

HEALTH OF THE ARMY – A Web-based Health Assessment Tool

<http://chppm-www.apgea.army.mil/deds/population.aspx>

Amish Shah^{1,2}, David Arday², Samuel Jang², Nikki Jordan², Walter E. Egerton²

¹Oak Ridge Institute for Science and Education (ORISE) ²U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)



ABSTRACT

BACKGROUND: Assessing the Army's health is essential in identifying and evaluating both determinants of health and fitness as well as obstacles to Force Health Protection. The "Health of the Army" is a new web-based application providing information on a variety of health-related metrics pertaining to Army personnel. Health-related metrics chosen for this initial report comprise four broad categories: Profile Status, Healthcare Utilization, Risk Factors for Premature Disease and Death (RFPDD), and Healthcare Optimization.

METHODS: Data sources used included the Defense Medical Surveillance System (DMSS), the DoD Survey of Health Related Behaviors Among Military Personnel and the Population Health Operational Tracking Optimization (PHOTO). Aside from the DoD survey data, which was completed in 1998, and the DMSS profile data, which was current through 31 October 2002, data was restricted to calendar year 2001. Only active duty Army personnel were included in the calculation of the estimates for the metrics. Metrics were stratified by gender, age groups, and regional levels (i.e. MACOM, RMC). When applicable, the estimates were compared to Healthy People 2010 benchmarks.

RESULTS: The Profile Status metric provides information on the distribution of PULHES (physical stamina, upper extremity, lower extremity, hearing, vision, and psychiatric) profiles. The Healthcare Utilization metric provides information on hospitalizations and ambulatory visits by 3-digit ICD-9CM diagnostic codes. The RFPDD metric provides information on health-related behaviors such as substance abuse and physical activity while the Healthcare Optimization metric provides information regarding quality of care issues such as cervical cancer screening and asthma management.

CONCLUSION: The Health of the Army provides line-commanders and healthcare professionals with a quick assessment to ascertain healthcare priorities and develop programs. Periodic installments of the report will follow.

BACKGROUND

Purpose: to depict the current health status of the active duty (AD) Army

Health of the Army (HOA) metric categories:

- Profile Status
- Healthcare Utilization
- Risk Factors for Premature Disease and Death
- Healthcare Optimization

CONCLUSION

Health of the Army is intended to:

- Provide a quick assessment of :
 - AD Army physical profile status
 - AD Army healthcare utilization
 - AD Army health-related behaviors
 - Delivery of preventive services to AD Army
- Enable line commanders and healthcare professionals to:
 - Ascertain healthcare priorities
 - Develop health-related programs

Future periodic installments are forthcoming

View report at:

<http://chppm-www.apgea.army.mil/deds/Population.aspx>

Profile Status

- Depicts the physical profile of the AD Army
- Based on PULHES (physical stamina, upper extremity, lower extremity, hearing, vision, and psychiatric) profile data
- Stratified by Major Command and rank

Profile Status				
Rate (per 1,000)				
	Total N	All 1's %	One 2 %	Worse %
Total Army Active	420,699	80.21	15.62	4.17
Major Commands				
FORSCOM	177,593	79.83	15.63	4.55
TRADOC	73,400	80.29	15.84	3.86
Other CONUS	33,244	84.18	12.93	2.89
V Corps	36,465	80.25	15.92	3.83
Other Europe	11,407	80.87	15.46	3.67
MEDCOM	23,722	76.79	17.36	5.85
EUSA	22,431	79.83	16.16	4.01
USAPAC	18,259	79.96	16.51	3.54
Signal Cmd	7,383	78.19	17.27	4.54
Intel & Security Cmd	7,006	75.50	20.00	4.60

*All 1's = no profile; One 2 = least severe profile status, any single category; Worse = anything more than a single 2 value, including 2's in more than one category. Data is current as of 31 October 2002. NOTE: Excludes Missing and Bad PULHES Data

By MACOM: MEDCOM

	P	U	L	H	E	S
	Physical Stamina	Upper Extremity	Lower Extremity	Hearing	Eyesight	Psych
	%	%	%	%	%	%
1 (No limit)	97.2	98.1	93.4	98.3	87.3	99.8
2 (Minor limitation)	1.3	1.2	4.5	1.2	12.5	0.1
3 (Major limitation)	1.5	0.6	2.1	0.5	0.3	0.1
4 (Severe limitation)	0.1	0.0	0.0	0.0	0.0	0.0
Total N	23,732	23,732	23,732	23,732	23,732	23,722

By MACOM: FORSCOM

	P	U	L	H	E	S
	Physical Stamina	Upper Extremity	Lower Extremity	Hearing	Eyesight	Psych
	%	%	%	%	%	%
1 (No limit)	98.1	99.2	96.7	98.2	86.7	99.8
2 (Minor limitation)	0.5	0.4	1.9	1.2	13.0	0.2
3 (Major limitation)	1.4	0.4	1.3	0.6	0.3	0.0
4 (Severe limitation)	0.0	0.0	0.0	0.0	0.0	0.0
Total N	177,630	177,627	177,626	177,631	177,630	177,599

Healthcare Utilization

- Illustrates hospitalization and ambulatory visit rates of AD Army
- Provides a proxy of the burden of disease in a community
- Categorized into International Classification of Diseases, 9th edition (ICD-9CM) major diagnostic categories, down to three digit diagnostic codes for more specific diseases/conditions
- Stratified by regional medical command (RMC), gender, and age group

Diagnostic Category	Total AD Army		North Atlantic	
	Count	Rate (per 1,000)	Count	Rate (per 1,000)
Total Ambulatory Visits*	5,165,829	10,899.04	1,327,864	12,425.39
Factors other than illness or injury (V01-V83)	2,158,648	4,554.39	509,694	4,769.42
Musculoskeletal system (710-739)	888,682	1,874.97	235,110	2,200.02
Injury and poisoning (800-999)	453,499	956.81	141,062	1,319.98
Respiratory system (460-519)	329,945	696.13	81,582	763.40
Mental disorders (290-319)	278,991	588.62	68,748	643.30
Nervous system (320-389)	258,442	545.27	73,930	691.79
Ill-defined conditions (780-799)	235,684	497.25	62,032	580.46
Infectious and parasitic diseases (001-139)	117,707	248.34	34,955	327.09
Skin diseases (680-709)	117,112	247.09	35,877	335.72
Genitourinary system (580-629)	90,865	191.71	23,614	220.97
Digestive system (520-579)	84,985	179.30	20,352	190.44
Endocrine, nutrition, immunity (240-279)	48,874	103.12	13,118	122.75
Circulatory system (390-459)	45,416	95.82	13,382	125.22
Neoplasms (140-239)	25,055	52.86	6,887	64.44
Pregnancy complications (630-679)	17,672	37.28	3,620	33.87
Congenital anomalies (740-759)	8,680	18.31	2,236	20.92
Hematologic disorders (280-289)	5,572	11.76	1,665	15.58

*Excludes Unknown Diagnoses

Diagnostic Category	Total AD Army		North Atlantic	
	Count	Rate (per 1,000)	Count	Rate (per 1,000)
Total Hospitalizations*	32,454	68.47	7,002	65.52
Pregnancy complications (630-679)	6,358	13.41	1,432	13.40
Injury and poisoning (800-999)	4,689	9.89	1,092	10.22
Mental disorders (290-319)	4,662	9.84	793	7.42
Musculoskeletal system (710-739)	3,451	7.28	746	6.98
Digestive system (520-579)	3,244	6.84	881	8.24
Ill-defined conditions (780-799)	1,844	3.89	329	3.08
Respiratory system (460-519)	1,649	3.48	268	2.51
Genitourinary system (580-629)	1,351	2.85	283	2.65
Circulatory system (390-459)	1,002	2.11	252	2.36
Neoplasms (140-239)	865	1.83	246	2.30
Skin diseases (680-709)	800	1.69	167	1.56
Factors other than illness or injury (V01-V83)	775	1.64	135	1.26
Infectious and parasitic diseases (001-139)	762	1.61	144	1.35
Nervous system (320-389)	480	1.01	96	0.90
Endocrine, nutrition, immunity (240-279)	289	0.61	76	0.71
Congenital anomalies (740-759)	122	0.26	29	0.27
Hematologic disorders (280-289)	111	0.23	33	0.31

*Excludes Unknown Diagnoses

METRIC CATEGORIES

Top Five Subcategories of Ambulatory Visits Within Musculoskeletal ICD-9 Category

Total AD Army				North Atlantic			
Diagnostic Category	Count	Rate (per 1,000)	Diagnostic Category	Count	Rate (per 1,000)		
Musculoskeletal (710-739)							
Other and unspecified disorders of joint	234,730	495.24	Other and unspecified disorders of back	53,300	498.75		
Other and unspecified disorders of back	194,544	410.46	Other and unspecified disorders of joint	52,221	488.65		
Peripheral enthesopathies and allied syndromes	94,535	199.45	Peripheral enthesopathies and allied syndromes	30,407	284.53		
Other disorders of soft tissues	94,285	198.93	Other disorders of soft tissues	23,217	217.25		
Internal derangement of knee	51,383	108.41	Internal derangement of knee	14,045	131.43		

Top Five Subcategories of Ambulatory Visits Within Injury and Poisoning ICD-9 Category

Total AD Army				North Atlantic			
Diagnostic Category	Count	Rate (per 1,000)	Diagnostic Category	Count	Rate (per 1,000)		
Injury and Poisoning (800-999)							
Sprains and strains of ankle and foot	63,185	133.31	Sprains and strains of knee and leg	23,445	219.38		
Sprains and strains of knee and leg	59,030	124.54	Sprains and strains of ankle and foot	18,199	170.30		
Other and ill-defined sprains and strains	33,143	69.93	Sprains and strains of other and unspecified parts of back	9,862	92.28		
Sprains and strains of other and unspecified parts of back	27,430	57.87	Other and ill-defined sprains and strains	9,274	86.78		
Sprains and strains of shoulder and upper arm	19,520	41.18	Sprains and strains of shoulder and upper arm	7,851	73.47		

Top Five Subcategories of Hospitalizations Within Pregnancy ICD-9 Category

Total AD Army				North Atlantic			
Diagnostic Category	Count	Rate (per 1,000)	Diagnostic Category	Count	Rate (per 1,000)		
Pregnancy complications (630-679)							
Trauma to perineum and vulva during delivery	1,431	3.02	Trauma to perineum and vulva during delivery	379	3.55		
Abnormality of forces of labor	512	1.08	Early or threatened labor	96	0.90		
Normal delivery	472	1.00	Prolonged pregnancy	95	0.89		
Early or threatened labor	417	0.88	Other problems associated with amniotic cavity and membranes	87	0.81		
Other problems associated with amniotic cavity and membranes	359	0.76	Abnormality of forces of labor	86	0.80		

Top Five Subcategories of Hospitalizations within Mental Disorders ICD-9 Category

Total AD Army				North Atlantic			
Diagnostic Category	Count	Rate (per 1,000)	Diagnostic Category	Count	Rate (per 1,000)		
Mental disorders (290-319)							
Adjustment reaction	1,806	3.81	Adjustment reaction	340	3.18		
Affective psychoses	1,003	2.12	Affective psychoses	155	1.45		
Alcohol dependence syndrome	419	0.88	Alcohol dependence syndrome	75	0.70		
Depressive disorder, not elsewhere classified	324	0.68	Neurotic disorders	42	0.39		
Neurotic disorders	263	0.55	Two-way tie*	33	0.31		

*Depressive disorders, not elsewhere classified; Personality disorders

Risk Factors For Premature Disease And Death

- Describes personal behaviors and lifestyle choices of AD Army that may impact health
 - Obesity
 - Substance Abuse
 - Physical Activity
 - Sexual Behavior
- Based on 1998 Department of Defense (DoD) Survey of Health Related Behaviors Among Military Personnel¹
- Stratified by region, gender, and age group

¹<http://www.tricare.osd.mil/analysis/surveys/98survey/survey.html>

Physical Activity Metric	HP 2010 Leading Health Indicator Targets	AD Army			Male			Female		
		N	%	(95%-CL)	N	%	(95%-CL)	N	%	(95%-CL)
Percent of individuals aged 17 years and older who engage in strenuous exercise at least 20 minutes 3 times a week	50%	5,423	84.8	(82.3- 87.4)	4,188	85.3	(82.7- 88.0)	1,235	81.8	(78.8- 84.9)

Substance Use Metric	HP 2010 Leading Health Indicator Targets	AD Army			Male			Female		
		N	%	(95%-CL)	N	%	(95%-CL)	N	%	(95%-CL)
Percent of heavy cigarette smokers in adults 17 years and older		5,444	14.1	(12.4- 15.8)	4,204	15.1	(13.4- 16.8)	1,240	8.2	(6.8- 9.6)

Substance Use Metric	HP 2010 Leading Health Indicator Targets	AD Army			Male			Female		
		N	%	(95%-CL)	N	%	(95%-CL)	N	%	(95%-CL)
Percent of adults 17 years and older that are current cigarette smokers	12.0%	5,449	31.1	(28.8- 33.5)	4,208	32.7	(30.3- 35.1)	1,241	21.8	(19.4- 24.3)

Substance Use Metric	HP 2010 Leading Health Indicator Targets	AD Army			Male			Female		
		N	%	(95%-CL)	N	%	(95%-CL)	N	%	(95%-CL)
Percent of adults 17 years and older using smokeless tobacco		5,434	14.4	(11.9- 16.9)	4,197	16.7	(14.2- 19.3)	1,237	0.7	(0.1- 1.3)

Substance Use Metric	HP 2010 Leading Health Indicator Targets	AD Army			Male			Female		
		N	%	(95%-CL)	N	%	(95%-CL)	N	%	(95%-CL)
Percent of adults 17 years and older who reported binge drinking in the past 30 days	6.0%	5,449	47.2	(43.4- 51.0)	4,208	50.9	(47.0- 54.8)	1,241	25.3	(23.2- 27.3)

Substance Use Metric	HP 2010 Leading Health Indicator Targets	AD Army			Male			Female		
		N	%	(95%-CL)	N	%	(95%-CL)	N	%	(95%-CL)
Percent of adults 17 years and older who reported any illicit drug use in the past 30 days	2.0%	5,449	4.5	(2.9- 6.1)	4,208	4.8	(3.0- 6.6)	1,241	3.0	(2.4- 3.6)

Healthcare Optimization

- Illustrates delivery of preventive services and treatment for chronic conditions
 - Cervical Cancer Screening
 - Mental Health Follow-Up
 - Preventable Admissions
 - Eye Exam for Diabetics
 - Prenatal Care
 - Checkups After Delivery
 - Asthma Management
 - Beta-blockers after Heart Attack
- Based on estimates provided by EI/DS PHOTO website²
- Stratified by RMC, gender, age group