

Medical Discharges in the UK Regular Armed Forces 2005/06 - 2009/10

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INTRODUCTION

1. This report provides statistical information on medical discharges among UK Regular Service personnel during the five financial years 2005/06 - 2009/10. Each of the three Services are presented separately, Naval Service (includes Royal Navy and Royal Marines), Army and RAF, and information has been provided on:

- Key socio-demographic factors, Rank and training status
- The principal cause leading to discharge

2. Medical discharges in the UK Armed Forces involve a series of processes, at times complex, which differ in each Service to meet their specific employment requirements. Due to these differences between the three Services, comparisons between the single Service statistics are judged to be invalid.

3. Service personnel with medical conditions or fitness issues which affect their ability to perform their duties will generally be referred to a medical board for a medical examination and review of their medical grading. In clear cut cases where the individual's fitness falls below the Service employment and retention standards^a the board will recommend a medical discharge. In many cases however, the patient will first be downgraded, to allow for treatment, recovery and rehabilitation. For personnel who do not make a total recovery, the board may recommend the patient is retained as permanently downgraded with limited duties, or they may recommend a medical discharge. The recommendation is then forwarded to personnel administration units or an employment board for ratification or decision and action. This report focuses exclusively on medical discharges that have actually occurred. Personnel discharged under administrative categories on medical grounds are not defined as medical discharges and thus are not included in this report.

4. Medical boards that lead to medical discharge are run by consultant occupational physicians, however information is provided by a number of different clinical specialists which is taken into consideration along with an assessment of the individual's functional capacity and ability to be deployed/employed in a suitable environment. Statistics based on these discharges do not represent measures of true morbidity or pathology. At best they indicate a minimum burden of ill-health in the Armed Forces. Furthermore, the number and diversity of processes involved when administering a medical discharge introduce a series of time lags, as well as impact on the quality of data recorded.

5. Medical Boards do not make decisions on attributability to Service. These decisions are made by administrators of the MOD pension and compensation schemes at the Service Personnel and Veterans' Agency (SPVA)^b. DASA produce bi-annual reports on the Armed Forces Compensation Scheme and annual reports on War Pension Scheme which can be found on the DASA website.

6. This report has been provided in response to regular requests for information about UK Service personnel medically discharged from the Armed Forces.

^a As laid down in JSP 346 and/or the single Services retention standards for their career group.

^b JSP 950 Leaflet 6-7-6 'Harmonisation of Medical Boards Leading to Discharge'

KEY POINTS

Naval Service

7. During the five year reporting period 2005/06 - 2009/10, a total of 1,474 Naval Service personnel were medically discharged, at an overall crude rate of 7.6 per 1,000 personnel. There were certain sub-groups where the rates of medical discharges were higher: personnel aged under 40, females, non-Officer Ranks, and untrained personnel.

8. Musculoskeletal disorders and injuries was the most common principal cause of medical discharge from the Naval Service during the reporting period (875 cases, or 62% of all cause coded Naval Service medical discharges). Mental and behavioural disorders (177 cases, or 12% of all cause coded Naval Service medical discharges) was the second most common principal cause of medical discharge.

Army

9. During the five year reporting period 2005/06 - 2009/10, a total of 4,539 Army personnel were medically discharged, at an overall crude rate of 8.2 per 1,000 personnel. There were certain sub-groups where the rates of medical discharge were higher: personnel aged under 30, females, non-Officer Ranks and untrained personnel.

10. Musculoskeletal disorders and injuries was the most common principal cause of medical discharge from the Army during the reporting period (2,777 cases, or 63% of all cause coded Army medical discharges). Mental and behavioural disorders (590 cases, or 13% of all cause coded Army medical discharges) was the second most common principal cause of medical discharge.

RAF

11. During the five year reporting period 2005/06 - 2009/10, a total of 1,049 RAF personnel were medically discharged, at an overall crude rate of 4.6 per 1,000 personnel. There were certain sub-groups where the rates of medical discharge were higher: females, non-Officer Ranks and untrained personnel.

12. Musculoskeletal disorders and injuries was the most common reason for medical discharges from the RAF during the reporting period (429 cases, or 49% of all cause coded RAF medical discharges). Mental and behavioural disorders (231 cases, or 26% of all cause coded RAF medical discharges), was the next most common principal cause of medical discharge.

DATA, DEFINITIONS AND METHODS

13. Any trends in the statistics presented within this report do not directly reflect actual occupational health morbidity within the Armed Forces. Medical discharge data are presented by year of medical discharge, and not year of injury / onset of condition that led to medical discharge. Therefore any trends identified may only be corresponding directly to changes in boarding practice, retention policies or changes to continuing employment standards.

14. The length of time between detecting and diagnosing a medical condition and the date at which an individual is eventually released under a medical discharge varies for each individual. The timing of a discharge medical board must strike an appropriate balance between the needs of the individual Service and those of the patient. The date of the medical discharge board should allow the timely provision of occupational health advice following the initial referral, and time elapsed waiting for further treatment may affect this process.

15. Information on potential hazardous exposure is not generally available and medical boards are not called upon to decide possible attribution of medical conditions. Therefore this report focuses on general risk factors and on medical causes only. It does not offer analyses of the external causes of injury-related conditions, nor does it speculate on the aetiology of conditions that could have potentially resulted from exposure to hazardous substances in the course of duty.

Data sources for medical discharges

16. Data are compiled by DASA from two sources:
- a) Monthly downloads from the Armed Forces personnel system provide information on personnel discharged for medical reasons (prior to the roll out of Joint Personnel Administration (JPA) in 2006/2007 from the Pay and Administration database; post 2006/2007 from the JPA system).
 - b) Medical documents (FMed 23s), raised for each individual by Service medical boards, are copied to DASA provided the consent of the individual was given. Individuals that withhold consent are captured on DASA's database with no clinical information recorded. Where consent is given, the individual's condition(s) that led to the medical board is entered onto DASA's database. This report concentrates exclusively on the medical information provided on the FMed 23 as the "Principal condition that led to the board" and does not analyse any possible co-morbidity.

Population

17. In this report Regular Service personnel include all Regulars (trained and untrained). Royal Navy and Royal Marines personnel are recorded as Naval Service personnel; Naval Activated Reservists are excluded. Army Regular personnel include Gurkha Regiments; known members of the Home Service of the Royal Irish Regiment, mobilised Reservists, full time Reservists and the Territorial Army are excluded. RAF Reservists are also excluded.

18. Personnel described in this report as "trainees" or "untrained" are those classified as under training or artificer candidate for Naval Service and Phase 1 and 2 training for Army and RAF.

19. Note that untrained personnel are sometimes discharged under administrative categories, albeit on medical grounds. These discharges usually concern individuals who have failed their initial training for medical reasons, or who at their initial medical failed to disclose medical reasons which may later affect their application and training. As these cases are not defined as medical discharges they are not included in this report.

Cause coding of medical conditions

20. The International Classification of Diseases & Related Health Problems version 10 (ICD 10) was used to classify medical discharges with a principal cause leading to discharge. As a result of public interest some ICD-10 groups have been provided in more detail allowing the presentation of specific conditions.

21. At the point of medical board, personnel have the opportunity to withhold or give their consent to their medical information relating to the medical board being forwarded to DASA. Should they withhold their consent they will still be counted as a medical discharge as indicated on JPA, however their reason for medical discharge will not be held by DASA, therefore their principal condition leading to medical discharge is not presented.

Denominator data

22. In order to calculate rates, extracts of all Regular Service personnel (strengths data) were taken from DASA's personnel databases that hold information supplied by the Joint Personnel Administration (JPA) system. Strengths data held on JPA are provisional and currently subject to review.

23. Whilst FMed23 forms received by DASA do include some Reservists, the number and coverage of Reservists captured is currently unknown and reliable denominator data is not available. Therefore, numbers and rates have been calculated using only strengths for Regular personnel and for this report all known Reservists have been removed. However, there may be a presence of a small unknown number of Reservists within the medical discharge dataset which may cause a small bias in the results.

Statistical methods

Rates

24. Crude rates are presented for overall totals of medical discharges each year for each Service. The crude rates are calculated by dividing the number of events (in this case medical discharges for each year) by the population at risk (in this case Service strengths for each year).

25. Age standardised rates are presented for males and females, enabling comparisons to be made that take into account the age profile of each gender. The chosen 'standard' population year is 2009/10.

26. Gender standardised rates are presented for age groups, enabling comparisons to be made that take into account the gender profile of each age group. The chosen 'standard' population year is 2009/10.

27. Demographic specific rates are provided for 'ranks' and 'training status' and are based on the appropriate denominator of the personnel at risk for the category being analysed (e.g. rates of discharge among Officers are based on the total Officer strength).

28. All rates presented for each group have been "annualised" to enable rates for the overall 5-year period of this study to be compared with rates for individual calendar years. Note that standardisation has not been carried out by Service. For technical reasons, this renders comparisons between the Services invalid, reflecting advice received from the single Services that such comparisons are inappropriate.

95% Confidence intervals

29. Confidence intervals (CI) are a statistical device designed to provide a measure of the likely variation of a given statistic and the possibility that it is different or not from another to which it is being compared. These confidence intervals have been calculated based on the Normal approximation where there were more than 30 cases, and on the Poisson distribution in other instances^c. They provide the range of values within which we expect to find the real value of the indicator under consideration in the study with a probability of 95%. Thus two rates where their 95% CI do not overlap are described as being "significantly different". In this report, the term "significantly" is only used in this context of statistical significance.

Tables

30. The tables in this report have been scrutinised to ensure individual identities have not been revealed inadvertently. In line with DASA's rounding policy (May 2009), in keeping with the Office for National Statistics Guidelines, all numbers less than five in have been suppressed and presented as '~'. Where there is only one cell in a row or column that is less than five, the next smallest number (or numbers where there are tied values) has also been suppressed so that numbers cannot simply be derived from totals.

^c Pearson ES, Hartley HO, 1954. Biometrika tables for statisticians volume I. Cambridge: Cambridge University Press.

FINDINGS

31. This report presents descriptive statistical information on the causes and trends of medical discharges among the UK Regular Armed Forces. There were 7,062 medical discharges in total during the five year period 2005/06 - 2009/10 for the three Services (annual mean=1,412, these constitute approximately 8% of all exits from the Armed Forces in any year). Overall, annual numbers of medical discharge have been declining year on year from 1,658 medical discharges in 2005/06 to 1,071 medical discharges in 2009/10. The findings for each Service are presented separately.

Naval Service

32. **Table 1** presents numbers and rates of medical discharges among UK Regular Naval Service personnel by age group, gender, rank, training status and financial year for the five-year reporting period 2005/06 - 2009/10.

Table 1: UK Regular Naval Service medical discharges¹ by age group, gender, rank and training status, 2005/06 - 2009/10, Numbers² and Rates³ per 1,000 strength

	All Years		2005/06		2006/07		2007/08		2008/09		2009/10	
	n	r	n	r	n	r	n	r	n	r	n	r
All	1,474	7.6	401	10.1	352	9.0	299	7.7	216	5.6	206	5.3
Under 20	47	9.5	13	4.5	~	4.1	12	4.7	~	2.0	~	2.5
20-24	348	8.6	92	9.8	92	10.1	63	7.1	53	6.1	48	5.4
25-29	335	9.4	79	11.5	71	9.7	85	10.9	49	6.1	51	6.1
30-34	266	9.9	93	13.9	65	11.0	46	8.6	33	6.5	29	5.7
35-39	292	8.8	81	11.7	66	9.4	59	8.5	53	7.9	33	5.3
40-44	125	6.4	31	7.5	32	7.5	25	5.8	13	3.0	24	5.6
45-49	49	4.3	~	4.5	12	5.7	~	3.6	8	3.4	12	4.9
50+	12	3.6	~	5.2	~	5.2	~	1.6	~	2.9	~	3.6
Male	1,275	8.1	354	9.9	292	8.2	263	7.5	185	5.3	181	5.2
Female	199	11.1	47	12.8	60	16.4	36	9.8	31	8.5	25	6.8
Officers	82	2.2	23	3.0	21	2.8	20	2.7	8	1.1	10	1.3
Other ranks	1,392	8.9	378	11.9	331	10.5	279	9.0	208	6.7	196	6.3
Trained	1,270	7.4	380	10.9	309	9.0	251	7.3	167	4.9	163	4.7
Untrained	204	9.5	21	4.4	43	9.4	48	11.4	49	12.4	43	11.0

¹As recorded on the Joint Personnel Administration System (JPA).

²Data presented as “~” has been suppressed in accordance with DASA’s rounding policy (see paragraph 30).

³Age and gender standardised rates are presented for each age group and gender; rank and training status specific rates are presented for each rank and training status; overall crude rates are presented for each financial year.

33. During the five-year period 2005/06 - 2009/10, a total of 1,474 Naval Service personnel were medically discharged, at an overall crude rate of 7.6 per 1,000 personnel. Annual overall crude rates decreased year on year from 10.1 per 1,000 personnel in 2005/06 to 5.3 per 1,000 personnel in 2009/10.

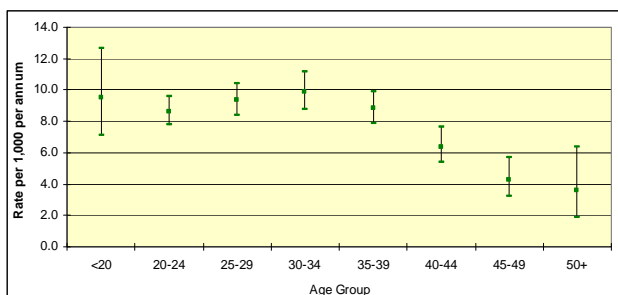


Figure 1: UK regular Naval Service medical discharges by age group, 2005/06 - 2009/10, Annualised gender-standardised rates and 95% CI

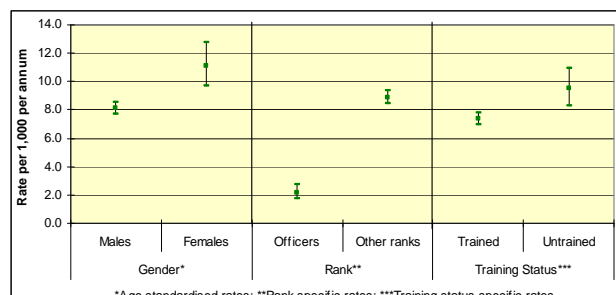


Figure 2: UK regular Naval Service medical discharges by gender, rank and training status, 2005/06 - 2009/10, rates and 95% CI

34. **Figure 1** shows that during the five-year period 2005/06 - 2009/10, the gender standardised rates of medical discharges for personnel in each age group under 40 were significantly higher than for personnel in each age group 40 years and over.

35. **Figure 2** shows that during the five-year period 2005/06 - 2009/10:

- The age standardised rate of medical discharges for female personnel (11.1 per 1,000 personnel, 95%CI=9.7-12.8) was significantly higher than for male personnel (8.1 per 1,000 personnel, 95%CI=7.7-8.6).
- The rank specific rate of medical discharges for Other Ranks (8.9 per 1,000 personnel, 95%CI=8.4-9.4) was significantly higher than for Officers (2.2 per 1,000 personnel, 95%CI=1.8-2.7).
- The training status specific rate of medical discharges for untrained personnel (9.5 per 1,000 personnel, 95%CI=8.3-10.9) was significantly higher than for trained personnel (7.4 per 1,000 personnel, 95%CI=7.0-7.8).

36. **Table 2** presents numbers of medical discharges among UK Regular Naval Service personnel by principal ICD 10 cause code group and financial year for the five-year period 2005/06 - 2009/10.

Table 2: UK Regular Naval Service medical discharges by principal ICD 10 cause code group, 2005/06 - 2009/10, Numbers¹

	All	2005/06	2006/07	2007/08	2008/09	2009/10
All medical discharges	1,474	401	352	299	216	206
All Cause Coded medical discharges	1,422	381	332	292	212	205
Infectious and parasitic diseases (A00 - B99)	~	0	~	0	~	~
Neoplasms (C00 - D48)	15	7	~	~	~	~
Blood disorders (D50 - D89)	~	~	0	0	0	~
Endocrine, nutritional and metabolic diseases (E00 - E90)	34	7	8	~	~	9
- Of Which diabetes (E10-E14)	28	~	6	6	~	7
- Of which insulin-dependent (E10)	21	5	5	5	~	~
- Of which non-Insulin-dependent (E11)	5	0	0	0	~	~
Mental and behavioural disorders (F00 - F99)	177	47	44	36	29	21
- Of which Mood disorders	69	17	17	15	11	9
- Of Which depression (F32 & F33)	61	16	15	13	9	8
- Of which Neurotic disorders	81	21	24	16	13	7
- Of which post-traumatic stress disorder (PTSD) (F431)	28	6	7	7	~	~
- Of which adjustment disorder (F432)	22	~	7	~	5	~
Nervous system disorders (G00 - G99)	80	20	24	15	9	12
- Of which epilepsy (G40)	42	11	14	9	~	~
Eye and adnexa diseases (H00 - H59)	17	~	10	~	0	~
- Of which blindness, low vision and visual disturbance (H53 & H54)	7	~	5	~	0	0
Ear and mastoid process diseases (H60 - H95)	24	6	~	~	7	7
- Of which hearing loss (H833 & H90 - H91)	20	~	0	~	6	7
- Of which noise-induced hearing loss (H833)	~	0	0	0	~	~
- Of which tinnitus (H931)	~	0	0	0	~	0
Circulatory system disorders (I00 - I99)	31	~	~	8	~	7
Respiratory system disorders (J00 - J99)	31	9	6	~	~	7
- Of which asthma (J45 & J46)	26	8	~	~	~	~
Digestive system disorders (K00 - K93)	29	5	15	~	~	~
Skin and subcutaneous tissue diseases (L00 - L99)	33	7	8	9	~	~
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	875	247	187	187	138	116
- Of which Injuries and disorders of the knee	276	93	60	58	39	26
- Of which knee pain	98	32	25	16	12	13
- Of which back pain (M549)	113	24	28	28	13	20
- Of which low back pain (M544-5)	95	21	24	23	12	15
- Of which heat injury (T67)	0	0	0	0	0	0
- Of which cold injury (T68 & T69)	11	0	0	~	5	~
Genitourinary system diseases (N00 - N99)	7	~	~	~	0	0
Pregnancy, childbirth and puerperium (O00 - O99)	~	0	0	~	0	0
Congenital malformations (Q00 - Q99)	14	~	5	~	~	~
Clinical and laboratory findings (R00 - R99)	44	12	11	8	6	7
Factors influencing health status (Z00 - Z99)	~	0	~	~	0	~
No details held on principle condition for medical boarding	51	20	19	7	~	~
Withheld consent	~	0	~	0	0	0

¹Data presented as “~” has been suppressed in accordance with DASA's rounding policy (see paragraph 30).

37. During the five-year period the most common cause of medical discharge for the Naval Service was musculoskeletal disorders and injuries with 62% (n=875) of all cause coded medical discharges. Although the annual numbers of medical discharges attributable to musculoskeletal disorders and injuries

have decreased by 53% over the period from 247 in 2005/06 to 116 in 2009/10, the proportion of musculoskeletal disorders and injuries of all cause coded medical discharges has only decreased over the period by 8%.

38. Disorders and injuries of the knee accounted for 32% (n=276) of all musculoskeletal disorders and injuries, of which knee pain accounted for 36% (n=98). Back pain accounted for 13% (n=113) of all musculoskeletal disorders and injuries, of which low back pain accounted for 84% (n=95).

39. Medical discharges attributable to cold injuries (n=11) accounted for 1% of all musculoskeletal disorders and injuries and accounted for less than 1% of all cause coded medical discharges. There were no medical discharges attributable to heat injuries.

40. The second most common cause of medical discharge was mental and behavioural disorders with 12% (n=177) of all cause coded medical discharges. Although the numbers of medical discharges attributable to mental and behavioural disorders have decreased by 55% over the five-year period from 47 in 2005/06 to 21 in 2009/10, the proportion of mental and behavioural disorders has decreased by only 2% for all cause coded medical discharges.

41. Neurotic and mood disorders accounted for 46% (n=81) and 39% (n=69) of all mental and behavioural disorders respectively. Of the neurotic disorders the most common were Post Traumatic Stress Disorder (PTSD) (n=28, 35%) and adjustment disorder (n=22, 27%). PTSD and adjustment disorders both accounted for 2% of all cause coded medical discharges and over time the proportion of medical discharges for these conditions remained stable, though the overall numbers of medical discharges decreased in each of the last five years.

42. Depression accounted for 88% of mood disorders (n=61). Overall, depression accounted for 4% of all cause coded medical discharges and over time this has remained constant.

43. Although hearing loss accounted for 83% (n=20) of all diseases of the ear and mastoid process, diseases of the ear and mastoid process only accounted for 2% (n=24) of all cause coded medical discharges.

Army

44. **Table 3** presents numbers and rates of medical discharges among UK Regular Army personnel by age group, gender, rank, training status and financial year for the five-year reporting period 2005/06 - 2009/10.

Table 3: UK Regular Army medical discharges¹ by age group, gender, rank and training status, 2005/06 - 2009/10, Numbers² and Rates³ per 1,000 strength

	All Years		2005/06		2006/07		2007/08		2008/09		2009/10	
	n	r	n	r	n	r	n	r	n	r	n	r
All	4,539	8.2	1,040	9.3	854	7.7	1,118	10.3	841	7.7	686	6.1
Under 20	1,389	22.6	331	24.5	271	20.7	360	29.1	246	20.9	181	15.4
20-24	1,563	10.9	351	11.9	281	9.8	378	13.5	285	10.2	268	9.1
25-29	727	5.9	152	6.5	127	5.3	175	7.2	153	6.3	120	4.8
30-34	350	4.1	81	4.4	72	4.2	87	5.3	62	3.8	48	2.8
35-39	305	3.8	78	4.6	63	3.7	75	4.4	51	3.0	38	2.3
40-44	154	4.4	40	6.5	31	5.0	27	4.2	34	4.9	22	2.8
45-49	27	2.0	~	1.6	~	2.4	9	3.4	~	1.5	~	1.4
50+	24	3.7	~	2.2	~	2.1	7	4.8	~	3.9	~	3.0
Male	4,073	7.9	943	9.1	762	7.5	997	9.9	754	7.5	617	6.0
Female	466	11.7	97	11.9	92	11.2	121	14.7	87	10.6	69	8.2
Officers	191	2.6	53	3.6	26	1.8	47	3.2	37	2.5	28	1.9
Other ranks	4,348	9.1	987	10.2	828	8.7	1,071	11.4	804	8.6	658	6.8
Trained	1,975	4.0	492	4.9	384	3.9	479	4.9	353	3.6	267	2.7
Untrained	2,564	40.5	548	44.2	470	37.0	639	50.8	488	39.8	419	31.5

¹As recorded on the Joint Personnel Administration System (JPA).

²Data presented as “~” has been suppressed in accordance with DASA's rounding policy (see paragraph 30).

³Age and gender standardised rates are presented for each age group and gender; rank and training status specific rates are presented for each rank and training status; overall crude rates are presented for each financial year.

45. During the five-year period 2005/06 - 2009/10, a total of 4,539 Army personnel were medically discharged, at an overall crude rate of 8.2 per 1,000 personnel. Annual overall crude rates decreased year on year from 9.3 per 1,000 personnel in 2005/06 to 6.1 per 1,000 personnel in 2009/10.

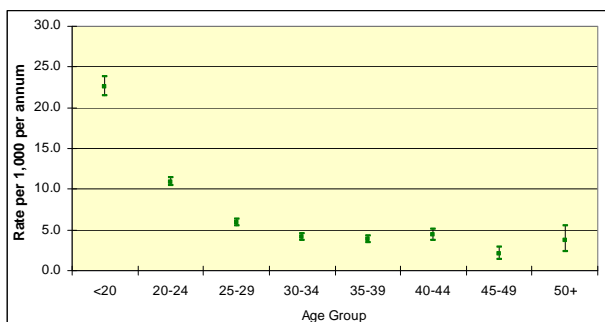


Figure 3: UK Regular Army medical discharges by age group, 2005/06 - 2009/10, Annualised gender-standardised rates and 95% CI

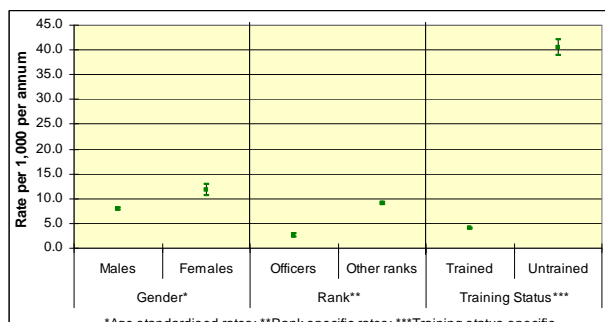


Figure 4: UK Regular Army medical discharges by gender, rank and training status, 2005/06 - 2009/10, rates and 95% CI

46. **Figure 3** shows that during the five year reporting period 2005/06 - 2009/10, the gender standardised rate of medical discharges for personnel in each age group under 30 were significantly higher than for personnel in each age group 30 years and over.

47. **Figure 4** shows that during the five-year period 2005/06 - 2009/10:

- The age standardised rate of medical discharges for female personnel (11.7 per 1,000 personnel, 95% CI=10.7-12.8) was significantly higher than for male personnel (7.9 per 1,000 personnel, 95% CI=7.6-8.1).

- The rank specific rate of medical discharges for Other Ranks (9.1 per 1,000 personnel, 95% CI=8.8-9.4) was significantly higher than for Officers (2.6 per 1,000 personnel, 95% CI=2.2-3.0).
- The training status specific rate of medical discharges for untrained personnel (40.5 per 1,000 personnel, 95% CI=39.0-42.1) was significantly higher than for trained personnel (4.0 per 1,000 personnel, 95% CI=3.8-4.2).

48. **Table 4** presents numbers of medical discharges among UK Regular Army personnel by principal ICD 10 cause code group and financial year for the five year period 2005/06 - 2009/10.

Table 4: UK Regular Army medical discharges by principal ICD 10 cause code group, 2005/06 - 2009/10, Numbers¹

	All	2005/06	2006/07	2007/08	2008/09	2009/10
All medical discharge	4,539	1,040	854	1,118	841	686
All Cause Coded medical discharges	4,390	999	845	1,057	811	678
Infectious and parasitic diseases (A00 - B99)	26	10	~	6	5	~
Neoplasms (C00 - D48)	32	~	9	7	7	~
Blood disorders (D50 - D89)	5	~	0	0	~	~
Endocrine, nutritional and metabolic diseases (E00 - E90)	25	~	5	9	~	~
- Of Which diabetes (E10-E14)	15	~	~	~	~	~
- Of Insulin-dependent (E10)	13	~	~	~	~	~
- Of non-Insulin-dependent (E11)	~	0	0	0	0	~
Mental and behavioural disorders (F00 - F99)	590	112	96	139	140	103
- Of which Mood disorders	188	46	29	51	37	25
- Of Which depression (F32 & F33)	155	39	26	42	31	17
- Of which Neurotic disorders	287	48	45	63	71	60
- Of which post-traumatic stress disorder (PTSD) (F431)	112	18	15	21	32	26
- Of which adjustment disorder (F432)	46	5	7	12	10	12
Nervous system disorders (G00 - G99)	182	43	27	61	20	31
- Of which epilepsy (G40)	66	16	11	22	6	11
Eye and adnexa diseases (H00 - H59)	46	9	9	14	7	7
- Of which blindness, low vision and visual disturbance (H53 - H54)	22	5	~	7	~	~
Ear and mastoid process diseases (H60 - H95)	114	21	32	23	21	17
- Of which hearing loss (H833 & H90 - H91)	98	15	27	21	18	17
- Of which noise-induced hearing loss (H833)	28	~	11	7	~	6
- Of which tinnitus (H931)	6	~	~	0	0	0
Circulatory system disorders (I00 - I99)	66	12	8	21	17	8
Respiratory system disorders (J00 - J99)	88	18	22	22	10	16
- Of which asthma (J45 & J46)	75	13	22	19	10	11
Digestive system disorders (K00 - K93)	58	14	9	14	13	8
Skin and subcutaneous tissue diseases (L00 - L99)	79	20	24	9	15	11
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	2,777	670	538	664	500	405
- Of which Injuries and disorders of the knee	578	137	108	143	101	89
- Of which knee pain	297	68	56	78	53	42
- Of which back pain (M549)	338 ^f	73	63 ^f	95	61	46
- Of which Low back pain (M544-5)	212	52	42	49	36	33
- Of which heat injury (T67)	7	~	0	0	~	~
- Of which Cold injury (T68 & T69)	179	14	14	62	61	28
Genitourinary system diseases (N00 - N99)	27	6	10	8	~	~
Pregnancy, childbirth and puerperium (O00 - O99)	0	0	0	0	0	0
Congenital malformations (Q00 - Q99)	27	12	~	0	~	6
Clinical and laboratory findings (R00 - R99)	216	40	47	55	37	37
Factors influencing health status (Z00 - Z99)	32	~	~	5	6	18
No details held on principle condition for medical boarding	142	41	~	60	29	~
Withheld consent	7	0	0	~	~	5

¹Data presented as “~” has been suppressed in accordance with DASA’s rounding policy (see paragraph 30).

^fThese figures have been revised due to the identification of a processing error that has now been amended.

49. During the five-year period the most common cause of medical discharge for the Army was musculoskeletal disorders and injuries with 63% (n=2,777) of all cause coded medical discharges. Although the annual numbers of medical discharges attributable to musculoskeletal disorders and injuries have decreased by 40% over the five-year period from 670 in 2005/06 to 405 in 2009/10, the proportion of musculoskeletal disorders and injuries of all cause coded medical discharges has only decreased over the period by 7%.

50. Disorders and injuries of the knee accounted for 21% (n=578) of all musculoskeletal disorders and injuries, of which knee pain accounted for 51% (n=297). Back pain accounted for 12% (n=318) of all musculoskeletal disorders and injuries, of which low back pain accounted for 63% (n=212).

51. Medical discharges attributable to cold injuries (n=179) accounted for 6% of all musculoskeletal disorders and injuries and 4% of all cause coded medical discharges, while less than 1% of all cause coded medical discharges were attributable to heat injuries.

52. The second most common cause of medical discharge was mental and behavioural disorders with 13% (n=590) of all cause coded medical discharges. Although the numbers of medical discharges attributable to mental and behavioural disorders have decreased by 8% over the five-year period from 112 in 2005/06 to 103 in 2009/10, the proportion of mental and behavioural disorders of all cause coded medical discharges has increased by 4%.

53. The majority of mental and behavioural disorders were made up by neurotic (n=287, 49%) and mood (n=188, 32%) disorders. Of the neurotic disorders the most common were Post Traumatic Stress Disorder (PTSD) (n=112, 39%) and adjustment disorder (n=46, 16%). Over the reporting period cases of PTSD increased amongst all cause coded medical discharges from 2% in 2005/06 (n=18) to 4% (n=26) in 2009/10. Adjustment disorders only accounted for 1% of all cause coded medical discharges and over time have remained constant.

54. Depression accounted for 82% (n=155) of mood disorders. During the reporting period cases of depression decreased amongst all cause coded medical discharges from 4% (n=39) in 2005/06 to 3% (n=17) in 2009/10.

55. Hearing loss accounted for 86% (n=98) of all diseases of the ear and mastoid process, of which noise-induced hearing loss accounted for 30% (n=28). Medical discharges attributable to diseases of the ear and mastoid process only accounted for 3% (n=114) of all cause coded medical discharges.

RAF

56. **Table 5** presents numbers and rates of medical discharges among UK Regular RAF personnel by age group, gender, rank, training status and financial year for the five-year reporting period 2005/06 - 2009/10.

Table 5: UK Regular RAF medical discharges¹ by age group, gender, rank and training status, 2005/06 - 2009/10, Numbers² and Rates³ per 1,000 strength

	All Years		2005/06		2006/07		2007/08		2008/09		2009/10	
	n	r	n	r	n	r	n	r	n	r	n	r
All	1,049	4.6	217	4.3	245	5.3	212	4.8	196	4.5	179	4.1
Under 20	33	4.2	~	2.3	~	3.8	5	5.0	~	4.4	13	6.0
20-24	225	5.6	56	5.9	53	6.1	44	5.6	34	4.6	38	5.1
25-29	210	4.5	44	4.9	57	6.2	34	3.7	42	4.6	33	3.6
30-34	156	4.4	41	5.0	31	4.3	32	5.0	28	4.6	24	3.7
35-39	152	3.5	28	2.8	35	3.7	37	4.2	29	3.5	23	3.1
40-44	141	4.8	23	3.5	32	5.2	31	5.3	33	5.8	22	3.8
45-49	78	4.7	~	3.0	24	7.4	16	4.9	~	3.9	15	4.4
50+	54	6.2	11	5.9	~	5.0	13	7.4	~	5.6	11	5.8
Male	784	4.0	166	3.8	185	4.5	162	4.2	135	3.6	136	3.6
Female	265	8.4	51	8.3	60	10.1	50	8.7	61	10.6	43	7.2
Officers	87	1.8	16	1.5	21	2.1	19	2.0	16	1.7	15	1.5
Other ranks	962	5.4	201	5.0	224	6.1	193	5.6	180	5.4	164	4.8
Trained	934	4.4	201	4.2	229	5.2	199	4.8	170	4.3	135	3.4
Untrained	115	7.5	16	6.7	16	7.2	13	4.9	26	7.0	44	10.2

¹As recorded on the Joint Personnel Administration System (JPA).

²Data presented as “~” has been suppressed in accordance with DASA's rounding policy (see paragraph 30).

³Age and gender standardised rates are presented for each age group and gender; rank and training status specific rates are presented for each rank and training status; overall crude rates are presented for each financial year.

57. During the five-year period 2005/06 - 2009/10, a total of 1,049 RAF personnel were medically discharged, at an overall crude rate of 4.6 per 1,000 personnel. Annual overall crude rates show little variation year on year in the rate of RAF medical discharges, decreasing from 4.3 per 1,000 personnel in 2005/06 to 4.1 per 1,000 personnel in 2009/10.

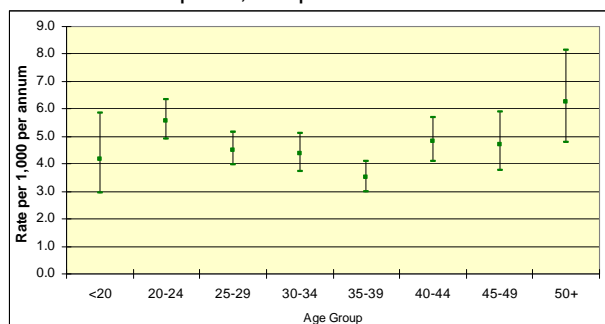


Figure 5: UK Regular RAF medical discharges by age group, 2005/06 - 2009/10, Annualised gender-standardised rates and 95% CI

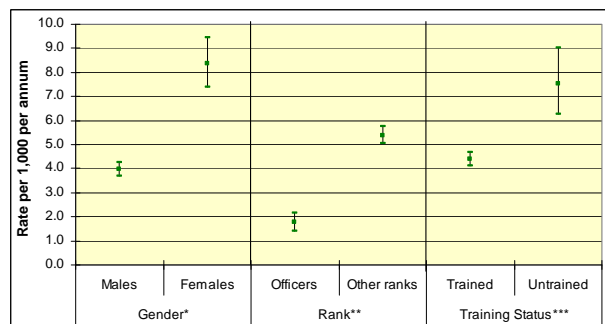


Figure 6: UK Regular RAF medical discharges by gender, rank and training status, 2005/06 - 2009/10, Annualised gender-standardised rates and 95% CI

58. **Figure 5** shows that during the five-year period 2005/06 - 2009/10, gender standardised rates of medical discharge were higher for personnel in the younger and older age groups. Personnel aged 35-39 had a significantly lower gender standardised rate of medical discharge (3.5 per 1,000 personnel, 95%CI=3.0-4.1) than personnel aged 20-24 (4.9 per 1,000 personnel, 95%CI=4.9-6.4), and personnel aged 50 and over (6.2 per 1,000 personnel, 95%CI=4.8-8.2)/

59. **Figure 6** shows that during the five-year period 2005/06 - 2009/10:
- The age standardised rate of medical discharges for female personnel (8.4 per 1,000 personnel, 95%CI=7.4-9.4) was significantly higher than for male personnel (4.0 per 1,000 personnel, 95%CI=3.7-4.3).
 - The rank specific rate of medical discharges for Other Ranks (5.4 per 1,000 personnel, 95%CI=5.1-5.7) was significantly higher than for Officers (1.8 per 1,000 personnel, 95%CI=1.4-2.2).
 - The training status specific rate of medical discharges for untrained personnel (7.5 per 1,000 personnel, 95%CI=6.3-9.0) was significantly higher than for trained personnel (4.4 per 1,000 personnel, 95%CI=4.1-4.7).

60. **Table 6** presents numbers of medical discharges among UK Regular RAF personnel by principal ICD 10 cause code group and financial year for the five-year period 2005/06 - 2009/10.

Table 6: UK Regular RAF medical discharges by principal ICD 10 cause code group, 2005/06 - 2009/10, Numbers¹

	All	2005/06	2006/07	2007/08	2008/09	2009/10
All medical discharge	1,049	217	245	212	196	179
All Cause Coded medical discharges	879	137	223	200	174	145
Infectious and parasitic diseases (A00 - B99)	~	0	0	~	~	~
Neoplasms (C00 - D48)	17	0	~	~	6	5
Blood disorders (D50 - D89)	~	~	0	0	0	0
Endocrine, nutritional and metabolic diseases (E00 - E90)	11	~	~	5	~	~
- Of Which diabetes (E10-E14)	8	~	~	~	~	~
- Of insulin-dependent (E10)	6	0	~	~	~	~
- Of non-Insulin-dependent (E11)	~	0	~	0	0	0
Mental and behavioural disorders (F00 - F99)	231	44	78	45	41	23
- Of which Mood disorders	101	20	31	15	24	11
- Of Which depression (F32 & F33)	95	20	28	14	22	11
- Of which Neurotic disorders	86	19	28	20	11	8
- Of which post-traumatic stress disorder (PTSD) (F431)	8	~	~	~	~	~
- Of which adjustment disorder (F432)	56	16	19	11	~	~
Nervous system disorders (G00 - G99)	64	11	17	15	10	11
- Of which epilepsy (G40)	9	~	~	~	~	0
Eye and adnexa diseases (H00 - H59)	12	~	~	5	~	~
- Of which blindness, low vision and visual disturbance (H53 & H54)	~	0	0	~	0	~
Ear and mastoid process diseases (H60 - H95)	13	~	5	~	~	~
- Of which hearing loss (H833& H90 - H91)	8	~	~	~	~	~
- Of which noise-induced hearing loss (H833)	~	0	~	0	0	0
- Of which tinnitus (H931)	0	0	0	0	0	0
Circulatory system disorders (I00 - I99)	31	8	10	7	~	~
Respiratory system disorders (J00 - J99)	14	~	~	~	~	~
- Of which asthma (J45 & J46)	10	~	~	0	~	~
Digestive system disorders (K00 - K93)	17	~	5	~	6	~
Skin and subcutaneous tissue diseases (L00 - L99)	10	~	~	~	~	~
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	429	55	90	109	90	85
- Of which Injuries and disorders of the knee	74	9	19	18	17	11
- Of which knee pain	22	~	6	~	7	~
- Of which back pain (M549)	103	10	23	32	19	19
- Of which low back pain (M544-5)	90	9	21	27	16	17
- Of which heat injury (T67)	0	0	0	0	0	0
- Of which cold injury (T68 & T69)	~	0	~	0	~	~
Genitourinary system diseases (N00 - N99)	7	0	~	~	~	0
Pregnancy, childbirth and puerperium (O00 - O99)	0	0	0	0	0	0
Congenital malformations (Q00 - Q99)	~	0	0	0	~	~
Clinical and laboratory findings (R00 - R99)	11	~	0	~	~	~
Factors influencing health status (Z00 - Z99)	~	0	~	0	~	0
No details held on principle condition for medical boarding	158	80	22	12	21	23
Withheld consent	12	0	0	0	~	~

¹Data presented as “~” has been suppressed in accordance with DASA’s rounding policy (see paragraph 30).

61. During the five-year period the most common cause of medical discharge for the RAF was musculoskeletal disorders and injuries with 49% (n=429) of all cause coded medical discharges. Although the annual numbers of medical discharges attributable to musculoskeletal disorders and injuries have increased by 55% over the five-year period from 55 in 2005/06 to 85 in 2009/10, the proportion of musculoskeletal disorders and injuries of all cause coded medical discharges has only increased by 19%.

62. Back pain accounted for 24% (n=103) of all musculoskeletal disorders and injuries, of which low back pain accounted for 87% (n=90). Injuries and disorders and injuries of the knee accounted for 17% (n=74) of all musculoskeletal disorders and injuries, of which knee pain accounted for 30% (n=22).
63. Medical discharges attributable to cold injuries (n<5) accounted for 1% of all musculoskeletal disorders and injuries and less than 1% of all cause coded medical discharges, and there were no medical discharges attributable to heat injuries.
64. The second most common cause of medical discharge was mental and behavioural disorders with 26% (n=231) of all cause coded medical discharges. Although the numbers of medical discharges attributable to mental and behavioural disorders have decreased by 48% over the five-year period from 44 in 2005/06 to 23 in 2009/10, the proportion of mental and behavioural disorders of all cause coded medical discharges has only decreased by 16%.
65. Of the medical discharges with a principal condition of neurotic disorders, adjustment disorder accounted for 65% (n=56) of cases. Post Traumatic Stress Disorder (PTSD) only accounted for 3% (n=8) of all mental and behavioural disorders.
66. The majority of mental and behavioural disorders were made up by mood disorders (n=101, 44%) and neurotic (n=86, 37%) disorders. Depression accounted for 94% of the mood disorders (n=95), and for 11% of all cause coded medical discharges. Over the reporting period medical discharges with a principal condition of depression decreased from 15% in 2005/06 (n=20) to 8% in 2009/10 (n=11).
67. Although hearing loss accounted for 62% (n=8) of all diseases of the ear and mastoid process, diseases of the ear and mastoid process diseases only accounted for 1% of all cause coded medical discharges.

DISCUSSION

68. Before using numbers of medical discharges to inform policy or audit, it is important to understand what is being measured. A medical discharge is an occupational health outcome resulting from the interaction between morbidity and Service manning requirements, and changes in patterns seen could result from either perspective. Statistics on medical discharges should therefore not be confused with measures of true incidence of pathology or morbidity in the Services. It is this mixed aspect that makes discussion of the patterns and trends seen in these statistics difficult.

69. An interpretation of statistics based on these discharges must also take into account the highly varied skill mix requirements of the Services to meet the UK's Defence mission. At its most simple, the requirement to deploy on sea, land, and air impose radically different assessment criteria for selecting recruits and for subsequently retaining personnel who may fall seriously ill or suffer a limiting injury. Flexibility in setting fitness levels to meet the manning requirements varies accordingly. Furthermore, as military medicine and occupational health in the Services are frequently under review, patient management and medical boarding procedures evolve, also potentially affecting the numbers and trends reported.

70. Having noted that the practices and protocols for recommending and awarding a medical discharge differ for each Service, this is particularly true for untrained personnel where there are no similarities between the single Services. This is thought to reflect several factors: differences in training regimes (including intra-Service and inter-Service differences in training course duration), different levels of fitness required by each Service, and differences in the main types of occupational roles and activities the Services aim to staff with the new recruits after initial training.

71. The key trends that appeared for all three Services over the reporting period 2005/06 to 2009/10 were:

- Overall, the number of medical discharges has decreased over the time period.
- Certain demographic groups had significantly higher rates of medical discharge such as females, Other Ranks and untrained personnel.
- The most common cause of medical discharge was musculoskeletal disorders and injuries.
- Back pain was the most prominent musculoskeletal disorder.
- The second most common cause of medical discharge was mental and behavioural disorders.
- Neurotic and mood disorders accounted for the majority of mental and behavioural disorders.

72. While there has been a particular public interest in the number of medical discharges due to cold and heat injuries, there are very few medical discharges due to cold injuries in the RAF and Naval Service and none due to heat injuries. For the Army cold injuries account for 4% of all cause coded medical discharges and less than 1% were due to heat injuries.

73. There has also been particular public interest in the number of medical discharges due to hearing loss, and it does account for the majority of medical discharges due to diseases of the ear and mastoid process for all three Services with a higher proportion in the Naval Service. However, for all three Services diseases of the ear and mastoid process accounted for a minority, 3% or less, of all cause coded medical discharges.

74. It is DASA's aim to be able to investigate significant morbidity within the Armed Forces, comprising medical downgradings as well as medical discharges. While work continues in this area DASA will release this report on an annual basis from July 2011.