

**ACTIVE DUTY – U.S. ARMY
NOISE-INDUCED
HEARING INJURY
QUARTERLY SURVEILLANCE
Q3 2007 thru Q4 2009**

Approved for public release, distribution unlimited

2014



Active Duty-U.S. Army Noise Induced Hearing Injury Quarterly Surveillance Q3 2007 thru Q4 2009

*Reported by: Thomas Helfer, PhD., Sharon Beamer, AuD, Karen Deaver, MPH,
and Shane Hall, MS, USAPHC.*

Points of Contact

Army Hearing Pgm.
U.S. Army Public Health Command
Institute of Public Health:
5158 Blackhawk Road; Bldg E-1570
Attn: MCHB-IP-MAH
Gunpowder, MD 21010-5403
COMM: (410) 436-3797 DSN: 584-3797

Injury Prevention Pgm
U.S. Army Public Health Command
Institute of Public Health
5158 Blackhawk Road; Bldg E-1570
Attn: MCHB-IP-DI
Gunpowder, MD 21010-5403
COMM: (410) 436-1008 DSN: 584-1008

Command Statisticians
Strategic Initiatives Office
U.S. Army Public Health Command
5158 Blackhawk Road
Attn: MCHB-CG-SIO
Gunpowder, MD 21010-5403
COMM: (410) 436-7425 DSN: 584-7425

**ACTIVE DUTY- U.S. ARMY
NOISE INDUCED HEARING INJURY
QUARTERLY SURVEILLANCE
Q3 2007 THRU Q4 2009**

EXECUTIVE SUMMARY

PURPOSE:

The Department of Defense (DOD) Hearing Conservation Working Group, the U.S. Army Public Health Command (USAPHC), the Armed Forces Health Surveillance Center (AFHSC) and the Hearing Center of Excellence (HCE) collaborated to develop new DOD and individual Services' Noise-Induced Hearing Injury (NIHI) surveillance data. The purposes of these NIHI data summaries are as follows:

- To present and summarize available Army medical surveillance data for use in noise-induced hearing injury (NIHI) prevention program and policy planning, including -
 - o Defining the relative impact of NIHI among U.S. Army Active Duty personnel in the total Army and at individual Army installations.
 - o Providing Army injury rates and trends from Q3 2007 thru Q4 2009.
 - o Identifying demographics most closely associated with NIHI incidence.
- To monitor progress-based metrics for reducing the NIHI morbidity burden over time.

The first NIHI data summary established a baseline against which future years' data can be compared for assessment of NIHI trends as prevention performance indicators.

CONCLUSIONS:

The Army NIHI quarterly surveillance summary for calendar years (CY) Q3 2007-Q4 2009 shows incident case rates for sensorineural hearing loss (SNHL), significant threshold shift (STS), tinnitus, and Noise-Induced Hearing Loss (NIHL).

RECOMMENDATIONS:

Commanders and Preventive Medicine assets at multiple levels should use NIHI data summaries trends to maintain situational awareness of the progress of NIHI prevention operations.

**Active Duty-U.S. Army
Noise Induced Hearing Injury
Quarterly Surveillance
Q3 2007 thru Q4 2009**

REFERENCES:

References are listed in Appendix A.

AUTHORITY:

Under Army Regulation (AR) 40-5, Section 2-19, the U.S. Army Public Health Command (USAPHC) is responsible for providing support for Army PM assets to include review and interpretation of surveillance data and identification and characterization of health problems as a foundation for injury prevention planning and policy efforts.

Under Department of Defense Instruction (DODI) 6055.12 Hearing Conservation Program, Enclosure 2, Section 3. Requires the Heads of the DOD components to annually evaluate the effectiveness of their HCPs.

Under Department of Defense Directive (DODD) 6490-02E Comprehensive Health Surveillance, 2012; Section 1. paragraph c. establishes the Armed Forces Health Surveillance Center (AFHSC) as the single source for DOD-level health surveillance information.

Under DODD 6200.04 Force Health Protection, Section 4.3.1.2, requires DOD components to promote and improve the health of the force through programs on injury prevention.

BACKGROUND:

Background details can be found in the annual Summary for CY 2007-2011.

Quarterly data time series will be updated semi-annually to provide a 10-quarter “moving window” of finer grained details compared to annual summaries.

METHODS:

Methods details can be found in the annual Summary for CY 2007-2011. The quarterly summary data are reported as is without statistical analysis.

Source: Defense Medical Surveillance System (DMSS)
Aggregated data prepared by Armed Forces Health Surveillance Center (AFHSC)

RESULTS:

Results are shown in Appendix C.

SUMMARY AND CONCLUSIONS:

AFHSC and AIPH will continue to provide annual and quarterly data summaries to support NIHI prevention coordination and planning by Army PM assets and unit commanders at multiple levels. The counts and rates of NIHI “incident cases” are the principle prevention performance metrics. Incident cases are important because they represent cases that might have been prevented if prevention strategies planning and operations were effective.

APPENDIX A

REFERENCES

Armed Forces Health Surveillance Center. Noise-Induced Hearing Injuries, Active Component, U.S. Armed Forces, 2007-2010. *Medical Surveillance Monthly Report (MSMR)*. 2011 June; 18(6): 7-10.

Bohnker BK, Betts LS, Page JC, Rovid CG, Sack DM. Navy hearing conservation program: 1995-1999 retrospective analysis of threshold shifts for age, sex, and officer/enlisted status. *Mil Med*. 2004;169:73-76.

Government Accountability Office. 2011. GAO Report No. 11-114 *Hearing Loss Prevention: Improvements to DOD Hearing Conservation Programs Could Lead to Better Outcomes*.

Helfer T, Shields A, Gates K. Outcomes analysis for hearing conservation programs. *Am J Audiology*, 2000; 9:75-83.

Helfer, T., Jordan, N, Lee R, Pietrusiak P, Cave K, Schairer K. Noise Induced Hearing Injury and Comorbidities Among Postdeployment U.S. Army Soldiers April 2003 through June 2009. *Am J Audiology*. 2011;20:1-9.

Helfer T, Jordan N, & Lee, R. Postdeployment hearing loss in U.S. Army Soldiers seen at audiology clinics from April 1, 2003, through March 31, 2004. *Am J Audiology* 2005;14:161-168.

Helfer T, Canham-Chervak M, Canada S, Mitchener TA. Epidemiology of hearing impairment and noise-induced hearing injury among U.S military personnel, 2003-2005. *Am J Prev Med*. 2010;38(1S):S71-S77.

Humes LE, Jollenbeck LM, Durch JS. *Noise and military service: Implications for hearing loss and tinnitus*. Washington, DC: National Academy Press, 2006.

Jordan N, Lee R, & Helfer, T. Noise induced hearing injury (NIHI) among army active duty soldiers deployed to the central command area of operations (CENTCOM AOR). *Seminars in Hearing*. 2009;30:28-37.

Petrucelli B, Knapik J. Army epidemiology and health surveillance. *Army Medical Department Journal*. 2006; April-June:22-30.

Tak S, Calvert GM. Hearing difficulty attributable to employment by industry and occupation: an analysis of the National Health Interview Survey-U.S. 1997 to 2003. *J Occ Environmental Med*. 2008;50(1):46-56.

U.S. Army Center for Health Promotion and Preventive Medicine . 2008. Technical Report No. 12-HF-04MT-08. *Noise-induced hearing injury surveillance in the U.S. military*, 2003-2005, pages 3-61 – 3-69.

World Health Organization. 2013. *WHO Health Topics*. Retrieved January 2013, from http://www.who.int/topics/public_health_surveillance/en/.

APPENDIX B
INJURY DIAGNOSIS CODES (ICD-9-CM CODES)
CATEGORIZATION BY DIAGNOSTIC GROUPS,
CURRENT PROCEDURE TERMINOLOGY (CPT) CODES
AND DOD OCCUPATION CODES
USED IN THESE DATA SUMMARIES

ICD-9 Codes

	Category	Code	Code Description
SNHL	Sensorineural hearing loss	38910	SENSORINEURAL HEARING LOSS UNSPECIFIED
SNHL	Sensorineural hearing loss	38911	SENSORY HEARING LOSS
SNHL	Sensorineural hearing loss	38915	SENSORINEURAL HEARING LOSS, UNILATERAL
SNHL	Sensorineural hearing loss	38916	SENSORINEURAL HEARING LOSS, ASYMMETRICAL
SNHL	Sensorineural hearing loss	38917	SENSORY HEARING LOSS, UNILATERAL
SNHL	Sensorineural hearing loss	38918	SENSORINEURAL HEARING LOSS, BILATERAL
NIHL	Noise-induced hearing loss	38810	NOISE EFFECTS ON INNER EAR UNSPECIFIED
NIHL	Noise-induced hearing loss	38811	ACOUSTIC TRAUMA (EXPLOSIVE) TO EAR
NIHL	Noise-induced hearing loss	38812	NOISE-INDUCED HEARING LOSS
SHIFT	Significant threshold shift	79415	NONSPECIFIC ABNORMAL AUDITORY FUNCTION STUDIES
TINN	Tinnitus	38830	TINNITUS UNSPECIFIED
TINN	Tinnitus	38831	SUBJECTIVE TINNITUS
TINN	Tinnitus	38832	OBJECTIVE TINNITUS

CPT Codes Used in the Data Summaries

AUDIO	CPT codes	92552	PURE TONE AUDIOMETRY (THRESHOLD); AIR ONLY
AUDIO	CPT codes	92555	SPEECH AUDIOMETRY THRESHOLD;
AUDIO	CPT codes	92556	SPEECH AUDIOMETRY THRESHOLD; WITH SPEECH RECOGNITION
AUDIO	CPT codes	92557	COMPREHENSIVE AUDIOMETRY THRESHOLD EVALUATION AND SPEECH RECOGNITION
AUDIO	CPT codes	92559	AUDIOMETRIC TESTING OF GROUPS

Department of Defense (DOD) Occupation
Codes used in the data summary

NEW DOD Code	DOD CODE TITLE
10	<i>Infantry, Gun Crew, and Seaman</i>
11	<i>Electronic Equipment Repairers</i>
12	<i>Communications and Intelligence Specialists</i>
13	<i>Health Care Specialists</i>
14	<i>Other Technical and Allied Specialists</i>
15	<i>Functional Support and Admin</i>
16	<i>Electrical/Mechanical Equipment Repairers</i>
17	<i>Craftswork & Construction</i>
18	<i>Service, Transport & Supply</i>
19	<i>Students & Trainees (Enlisted)</i>
21	<i>General/Flag. Officers & Executives</i>
22	<i>Tactical Operations Officers</i>
23	<i>Intelligence Officers</i>
24	<i>Engineering & Maintenance Officers</i>
25	<i>Scientists & Professionals</i>
26	<i>Health Care Officers</i>
27	<i>Administrators</i>
28	<i>Supply & Logistics Officers</i>
29	<i>Students, Trainees & Other Officers</i>

APPENDIX C
TOTAL ARMY QUARTERLY DATA DETAILS

Active Duty-U.S. Army
NIHI Quarterly Surveillance Q3 2007- Q4 2009

US Army Noise-Induced Hearing Injuries, by diagnosis, Q3 2007 - Q4 2009

Count (Rate ¹)	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
Sensorineural hearing loss	1,685	13.56	1,929	15.48	1,819	14.70	1,920	15.43	2,073	16.07	2,066	15.93	1,984	15.54	2,186	16.96	2,067	15.79	2,032	15.57
Significant threshold shift	1,856	14.54	2,202	17.24	2,982	23.56	2,979	23.48	2,334	17.79	2,016	15.29	2,042	15.75	2,445	18.69	2,639	19.91	2,427	18.37
Noise-induced hearing loss	433	3.39	464	3.62	464	3.64	481	3.75	469	3.52	431	3.22	454	3.44	403	3.02	436	3.21	504	3.71
Tinnitus	1,178	9.28	1,546	12.14	1,707	13.50	1,955	15.38	1,849	14.04	1,938	14.64	1,813	13.91	1,852	14.07	1,915	14.33	1,912	14.34

US Armed Forces (DoD) Noise-Induced Hearing Injuries, Active Component, by diagnosis, Q3 2007 - Q4 2009

	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
Sensorineural hearing loss	3,143	9.47	3,242	9.81	3,269	10.00	3,479	10.62	3,593	10.70	3,449	10.23	3,342	10.08	3,662	10.90	3,631	10.66	3,482	10.27
Significant threshold shift	2,052	6.02	2,368	6.97	3,109	9.27	3,170	9.43	2,589	7.53	2,208	6.40	2,220	6.54	2,781	8.09	2,942	8.45	2,601	7.50
Noise-induced hearing loss	917	2.71	816	2.42	760	2.28	823	2.46	710	2.07	708	2.06	702	2.07	682	1.98	657	1.88	746	2.14
Tinnitus	2,622	7.76	3,020	8.97	3,425	10.30	3,765	11.29	3,305	9.68	3,287	9.59	3,387	10.05	3,570	10.46	3,656	10.57	3,531	10.25

1. A person can be counted in more than one diagnosis type, but only once (life-time) for each. Rate is provided per 1,000 person-years.

2. Includes only data through the last available full quarter

Source: Defense Medical Surveillance System (DMSS) as of 21-NOV-2014

Prepared by Armed Forces Health Surveillance Center (AFHSC) as of 04-DEC-2014

Active Duty-U.S. Army
NIHI Quarterly Surveillance Q3 2007- Q4 2009

US Army SENSORINEURAL HEARING LOSS diagnoses, Q3 2007 - Q4 2009																				
	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN																				
Aberdeen Proving Ground, MD	7	12.71	7	12.36	8	18.93	5	15.59	4	12.76	3	7.78	5	13.71	3	8.67	1	3.28	2	6.51
Fort Belvoir, VA	7	14.32	8	16.52	8	17.38	10	23.36	11	24.02	9	19.78	4	9.05	11	23.91	12	24.35	9	18.57
Fort Bragg, NC	85	7.70	108	9.50	85	7.46	109	9.52	157	13.86	140	12.17	125	10.82	142	12.11	102	8.60	103	8.61
Fort Detrick, MD	1	5.22	1	5.31	1	5.44	1	5.73	4	23.27	3	17.05	2	11.54	6	33.36	3	16.07	4	21.79
Fort Dix, NJ	0	0.00	0	0.00	0	0.00	1	42.11	0	0.00	1	29.54	0	0.00	1	52.82	0	0.00	0	0.00
Fort Drum, NY	79	19.37	76	18.37	60	14.90	67	16.67	60	14.19	92	20.68	60	13.79	67	15.75	58	13.58	58	13.26
Fort Eustis, VA	9	6.88	7	4.93	9	6.49	11	7.85	17	11.62	10	6.54	18	12.05	53	34.75	20	13.34	15	9.78
Fort George G Meade, MD	4	6.40	7	10.84	5	7.18	5	6.96	15	19.99	23	30.87	22	30.28	18	24.91	20	27.32	10	13.95
Fort Knox, KY	58	29.04	61	32.25	49	28.10	69	38.17	44	20.16	39	21.29	18	10.06	15	8.37	23	10.70	22	10.02
Fort Lee, VA	8	5.37	15	9.48	10	6.96	10	6.51	16	10.23	8	4.59	9	5.86	12	7.69	10	6.93	7	4.34
Fort Myer, VA	3	7.49	6	14.80	3	7.45	1	2.49	5	12.19	4	9.44	2	4.74	4	9.30	14	32.78	5	11.95
Fort Monmouth, NJ	1	8.17	2	17.01	1	8.99	0	0.00	0	0.00	0	0.00	2	19.75	1	12.02	0	0.00	0	0.00
Walter Reed AMC, DC	6	9.15	11	16.92	11	17.42	11	16.75	6	8.96	12	18.11	14	21.53	14	21.23	7	10.53	8	12.31
West Point USMA, NY	2	6.12	6	19.21	5	16.04	8	24.69	3	8.79	3	8.95	6	18.61	13	38.82	6	17.71	5	15.48
SOUTHERN																				
Fort Benning, GA	133	26.96	85	18.23	144	31.23	123	25.90	206	38.57	109	21.42	128	25.81	162	31.89	146	27.00	73	14.32
Fort Campbell, KY	143	19.69	88	11.87	92	12.39	76	10.21	75	9.88	72	9.14	71	8.98	98	12.65	117	15.27	113	14.66
Fort Gordon, GA	14	7.46	14	6.97	22	10.87	12	6.02	18	8.77	27	11.82	30	13.73	25	11.24	19	8.42	29	12.75
Fort Hood, TX	162	12.66	212	16.44	198	15.32	281	21.89	175	13.53	231	17.40	185	14.08	219	16.42	137	10.74	89	7.22
Fort Jackson, SC	70	25.22	41	17.52	37	15.81	59	22.86	56	16.58	41	14.18	90	31.34	48	19.65	49	18.36	67	25.30
Fort McPherson, GA	3	8.37	8	22.31	4	11.43	7	19.97	8	21.98	6	15.80	8	21.08	5	12.96	12	30.66	2	5.11
Fort Polk, LA	45	24.56	45	24.22	27	14.21	28	14.63	33	16.46	35	16.63	68	32.29	58	28.23	29	14.34	41	19.90
Fort Rucker, AL	21	21.41	30	29.81	18	18.37	24	24.81	33	33.70	30	30.42	18	18.63	25	25.86	37	38.35	28	29.09
Fort Sam Houston, TX	14	8.10	22	12.84	21	12.22	28	16.60	24	13.33	30	15.77	34	18.54	22	12.04	23	12.36	30	16.01
Fort Sill, OK	8	2.58	18	6.27	24	9.03	31	11.42	24	8.02	44	15.33	40	15.11	33	13.34	25	9.79	60	20.83
Fort Stewart, GA	74	19.13	41	10.43	15	5.53	47	11.34	48	11.60	50	11.81	56	13.34	52	12.77	71	17.54	157	38.05
Redstone Arsenal, AL	1	4.63	4	16.94	1	4.38	4	16.84	1	4.35	4	16.12	2	8.23	3	11.04	4	14.13	3	10.66
WESTERN																				
Fort Bliss, TX	49	13.64	51	13.84	49	13.41	74	19.55	70	16.84	71	16.41	56	12.82	162	35.58	157	33.43	95	20.74
Fort Carson, CO	40	10.30	66	16.52	83	21.71	58	13.70	41	9.50	63	14.17	48	10.72	76	15.63	105	21.55	80	15.58
Fort Huachuca, AZ	20	15.29	17	12.95	7	5.76	6	5.43	10	9.26	8	6.73	4	3.49	11	9.64	5	4.43	7	6.13
Fort Irwin, CA	8	7.64	4	3.80	8	7.81	8	8.16	10	10.25	10	10.10	10	9.96	14	14.03	12	12.10	14	13.81
Fort Leavenworth, KS	6	9.26	1	1.57	9	13.99	8	12.44	8	11.59	3	4.48	6	8.75	10	14.61	14	18.59	4	5.40
Fort Leonard Wood, MO	31	11.24	19	7.23	26	10.85	53	21.31	72	25.08	54	18.16	91	32.74	62	23.41	46	18.10	41	14.51
Fort Lewis, WA	73	11.53	99	14.95	119	18.09	123	18.24	135	19.27	157	22.31	150	21.16	173	23.33	140	18.45	89	12.00
Fort Richardson, AK	15	10.61	9	9.43	41	25.72	50	26.97	38	24.68	57	31.75	44	23.65	9	4.70	17	8.64	43	21.81
Fort Riley, KS	85	23.58	71	19.40	49	19.35	86	23.01	182	48.82	176	49.14	102	28.81	89	24.26	94	23.44	70	17.17
Fort Wainwright, AK	21	15.64	13	13.29	28	31.64	11	13.29	17	15.33	14	11.93	12	10.49	13	11.44	15	12.88	28	24.48
PACIFIC																				
Camp Carroll	1	8.24	1	6.74	0	0.00	0	0.00	1	5.12	0	0.00	1	5.01	1	5.75	1	5.57	2	10.37
Camp Casey	10	7.08	0	0.00	5	3.59	1	0.71	6	4.26	6	4.27	7	4.96	4	2.71	14	9.13	15	10.14
Camp Humphreys	0	0.00	1	2.55	1	2.62	0	0.00	3	7.24	1	2.67	1	2.69	4	9.92	2	4.87	5	12.66
Camp Long	1	18.11	1	10.04	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	54.34
Camp Stanley/Red Cloud	0	0.00	0	0.00	1	31.64	0	0.00	1	10.12	1	10.49	0	0.00	1	10.11	1	9.74	0	0.00
Japan	1	7.88	0	0.00	0	0.00	1	6.15	0	0.00	0	0.00	3	17.23	5	27.68	2	11.32	3	16.93
Schofield Barracks-Wheeler AAF	104	27.84	154	59.64	135	41.33	117	32.62	132	36.21	99	25.91	120	31.62	112	28.90	108	29.20	228	61.31
USA Hawaii	3	32.77	8	198.75	2	39.96	1	19.24	0	0.00	2	39.99	1	19.98	1	19.93	1	19.19	2	37.53
Yongsan Garrison	3	3.29	4	4.62	3	4.69	6	5.81	8	8.04	6	6.21	8	8.81	4	4.46	9	9.95	9	10.21
EUROPEAN																				
Ansbach	0	0.00	0	0.00	1	2.92	0	0.00	0	0.00	0	0.00	4	9.23	1	2.24	3	6.79	2	4.55
Baden-Wuerttemberg	15	8.89	17	10.27	11	6.78	14	9.20	12	8.20	5	3.44	11	7.64	13	9.19	13	9.64	18	13.48
Bamberg	0	0.00	5	7.55	2	3.46	1	2.02	0	0.00	1	2.18	0	0.00	1	2.04	7	11.92	16	29.42
BeNeLux	1	4.66	2	9.65	1	5.15	3	14.87	2	10.83	2	10.65	2	10.97	3	16.30	1	5.36	1	5.46
Grafenwoehr	8	23.67	5	14.23	5	13.75	2	3.81	4	7.12	9	10.83	5	6.40	3	3.82	5	6.49	4	5.08
Kaiserslautern	0	0.00	1	22.46	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	28.14
Schweinfurt	5	5.79	3	3.24	4	7.17	1	2.48	2	4.39	10	10.98	1	1.07	2	2.07	2	2.03	11	11.45
Stuttgart	0	0.00	0	0.00	2	119.68	0	0.00	0	0.00	0	0.00	1	27.33	0	0.00	0	0.00	0	0.00
Vicenza	2	3.25	7	11.28	4	6.24	4	6.07	6	8.06	33	46.30	17	30.02	37	60.45	16	24.64	17	27.83
Wiesbaden	7	14.01	2	4.21	3	6.04	2	4.06	3	6.94	4	11.09	1	2.72	5	12.96	4	9.55	2	4.98
1. Rate is provided per 1,000 person-years.																				

1. Rate is provided per 1,000 person-years.

Active Duty-U.S. Army
NIHI Quarterly Surveillance Q3 2007- Q4 2009

US Army SIGNIFICANT THRESHOLD SHIFT diagnoses, Q3 2007 - Q4 2009																				
	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN																				
Aberdeen Proving Ground, MD	5	8.86	2	3.45	4	9.24	6	18.33	3	9.35	2	5.07	3	8.02	3	8.45	3	9.64	2	6.37
Fort Belvoir, VA	0	0.00	1	1.96	0	0.00	0	0.00	0	0.00	2	4.15	0	0.00	1	2.05	1	1.92	0	0.00
Fort Bragg, NC	142	12.59	234	20.21	268	23.18	149	12.85	226	19.72	197	16.95	331	28.44	328	27.88	405	34.17	329	27.64
Fort Detrick, MD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	10.88	2	10.53	1	5.08	1	5.16
Fort Dix, NJ	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Fort Drum, NY	0	0.00	0	0.00	0	0.00	2	0.48	0	0.00	0	0.00	0	0.00	1	0.22	1	0.22	6	1.30
Fort Eustis, VA	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.64	3	1.89
Fort George G Meade, MD	9	14.25	6	9.18	1	1.41	13	17.74	40	52.52	44	58.87	26	35.72	21	29.04	21	28.73	18	25.26
Fort Knox, KY	69	33.56	70	35.93	0	0.00	11	5.85	6	2.66	3	1.57	10	5.39	1	0.54	3	1.36	11	4.92
Fort Lee, VA	0	0.00	1	0.62	0	0.00	0	0.00	0	0.00	1	0.56	0	0.00	2	1.26	1	0.68	4	2.43
Fort Myer, VA	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	9	20.67
Fort Monmouth, NJ	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Walter Reed AMC, DC	0	0.00	1	1.45	0	0.00	0	0.00	0	0.00	1	1.44	0	0.00	0	0.00	0	0.00	2	2.91
West Point USMA, NY	3	8.71	4	12.17	1	3.05	0	0.00	0	0.00	1	2.87	0	0.00	0	0.00	0	0.00	0	0.00
SOUTHERN																				
Fort Benning, GA	1	0.20	1	0.21	0	0.00	0	0.00	0	0.00	2	0.38	15	2.91	92	17.44	33	5.89	14	2.64
Fort Campbell, KY	0	0.00	0	0.00	1	0.13	0	0.00	1	0.13	3	0.37	2	0.24	70	8.69	63	7.93	38	4.74
Fort Gordon, GA	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.44	0	0.00	0	0.00	8	3.41
Fort Hood, TX	927	73.76	926	74.03	1,612	130.23	1,586	132.35	781	65.42	799	65.54	777	64.54	1,092	89.97	913	79.24	1,232	111.87
Fort Jackson, SC	0	0.00	0	0.00	1	0.42	2	0.76	5	1.45	1	0.34	0	0.00	0	0.00	0	0.00	11	4.05
Fort McPherson, GA	0	0.00	0	0.00	1	2.68	0	0.00	0	0.00	0	0.00	0	0.00	3	7.41	0	0.00	1	2.43
Fort Polk, LA	0	0.00	0	0.00	1	0.50	1	0.49	1	0.47	0	0.00	0	0.00	1	0.46	0	0.00	4	1.83
Fort Rucker, AL	0	0.00	2	1.89	2	1.93	19	18.60	58	56.72	61	59.66	58	58.49	65	66.12	121	124.40	61	63.84
Fort Sam Houston, TX	39	21.70	38	21.43	30	16.89	21	12.05	17	9.17	29	14.84	18	9.54	24	12.77	23	12.05	42	21.90
Fort Sill, OK	70	22.39	8	2.76	18	6.69	34	12.39	4	1.32	5	1.72	1	0.37	2	0.79	0	0.00	4	1.36
Fort Stewart, GA	169	43.03	46	11.59	16	5.84	543	132.52	523	131.14	321	78.82	134	33.45	88	22.49	242	61.84	134	33.87
Redstone Arsenal, AL	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	3.41
WESTERN																				
Fort Bliss, TX	47	12.93	174	46.67	113	30.86	81	21.36	78	18.68	64	14.69	150	34.18	204	44.75	170	36.14	82	17.86
Fort Carson, CO	4	0.98	3	0.71	0	0.00	4	0.90	2	0.44	2	0.43	3	0.64	5	0.98	3	0.59	4	0.75
Fort Huachuca, AZ	1	0.74	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	4	3.41
Fort Irwin, CA	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	4	3.85
Fort Leavenworth, KS	0	0.00	0	0.00	0	0.00	2	2.96	0	0.00	0	0.00	1	1.39	1	1.39	8	10.15	3	3.88
Fort Leonard Wood, MO	5	1.77	5	1.85	0	0.00	0	0.00	4	1.36	2	0.65	2	0.70	7	2.55	1	0.38	8	2.74
Fort Lewis, WA	263	41.23	520	78.76	796	123.48	369	56.37	487	72.02	310	45.70	380	55.46	287	40.10	446	61.20	166	23.48
Fort Richardson, AK	1	0.69	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.48
Fort Riley, KS	8	2.10	3	0.77	0	0.00	2	0.50	0	0.00	2	0.52	0	0.00	0	0.00	1	0.23	1	0.23
Fort Wainwright, AK	2	1.47	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.85	1	0.85	0	0.00	0	0.00
PACIFIC																				
Camp Carroll	1	8.06	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	5.08
Camp Casey	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.67	0	0.00	34	22.76
Camp Humphreys	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	4.97
Camp Long	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Camp Stanley/Red Cloud	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	19.88
Japan	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	3	16.27
Schofield Barracks-Wheeler AAF	0	0.00	1	0.36	0	0.00	1	0.26	0	0.00	0	0.00	0	0.00	0	0.00	1	0.25	2	0.49
USA Hawaii	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Yongsan Garrison	1	1.07	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	3	3.32
EUROPEAN																				
Ansbach	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	2.20	0	0.00	1	2.23
Baden-Wuerttemberg	14	8.04	24	14.09	18	10.81	2	1.28	0	0.00	0	0.00	0	0.00	2	1.38	7	5.05	0	0.00
Bamberg	1	1.53	3	4.43	5	8.46	0	0.00	0	0.00	38	82.42	1	2.15	0	0.00	0	0.00	0	0.00
BeNeLux	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Grafenwoehr	0	0.00	0	0.00	0	0.00	1	1.85	0	0.00	0	0.00	3	3.74	0	0.00	0	0.00	3	3.71
Kaiserslautern	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Schweinfurt	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	1.02
Stuttgart	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Vicenza	1	1.70	0	0.00	0	0.00	0	0.00	0	0.00	3	4.28	46	81.93	27	44.49	45	69.29	16	26.33
Wiesbaden	0	0.00	1	2.04	0	0.00	0	0.00	0	0.00	0	0.00	1	2.63	0	0.00	0	0.00	0	0.00
1. Rate is provided per 1,000 person-years.																				

1. Rate is provided per 1,000 person-years.

Active Duty-U.S. Army
NIHI Quarterly Surveillance Q3 2007- Q4 2009

US Army Noise-Induced HEARING LOSS diagnoses, Q3 2007 - Q4 2009																				
	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN																				
Aberdeen Proving Ground, MD	2	3.52	0	0.00	0	0.00	0	0.00	1	3.10	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Fort Belvoir, VA	0	0.00	0	0.00	1	2.09	1	2.25	1	2.09	0	0.00	1	2.15	0	0.00	1	1.92	1	1.95
Fort Bragg, NC	74	6.64	78	6.79	123	10.68	164	14.18	90	7.86	66	5.66	72	6.15	50	4.20	55	4.55	75	6.14
Fort Detrick, MD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Fort Dix, NJ	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	95.02	0	0.00	0	0.00
Fort Drum, NY	4	0.95	0	0.00	2	0.48	3	0.72	1	0.23	14	3.02	7	1.54	9	2.03	2	0.45	11	2.40
Fort Eustis, VA	0	0.00	0	0.00	1	0.70	2	1.39	3	2.01	2	1.28	3	1.95	2	1.27	3	1.92	6	3.76
Fort George G Meade, MD	0	0.00	0	0.00	0	0.00	1	1.36	1	1.30	0	0.00	1	1.33	1	1.33	1	1.31	0	0.00
Fort Knox, KY	0	0.00	5	2.54	4	2.19	1	0.53	1	0.44	0	0.00	1	0.53	1	0.53	2	0.89	1	0.43
Fort Lee, VA	2	1.33	0	0.00	0	0.00	0	0.00	1	0.63	1	0.56	0	0.00	0	0.00	2	1.36	7	4.25
Fort Myer, VA	1	2.49	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	2.31	0	0.00	1	2.34
Fort Monmouth, NJ	0	0.00	0	0.00	0	0.00	0	0.00	1	8.77	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Walter Reed AMC, DC	2	2.89	0	0.00	1	1.50	0	0.00	1	1.43	1	1.44	0	0.00	0	0.00	0	0.00	0	0.00
West Point USMA, NY	0	0.00	2	6.11	3	9.20	2	5.92	0	0.00	0	0.00	3	8.99	1	2.88	2	5.69	0	0.00
SOUTHERN																				
Fort Benning, GA	4	0.79	9	1.87	0	0.00	3	0.61	30	5.44	23	4.37	19	3.70	13	2.46	10	1.78	17	3.20
Fort Campbell, KY	63	8.47	66	8.69	63	8.28	35	4.59	36	4.62	35	4.33	49	6.04	61	7.67	75	9.53	80	10.09
Fort Gordon, GA	0	0.00	1	0.48	2	0.96	2	0.98	0	0.00	1	0.43	0	0.00	0	0.00	0	0.00	2	0.85
Fort Hood, TX	62	4.77	81	6.17	47	3.57	114	8.69	77	5.82	53	3.89	69	5.11	48	3.50	58	4.41	91	7.16
Fort Jackson, SC	0	0.00	3	1.26	2	0.84	3	1.14	14	4.07	21	7.14	6	2.05	5	2.00	7	2.57	17	6.27
Fort McPherson, GA	2	5.36	0	0.00	0	0.00	1	2.74	2	5.28	2	5.09	0	0.00	0	0.00	1	2.43	0	0.00
Fort Polk, LA	1	0.52	0	0.00	2	1.00	1	0.50	2	0.94	0	0.00	2	0.90	3	1.38	1	0.47	5	2.29
Fort Rucker, AL	2	1.97	0	0.00	3	2.93	1	0.99	0	0.00	0	0.00	0	0.00	1	0.98	0	0.00	2	1.95
Fort Sam Houston, TX	1	0.56	1	0.56	1	0.56	1	0.57	1	0.53	1	0.51	2	1.05	0	0.00	0	0.00	0	0.00
Fort Sill, OK	35	11.06	21	7.18	5	1.84	0	0.00	5	1.64	4	1.36	12	4.41	22	8.65	18	6.84	12	4.04
Fort Stewart, GA	45	11.26	15	3.69	0	0.00	1	0.23	1	0.23	1	0.23	1	0.23	1	0.24	1	0.24	4	0.93
Redstone Arsenal, AL	0	0.00	0	0.00	1	4.20	0	0.00	0	0.00	0	0.00	0	0.00	1	3.52	1	3.41	0	0.00
WESTERN																				
Fort Bliss, TX	6	1.62	4	1.05	11	2.92	21	5.38	13	3.03	36	8.04	36	7.98	31	6.57	18	3.68	18	3.75
Fort Carson, CO	13	3.21	14	3.37	35	8.79	4	0.91	8	1.78	11	2.38	7	1.50	3	0.59	19	3.75	22	4.10
Fort Huachuca, AZ	0	0.00	2	1.48	1	0.80	1	0.88	1	0.90	1	0.82	0	0.00	1	0.85	0	0.00	0	0.00
Fort Irwin, CA	2	1.88	1	0.93	2	1.91	4	3.99	2	2.01	5	4.94	6	5.84	2	1.95	6	5.89	5	4.79
Fort Leavenworth, KS	0	0.00	0	0.00	2	2.99	2	2.99	0	0.00	1	1.42	1	1.40	2	2.78	1	1.26	3	3.86
Fort Leonard Wood, MO	46	16.69	40	15.25	39	16.30	31	12.46	65	22.55	46	15.37	57	20.32	72	26.82	92	35.83	58	20.35
Fort Lewis, WA	4	0.61	12	1.74	3	0.44	5	0.71	4	0.55	3	0.41	5	0.67	3	0.39	1	0.13	1	0.13
Fort Richardson, AK	5	3.47	6	6.17	12	7.37	9	4.73	1	0.63	1	0.54	3	1.55	2	1.00	1	0.49	11	5.35
Fort Riley, KS	3	0.79	16	4.15	15	5.61	17	4.31	40	10.15	36	9.44	32	8.48	12	3.08	3	0.71	1	0.23
Fort Wainwright, AK	9	6.57	4	3.99	8	8.79	2	2.35	2	1.75	1	0.83	2	1.69	0	0.00	3	2.49	5	4.20
PACIFIC																				
Camp Carroll	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Camp Casey	0	0.00	1	0.68	0	0.00	2	1.39	1	0.70	3	2.10	0	0.00	0	0.00	0	0.00	0	0.00
Camp Humphreys	0	0.00	0	0.00	0	0.00	1	2.41	0	0.00	0	0.00	0	0.00	1	2.43	1	2.38	0	0.00
Camp Long	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Camp Stanley/Red Cloud	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Japan	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	5.41	0	0.00	0	0.00	0	0.00	0	0.00
Schofield Barracks-Wheeler AAF	1	0.25	1	0.36	3	0.86	3	0.78	1	0.26	1	0.24	4	0.98	6	1.43	5	1.26	8	1.97
USA Hawaii	1	10.23	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	17.34	1	16.69	1	16.41
Yongsan Garrison	0	0.00	0	0.00	1	1.54	0	0.00	1	0.99	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
EUROPEAN																				
Ansbach	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Baden-Wuerttemberg	0	0.00	2	1.18	2	1.20	0	0.00	6	3.99	1	0.67	1	0.68	1	0.69	0	0.00	3	2.17
Bamberg	0	0.00	0	0.00	1	1.69	0	0.00	0	0.00	2	4.27	1	2.12	0	0.00	0	0.00	2	3.59
BeNeLux	0	0.00	0	0.00	0	0.00	1	4.76	0	0.00	1	5.12	0	0.00	1	5.25	0	0.00	0	0.00
Grafenwoehr	1	2.89	1	2.76	0	0.00	1	1.86	0	0.00	1	1.17	0	0.00	1	1.24	0	0.00	0	0.00
Kaiserslautern	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Schweinfurt	0	0.00	2	2.11	0	0.00	0	0.00	0	0.00	6	6.48	0	0.00	0	0.00	0	0.00	0	0.00
Stuttgart	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Vicenza	3	4.80	4	6.35	2	3.07	0	0.00	3	3.96	4	5.48	8	13.65	7	11.04	1	1.47	0	0.00
Wiesbaden	0	0.00	0	0.00	1	1.97	1	1.98	0	0.00	1	2.70	0	0.00	1	2.53	0	0.00	0	0.00
1. Rate is provided per 1,000 person-years																				

1. Rate is provided per 1,000 person-years.

Active Duty-U.S. Army
NIHI Quarterly Surveillance Q3 2007- Q4 2009

US Army TINNITUS diagnoses, Q3 2007 - Q4 2009		Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
		Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN																					
Aberdeen Proving Ground, MD		5	8.91	7	12.13	4	9.27	5	15.34	1	3.13	3	7.62	1	2.68	6	16.93	1	3.20	4	12.72
Fort Belvoir, VA		6	11.99	14	28.20	13	27.60	15	34.32	9	19.20	18	38.63	11	24.40	17	36.23	11	21.84	7	14.08
Fort Bragg, NC		111	9.94	122	10.60	172	14.92	227	19.64	202	17.67	169	14.56	177	15.19	188	15.90	149	12.44	134	11.10
Fort Detrick, MD		2	10.10	1	5.14	2	10.55	3	16.71	4	22.58	3	16.39	5	27.91	5	26.91	3	15.60	7	37.28
Fort Dix, NJ		0	0.00	0	0.00	0	0.00	2	81.89	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Fort Drum, NY		62	14.86	59	13.94	62	15.06	48	11.68	26	6.00	36	7.90	32	7.16	39	8.92	27	6.14	45	9.98
Fort Eustis, VA		8	5.99	8	5.52	8	5.67	7	4.91	20	13.43	15	9.62	19	12.47	25	16.03	19	12.34	21	13.36
Fort George G Meade, MD		1	1.57	4	6.05	8	11.20	9	12.24	15	19.55	29	38.15	19	25.68	22	29.93	11	14.77	12	16.44
Fort Knox, KY		54	26.48	68	35.20	57	32.05	67	36.28	46	20.72	43	23.04	21	11.52	25	13.69	25	11.42	33	14.80
Fort Lee, VA		3	1.99	8	5.00	10	6.87	13	8.37	22	13.91	9	5.10	16	10.29	10	6.33	13	8.89	17	10.41
Fort Myer, VA		8	19.74	3	7.31	5	12.25	4	9.84	8	19.30	6	14.04	1	2.35	5	11.55	7	16.23	4	9.41
Fort Monmouth, NJ		1	8.01	1	8.35	2	17.60	0	0.00	0	0.00	1	9.20	1	9.67	1	11.71	1	9.46	1	10.22
Walter Reed AMC, DC		6	8.84	11	16.37	3	4.60	6	8.85	7	10.18	7	10.29	8	11.96	15	22.04	6	8.76	5	7.48
West Point USMA, NY		3	8.84	6	18.54	7	21.72	6	17.96	1	2.86	3	8.77	6	18.24	3	8.77	9	26.07	2	6.08
SOUTHERN																					
Fort Benning, GA		104	20.76	106	22.39	125	26.74	176	36.57	122	22.58	83	16.11	95	18.91	113	21.96	92	16.76	62	11.98
Fort Campbell, KY		99	13.43	75	9.96	78	10.33	63	8.32	60	7.77	177	22.10	114	14.20	116	14.75	154	19.80	111	14.20
Fort Gordon, GA		12	6.26	7	3.42	16	7.76	13	6.40	19	9.08	15	6.45	14	6.29	11	4.85	11	4.78	18	7.76
Fort Hood, TX		98	7.51	166	12.61	184	13.95	243	18.56	220	16.69	236	17.46	204	15.25	163	12.00	164	12.61	170	13.55
Fort Jackson, SC		11	3.91	10	4.20	16	6.74	11	4.19	17	4.96	9	3.07	28	9.61	8	3.22	12	4.43	24	8.91
Fort McPherson, GA		3	8.11	8	21.62	8	22.15	7	19.40	7	18.77	7	18.02	8	20.59	4	10.12	7	17.36	2	4.96
Fort Polk, LA		35	18.43	27	14.04	22	11.18	25	12.62	24	11.57	31	14.24	72	33.12	50	23.64	60	28.89	51	24.12
Fort Rucker, AL		5	4.92	14	13.44	11	10.80	15	14.92	21	20.61	38	37.07	26	25.95	21	21.01	28	28.03	27	27.08
Fort Sam Houston, TX		11	6.21	29	16.50	27	15.33	37	21.42	37	20.13	39	20.14	32	17.12	29	15.56	26	13.73	30	15.71
Fort Sill, OK		43	13.71	38	13.10	31	11.53	38	13.86	38	12.57	59	20.38	60	22.45	49	19.63	54	20.94	62	21.33
Fort Stewart, GA		13	3.25	16	3.93	20	7.12	84	19.61	101	23.68	90	20.70	77	17.93	76	18.28	90	21.80	86	20.40
Redstone Arsenal, AL		1	4.52	6	24.86	1	4.29	5	20.52	1	4.25	2	7.88	4	16.11	8	28.89	4	13.88	5	17.44
WESTERN																					
Fort Bliss, TX		40	10.85	79	20.90	59	15.78	86	22.26	57	13.42	59	13.34	51	11.44	63	13.52	108	22.40	101	21.46
Fort Carson, CO		50	12.67	79	19.48	97	25.00	88	20.52	77	17.62	66	14.68	71	15.66	79	16.04	110	22.29	99	19.05
Fort Huachuca, AZ		9	6.77	8	5.99	13	10.50	11	9.77	12	10.91	15	12.42	14	12.06	15	13.03	5	4.38	9	7.77
Fort Irwin, CA		11	10.34	7	6.56	18	17.33	14	14.09	12	12.13	16	15.96	11	10.84	15	14.84	19	18.94	19	18.53
Fort Leavenworth, KS		6	8.98	5	7.64	7	10.54	6	9.03	7	9.78	8	11.50	11	15.52	15	21.18	9	11.59	10	13.13
Fort Leonard Wood, MO		7	2.49	5	1.87	16	6.54	16	6.31	14	4.78	23	7.57	20	7.02	21	7.70	19	7.26	23	7.93
Fort Lewis, WA		72	11.10	183	27.05	130	19.38	114	16.56	131	18.31	153	21.28	138	19.05	146	19.27	138	17.78	94	12.39
Fort Richardson, AK		15	10.47	26	26.95	50	30.99	41	21.87	26	16.68	18	9.85	36	18.96	9	4.61	23	11.46	33	16.42
Fort Riley, KS		16	4.23	16	4.16	20	7.50	66	16.82	37	9.46	29	7.64	21	5.59	37	9.53	24	5.68	50	11.60
Fort Wainwright, AK		27	19.84	16	16.12	18	20.11	8	9.53	14	12.44	13	10.90	8	6.88	16	13.83	21	17.71	15	12.90
PACIFIC																					
Camp Carroll		1	8.09	1	6.65	0	0.00	1	5.75	0	0.00	0	0.00	1	4.95	1	5.70	1	5.52	1	5.14
Camp Casey		6	4.19	1	0.68	4	2.83	5	3.50	1	0.70	2	1.40	6	4.19	3	2.00	2	1.29	5	3.32
Camp Humphreys		3	7.87	0	0.00	2	5.16	1	2.41	0	0.00	1	2.63	0	0.00	0	0.00	2	4.79	2	5.00
Camp Long		2	35.77	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Camp Stanley/Red Cloud		0	0.00	0	0.00	0	0.00	2	28.24	1	10.02	0	0.00	1	10.56	1	10.06	0	0.00	0	0.00
Japan		0	0.00	0	0.00	1	9.75	1	5.94	2	11.66	0	0.00	3	16.65	2	10.74	1	5.50	5	27.51
Schofield Barracks-Wheeler AAF		20	5.11	29	10.61	69	19.87	96	25.24	77	20.03	83	20.58	82	20.51	79	19.34	78	20.10	103	26.21
USA Hawaii		1	10.27	0	0.00	0	0.00	1	16.95	1	17.77	1	17.74	3	53.55	2	36.08	0	0.00	2	33.94
Yongsan Garrison		1	1.08	2	2.27	1	1.54	5	4.77	4	3.96	1	1.02	2	2.16	10	10.96	7	7.60	7	7.80
EUROPEAN																					
Ansbach		0	0.00	1	3.21	1	2.90	1	2.61	4	9.17	3	6.13	2	4.58	4	8.86	3	6.71	2	4.50
Baden-Wuerttemberg		8	4.67	13	7.73	16	9.71	7	4.52	16	10.75	9	6.09	12	8.21	8	5.56	9	6.56	10	7.36
Bamberg		2	3.08	1	1.48	2	3.40	2	3.99	0	0.00	2	4.32	1	2.14	3	6.07	6	10.16	10	18.26
BeNeLux		1	4.57	1	4.72	1	5.04	3	14.46	0	0.00	3	15.48	0	0.00	2	10.59	2	10.45	2	10.66
Grafenwoehr		10	29.04	8	22.34	1	2.69	3	5.62	3	5.26	10	11.87	8	10.08	8	10.03	7	8.94	17	21.29
Kaiserslautern		0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Schweinfurt		3	3.44	20	21.39	2	3.56	3	7.41	5	10.96	13	14.23	1	1.07	0	0.00	1	1.01	10	10.36
Stuttgart		0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	22.44	0	0.00
Vicenza		1	1.61	3	4.79	5	7.73	0	0.00	34	45.42	4	5.56	1	1.73	6	9.54	13	19.29	9	14.19
Wiesbaden		2	3.96	1	2.08	0	0.00	5	10.01	2	4.55	4	10.90	4	10.72	0	0.00	5	11.79	9	22.13

1. Rate is provided per 1,000 person-years.

Active Duty-U.S. Army
NIHI Quarterly Surveillance Q3 2007- Q4 2009

US Army Noise-Induced Hearing Injuries, Q3 2007 - Q4 2009

	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
Occupation (Army)																				
<i>Infantry, Gun Crew, and Seaman</i>	1,014	39.53	1,426	56.06	1,706	68.28	1,592	64.07	1,316	51.61	1,209	47.05	1,335	52.65	1,336	52.67	1,443	56.21	1,405	55.15
<i>Electronic Equipment Repairers</i>	127	22.77	144	25.66	161	28.57	153	26.82	167	27.69	139	22.73	153	25.02	174	27.97	178	27.89	162	25.61
<i>Communications and Intelligence Specialists</i>	343	28.30	388	32.50	532	45.20	495	42.33	435	36.33	386	32.56	386	33.79	467	40.77	423	36.70	426	37.04
<i>Health Care Specialists</i>	145	17.42	201	24.27	210	25.84	243	30.19	230	27.72	215	25.79	164	20.01	204	24.62	210	25.18	219	26.42
<i>Other Technical and Allied Specialists</i>	91	24.20	109	29.06	109	29.58	121	33.07	138	36.21	113	29.38	105	27.66	110	28.86	126	32.64	137	35.56
<i>Functional Support and Admin</i>	347	23.85	359	24.10	334	22.59	416	27.98	418	27.03	345	22.24	383	25.22	417	27.32	398	25.81	399	26.10
<i>Electrical/Mechanical Equip. Repairers</i>	432	30.72	425	30.20	488	35.35	528	38.68	485	34.52	434	30.69	435	31.34	434	31.77	517	37.81	462	33.67
<i>Craftwork & Construction</i>	72	30.42	120	50.25	120	50.48	101	42.25	75	30.00	86	34.48	93	37.45	91	33.14	135	46.95	100	36.70
<i>Service, Transport & Supply</i>	451	31.56	411	28.55	502	34.67	572	38.95	545	35.42	485	31.20	454	29.50	537	34.92	544	35.10	512	33.28
<i>Students & Trainees</i>	30	48.83	12	24.11	29	53.24	24	43.36	59	73.28	20	28.66	29	42.26	30	42.55	40	50.40	31	46.41
<i>General/Flag. Off. & Executives</i>	2	42.15	7	147.97	6	130.88	1	21.28	9	183.94	4	85.09	8	175.91	6	131.52	4	83.72	3	61.02
<i>Tactical Operations Officers</i>	144	21.62	185	27.84	196	30.06	220	33.48	196	29.09	189	28.42	213	32.77	240	36.15	198	29.33	191	28.55
<i>Intelligence Officers</i>	33	24.63	41	30.59	33	24.70	46	34.31	38	27.75	46	33.47	49	36.87	41	30.08	33	23.54	59	41.11
<i>Engineering & Maintenance Officers</i>	84	26.58	91	28.74	87	29.51	84	29.00	79	26.44	82	27.42	88	29.85	93	30.68	95	30.69	92	29.74
<i>Scientists & Professionals</i>	37	28.27	35	26.50	39	29.26	47	34.45	32	23.62	32	23.56	42	30.98	67	48.12	59	42.25	47	33.94
<i>Health Care Officers</i>	70	21.13	103	31.21	69	21.17	85	25.81	77	22.72	97	28.67	78	23.52	90	26.58	79	22.59	90	25.93
<i>Administrators</i>	39	29.46	40	29.90	31	23.06	38	27.52	45	31.31	43	29.01	46	31.50	60	40.08	34	22.16	47	30.35
<i>Supply & Logistics Officers</i>	47	28.86	47	29.05	48	26.41	61	31.55	60	30.41	53	26.82	61	31.36	60	29.95	47	22.77	50	24.01
<i>Students, Trainees & Other Officers</i>	13	19.75	11	17.51	13	21.81	10	16.92	19	33.41	22	37.11	15	27.81	13	23.12	20	37.47	20	36.50
By Diagnosis																				
<i>DoD - SNHL</i>	2,290	7.08	2,238	6.96	2,225	7.00	2,322	7.30	2,504	7.69	2,317	7.09	2,316	7.21	2,423	7.45	2,433	7.39	2,320	7.09
<i>DoD - STS</i>	1,732	5.35	1,983	6.16	2,613	8.22	2,695	8.47	2,198	6.75	1,834	5.61	1,859	5.79	2,386	7.34	2,487	7.56	2,228	6.81
<i>DoD - NIHL</i>	660	2.04	535	1.66	499	1.57	465	1.46	423	1.30	433	1.32	404	1.26	413	1.27	398	1.21	390	1.19
<i>DoD - TINN</i>	1,433	4.43	1,710	5.31	1,969	6.20	2,161	6.79	1,794	5.51	1,713	5.24	1,974	6.15	2,043	6.29	2,027	6.16	1,991	6.09
<i>Army - SNHL</i>	1,208	10.00	1,328	11.01	1,193	9.99	1,220	10.21	1,395	11.28	1,308	10.54	1,356	11.12	1,358	11.06	1,308	10.52	1,285	10.40
<i>Army - STS</i>	1,567	12.98	1,843	15.27	2,509	21.01	2,536	21.22	1,981	16.02	1,668	13.44	1,714	14.06	2,096	17.07	2,232	17.95	2,089	16.91
<i>Army - NIHL</i>	258	2.14	265	2.20	283	2.37	228	1.91	248	2.01	236	1.90	251	2.06	216	1.76	254	2.04	249	2.02
<i>Army - TINN</i>	488	4.04	719	5.96	728	6.10	853	7.14	799	6.46	788	6.35	816	6.69	800	6.51	789	6.34	829	6.71
Sex (Army)																				
<i>Male</i>	3,284	31.70	3,875	37.42	4,431	43.23	4,477	43.61	4,100	38.63	3,700	34.74	3,826	36.55	4,144	39.29	4,223	39.56	4,077	38.49
<i>Female</i>	237	13.81	280	16.36	282	16.69	360	21.36	323	18.40	300	17.04	311	18.01	326	18.80	360	20.44	375	21.30
Age (Army)																				
<i><20</i>	165	14.77	127	12.01	171	17.26	192	20.77	219	19.91	130	11.97	169	19.20	179	19.87	198	19.87	145	20.14
<i>20-24</i>	968	23.14	1,255	30.24	1,547	37.79	1,549	37.95	1,370	32.57	1,163	27.63	1,247	30.81	1,315	32.09	1,329	32.31	1,296	31.73
<i>25-29</i>	791	29.37	983	35.82	1,090	39.65	1,092	39.05	915	31.91	931	32.07	880	29.57	1,030	34.47	1,112	36.96	1,030	32.90
<i>30-34</i>	501	29.40	574	33.57	615	36.37	601	35.39	611	35.54	543	31.31	551	31.54	578	32.85	645	36.21	606	33.05
<i>35-39</i>	494	35.07	553	38.85	584	41.15	658	46.17	613	42.52	504	34.93	557	38.73	603	41.93	580	40.38	577	40.01
<i>>=40</i>	602	62.02	663	67.50	706	70.87	745	72.54	695	67.18	729	70.48	733	66.30	765	69.80	719	65.39	798	69.83
Deployment Association² (Army)																				
COUNTS ONLY																				
<i>OIF-associated</i>	538	N/A	1,430	N/A	1,864	N/A	1,828	N/A	1,080	N/A	798	N/A	1,127	N/A	1,238	N/A	818	N/A	1,487	N/A
<i>OEF-associated</i>	83	N/A	47	N/A	74	N/A	145	N/A	133	N/A	107	N/A	78	N/A	226	N/A	381	N/A	137	N/A
<i>Not Deployment Associated</i>	2,900	N/A	2,678	N/A	2,775	N/A	2,864	N/A	3,210	N/A	3,095	N/A	2,932	N/A	3,006	N/A	3,384	N/A	2,828	N/A

1. Rate is provided per 1,000 person-years.

2. The diagnosis occurred during or within 180 days of a deployment.

Active Duty-U.S. Army
NIHI Quarterly Surveillance Q3 2007- Q4 2009

Army Regional Totals Counts & Rates, Q3 2007 - Q4 2009

US Army SENSORINEURAL HEARING LOSS diagnoses, Q3 2007 - Q4 2009																				
	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN	270	11.60	315	13.24	255	10.98	308	13.19	342	14.24	347	14.23	287	11.99	360	14.94	276	11.27	248	9.97
SOUTHERN	688	16.49	608	14.73	603	15.12	720	17.30	701	16.00	679	15.38	730	16.80	750	17.49	669	15.61	692	16.23
WESTERN	348	13.42	350	13.71	419	17.21	477	18.07	583	21.22	613	21.75	523	18.62	619	21.33	605	20.36	471	15.68
PACIFIC	123	17.95	169	29.55	147	24.16	126	18.11	151	21.55	115	16.12	141	20.04	132	18.43	138	19.53	265	37.78
EUROPEAN	38	7.28	42	7.97	33	6.80	27	5.71	29	6.17	64	11.69	42	8.02	65	12.13	51	9.33	72	13.48

US Army SIGNIFICANT THRESHOLD SHIFT diagnoses, Q3 2007 - Q4 2009																				
	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN	228	9.52	319	13.06	274	11.51	181	7.56	275	11.18	251	10.06	372	15.19	359	14.59	437	17.51	385	15.23
SOUTHERN	1,206	28.45	1,021	24.42	1,682	41.81	2,206	52.98	1,390	31.88	1,221	27.86	1,006	23.36	1,437	33.87	1,395	32.93	1,550	36.88
WESTERN	331	12.41	705	26.90	909	36.60	458	17.01	571	20.42	380	13.23	537	18.74	505	17.08	629	20.84	273	8.94
PACIFIC	2	0.28	1	0.17	0	0.00	1	0.14	0	0.00	0	0.00	0	0.00	1	0.13	1	0.13	47	6.33
EUROPEAN	16	3.00	28	5.20	23	4.65	3	0.62	0	0.00	41	7.35	51	9.55	30	5.49	52	9.33	21	3.85

US Army NOISE-INDUCED HEARING LOSS diagnoses, Q3 2007 - Q4 2009																				
	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN	85	3.58	85	3.50	135	5.69	174	7.29	101	4.11	84	3.36	88	3.58	67	2.70	68	2.69	102	3.97
SOUTHERN	215	5.03	197	4.65	126	3.08	162	3.78	168	3.73	141	3.10	160	3.57	155	3.50	172	3.88	230	5.21
WESTERN	88	3.29	99	3.75	128	5.09	96	3.51	136	4.78	141	4.82	149	5.10	128	4.24	144	4.65	124	3.95
PACIFIC	2	0.28	2	0.34	4	0.63	6	0.82	3	0.41	5	0.67	4	0.54	8	1.06	7	0.94	9	1.21
EUROPEAN	4	0.75	9	1.67	6	1.21	3	0.62	9	1.87	16	2.86	10	1.86	11	2.00	1	0.18	5	0.91

US Army TINNITUS diagnoses, Q3 2007 - Q4 2009																				
	Q3 2007		Q4 2007		Q1 2008		Q2 2008		Q3 2008		Q4 2008		Q1 2009		Q2 2009		Q3 2009		Q4 2009	
	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹	Count	Rate ¹
NORTHERN	270	11.40	312	12.90	353	14.95	412	17.38	361	14.81	342	13.82	317	13.04	361	14.75	282	11.33	292	11.55
SOUTHERN	435	10.22	502	11.91	539	13.25	717	16.88	667	14.93	786	17.48	734	16.60	648	14.85	702	16.08	648	14.94
WESTERN	253	9.52	424	16.22	428	17.20	450	16.67	387	13.77	400	13.86	381	13.23	416	13.98	476	15.62	453	14.70
PACIFIC	34	4.80	33	5.57	77	12.15	112	15.48	86	11.84	88	11.88	98	13.43	98	13.19	91	12.45	125	17.16
EUROPEAN	27	5.10	48	8.98	28	5.69	24	5.01	64	13.44	48	8.67	29	5.47	31	5.70	47	8.47	69	12.73