rates and distribution of injuries are presented by leading injury types, injured body regions, injury mechanisms, activities and places.



Data Sources and Injury Definition

- Prepared for the Defense Safety Oversight Council (DSOC) Military Injuries Working Group (MIWG)
- Prepared by DCPH-A Injury Prevention, email: dha.apg.Pub-Health-A.mbx.injuryprevention@health.mil
- Data source: Defense Casualty Analysis System and Defense Medical Surveillance System (DMSS)
- Injuries defined and classified using the Taxonomy of Injuries¹

¹U.S. Army Public Health Center. 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>



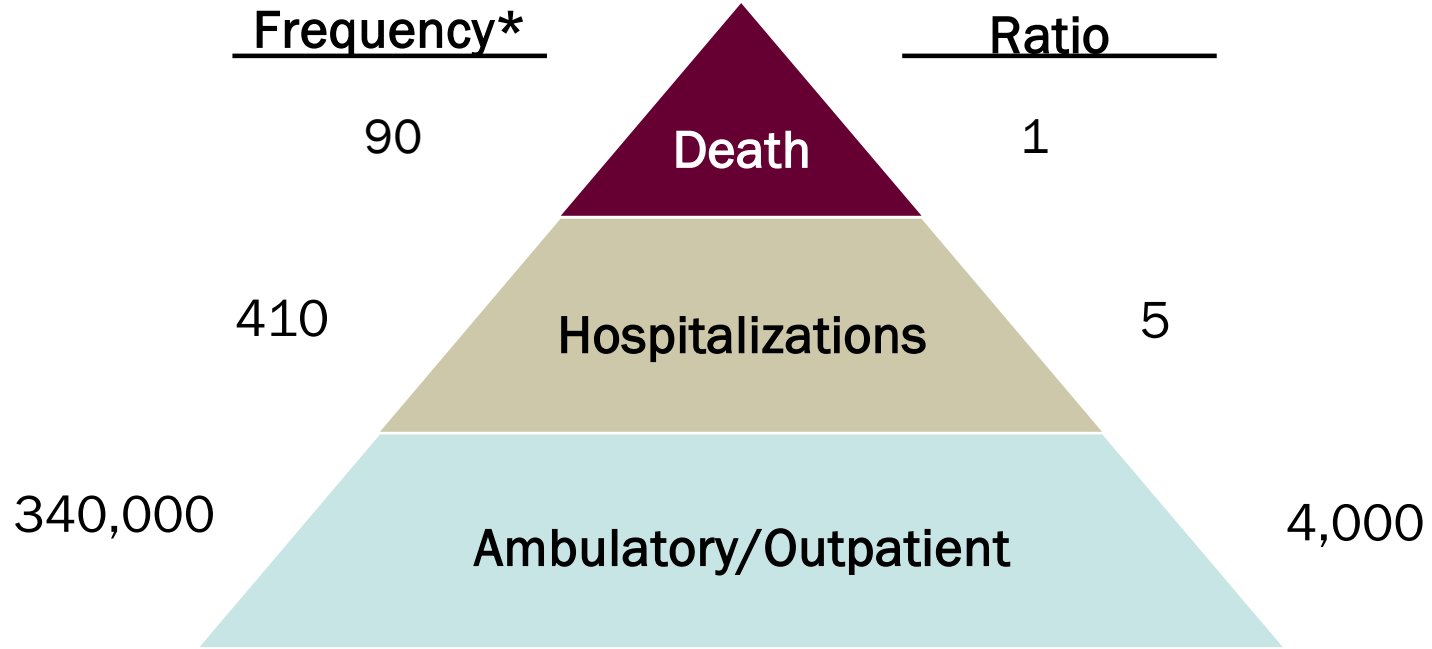
Data Summary, U.S. Air Force Active Duty, 2021

- Injuries accounted for 36.7% of all medical encounters (n=1,123,240), 2.2 times more encounters than the second leading cause.
- Injuries affected 164,706 individuals (49.6%), 1.3 times more individuals than the second leading diagnosis group.
- A high proportion (75%) of new (incident) injury diagnoses were due to cumulative microtrauma.
- Most injuries were to the lower extremities (36.5%); followed by spine & back (31.0%).
- Among outpatient injury encounters with a cause code in 2021, leading injury mechanisms were falls (19.4%) and overexertion (18.9%).





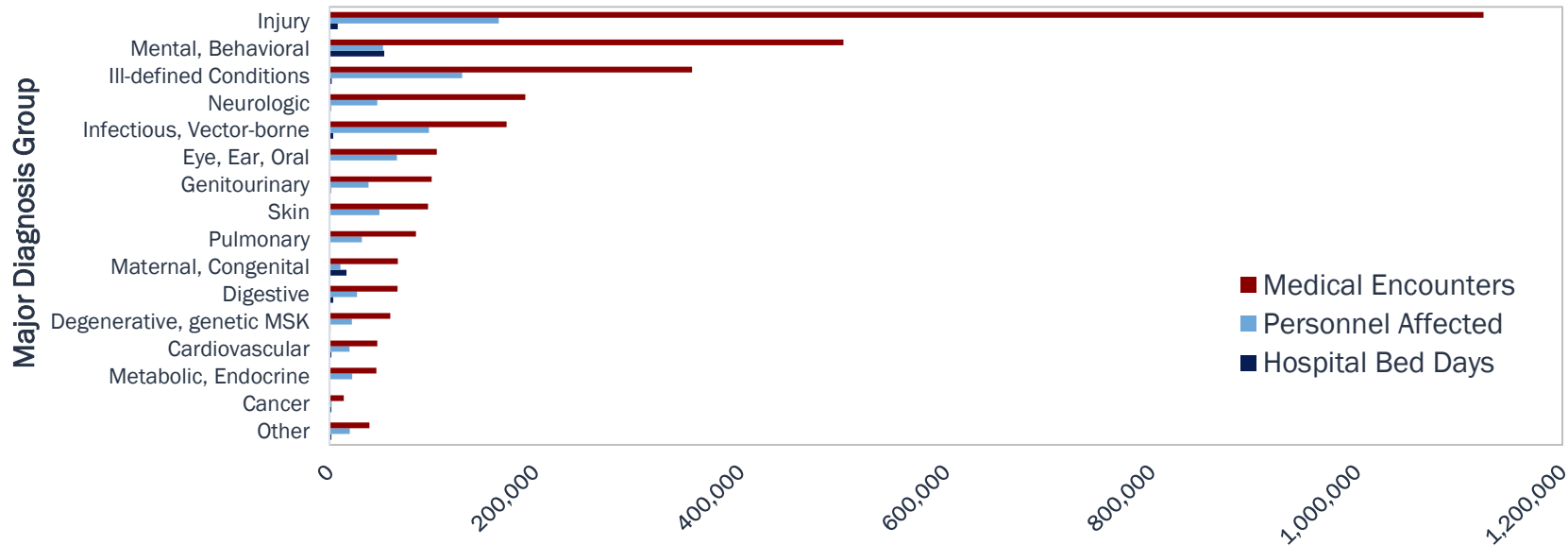
Injury Pyramid U.S. Air Force Active Duty, 2021



*Frequencies are rounded and represent incident injury encounters



Relative Burden of Illnesses and Injuries U.S. Air Force Active Duty, 2021



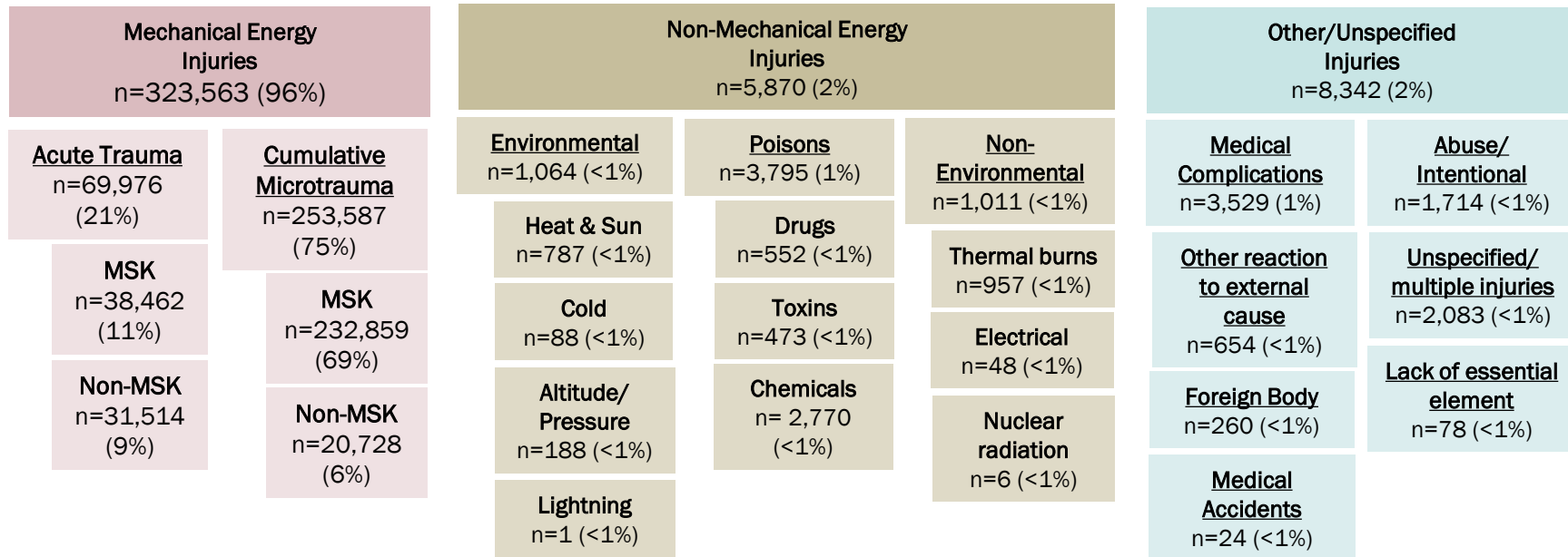
MSK = damage to tissue(s) of the musculoskeletal system (i.e., bone, cartilage, muscle, tendon, fascia, joint, ligament, bursa, or synovium). Diagnosis group “Other” includes adverse effects of drugs, blood disorders, and other neoplasms (not cancer).



Taxonomy Distribution of Injuries

U.S. Air Force Active Duty, 2021

Incident Injuries, N = 337,775

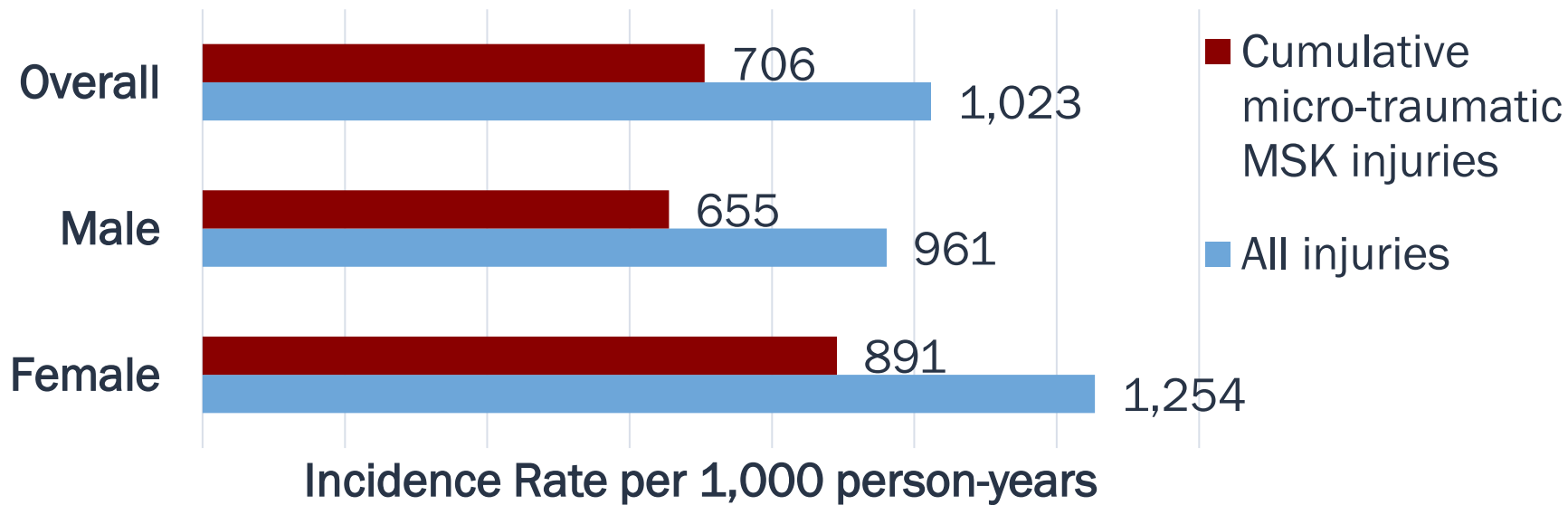




Incident Injury Encounter Rates by Sex

All Injury and Cumulative Micro-traumatic Musculoskeletal (MSK)

U.S. Air Force Active Duty, 2021



Rates for all injuries and cumulative micro-traumatic MSK injuries were both significantly higher among females ($p < 0.001$).



Incident Mechanical Injuries by Body Region

U.S. Air Force Active Duty, 2021

Body Region	Acute Traumatic n (%)	Cumulative Micro-traumatic (Overuse) n (%)	All n (%)
Lower Extremity	26,536 (8.2)	91,720 (28.3)	118,256 (36.5)
Spine & Back	4,086 (1.3)	96,304 (29.8)	100,390 (31.0)
Upper Extremity	22,149 (6.8)	48,022 (14.8)	70,171 (21.7)
Head, Face, & Neck	12,229 (3.8)	9,648 (3.0)	21,877 (6.8)
Torso	4,655 (1.4)	297 (<1.0)	4,952 (1.5)
Other	421 (<1.0)	7596 (2.3)	7,917 (2.4)
Total	69,976 (21.6)	253,587 (78.4)	323,563 (100)

*In order of most frequently injured body region for All



Incident Mechanical Injury Diagnoses by Injury Type and Body Region, U.S. Air Force Active Duty, 2021

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	11	135	537	88,351	92	1	1,895	44,096	3,917	87,737	85	7,516	234,373	72.4
Other Tissue Damage	4,455	9,495	370	0	1,162	0	2,040	0	1,078	0	187	0	18,787	5.8
Sprain/Joint Damage	8	0	913	1	288	0	2,673	239	9,231	964	33	49	14,399	4.5
Nerve	24	0	27	7,945	5	276	1,749	2,093	694	558	0	0	13,371	4.1
Strain/Tear	1,161	0	1,889	0	1,404	0	2,170	1,545	3,746	3	16	11	11,945	3.7
Contusion/Superficial	2,579	18	0	0	987	10	2,675	42	3,287	291	0	0	9,889	3.1
Fracture	451	0	267	7	252	10	2,875	7	2,785	2,167	0	20	8,841	2.7
Open Wound	1,991	0	0	0	169	0	4,805	0	1,366	0	0	0	8,331	2.6
Internal Organ and Blood Vessel	1,515	0	55	0	249	0	34	0	8	0	0	0	1,861	<1.0
Dislocation	30	0	28	0	41	0	907	0	327	0	0	0	1,333	<1.0
Crush	3	0	0	0	6	0	288	0	90	0	0	0	387	<1.0
Amputation	1	0	0	0	0	0	38	0	7	0	0	0	46	<1.0
Total	12,229	9,648	4,086	96,304	4,655	297	22,149	48,022	26,536	91,720	321	7,596	323,563	100.0
Percent Total (%)	3.8	3.0	1.3	29.8	1.4	<1.0	6.8	14.8	8.2	28.3	<1.0	2.3	100.0	

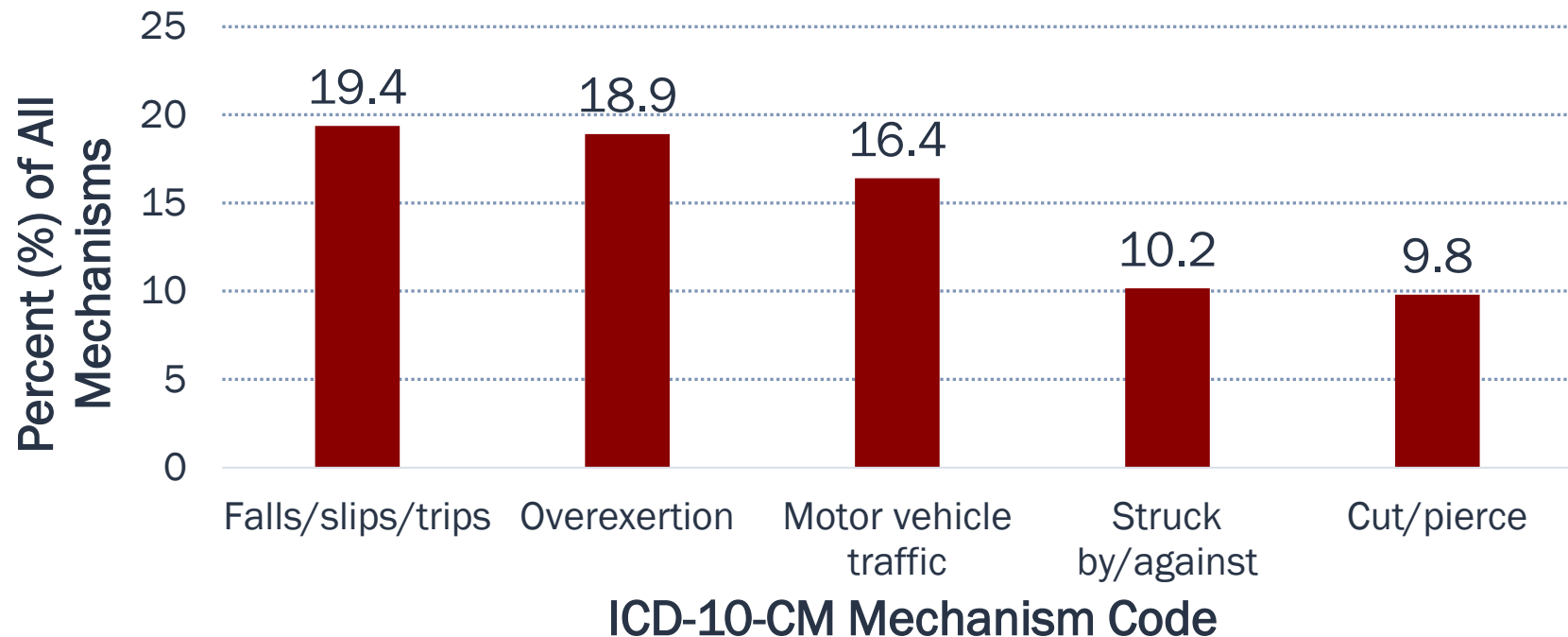
Legend: ACT = Acute trauma, CMT = Cumulative microtrauma



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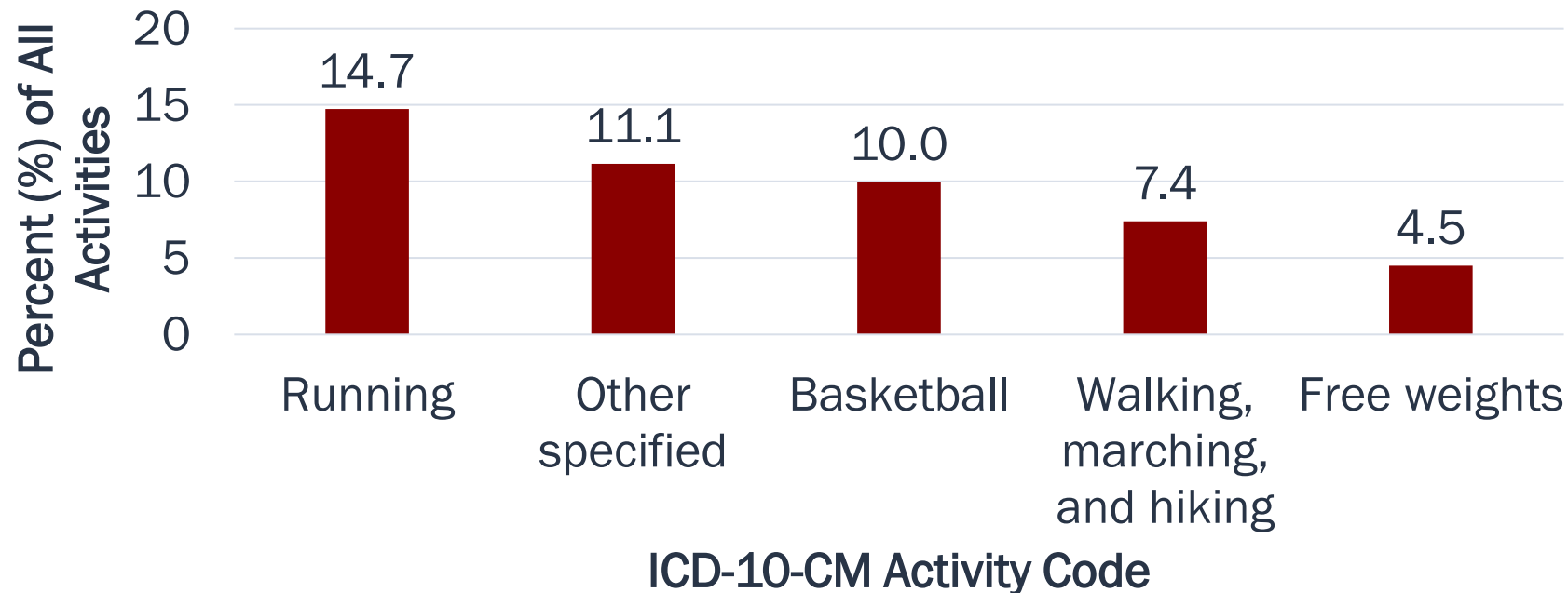
Leading Mechanisms of Unintentional Injury Outpatient Encounters, U.S. Air Force Active Duty, 2021



Total number of unintentional incident injury outpatient encounters with activity codes = 10,947 (5%); may not be representative of the distribution of mechanisms for all incident injuries.



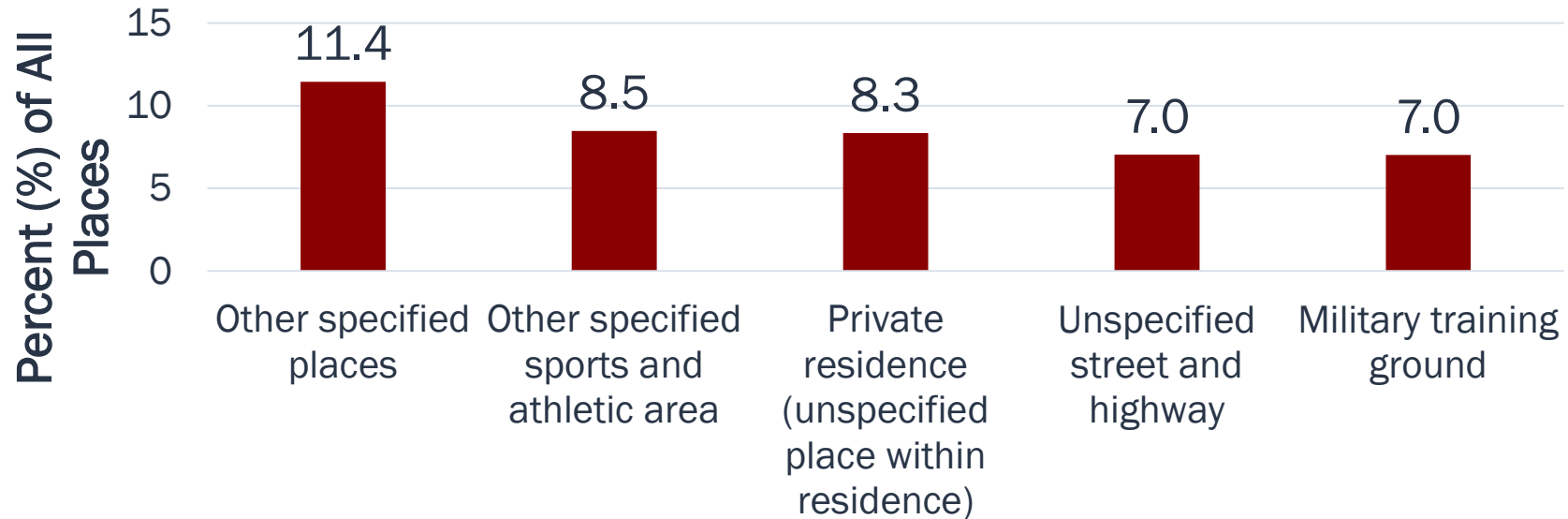
Leading Activities Associated with Unintentional Injury Outpatient Encounters, U.S. Air Force Active Duty, 2021



Total number of unintentional incident injury encounters with activity codes = 5,333 (3%); may not be representative of the distribution of activities for all incident injuries.



Leading Places Associated with Unintentional Injury Outpatient Encounters, U.S. Air Force Active Duty, 2021



ICD-10-CM Place of Occurrence Code

Total number of unintentional outpatient incident injury encounters with activity codes = 5,050 (1%); may not be representative of the distribution of places for all incident injuries.



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

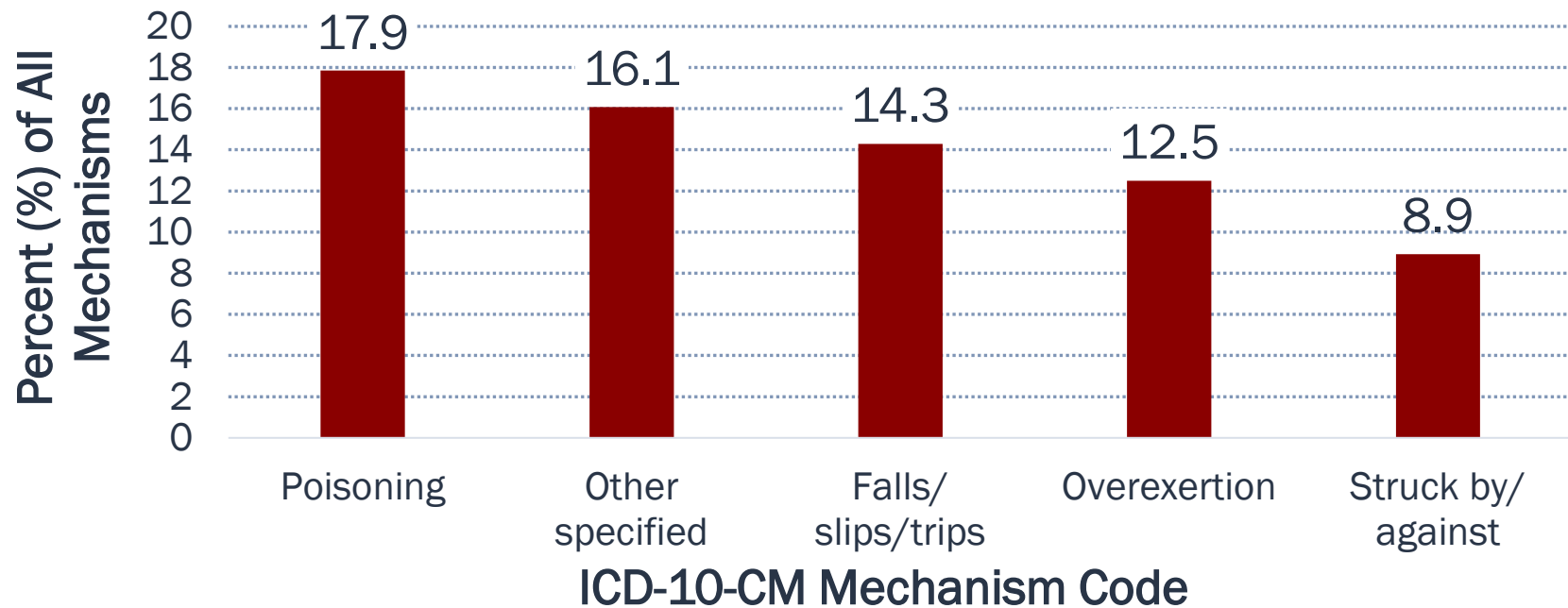
Email: dha.apg.Pub-Health-A.mbx.injuryprevention@health.mil



Additional Injury Hospitalization Cause Information



Leading Mechanisms of Unintentional Injury Hospitalizations, U.S. Air Force Active Duty, 2021



Total number of cause-coded unintentional injury hospitalizations = 56 (14%); may not be representative of the distribution of causes for all incident injury hospitalizations.

