Ministry of Defence

Annual Medical Discharges in the UK Regular Armed Forces 2008/09 - 2012/13

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INTRODUCTION

1. This report provides statistical information on medical discharges among UK Regular Service personnel during the five financial years 2008/09 - 2012/13. 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. Time series graphs have also been included presenting the overall number and crude rates per 1,000 strength per year of medical discharges for the last ten years, to help assess the impact of changes in policy and practices.

3. 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.

4. 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.

5. 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.

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

6. 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). Defence Statistics produce bi-annual reports on the Armed Forces Compensation Scheme and annual reports on War Pension Scheme which can be found on the Defence Statistics website.

7. This report has been provided in response to regular requests for information from internal stakeholders, the public and the media about UK Service personnel medically discharged from the Armed Forces.

Changes since the previous publication

8. In order to align with other Official Statistics publications produced by Defence Statistics, this report uses a different method to calculate confidence intervals than previous reports. Therefore, the confidence intervals in this report should not be compared to those provided in historic publications. This change in methodology does not impact on any of the findings presented in the report.

9. In order to allow greater interpretation and analysis of changes in medical discharges over time, this report includes two new elements for each Service:

- Figures 1, 4, and 7 show the number and crude rate per 1,000 strength per year of medical discharges over a ten year period.
- Tables 3, 6 and 9 show the proportion of cause coded medical discharges in each cause code category over the five year reporting period.

KEY POINTS

Naval Service

10. Over the past 10 years (2003/04 – 2012/13) the Naval Service medical discharge crude rate fell from 10.1 per 1,000 personnel in 2005/06 to it's lowest in 2009/10 (5.3 per 1,000) before sharply rising to a peak in 2011/12 (12.8 per 1,000 personnel). The decease in the rate between 2005/06 and 2009/10 may be partly due to the Service endeavouring to retain seriously injured personnel if there was a role for them to fulfil, or if retention was in the interest of both the individual and the Service. The rise is likely to be a result of the improved management of the recovery pathway, the completion of treatment and the restricted number of non-deployable roles.

11. During the five year reporting period 2008/09 - 2012/13, a total of 1,612 Naval Service personnel were medically discharged, at an overall crude rate of 8.6 per 1,000 personnel. There were certain sub-groups where the rates of medical discharges were higher: personnel aged between 25 and 39, females, Other (non-Officer) Ranks, and untrained personnel.

12. During the latest financial year 2012/13 there was a drop in both the overall number and the crude rate of Naval Service personnel medically discharged from 2011/12. However, the crude rate for 2012/2013 is still higher than those seen in any year prior to 2011/12.

13. Despite a slight drop in the overall crude rate of Naval Service personnel medically discharged from 2011/12 the following sub-groups showed increases in the crude rate:

- Discharges among personnel aged under 20 rose from 1.7 per 1,000 personnel to 5.6 per 1,000 personnel
- Discharges among personnel aged 30 – 39 rose from 13.4 per 1,000 personnel to 16.2 per 1,000 personnel
- Discharges among untrained personnel rose from 9.3 per 1,000 personnel to 12.4 per 1,000 personnel

14. Musculoskeletal disorders and injuries was the most common principal cause of medical discharge from the Naval Service during the reporting period (937 cases, or 58% of all cause coded Naval Service medical discharges). Mental and behavioural disorders (176 cases, or 11% of all cause coded Naval Service medical discharges) was the second most common principal cause of medical discharge.

Army

15. Over the past 10 years (2003/04 – 2012/13) the Army medical discharge crude rate fell from 10.3 per 1,000 personnel in 2007/08 to it's lowest in 2009/10 (6.1 per 1,000 personnel) before rising to 15.6 per 1,000 personnel in 2012/13. The crude rate increased by 77% from 2011/12 to 2012/13. The decease in the rate between 2007/08 and 2009/10 may be partly due to the Service endeavouring to retain seriously injured personnel if there was a role for them to fulfil, or if retention was in the interest of both the individual and the Service. The rise is likely to be a result of the improved management of the recovery pathway, the completion of treatment and the restricted number of non-deployable roles.

16. During the five year reporting period 2008/09 - 2012/13, a total of 4,991 Army personnel were medically discharged, at an overall crude rate of 9.1 per 1,000 personnel. There were certain sub-groups where the rates of medical discharge were higher: personnel aged under 25, females, Other (non-Officer) Ranks and untrained personnel.

17. During 2012/13, all Army demographic groups demonstrated a much higher rate of medical discharge, when compared to the rest of the period (2008/09 – 2012/13). The demographic group which showed the biggest increase in rate from 2011/12 to 2012/13 were trained personnel, who saw an increase of 112%.

18. Musculoskeletal disorders and injuries was the most common principal cause of medical discharge from the Army during the reporting period 2008/09 - 2012/13 (2,930 cases, or 59% of all cause coded Army medical discharges). Mental and behavioural disorders (682 cases, or 14% of all cause coded Army medical discharges) was the second most common principal cause of medical discharge.

RAF

19. Over the past 10 years (2003/04 – 2012/13) the RAF medical discharge crude rate fell from 5.3 per 1,000 personnel in 2006/07 to it's lowest in 2010/11 (3.3 per 1,000 personnel) before rising to 5.4 per 1,000 personnel in 2012/13. The decease in the rate between 2006/07 and 2010/11 may be partly due to the Service endeavouring to retain seriously injured personnel if there was a role for them to fulfil, or if retention was in the interest of both the individual and the Service. The rise is likely to be a result of the improved management of the recovery pathway, the completion of treatment and the restricted number of non-deployable roles.

20. During the five year reporting period 2008/09 - 2012/13, a total of 914 RAF personnel were medically discharged, at an overall crude rate of 4.3 per 1,000 personnel. There were certain sub-groups where the rates of medical discharge continue to be higher: personnel aged over 50, females, Other (non-Officer) Ranks and untrained personnel.

21. The most noticeable changes in RAF medical discharges during 2012/13 were:

- Personnel aged over 50 saw an increase in rate from 3.9 in 2010/11 to 11.2 per 1,000 personnel in 2012/13.
- Personnel aged 30-34 saw an increase in rate from 3.7 per 1,000 personnel in 2011/12 to 6.0 per 1,000 personnel in 2012/13.

22. Musculoskeletal disorders and injuries was the most common reason for medical discharges from the RAF during the reporting period (460 cases, or 56% of all cause coded RAF medical discharges). Mental and behavioural disorders (149 cases, or 18% of all cause coded RAF medical discharges), was the second most common cause for medical discharge.

DATA, DEFINITIONS AND METHODS

23. 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.

24. 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.

25. 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.

26. Defence Statistics undertook a major review of all personnel data form the Joint Personnel Administration System (JPA). This has resulted in minor changes to the previously reported financial years (2007/08 to 2011/12). All revisions are represented by an 'r' in relevant tables; further details on the scale and position of changes can be found in **Annex A.**

Data sources for medical discharges

27. Data are compiled by Defence Statistics from two sources:

a) Monthly downloads from JPA (Joint Personnel Administration) system are used to determine the number of medical discharges for each Service.

b) Medical documents (FMed 23s), raised for each individual by Service medical boards, are copied to Defence Statistics provided the consent of the individual was given. Individuals that withhold consent are captured on Defence Statistics' database with no clinical information recorded. Where consent is given, the individual's condition(s) that led to the medical board is entered onto Defence Statistics' 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

28. 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 Ghurkha Regiments and Military Provost Guard Service (MPGS); 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.

29. 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.

30. 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

31. 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.

32. 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 Defence Statistics. 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 Defence Statistics, therefore their principal condition leading to medical discharge is not presented. In Tables 2, 4 and 6 these are indentified by the field labelled 'Withheld Consent'.

33. There are also occasions when Defence Statistics have been unable to locate the medical documents/FMed 23s to enable the medical discharge record to be cause coded (ICD-10 Coded). In Tables 2, 4 and 6 these records are indentified by the field labelled 'No Details held on principal condition for medical boarding'. For the current year (2012/13) Defence Statistics were unable to obtain 22 Fmed 23 forms for Regular Army personnel. In previous years, missing Army forms have been sourced from the Army Personnel Centre (APC). However, APC were unable to provide this information for 2012/13, resulting in the increase in Army medical discharges without a known cause code.

Denominator data

34. In order to calculate rates, extracts of all Regular Service personnel (strengths data) were taken from Defence Statistics' personnel databases that hold information supplied by the Joint Personnel Administration (JPA) system.

35. Whilst FMed23 forms received by Defence Statistics 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

36. Crude rates are presented for gender, age groups, 'ranks' and 'training status' for each individual service each year. 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).

37. Standardised rates are presented for the five year period for gender, age groups, 'ranks' and 'training status'. An outline of how these rates are calculated is provided below:

- 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 2012/13.
- 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 2012/13.
- 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).

38. All standardised 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 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.

39. Please note that the comparison of standardised rates between this report and previous Official Statistic releases is not advisable, as the population used to standardise the rates differs between reports.

95% Confidence intervals

40. 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[b]. 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

41. The tables in this report have been scrutinised to ensure individual identities have not been revealed inadvertently. In line with Defence Statistics' rounding policy for health statistics (May 2009), and in keeping with the Office for National Statistics Guidelines, all numbers less than five 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.

[b] Pearson ES, Hartley HO, 1954. Biometrika tables for statisticians volume I. Cambridge: Cambridge University Press.

FINDINGS

42. This report presents descriptive statistical information on the causes and trends of medical discharges among the UK regular Armed Forces. There were 7,517 medical discharges in total during the five year period 2008/09 - 2012/13 for the three Services (annual mean=1,503, these constitute approximately 7% of all exits from the Armed Forces in any year). The findings for each Service are presented separately.

Naval Service

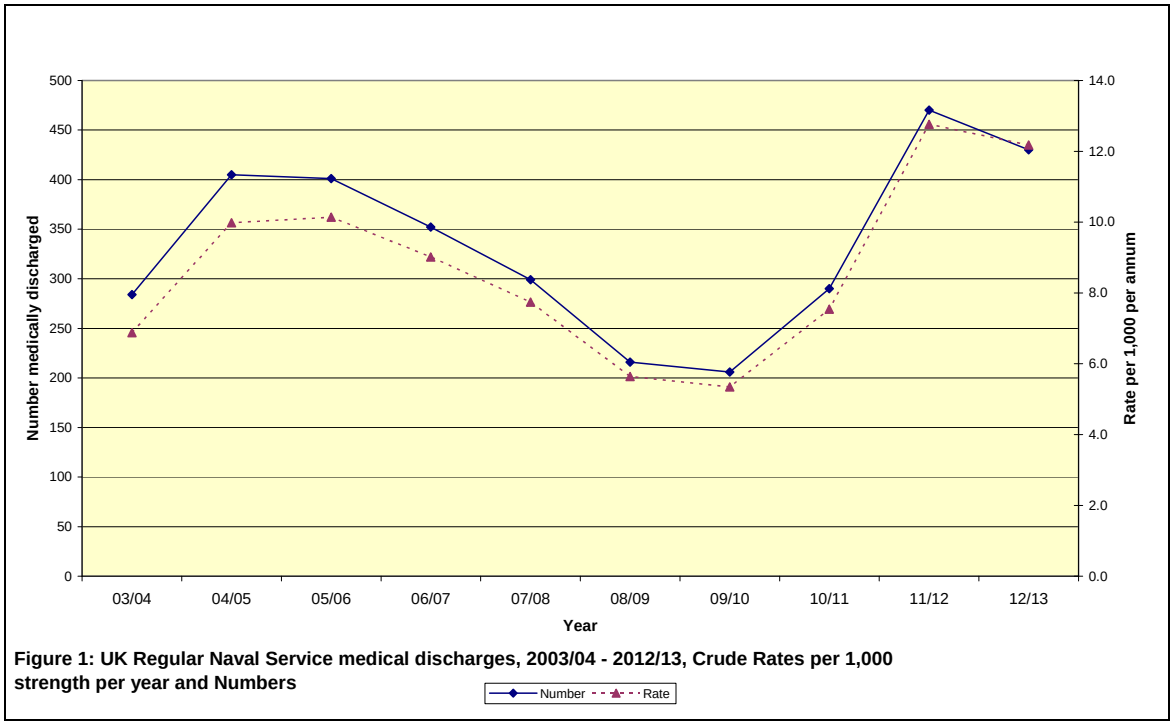

Figure 1: UK Regular Naval Service medical discharges, 2003/04 - 2012/13, Crude Rates per 1,000 strength per year and Numbers

43. **Figure 1** shows the rate and number of personnel medically discharged from UK Regular Naval Service during the ten-year period 2003/04 - 2012/13. The graph shows a decrease in both the number and rate of medical discharges between 2005/06 and 2009/10. Medical discharges have been increasing from 2009/10 (109%), with the largest year on year increase being between 2010/11 and 2011/12 (62%).

44. The decease in the number and rate between 2005/06 and 2009/10 may be partly due to the Service endeavouring to retain seriously injured personnel if there was a role for them to fulfil, or if retention was in the interest of both the individual and the Service[c]. The rise in the last two financial years is likely to be a result of the improved management of the recovery care pathway, the completion of treatment and the restricted number of non-deployable roles available with the Naval Service.

[c] As personnel wounded, injured or sick and those requiring long term (greater than three months) support for medical, welfare or disciplinary reasons are assigned to a Recovery Cell, Troop or HASLER Company (Coy)

45. **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 2008/09 - 2012/13.

Table 1: UK regular Naval Service medical discharges[1] by age group[1], gender[1], rank[1] and training status[1], 2008/09 - 2012/13, Numbers[2] and Rates[3] per 1,000 strength

	All Years		2008/09		2009/10		2010/11		2011/12		2012/13	
	n	r	n	r	n	r	n	r	n	r	n	r
All	**1,612**	**8.6**	**216**	**5.6**	**206**	**5.3**	**290**	**7.5**	**470**	**12.8**	**430**	**12.2**
Under 20	**22**	2.4	~	2.0	~	2.5	~	2.1	~	1.7	~	5.6
20-24	**310**	7.3	53	6.1	48	5.4	56	6.4	83	10.2	70	9.1
25-29	**409**	9.7	49	6.1	51	6.1	77	8.9	128	14.9	104	12.4
30-34	**312**	11.6	33	6.5	29	5.7	48	9.0	100	17.6	102	17.4
35-39	**288**	10.1	53	7.9	33	5.3	58	9.9	69	13.4	75	16.2
40-44	**162**	7.4	13	3.0	24	5.6	26	5.9	54	12.0	45	10.4
45-49	**85**	6.8	8	3.4	12	4.9	16	6.3	24	9.2	25	9.7
50+	**24**	5.6	~	2.9	~	3.6	~	5.5	~	10.9	~	4.3
Male	**1,381**	8.3	185	5.3	181	5.2	243	7.0	395	11.8	377	11.8
Female	**231**	12.8	31	8.5	25	6.8	47	12.9	75	21.9	53	16.3
Officers	**97**	2.6	8	1.1	10	1.3	19	2.5	32	4.4	28	3.9
Other ranks	**1,515**	10.1	208	6.7	196	6.3	271	8.8	438	14.9	402	14.3
Trained	**1,447**	8.4	168 [r]	4.9	162 [r]	4.7	269	7.6	449	13.0	399	12.2
Untrained	**165**	10.4	48 [r]	12.1 [r]	44 [r]	11.3 [r]	21	6.6	21	9.3	31	12.4

[1]As recorded on the Joint Personnel Administration System (JPA) at the time of discharge.
[2]Data presented as "~" has been suppressed in accordance with Defence Statistics' rounding policy (see paragraph 41).
[3]Age 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 (see paragraphs 36-39).
[r]Indicates a change in previously published data (see Annex A)

46. During the five-year period 2008/09 - 2012/13, a total of 1,612 Naval Service personnel were medically discharged, at an overall crude rate of 8.6 per 1,000 personnel. Overall annual numbers have increased by 99% over the reporting period; in comparison the rate has increased by 118%.

47. During the five year reporting period there were certain demographic sub-groups where the rates of medical discharges were higher than the overall crude rate; personnel aged 25-39, females, other (non-Officer) ranks and untrained personnel.

48. During the latest financial year 2012/2013 there was a drop in both the overall number and the crude rate of Naval Service personnel medically discharged from 2011/12. However, the crude rate for 2012/2013 is still higher than those seen prior to 2011/2012.

49. The most noticeable changes in 2012/13 were:

- Personnel aged under 20; rose from 1.7 per 1,000 personnel in 2011/12 to 5.6 per 1,000 personnel in 2012/13. This compares with a rate for the overall time period of 2.4 per 1,000 strength. However, this may be the result of the small numbers involved.
- Personnel aged 35 - 39; rose from 13.4 per 1,000 personnel in 2011/12 to 16.2 per 1,000 personnel in 2012/13. The rate for 2012/13 is the highest seen since the earliest held discharge data, 1995/96. This compares with a rate for the overall time period of 10.1 per 1,000 strength.
- Personnel aged 50+ have decreased from 10.9 per 1,000 personnel in 2011/12 to 4.3 per 1,000 personnel in 2012/13. This compares with a rate for the overall time period of 5.6 per 1,000 strength.
- Females personnel; has decreased from 21.9 per 1,000 personnel in 2011/12 to 16.3 per 1,000 personnel in 2012/13. This compares with a rate for the overall time period of 12.8 per 1,000 strength.
- Untrained personnel; rose from 9.3 per 1,000 personnel in 2011/12 to 12.4 per 1,000 personnel in 2012/13, resulting in similar rates of discharge for trained and untrained personnel. This compares with a rate for the overall time period of 10.1 per 1,000 strength.

50. The sustained rise since 2010/11 seen in the overall numbers and sub-groups is likely to be a result of changes in policy and practices in the management of the recovery pathway and the medical boarding process.

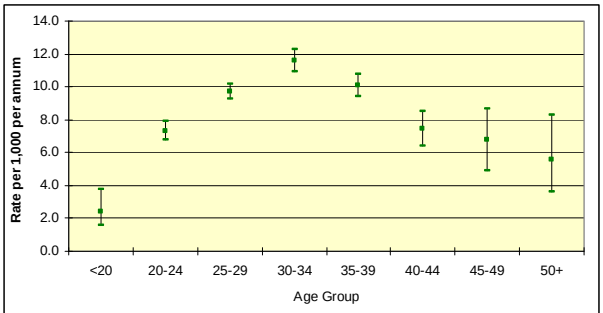

Figure 2: UK Regular Naval Service medical discharges by age group, 2007/08 - 2011/12, Annualised gender-standardised rates per 1,000 strength and 95% CI

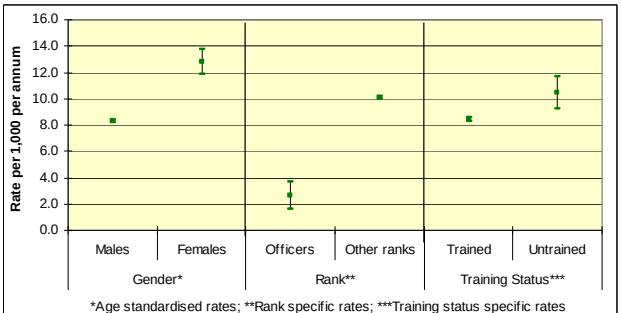

Figure 3: UK Regular Naval Service medical discharges by gender, rank and training status, 2007/08 - 2011/12, Annualised gender-standardised rates per 1,000 strength and 95% CI

51. **Figure 2** shows that during the five-year period 2008/09 - 2012/13, the gender standardised rates of medical discharges for personnel aged between 25 and 39 were significantly higher than the other age groups. The rates for those aged between 25 and 39 is thought to reflect the requirement for Naval Service personnel to be fit for service at sea, as medical conditions that could be managed on land can be more problematic at sea. It is therefore felt that, as a rule, it is only when personnel are older that the manning situation can only allow for some personnel to be retained on shore without this strict criterion, which may account for the lower medical discharge rate among these personnel.

52. **Figure 3** shows that during the five-year period 2008/09 - 2012/13:

- The age standardised rate of medical discharges for female personnel (12.8 per 1,000 personnel, 95%CI=11.8-13.8) was significantly higher than for male personnel (8.3 per 1,000 personnel, 95%CI=8.2-8.4).
- The rank specific rate of medical discharges for Other Ranks (10.1 per 1,000 personnel, 95%CI=9.9-10.2) was significantly higher than for Officers (2.6 per 1,000 personnel, 95%CI=1.6-3.7).
- The training status specific rate of medical discharges for untrained personnel (10.4 per 1,000 personnel, 95%CI=9.2-11.6) was significantly higher than for trained personnel (8.4 per 1,000 personnel, 95%CI=8.3-8.6).

53. **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 2008/09 - 2012/13.

Table 2: UK regular Naval Service medical discharges by principal ICD 10 cause code group, 2008/09- 2012/13, Numbers[1]

	All	2008/09	2009/10	2010/11	2011/12	2012/13
All Causes of medical discharge	**1,612**	**216**	**206**	**290**	**470**	**430**
All Cause Coded medical discharges	**1,605**	**212**	**205**	**290**	**469**	**429**
Infectious and parasitic diseases (A00 - B99)	**12**	~	~	~	5	~
Neoplasms (C00 - D48)	**19**	~	~	~	7	6
Blood disorders (D50 - D89)	**10**	0	~	~	~	~
Endocrine, nutritional and metabolic diseases (E00 - E90)	**35**	~	9	~	8	9
- Of Which diabetes (E10-E14)	***29***	~	*7*	~	*7*	*8*
- Of which insulin-dependent (E10)	***17***	~	~	~	~	*5*
- Of which non-Insulin-dependent (E11)	***12***	~	~	~	~	~
Mental and behavioural disorders (F00 - F99)	**176**	29	21	42	39	45
- Of which Mood disorders (F30 - F39)	***71***	*11*	*9*	*17*	*16*	*18*
- Of Which depression (F32 & F33)	***63***	*9*	*8*	*16*	*14*	*16*
- Of which Neurotic, stress related and somatoform disorders (F40 - F48)	***80***	*13*	*7*	*19*	*17*	*24*
- Of which post-traumatic stress disorder (PTSD) (F431)	***35***	~	~	*7*	*6*	*14*
- Of which adjustment disorder (F432)	***15***	*5*	~	~	~	~
Nervous system disorders (G00 - G99)	**60**	9	12	11	17	11
- Of which epilepsy (G40)	***21***	~	~	~	*5*	*5*
Eye and adnexa diseases (H00 - H59)	**20**	0	~	~	7	7
- Of which blindness, low vision and visual disturbance (H53 & H54)	***6***	*0*	*0*	~	~	~
Ear and mastoid process diseases (H60 - H95)	**76**	7	7	5	32	25
- Of which hearing loss (H833 & H90 - H91)	***70***	~	*7*	~	*30*	*23*
- Of which noise-induced hearing loss (H833)	***41***	~	~	~	*16*	*18*
- Of which tinnitus (H931)	***~***	~	*0*	*0*	*0*	*0*
Circulatory system disorders (I00 - I99)	**40**	~	7	10	13	~
Respiratory system disorders (J00 - J99)	**33**	~	7	~	12	~
- Of which asthma (J45 & J46)	***28***	~	*5*	*5*	*11*	~
Digestive system disorders (K00 - K93)	**41**	~	~	8	14	12
Skin and subcutaneous tissue diseases (L00 - L99)	**42**	~	~	7	14	12
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	**937**	137 [r]	116	166	262	256
- Of which Injuries and disorders of the knee[2]	***273***	*39*	*26*	*42*	*90*	*76*
- Of which knee pain (M2556)	***94***	*12*	*13*	*13*	*31*	*25*
- Of which back pain (M549)	***124***	*13*	*20*	*26*	*26*	*39*
- Of which low back pain (M544-5)	***102***	*12*	*15*	*20*	*22*	*33*
- Of which heat injury (T67)	***0***	*0*	*0*	*0*	*0*	*0*
- Of which cold injury (T68 & T69)	***12***	*5*	~	~	~	~
Genitourinary system diseases (N00 - N99)	**14**	0	0	~	8	~
Pregnancy, childbirth and puerperium (O00 - O99)	**0**	0	0	0	0	0
Congenital malformations (Q00 - Q99)	**11**	~	~	~	~	~
Clinical and laboratory findings (R00 - R99)	**57**	6	7	9	19	16
Factors influencing health status (Z00 - Z99)	**22**	~ [r]	~	6	6	8
No details held on principle condition for medical boarding	**~**	4	~	0	~	~
Witheld consent	**~**	0	0	0	0	~

[1] Data presented as "~" has been suppressed in accordance with Defence Statistics' rounding policy (see paragraph 41)
[2] Injuries and disorders of the knee have been compiled using ICD 10 codes M17, M22, M23, M2406, M2416, M2436, M2446, M2536, M2556, M2566, M2586, M2596, M7046, M7126, M7636, M7656, M925, S83, S89
[r] Indicates a change in previously published data (see Annex A)

54. **Table 3** presents the proportion of cause coded medical discharges among UK Regular Naval Service personnel by principal ICD 10 cause code group and financial year for the five year period 2008/09 - 2012/13.

Table 3: UK regular Naval Service medical discharges by principal ICD 10 cause code group, 2008/09- 2012/13, Percentages[1]

Cause Code Groupings	All	2008/09	2009/10	2010/11	2011/12	2012/13
Infectious and parasitic diseases (A00 - B99)	**<1%**	<1%	<1%	<1%	1%	<1%
Neoplasms (C00 - D48)	**1%**	<1%	<1%	1%	1%	1%
Blood disorders (D50 - D89)	**<1%**	0%	<1%	1%	<1%	<1%
Endocrine, nutritional and metabolic diseases (E00 - E90)	**2%**	2%	4%	2%	2%	2%
Mental and behavioural disorders (F00 - F99)	**11%**	14%	10%	14%	8%	10%
Nervous system disorders (G00 - G99)	**4%**	4%	6%	4%	4%	3%
Eye and adnexa diseases (H00 - H59)	**1%**	0%	<1%	1%	1%	2%
Ear and mastoid process diseases (H60 - H95)	**5%**	3%	3%	2%	7%	6%
Circulatory system disorders (I00 - I99)	**2%**	2%	3%	3%	3%	1%
Respiratory system disorders (J00 - J99)	**2%**	2%	3%	2%	3%	1%
Digestive system disorders (K00 - K93)	**3%**	1%	2%	3%	3%	3%
Skin and subcutaneous tissue diseases (L00 - L99)	**3%**	1%	3%	2%	3%	3%
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	**58%**	65%	57%	57%	56%	60%
Genitourinary system diseases (N00 - N99)	**<1%**	0%	0%	<1%	2%	1%
Pregnancy, childbirth and puerperium (O00 - O99)	**0%**	0%	0%	0%	0%	0%
Congenital malformations (Q00 - Q99)	**<1%**	<1%	<1%	<1%	<1%	<1%
Clinical and laboratory findings (R00 - R99)	**4%**	3%	3%	3%	4%	4%
Factors influencing health status (Z00 - Z99)	**1%**	<1%	<1%	2%	1%	2%

[1]Data presented as "<1%" represent a value of greater than 0% but smaller than 1%

55. During the five-year period the most common cause of medical discharge for the Naval Service was musculoskeletal disorders and injuries with 58% (n=937) of all cause coded medical discharges.

- Injuries and disorders of the knee accounted for 29% (n=273) of all musculoskeletal disorders and injuries, of which knee pain accounted for 34% (n=94) and 10% of all musculoskeletal disorders and injuries.
- Back pain accounted for 13% (n=124) of all musculoskeletal disorders and injuries, of which low back pain accounted for 82% (n=102). Back pain (including low back pain) accounted for 8% of all cause coded medical discharges.

56. Musculoskeletal injuries and disorders, as a percentage of all cause coded medical discharges, has been decreasing from 1999/2000 (71%); it currently accounts for 60% of all cause coded medical discharges.

57. The second most common cause of medical discharge was mental and behavioural disorders with 11% (n=176) of all cause coded medical discharges. The majority of mental and behavioural disorders were the result of neurotic disorders (n=80, 45%) and mood disorders (n=71, 40%).

- Of the neurotic disorders the most common were post-traumatic stress disorder (PTSD) (n=35, 44%) and adjustment disorder (n=15, 19%). However, these disorders each made up only 3% of all cause coded medical discharges.
- Of the mood disorders, depression accounted for 89% (n=63) and accounted for 4% of all cause coded medical discharges.
- PTSD, over the past five years has increased at a greater rate than mental and behavioural disorders.

58. Hearing loss accounted for 92% (n=70) of all diseases of the ear and mastoid process, of which noise-induced hearing loss accounted for 59% (n=41). Medical discharges attributable to diseases of the ear and mastoid process only accounted for 5% (n=76) of all cause-coded medical discharges. Medical discharges attributable to diseases of the ear and mastoid process have seen an increase in 2011/12 and 2012/13 compared to the previous years. As a percentage of all cause coded medical discharges, ear and mastoid process has increased from 3% in 2008/09 to 6% in 2012/13. The change over this time period is likely to reflect changes in policy and practices and the work underway by the Defence Hearing Working Group.

59. The main causes of medical discharges which have contributed to the rise form 2009/10 to 2012/13:

- Musculoskeletal disorders and injuries have shown an increase of 121% from 116 in 2009/10 to 258 in 2012/13.
- Mental and behavioural disorders have shown an increase of 114% from 21 in 2009/10 to 45 in 2012/13
- Ear and mastoid process diseases have shown an increase of 257% from seven in 2009/10 to 25 in 2012/13.

Army

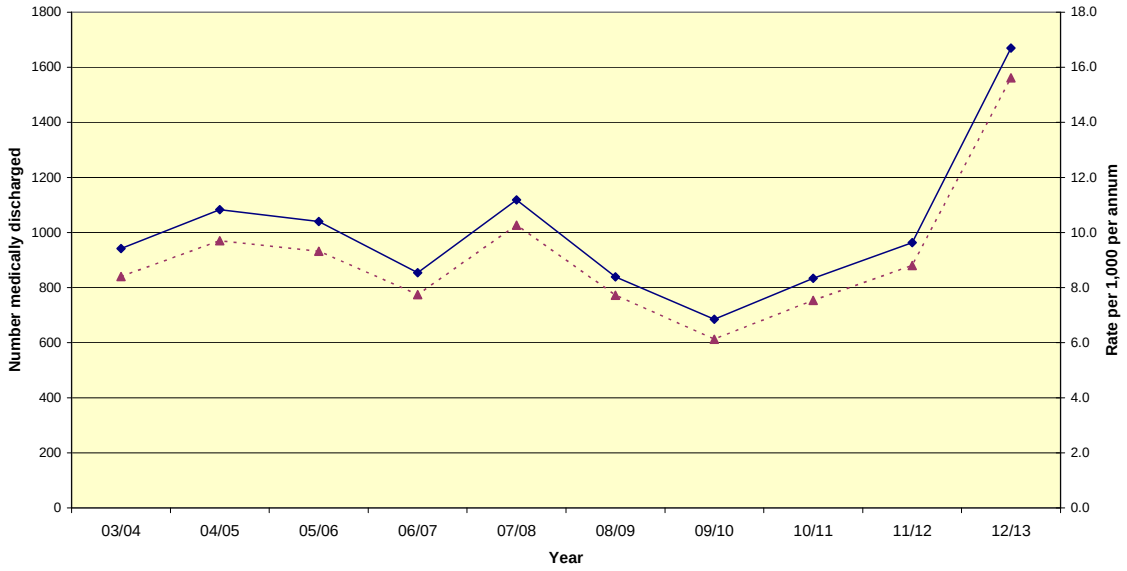

Figure 4: UK Regular Army medical discharges, 2003/04 - 2012/13, Crude Rates per 1,000 strength per year and Numbers

60. **Figure 4** shows the rate and number of personnel medically discharged from UK Regular Army during the ten-year period 2003/04 - 2012/13. The graph shows a decrease in both the number and rate of medical discharges between 2007/08 and 2009/10, before increasing to a high point in 2012/13. The largest year on year increase was seen between 2011/12 and 2012/13 (73%).

61. The decease in the number and rate between 2007/08 and 2009/10 may be partly due to the Service endeavouring to retain seriously injured personnel if there is a role for them to fulfil, or if retention is in the interest of both the individual and the Service[d]. The rise in the last two financial years is likely to be a result of the improved management of the recovery care pathway, the completion of treatment and the restricted number of non-deployable roles available with the Army.

[d] In February 2010 the Army Recovery Capability (ARC) was launched. The ARC ensures that wounded, injured, or sick personnel are focussed on achieving a successful outcome that is right for the individual and right for the Army. It ensures personnel who need it, have access to the key services and resources needed to help them return to duty or make a smooth transition into an appropriately skilled civilian life. The key services and resources are available to personnel from all three Services, including mobilised reservists

62. **Table 4** 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 2008/09 - 2012/13.

Table 4: UK regular Army medical discharges[1] by age group[1], gender[1], rank[1] and training status[1], 2008/09 - 2012/13, Numbers[2] and Rates[3] per 1,000 strength

	All Years		2008/09		2009/10		2010/11		2011/12		2012/13	
	n	r	n	r	n	r	n	r	n	r	n	r
All	**4,991**	**9.1**	**839**	**7.7**	**685**	**6.1**	**834**	**7.5**	**963**	**8.8**	**1,670**	**15.6**
Under 20	**916**	18.6	246	20.9	181	15.4	164	17.4	148	17.5	177	22.2
20-24	**1,640**	11.6	284	10.2	268	9.1	324	11.2	278	9.9	486	18.0
25-29	**1,039**	8.3	153	6.3	119	4.8	175	7.0	199	7.9	393	15.6
30-34	**638**	7.0	61	3.7	48	2.8	80	4.3	154	8.0	295	15.2
35-39	**390**	5.1	51	3.0	38	2.3	43	2.7	94	6.4	164	11.7
40-44	**271**	6.6	34	4.9	22	2.8	36	4.2	65	7.3	114	13.2
45-49	**54**	3.8	~	1.5	~	1.4	~	1.3	16	5.2	26	8.6
50+	**43**	5.1	~	3.9	~	3.0	~	4.6	9	5.1	15	8.8
Male	**4,527**	8.8	752	7.5	617	6.0	750	7.3	887	8.8	1,521	15.5
Female	**464**	10.8	87	10.6	68	8.0	84	9.9	76	8.9	149	17.4
Officers	**167**	2.3	37	2.5	29 [r]	2.0 [r]	28	1.9	28	1.9	45	3.1
Other ranks	**4,824**	10.2	802	8.5	656 [r]	6.8	806	8.4	935	9.9	1,625	17.6
Trained	**2,761**	5.6	339 [r]	3.5 [r]	260 [r]	2.6 [r]	404 [r]	4.0	574 [r]	5.7 [r]	1,184	12.1
Untrained	**2,230**	44.0	500 [r]	45.9 [r]	425 [r]	35.4 [r]	430 [r]	48.1 [r]	389 [r]	41.2 [r]	486	51.6

[1]As recorded on the Joint Personnel Administration System (JPA) at the time of Discharge.
[2]Data presented as "~" has been suppressed in accordance with Defence Statistics' rounding policy (see paragraph 41).
[3]Age 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 (see paragraphs 36-39).
[r]Indicates a change in previously published data (see Annex A)

63. During the five year reporting period 2008/09 - 2012/13, a total of 4,991 Army personnel were medically discharged, at an overall crude rate of 9.1 per 1,000 personnel. There were certain sub-groups where the rates of medical discharge were higher: personnel aged under 25, females, Other (non-Officer) Ranks and untrained personnel.

64. Annual numbers and crude rates of medical discharge have continued to rise from 2009/10 (n = 685, rate = 6.1 per 1,000 strength) to the highest in 2012/13 (n = 1,670, rate = 15.6 per 1,000 strength). The largest year on year increase was seen from 2011/12 to 2012/13 with an increase of 73%. This continued rise over this time period is likely to reflect changes in policy and practices in the management of the recovery pathway and the medical boarding process.

65. In line with the overall increase in medical discharges in 2012/13, all demographic groups demonstrated a higher rate of medical discharge, when compared to 2008/09 - 2011/12. The demographic group which showed the biggest increase in rate from 2011/12 to 2012/13 was trained personnel, which saw an increase in the rate of 112%.

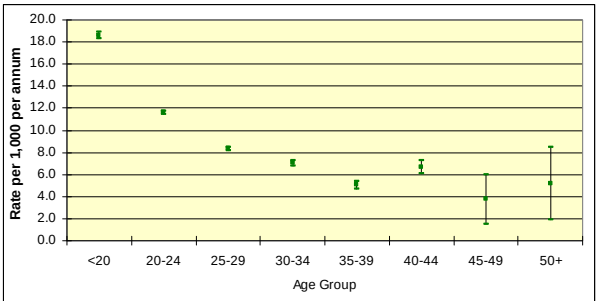

Figure 5: UK Regular Army medical discharges by age group, 2005/06 - 2009/10, Annualised gender-standardised rates per 1,000 strength and 95% CI

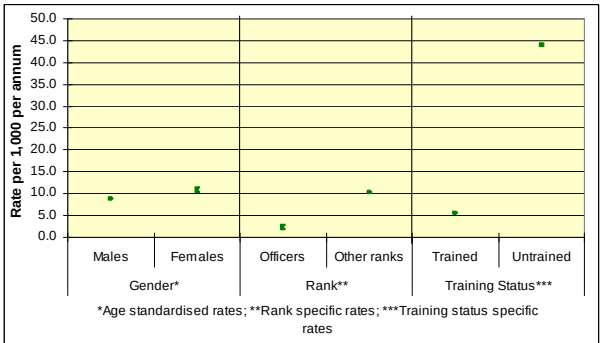

Figure 6: UK Regular Army medical discharges by gender, rank and training status, 2005/06 - 2009/10, Annualised gender-standardised rates per 1,000 strength and 95% CI

66. **Figure 5** shows that during the five year reporting period 2008/09 - 2012/13, the gender standardised rates of medical discharges for personnel under 25 years old were significantly higher than for personnel aged over 25 years old.

67. The higher rate of discharge seen amongst the younger age-groups is likely to be linked to the high rate of discharge for untrained personnel (see paragraph 67).

68. **Figure 6** shows that during the five-year period 2008/09 - 2012/13:

- The age standardised rate of medical discharges for female personnel (10.8 per 1,000 personnel, 95% CI=10.3-11.2) was significantly higher than for male personnel (8.8 per 1,000 personnel, 95% CI=8.8-8.8).
- The rank specific rate of medical discharges for Other Ranks (10.2 per 1,000 personnel, 95% CI=10.1-10.2) was significantly higher than for Officers (2.3 per 1,000 personnel, 95% CI=1.7-2.8).
- The training status specific rate of medical discharges for untrained personnel (44.0 per 1,000 personnel, 95% CI=43.8-44.2) was significantly higher than for trained personnel (5.6 per 1,000 personnel, 95% CI=5.5-5.6).

69. The higher rate seen among untrained personnel is thought to reflect both the intensive physical nature of the training programmes for new Army recruits, and the demanding entry standards into the Field Army once qualified. Recruits whose fitness is found to fall below entry standards during training are readily medically discharged, whereas trained Army personnel may be retained if suitable employment can be found which is occupationally suitable for the individual's medical condition.

70. **Table 5** 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 2008/09 - 2012/13.

Table 5: UK regular Army medical discharges by principal ICD 10 cause code group, 2008/09-2012/13, Numbers[1]

	All	2008/09	2009/10	2010/11	2011/12	2012/13
All Causes of medical discharge	**4,991**	**839**	**685**	**834**	**963**	**1,670**
All Cause Coded medical discharges	**4,929**	**809**	**677**	**832**	**963**	**1,648**
Infectious and parasitic diseases (A00 - B99)	**37**	~	~	~	8	16
Neoplasms (C00 - D48)	**36**	7	~	~	11	10
Blood disorders (D50 - D89)	**18**	~	~	~	~	9
Endocrine, nutritional and metabolic diseases (E00 - E90)	**56**	~	~	7	13	29
- Of Which diabetes (E10-E14)	***38***	*~*	*~*	*~*	*7*	*21*
- Of which insulin-dependent (E10)	***29***	*~*	*~*	*~*	*6*	*16*
- Of which non-Insulin-dependent (E11)	***6***	*0*	*~*	*~*	*~*	*~*
Mental and behavioural disorders (F00 - F99)	**682**	140	102	128	124	188
- Of which Mood disorders (F30 - F39)	***174***	*37*	*25*	*33*	*40*	*39*
- Of Which depression (F32 & F33)	***133***	*31*	*17*	*25*	*28*	*32*
- Of which Neurotic, stress related and somatoform disorders (F40 - F48)	***395***	*71*	*60*	*71*	*69*	*124*
- Of which post-traumatic stress disorder (PTSD) (F431)	***208***	*32*	*26*	*33*	*44*	*73*
- Of which adjustment disorder (F432)	***49***	*10*	*12*	*9*	*8*	*10*
Nervous system disorders (G00 - G99)	**177**	20	31	23	39	64
- Of which epilepsy (G40)	***63***	*6*	*11*	*11*	*13*	*22*
Eye and adnexa diseases (H00 - H59)	**48**	7	7	10	13	11
- Of which blindness, low vision and visual disturbance (H53 & H54)	***24***	*~*	*~*	*5*	*6*	*7*
Ear and mastoid process diseases (H60 - H95)	**242**	21	17	37	66	101
- Of which hearing loss (H833 & H90 - H91)	***231***	*18*	*17*	*34*	*63*	*99*
- Of which noise-induced hearing loss (H833)	***99***	*~*	*~*	*14*	*33*	*44*
- Of which tinnitus (H931)	***~***	*0*	*0*	*0*	*~*	*~*
Circulatory system disorders (I00 - I99)	**111**	17	8	26	22	38
Respiratory system disorders (J00 - J99)	**74**	10	16	14	16	18
- Of which asthma (J45 & J46)	***65***	*10*	*11*	*13*	*16*	*15*
Digestive system disorders (K00 - K93)	**84**	13	8	11	17	35
Skin and subcutaneous tissue diseases (L00 - L99)	**75**	15	11	13	19	17
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	**2,930**	479 [r]	387 [r]	496	552	1,016
- Of which Injuries and disorders of the knee [2]	***619***	*100*	*89*	*134*	*116*	*180*
- Of which knee pain	***272***	*53*	*42*	*62*	*40*	*75*
- Of which back pain (M549)	***366***	*61*	*46*	*62*	*72*	*125*
- Of which low back pain (M544-5)	***269***	*36*	*33*	*40*	*56*	*104*
- Of which heat injury (T67)	***19***	*~*	*~ [r]*	*5 [r]*	*~*	*7*
- Of which cold injury (T68 & T69)	***226***	*61*	*28*	*16*	*36*	*85*
Genitourinary system diseases (N00 - N99)	**22**	~	~	6	7	6
Pregnancy, childbirth and puerperium (O00 - O99)	**0**	0	0	0	0	0
Congenital malformations (Q00 - Q99)	**24**	~	6	~	5	6
Clinical and laboratory findings (R00 - R99)	**189**	37	37	36	35	44
Factors influencing health status (Z00 - Z99)	**124**	25 [r]	36 [r]	9	14	40
No details held on principle condition for medical boarding	**55**	~	~	~	0	22
Witheld consent	**7**	~	~	~	0	0

[1] Data presented as "~" has been suppressed in accordance with Defence Statistics' rounding policy (see paragraph 41)
[2] Injuries and disorders of the knee have been compiled using ICD 10 codes M17, M22, M23, M2406, M2416, M2436, M2446, M2536, M2556, M2566, M2586, M2596, M7046, M7126, M7636, M7656, M925, S83, S89.
[r] Indicates a change in previously published data (see Annex A)

71. **Table 6** presents the proportion of cause coded medical discharges among UK Regular Army personnel by principal ICD 10 cause code group and financial year for the five year period 2008/09 - 2012/13.

Table 6: UK regular Army medical discharges by principal ICD 10 cause code group, 2008/09-2012/13, Percentages[1]

Cause Code Groupings	All	2008/09	2009/10	2010/11	2011/12	2012/13
Infectious and parasitic diseases (A00 - B99)	**<1%**	<1%	<1%	<1%	<1%	<1%
Neoplasms (C00 - D48)	**<1%**	<1%	<1%	<1%	1%	<1%
Blood disorders (D50 - D89)	**<1%**	<1%	<1%	<1%	<1%	<1%
Endocrine, nutritional and metabolic diseases (E00 - E90)	**1%**	<1%	<1%	<1%	1%	2%
Mental and behavioural disorders (F00 - F99)	**14%**	17%	15%	15%	13%	11%
Nervous system disorders (G00 - G99)	**4%**	2%	5%	3%	4%	4%
Eye and adnexa diseases (H00 - H59)	**<1%**	<1%	1%	1%	1%	<1%
Ear and mastoid process diseases (H60 - H95)	**5%**	3%	3%	4%	7%	6%
Circulatory system disorders (I00 - I99)	**2%**	2%	1%	3%	2%	2%
Respiratory system disorders (J00 - J99)	**2%**	1%	2%	2%	2%	1%
Digestive system disorders (K00 - K93)	**2%**	2%	1%	1%	2%	2%
Skin and subcutaneous tissue diseases (L00 - L99)	**2%**	2%	2%	2%	2%	1%
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	**59%**	59%	57%	60%	57%	62%
Genitourinary system diseases (N00 - N99)	**<1%**	<1%	<1%	<1%	<1%	<1%
Pregnancy, childbirth and puerperium (O00 - O99)	**0%**	0%	0%	0%	0%	0%
Congenital malformations (Q00 - Q99)	**<1%**	<1%	<1%	<1%	<1%	<1%
Clinical and laboratory findings (R00 - R99)	**4%**	5%	5%	4%	4%	3%
Factors influencing health status (Z00 - Z99)	**3%**	3%	5%	1%	1%	2%

[1]Data presented as "<1%" represent a value of greater than 0% but smaller than 1%

72. During the five-year period the most common cause of medical discharge for the Army was musculoskeletal disorders and injuries with 59% (n=2,930) of all cause coded medical discharges. Within this cause group:

- Injuries and disorders of the knee accounted for 21% (n=619) of all musculoskeletal disorders and injuries, of which knee pain accounted for 44% (n=272). Medical discharges for Injuries and disorders of the knee accounted for 13% of all cause coded medical discharges.
- Back pain accounted for 12% (n=366) of all musculoskeletal disorders and injuries, of which low back pain accounted for 73% (n=269). Medical discharges for back pain accounted for 7% of all cause coded medical discharges.
- Despite the number of medical discharges as a result of musculoskeletal disorders and injuries more than doubling over the reporting period, the proportion of medical discharges as a result of musculoskeletal disorders and injuries has remained stable. Over the longer term, musculoskeletal disorders and injuries, as proportion of all cause coded medical discharges, has been steadily decreasing form 77% in 2000/01 to 57% in 2011/12.

73. Medical discharges attributable to cold injuries accounted for 8% (n=226) of all musculoskeletal disorders and injuries and 5% of all cause coded medical discharges. Medical discharges attributable to cold injuries have increased since 2009/10, at a greater rate than musculoskeletal disorders and injuries for the same period, 204% and 163% respectively. Less than 1% (n=19) of all cause coded medical discharges were attributable to heat injuries.

74. The second most common cause of medical discharge was mental and behavioural disorders with 14% (n=682) of all cause coded medical discharges. The majority of mental and behavioural disorders were made up by neurotic disorders (n=395, 58%) and mood disorders (n=174, 26%).

- Of the neurotic disorders the most common were post-traumatic stress disorder (PTSD) (n=208, 53%) and adjustment disorder (n=49, 12%). However, these disorders made up only 5% of all cause coded medical discharges.
- Of the mood disorders, depression accounted for 76% (n=133) and accounted for 3% of all cause coded medical discharges.
- Mental and behavioural disorders, as a proportion of all cause coded medical discharges, have been steadily increasing, from 5% in 1999/2000 to 17% in 2008/09. From 2008/09, mental and behavioural disorders have been decreasing to the current proportion of 11%.

75. Hearing loss accounted for 95% (n=231) of all diseases of the ear and mastoid process, less than five of these were for noise-induced hearing loss. Medical discharges attributable to diseases of the ear

and mastoid process only accounted for 5% (n=242) of all cause-coded medical discharges. These have increased in 2012/13 with 101 cases compared with just 21 in 2008/09, resulting in a 381% increase. This change reflects changes in policy and practices and the work underway by the Defence Hearing Working Group.

76. Causes of medical discharge for the Army have been scrutinised in order to identify whether any specific causes have been drivers for the 73% increase between 2011/12 and 2012/13. All the main causes of medical discharge have increased at a similar rate; therefore the rise in total medical discharges cannot be attributed to any single principal cause code.

RAF

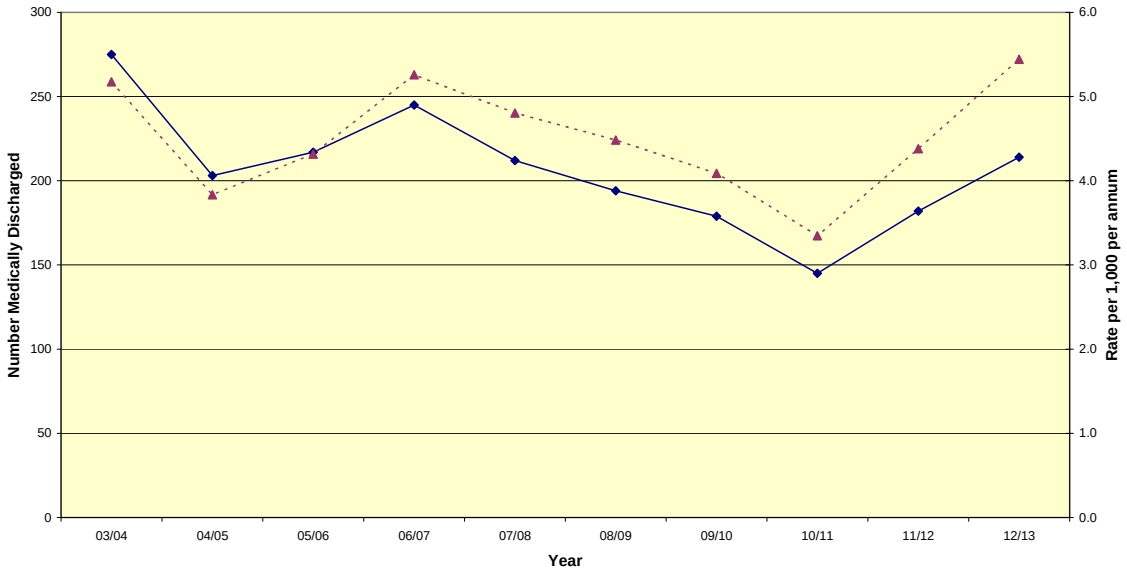

Figure 7: UK Regular RAF medical discharges, 2003/04 - 2012/13, Crude Rates per 1,000 strength per year and Numbers

77. **Figure 7** shows the rate and number of personnel medically discharged from UK Regular RAF during the ten-year period 2003/04 - 2012/13. The graph shows a decrease in both the number and rate of medical discharges between 2006/07 and 2010/11, before increasing by 48% between 2010/11 and 2012/13.

78. The decease in the number and rate between 2006/07 and 2010/11 may be partly due to the Service endeavouring to retain seriously injured personnel if there is a role for them to fulfil, or if retention is in the interest of both the individual and the Service[e]. The rise in the last two financial years is likely to be a result of the improved management of the recovery care pathway, the completion of treatment and the restricted number of non-deployable roles available within the RAF.

79. 2010/11 and 2012 show an increasing gap between the number of medical discharges, and the rate per 1,000 personnel. This is a result of the reduction in manpower numbers seen within the RAF in recent years, combined with the increase observed in the number of medical discharges.

[e] As personnel wounded, injured or sick and those requiring long term (greater than three months) support for medical, welfare or disciplinary reasons are assigned to a Personnel Recovery Unit (formerly known as the Personnel Holding Flight) .

80. **Table 7** 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 2008/09 - 2012/13.

Table 7: UK regular RAF medical discharges[1] by age group[1], gender[1], rank[1] and training status[1], 2008/09 - 2012/13, Numbers[2] and Rates[3] per 1,000 strength

	All Years		2008/09		2009/10		2010/11		2011/12		2012/13	
	n	r	n	r	n	r	n	r	n	r	n	r
All	**914**	**4.3**	**194** [r]	**4.5**	**179**	**4.1**	**145**	**3.3**	**182**	**4.4**	**214**	**5.4**
Under 20	**26**	3.6	7	4.4	13	6.0	~	2.5	0	0.0	~	3.2
20-24	**132**	3.6	34	4.6	38	5.1	~	2.4	19	2.7	~	3.5
25-29	**183**	4.0	41	4.4	33	3.6	38	4.1	37	4.1	34	3.9
30-34	**136**	4.0	28	4.6	24	3.7	13	1.9	27	3.7	44	6.0
35-39	**133**	4.0	29	3.5	23	3.1	25	3.7	25	4.1	31	5.7
40-44	**156**	5.6	33	5.8	22	3.8	30	5.1	38	6.7	33	6.2
45-49	**78**	4.6	12 [r]	3.6 [r]	15	4.4	~	2.6	18	5.3	~	7.3
50+	**70**	7.1	10	5.6	11	5.8	~	3.9	18	8.7	~	11.2
Male	**698**	3.8	135	3.6	136	3.6	101	2.7	151	4.2	175	5.2
Female	**216**	7.7	59 [r]	10.3 [r]	43	7.2	44	7.4	31	5.4	39	7.2
Officers	**102**	2.2	15 [r]	1.6 [r]	15	1.5	13	1.3	26	2.8	33	3.7
Other ranks	**812**	5.0	179	5.3	164	4.8	132	3.9	156	4.9	181	5.9
Trained	**804**	4.1	169	4.3	135	3.4	128	3.2	171	4.3	201	5.4
Untrained	**110**	7.3	25 [r]	6.8 [r]	44	10.2	17	5.6	11	5.2	13	7.0

[1] As recorded on the Joint Personnel Administration System (JPA).
[2] Data presented as "~" has been suppressed in accordance with Defence Statistics' rounding policy (see paragraph 41).
[3] Age 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 (see paragraphs 36-39).
[r] Indicates a change in previously published data (see Annex A)

81. During the five-year period 2008/09 - 2012/13, a total of 914 RAF personnel were medically discharged, at an overall crude rate of 4.3 per 1,000 personnel. Overall annual numbers have increased by 10% over the reporting period, despite a dip in numbers in 2010/11. Crude rates of medical discharge have also increased.

82. During the five-year period 2008/09 - 2012/13 there were certain sub-groups where the rates of medical discharge were higher than the overall crude rate: personnel aged over 50, females, Other (non-Officer) Ranks and untrained personnel.

83. The most noticeable changes in 2012/13 were:

- Personnel aged over 50 saw an increase in rate from 3.9 in 2010/11 to 11.2 per 1,000 personnel in 2012/13. This is compared with the overall rate for the time period of 7.1 per 1,000 personnel.
- Personnel aged 30-34 saw an increase in rate from 3.7 per 1,000 personnel in 2011/12 to 6.0 per 1,000 personnel in 2012/13. This is compared with the overall rate for the time period of 4.0 per 1,000 personnel.

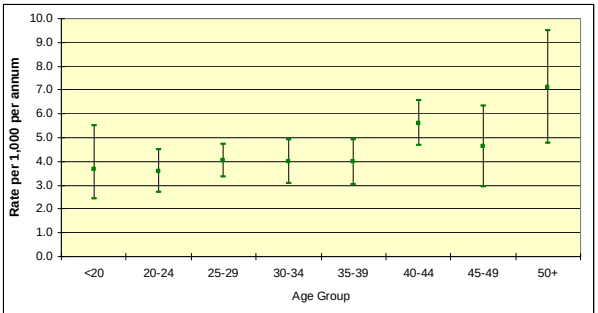

Figure 8: UK Regular RAF medical discharges by age group, 2007/08 - 2011/12, Annualised gender-standardised rates per 1,000 strength and 95% CI

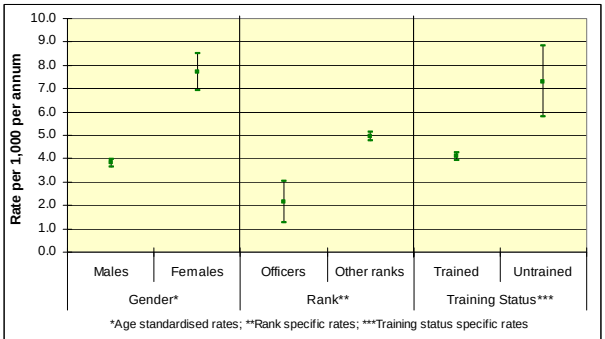

Figure 9: UK Regular RAF medical discharges by gender, rank and training status, 2007/08 - 2011/12, Annualised gender-standardised rates per 1,000 strength and 95% CI

84. **Figure 8** shows that during the five-year period 2008/09 - 2012/13, personnel aged 50 and over had the highest rate of medical discharge at 7.1 per 1,000.

85. **Figure 9** shows that during the five-year period 2008/09 - 2012/13:

- The age standardised rate of medical discharges for female personnel (7.7 per 1,000 personnel, 95%CI=6.9-8.5) was significantly higher than male personnel (3.8 per 1,000 personnel, 95%CI=3.6-4.0).
- The rank specific rate of medical discharges for Other Ranks (5.0 per 1,000 personnel, 95%CI=4.8-5.1) was significantly higher than for Officers (2.2 per 1,000 personnel, 95%CI=1.3-3.0).
- The training status specific rate of medical discharges for untrained personnel (7.3 per 1,000 personnel, 95%CI=5.8-8.8) was significantly higher than for trained personnel (4.1 per 1,000 personnel, 95%CI=3.9-4.3). The higher rate seen among untrained personnel is thought to be a reflection of a demanding physical training regime.

86. **Table 8** 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 2008/09 - 2012/13.

Table 8: UK regular RAF medical discharges by principal ICD 10 cause code group, 2008/09 - 2012/13, Numbers[1]

	All	2007/08	2008/09	2009/10	2010/11	2011/12
All Causes of medical discharge	**914**	**194** [r]	**179**	**145**	**182**	**214**
All Cause Coded medical discharges	**821**	**173**	**145**	**129**	**173**	**201**
Infectious and parasitic diseases (A00 - B99)	~	~	~	0	~	~
Neoplasms (C00 - D48)	21	6	5	~	6	~
Blood disorders (D50 - D89)	~	0	0	0	0	~
Endocrine, nutritional and metabolic diseases (E00 - E90)	8	~	~	~	~	~
- Of Which diabetes (E10-E14)	*7*	~	~	~	~	~
- Of which insulin-dependent (E10)	~	~	~	~	~	*0*
- Of which non-Insulin-dependent (E11)	~	*0*	*0*	~	*0*	~
Mental and behavioural disorders (F00 - F99)	149	40	23	30	26	30
- Of which Mood disorders (F30 - F39)	*73*	*23*	*11*	*14*	*9*	*16*
- Of Which depression (F32 & F33)	*68*	*21*	*11*	*13*	*9*	*14*
- Of which Neurotic, stress related and somatoform disorders (F40 - F48)	*56*	*11*	*8*	*10*	*14*	*13*
- Of which post-traumatic stress disorder (PTSD) (F431)	*12*	~	~	~	~	~
- Of which adjustment disorder (F432)	*24*	*8*	~	~	*5*	*7*
Nervous system disorders (G00 - G99)	53	10	11	7	13	12
- Of which epilepsy (G40)	*6*	~	*0*	*0*	~	~
Eye and adnexa diseases (H00 - H59)	8	~	~	0	~	~
- Of which blindness, low vision and visual disturbance (H53 & H54)	~	*0*	~	*0*	~	*0*
Ear and mastoid process diseases (H60 - H95)	20	~	~	~	6	10
- Of which hearing loss (H833 & H90 - H91)	*16*	~	~	~	*6*	*7*
- 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)	20	~	~ [r]	~	9	~
Respiratory system disorders (J00 - J99)	6	~	~	0	~	0
- Of which asthma (J45 & J46)	~	~	~	*0*	~	*0*
Digestive system disorders (K00 - K93)	19	6	~	~	~	8
Skin and subcutaneous tissue diseases (L00 - L99)	14	~	~	~	~	~
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)[2]	460	90	85	73	94	118
- Of which Injuries and disorders of the knee[3]	*86*	*17*	*11*	*17*	*20*	*21*
- Of which knee pain (M2556)	*38*	~	~	*11*	~	*9*
- Of which back pain (M549)	*127*	*19*	*19*	*16*	*26*	*47*
- Of which low back pain (M544-5)	*108*	*16*	*17*	*12*	*21*	*42*
- Of which heat injury (T67)	*0*	*0*	*0*	*0*	*0*	*0*
- Of which cold injury (T68 & T69)	*7*	~	~	*0*	~	~
Genitourinary system diseases (N00 - N99)	7	~	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)	24	~	~	6	6	7
Factors influencing health status (Z00 - Z99)	~	~	0	~	0	0
No details held on principle condition for medical boarding	43	~ [r]	23	0	0	0
Witheld consent	50	~	11	16	~	13

[1] Data presented as "~" has been suppressed in accordance with Defence Statistics' rounding policy (see paragraph 41)

[4]Injuries and disorders of the knee have been compiled using ICD 10 codes M17, M22, M23, M2406, M2416, M2436, M2446, M2536, M2556, M2566, M2586, M2596, M7046, M7126, M7636, M7656, M925, S83, S89.

[r]Indicates a change in previously published data (see Annex A)

87. **Table 9** presents the proportion of cause coded medical discharges among UK Regular RAF personnel by principal ICD 10 cause code group and financial year for the five year period 2008/09 - 2012/13.

Table 9: UK regular RAF medical discharges by principal ICD 10 cause code group, 2008/09-2012/13, Percentages[1]

Cause Code Groupings	All	2008/09	2009/10	2010/11	2011/12	2012/13
Infectious and parasitic diseases (A00 - B99)	**<1%**	<1%	<1%	0%	<1%	<1%
Neoplasms (C00 - D48)	**3%**	3%	3%	<1%	3%	1%
Blood disorders (D50 - D89)	**<1%**	0%	0%	0%	0%	<1%
Endocrine, nutritional and metabolic diseases (E00 - E90)	**<1%**	<1%	<1%	2%	1%	<1%
Mental and behavioural disorders (F00 - F99)	**18%**	23%	16%	23%	15%	15%
Nervous system disorders (G00 - G99)	**6%**	6%	8%	5%	8%	6%
Eye and adnexa diseases (H00 - H59)	**<1%**	<1%	2%	0%	2%	<1%
Ear and mastoid process diseases (H60 - H95)	**2%**	1%	<1%	<1%	3%	5%
Circulatory system disorders (I00 - I99)	**2%**	1%	3%	2%	5%	1%
Respiratory system disorders (J00 - J99)	**<1%**	2%	1%	0%	<1%	0%
Digestive system disorders (K00 - K93)	**2%**	3%	<1%	<1%	2%	4%
Skin and subcutaneous tissue diseases (L00 - L99)	**2%**	1%	2%	2%	1%	2%
Musculoskeletal disorders (M00 - M99) and Injuries (S00 - T98)	**56%**	52%	59%	57%	54%	59%
Genitourinary system diseases (N00 - N99)	**<1%**	2%	0%	<1%	<1%	<1%
Pregnancy, childbirth and puerperium (O00 - O99)	**0%**	0%	0%	0%	0%	0%
Congenital malformations (Q00 - Q99)	**<1%**	<1%	2%	0%	0%	0%
Clinical and laboratory findings (R00 - R99)	**3%**	2%	1%	5%	3%	3%
Factors influencing health status (Z00 - Z99)	**<1%**	<1%	0%	2%	0%	0%

[1]Data presented as "<1%" represent a value of greater than 0% but smaller than 1%

88. During the five-year period the most common cause of medical discharge for the RAF was musculoskeletal disorders and injuries with 56% (n=460) of all cause coded medical discharges.

- Back pain accounted for 28% (n=127) of all musculoskeletal disorders and injuries, of which low back pain accounted for 85% (n=108). RAF medical discharges for back pain accounted for 15% of all caused code medical discharges.
- Since 2006/07 musculoskeletal disorders and injuries, as a proportion of cause coded medical discharges has been increasing and currently accounts for 59% of all medical discharges. Injuries and disorders of the knee accounted for 19% (n=86) of all musculoskeletal disorders and injuries, of which knee pain accounted for 44% (n=38).
- Musculoskeletal disorders and injuries, as a proportion of cause coded medical discharges, steadily decreased from 65% in 1995/96 to 39% in 2004/05.

89. The second most common cause of medical discharge was mental and behavioural disorders with 18% (n=149) of all cause coded medical discharges. The majority of mental and behavioural disorders were made up by mood disorders (n=73, 49%) and neurotic disorders (n=56, 38%).

- Of the mood disorders, depression accounted for 93% (n=68) and 8% of all cause coded medical discharges.
- Of the neurotic disorders the most common were adjustment disorder (n=24, 43%) and post-traumatic stress disorder (PTSD) (n=12, 21%).
- Mental and behavioural disorders, as a proportion of cause coded medical discharges, remained steady at around 11% from 1995/96 to 2002/03. This peaked at around 33% from 2004/05 to 2006/07 before decreasing to the current value of 15%.

90. Hearing loss accounted for 80% (n=16) of all diseases of the ear and mastoid process, less than five of these were for noise-induced hearing loss. Medical discharges attributable to diseases of the ear and mastoid process only accounted for only 2% (n=20) of all cause-coded medical discharges.

91. Causes of medical discharge for the RAF have been scrutinised in order to identify whether any specific causes have been drivers for the increase between 2010/11 and 2012/13. Musculoskeletal disorders and injuries is the main principal cause of medical discharge which contributed to the rise, increasing by 62% over the time period.

DISCUSSION

92. 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.

93. 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.

94. 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.

95. The numbers of medical discharges for all three services have been rising since 2010/11. For the Naval Service, the increase can be attributed to rises in musculoskeletal injuries and disorders, mental and behavioural disorders and disorders of the ear and mastoid process. For the Army no single principal cause code could be attributed for the rise. For the RAF the increase can be attributed to the rise in musculoskeletal injuries and disorders.

96. The key trends that appeared for all three Services over the reporting period 2008/09 to 2012/13 were:

- Certain demographic groups had significantly higher rates of medical discharge such as females, other (non-Officer) ranks and untrained personnel, while there were no specific age groups with the highest rate of medical discharge across all three Services.
- The most common cause of medical discharge continued to be musculoskeletal disorders and injuries. Numbers for these have increased over the period, more than doubling for the Army. However the proportion of cause coded medical discharges due to musculoskeletal disorders and injuries for the Army have remained stable.
- Knee pain and Back pain were the most prominent musculoskeletal disorders.
- The second most common cause of medical discharge was mental and behavioural disorders. Whilst the number for these have increased for the Naval Service and Army, for all three Services the proportion of medical discharges due mental and behavioural disorders decreased over the reporting period.
- Neurotic and mood disorders accounted for the majority of mental and behavioural disorders.

97. While there has been a particular public interest in the number of medical discharges due to cold and heat injuries, there were 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 5% of all cause coded medical discharges and less than 1% due to heat injuries.

98. It is Defence Statistics' 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, Defence Statistics will release this report on an annual basis.

Annex A

Revisions

99. Defence Statistics undertook a major review of all personnel data from the Joint Personnel Administration system. This has resulted in minor changes to the socio-demographic, Service, Rank and training status breakdowns but not to the total number of medical discharges for 2007/08 to 2011/12. None of the changes impact on the findings in the report. The changes for 2007/08 are listed below:

100. For Regular UK RAF personnel:

- The number of medical discharges reduced from 212 to 211
- The number of personnel aged under 20 medically discharged reduced from 5 to 4; the rate reduced from 5 to 4.
- The number of female medical discharges reduced from 50 to 49; the rate reduced from 8.7 to 8.5
- The number of trained medical discharges reduced from 199 to 198

101. For Regular UK Army personnel:

- The number of medical discharges increased from 1,118 to 1,119
- The number of personnel aged under 20 medically discharged increased from 360 to 361
- The number of male medical discharges reduced from 997 to 995
- The number of female medical discharges increased from 121 to 124; the rate increased from 14.7 to 15.1
- The number of Other Rank medical discharges increased from 1071 to 1072
- The number of trained medical discharges increased from 479 to 487; the rate increased from 4.9 to 5
- The number of untrained medical discharges decreased from 639 to 632; the rate decreased from 57.2 to 56.5

102. There were also changes for the years 2008/09 to 2011/12, which are represented by an ‘r’ in Tables 1, 3 and 5. A brief description of these changes is provided below:

- For the Naval Service in 2008/09 untrained personnel went from 49 to 48 and trained personnel went from 167 to 168. In 2009/10 untrained personnel went from 43 to 44 and trained personnel went from 163 to 162.
- For the Army in 2008/09 untrained personnel went from 488 to 500 and trained personnel went from 351 to 339. In 2009/10 untrained personnel went from 419 to 425 and trained personnel went from 266 to 260 and Officers went from 28 to 29 and Other Ranks went from 657 to 656. In 2010/11 untrained personnel went from 424 to 430 and trained personnel went from 410 to 404. In 2011/12 untrained personnel went from 387 to 389 and trained personnel went from 576 to 574.
- There were no changes in training status or rank for the RAF due to the exit data validation.

103. There was one person removed from the RAF data in 2008/09 as they were not picked up in the last duplicate check during the last reporting period due to them having two exits with two different Service numbers.

104. Two personnel from the Army (one in 2009/10 and one 2010/11) have had their principal condition amended to heat illness. These were previously not included in the heat illness total but were included in the overall musculoskeletal disorders and injuries totals thus they remain unchanged.

105. One record in 2009/10 for the RAF was amended from circulatory system disorders to cause code group musculoskeletal skeletal disorders and injuries.

106. In previous reporting periods, some 'Z' ICD 10 codes (Z915 and Z916) were previously classified with musculoskeletal disorders and injuries. They have now been reclassified as Factors influencing health status. This has resulted the following changes:

- For the Naval Service, 1 change in 2008/09,

- For the Army, 19 in 2008/09 and 18 in 2009/10.
- No changes affected the RAF.