Limited Duty in U.S. Army Active-Duty Electronic Medical Profiles, 2019–2021

PURPOSE

This document provides an overview of the U.S. Army system of record for electronic medical profiles, e-Profile, and specifically describes characteristics of limited duty days (LDDs) assigned to temporary profiles for Active Component (AC) Army Soldiers in calendar years (CY) 2019 to 2021.

INTRODUCTION

E-Profile is an application within the Medical Operational Data System (MODS) which "allows global tracking of all Army Soldiers who have been determined by the medical system to have a temporary or permanent medical condition(s) that may render them medically not ready to deploy."[1] Profiles are specifically mandated for some conditions referrable to the Disability Evaluation System.[2] Profiles document provider-recommended training and duty limitations related to temporary and permanent medical conditions. The main purpose of e-Profile is "to facilitate communications between Commanders and Providers helping to ensure Soldiers get corrective intervention."[1] Data maintained in the e-Profile application provide a comprehensive record of LDDs assigned by providers for any medical condition.

The e-Profile application was also created to assist Commanders with evaluating and tracking unit readiness. The Army implemented the new e-Profile system to provide a fully automated profile process from data entry into Department of the Army (DA) Form 3349 (Physical Profile Record) to routing the final profile to unit Commanders[1,3].

In e-Profile, injuries and other conditions are categorized in a hierarchy starting with "System Condition" (SC), which represents the general medical condition (e.g., neuromusculoskeletal, behavioral health, pregnancy). SC categories may be changed or updated in the e-Profile application from year-to-year. SC is followed by "Focus Area" (FA), which is the body region affected (e.g., upper extremity, lower extremity, spine). Lastly, "Detail" identifies the specific body part(s) affected (e.g., foot, hand, hip). Additional fields of interest include the profile start and end dates, the mechanism (cause) of injury (e.g., sports, motor vehicle, and work tasks), and instruction to Commanders. Soldiers' training limitations may be described by free text in the profile. Profiles may be permanent or temporary. Permanent profiles are for persistent conditions, limitations, or restrictions. Temporary profiles are for conditions with limitations that will improve over time.[3] The maximum duration of temporary profiles is 12 months for the same medical condition.[3] All duty limitations of more than 7 days should be documented in e-Profile by providers.[3]

E-Profile data are complicated by a number of factors. Soldiers may see multiple providers who can assign the same Soldier to multiple profiles, categorize a Soldier under more than one SC, or assign multiple justifications for the same SC. Profile categories and time frames may be duplicative, overlapping, consecutive, or nested for different conditions or for the same condition. Lastly, providers may choose to extend, modify, or expire a profile during subsequent encounters. Methods described below were designed to address these complexities.

METHODS

All temporary profiles were summarized by SC to provide an overview of what was captured in e-Profile, CY 2019–2021. Injury-related profiles were identified in seven SCs: Musculoskeletal (Neuromusculoskeletal), Initial Military Training (IMT), Initial Entry Training/One Station Unit Training (IET/OSUT), Podiatry, Neurology, Neurosurgery, and Army Combat Fitness Test (ACFT) Modification.

When determining LDDs for a Soldier's condition, multiple temporary profiles for a Soldier with the same SC and FA were combined to form a consolidated injury profile (CIP) within each CY. Consolidating the profiles eliminated double counting of LDDs for the same injury. The sum of all the unique injury-related profiles in e-Profile during each year, CY 2019–2021, was calculated by mechanism (cause) of injury for all Soldiers.

Medical Verification of e-Profile

Although e-Profile is an administrative record capturing Soldier medical non-readiness, it is not directly linked to the medical record and does not contain diagnostic codes. It is desirable to associate injury profiles with corresponding injury diagnoses to align with usual incident injury reporting[4] and support predictive modelling. To align with diagnoses, e-Profile records were merged with medical encounter records that contained International Classification of Disease, Tenth Revision, Clinical Modification (ICD-10-CM) diagnostic codes. The injury taxonomy[4], used in Army injury surveillance reporting, categorizes injuries by body region and injury type based on the ICD-10-CM codes. The e-Profile CIPs were associated with an injury diagnosis by matching the recorded FA in e-Profile with the Injury Taxonomy Body Region 1. Any CIP having a diagnosis specifying the same body region cited in the profile within 30 days of the profile start date was deemed to be medically verified.

RESULTS

From 2019 to 2021, neuromusculoskeletal conditions accounted for over half of LDDs among all temporary profiles, ranging from over 7 million LDDs in 2020 to over 9.5 million LDDs in 2019. Across all three years, about half of Soldiers (e.g., 53% in 2019) who qualified for a temporary injury profile received one.

The top three SCs were the same across all 3 years: Neuromusculoskeletal (54.3–59.9%), Behavioral health (10.1–11.3%), and Pregnancy (9.0–11.7%) (Table 1). LDDs dropped significantly in 2020 then rebounded to near-2019 levels in 2021.

Table 1. LDDs for Leading Temporary Profile System Conditions, U.S. Army Active Component, CY 2019–2021

Leading System Conditions, Males/Females	CY 2019		CY 2020		CY 2021	
	LDD	(%)	LDD	(%)	LDD	(%)
Neuromusculoskeletal	9,620,295	(59.9)	7,404,122	(55.1)	8,749,787	(54.3)
Behavioral Health	1,623,791	(10.1)	1,491,958	(11.1)	1,817,268	(11.3)
Pregnancy	1,444,435	(9.0)	1,575,336	(11.7)	1,622,781	(10.1)
Neurology	313,249	(2.0)	262,724	(2.0)	320,133	(2.0)
Shaving	283,697	(1.8)	265,864	(2.0)	307,409	(1.9)
Podiatry	276,740	(1.7)	200,097	(1.5)	229,007	(1.4)
Eye	243,958	(1.5)	132,448	(1.0)	214,140	(1.3)
Dermatology/Skin	235,427	(1.5)	220,700	(1.6)	334,195	(2.1)
General Surgery	223,714	(1.4)	182,049	(1.4)	189,737	(1.2)
Cardiology	215,401	(1.3)	177,052	(1.3)	249,433	(1.5)
Pulmonary	214,625	(1.3)	162,497	(1.2)	162,199	(1.0)
Dental	201,603	(1.3)	384,730	(2.9)	12,869	(0.1)
Post COVID (Retesting)		n/a	24,316	(0.2)	597,514	(3.7)
Post COVID-19		n/a	42,180	(0.3)	297,215	(1.8)
Subtotal	**14,896,935**	**(92.8)**	**12,526,073**	**(93.2)**	**15,103,687**	**(93.7)**

Legend:
CY = calendar year
LDD = limited duty days
n/a = not applicable

Table 2. LDDs for Leading Injury-Related Temporary Profiles, U.S. Army Active Component, CY 2019–2021

Leading System Conditions, Males/Females	CY 2019		CY 2020		CY 2021	
	LDD	(%)	LDD	(%)	LDD	(%)
Neuromusculoskeletal	9,620,295	(59.9)	7,404,122	(55.1)	8,749,787	(54.3)
Neurology	313,249	(2.0)	262,724	(2.0)	320,133	(2.0)
Podiatry	276,740	(1.7)	200,097	(1.5)	229,007	(1.4)
Neurosurgery	28,198	(0.2)	25,821	(0.2)	27,857	(0.2)
IET/OSUT	4,843	(0.0)	6,182	(0.0)	6,357	(0.0)
IMT	66,914	(0.4)	3,515	(0.0)	4,403	(0.0)
ACFT Modification		**n/a**	19,630	(0.1)	64,612	(0.4)
Subtotal	**10,310,239**	**(64.2)**	**7,922,091**	**(59.0)**	**9,402,156**	**(58.3)**

Legend:
LDD = limited duty days
CY = calendar year
IET/OSUT = Initial Entry Training/One Station Unit Training
IMT = Initial Military Training
ACFT = Army Combat Fitness Test

LDDs for injury-related temporary profiles were primarily associated with the Neuromusculoskeletal SC across all three years (Table 2). The top three system conditions that contributed to the most temporary injury profiles were Neuromusculoskeletal (54.3–59.9%), Neurology (2%), and Podiatry (1.4–1.7%). Consistent with Table 1, LDDs dropped in 2020 and rebounded the following year.

Table 3. LDDs for Injury-Related Temporary Profiles by Mechanism (Cause), U.S. Army Active Component, CY 2019–2021

Injury Mechanism	CY 2019		CY 2020		CY 2021	
	LDD (%)		LDD (%)		LDD (%)	
Running	2,395,305	(24.0)	1,776,724	(23.3)	1,803,024	(20.0)
MOS Work Tasks:	664,967	(6.7)	706,228	(9.2)	886,911	(9.9)
- Lifting	272,258	(2.7)	244,616	(3.2)	301,790	(3.4)
- Mechanical/Repair	63,995	(0.6)	58,554	(0.8)	68,941	(0.8)
- Pushing or Pulling Objects	26,256	(0.3)	32,314	(0.4)	35,158	(0.4)
- Work Tasks, Other	302,458	(3.0)	370,744	(4.9)	481,022	(5.3)
Falls/ Slips/ Trips	549,439	(5.5)	501,348	(6.6)	619,268	(6.9)
Sports, Teams & Individual	447,553	(4.5)	298,943	(3.9)	367,837	(4.1)
Road Marching/ Load Carriage	404,365	(4.1)	376,589	(4.9)	532,986	(5.9)
Physical Training, Other	393,112	(3.9)	256,011	(3.4)	266,266	(3.0)
Strength Training	356,672	(3.6)	411,795	(5.4)	535,893	(6.0)
Motor Vehicle/ Motorcycle Accident	219,015	(2.2)	186,827	(2.4)	208,303	(2.3)
Fast Rope, Parachute	181,500	(1.8)	129,809	(1.7)	181,185	(2.0)
Combative/ Martial Arts/ Fighting	96,698	(1.0)	61,821	(0.8)	48,672	(0.5)
Off-Duty Activities, Non-Vehicular	91,425	(0.9)	21,328	(0.3)	n/a	
Battle Injury	27,900	(0.3)	23,654	(0.3)	16,781	(0.2)
Environmental, Heat or Cold	3,156	(<0.1)	2,502	(<0.1)	2,309	(<0.1)
Stress	2,274	(<0.1)	4,782	(0.1)	n/a	
ACFT Event, Record or Diagnostic	n/a		28,812	(0.4)	75,962	(0.8)
Gradual/ Insidious Onset	n/a		332,500	(4.4)	772,008	(8.6)
Subtotal (Excluding Unknown)	**5,833,381**	**(58.5)**	**5,255,850**	**(68.8)**	**6,583,002**	**(73.2)**
Unknown	4,130,705	(41.5)	2,384,991	(31.8)	2,414,743	(26.8)
Total	**9,964,086**	**(100)**	**7,640,841**	**(100)**	**8,997,745**	**(100)**

Legend:
LDDs = limited duty days
CY = calendar year
MOS = military occupational specialty
ACFT = Army Combat Fitness Test

Across all 3 years, LDDs for injury temporary profiles were primarily associated with running, accounting for between 1.8 and 2.3 million LDDs (Table 3). The top three mechanisms that contributed to the most temporary profiles were the same in 2019 and 2020: running (23.7–24.0%), Military Occupational Specialty (MOS) work tasks (6.7–9.4%), and falls/slips/trips (5.5–6.7%). In 2021, the top three mechanisms differed slightly, with Gradual/insidious onset as the third leading mechanism (8.8%).

Discussion

The recommended LDDs assigned by providers quantify the administrative capture of Soldier medical non-readiness across a range of medical conditions. The LDD assignments lend themselves to straightforward reporting in easy-to-understand terms (e.g., LDD counts, means, medians) that can characterize medical non-readiness for leaders at all levels. Linking the injury profile record with the medical encounter record enriches knowledge of Soldiers' injury experiences and facilitates more informative analysis.

The drop in injury-related LDDs in 2020 was likely attributable to reductions in medical encounters in the early months of the COVID-19 pandemic.[5]

In spite of AR 40-502 guidance, only about half of Soldiers who qualified for a temporary profile received one. It cannot be assumed that injured Soldiers who were not assigned a profile were fully capable of performing their duties.

Note that mechanism labels may change year-to-year, and due to this, some row labels were not applicable across every year (Table 3).

In 2020, the ACFT was scheduled to replace the Army Physical Fitness Test. This implementation appears to be reflected in a drop in LDDs related to the IMT SC. Note also, unlike other injury categories, the LDDs of IET/OSUT increased in 2020 and again in 2021. This shuffling of LDDs among categories may preclude trend analysis of some categories.

Specific provider-recommended limited duty restrictions may be recorded in the eProfile record. The term "limited duty" should not be conflated with "no duty." Depending on the nature of injury(ies) and assigned Area of Concentration/MOS, many Soldiers may be able to perform usual duties with few limitations.

POINT OF CONTACT

For additional information, please visit the Injury Prevention Branch webpage at https://ph.health.mil/topics/discond/ptsaip/Pages/default.aspx, or contact us by email at: dha.apg.pub-health-a.mbx.injuryprevention@health.mil.

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