



Deaths in the UK regular armed forces: Annual summary and trends over time 1 January 2010 to 31 December 2019

Published 26 March 2020

This annual National Statistical Notice provides summary information on deaths whilst in service in 2019 among the UK regular armed forces, and trends over the ten-year period, 2010-2019. This information updates previous notices and includes new data for 2019. The information presented has been compiled from data held by Defence Statistics on 1 February 2020.

The data is presented for Tri-Service and separately for each of the services; Naval Service (Royal Navy and Royal Marines), Army (including Gurkhas) and Royal Air Force (RAF). This release provides information on the major categories of cause of death for the ten-year period 2010-2019 also presenting comparisons to the UK general population and the number of on-duty armed forces reservist deaths.

2019 Key points and trends

| | Tri-Service | Naval Service | Army | RAF |
|--------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Number of Deaths in 2019 | 66 | 9 | 40 | 17 |
| Overall 2019 Mortality Rate (per 100,000 personnel at risk) | 45 per 100,000 | 27 per 100,000 | 54 per 100,000 | 43 per 100,000 |

In 2019, the three largest causes of death among the UK regular armed forces were:

Cancers
32% (n= 21)

Other Accidents
23% (n= 15)^p
Of which 8 are awaiting verdicts and may be recategorised following a coroner's inquest

Land Transport Accidents
20% (n=13)

Overall, in 2019, the UK regular armed forces were at a **statistically significant lower risk** of dying compared to the UK general population. More specifically, the UK regular armed forces were at a:

- **70% significantly decreased** risk of dying as a result of a **disease related condition** and a
- **44% significantly decreased** risk of dying as a result of **external causes of injury and poisoning** (accidental, violent or suicide) compared to the UK general population.

The lower risk of dying among UK armed forces personnel compared to the UK general population may be explained by the 'healthy worker effect', as discussed in the report.

Responsible statistician: Deputy Head of Defence Statistics (Health) Tel. 030 679-84411

Analysis-Health-PQ-FOI@mod.gov.uk

Further information/ mailing list: Analysis-Health-PQ-FOI@mod.gov.uk

Background quality report: The Background Quality Report for this publication can be found here <https://www.gov.uk/government/collections/uk-armed-forces-deaths-in-service-statistics-index>

Enquiries: Press Office: 020 721-83253

Would you like to be added to our **contact list**, so that we can inform you about updates to these statistics and consult you if we are thinking of making changes? You can subscribe to updates by emailing Analysis-Publications@mod.gov.uk

Contents

| | |
|-------------------------------------------------------------------------------------------------------------------|----|
| Introduction | 3 |
| UK regular armed forces overall and service comparison..... | 4 |
| UK regular armed forces overall and service comparison (cont.) | 5 |
| UK regular armed forces overall and service comparison to the UK general population | 6 |
| Cause of death | 8 |
| Cause of death (cont.)..... | 9 |
| Cause of death (cont.)..... | 10 |
| Cause of death (cont.)..... | 11 |
| Glossary..... | 13 |
| Methodology | 16 |
| Changes to previously published data..... | 18 |
| Further Information..... | 19 |
| Annex A - Number of Land Traffic Accidents (LTA) resulting in deaths among UK regular armed forces personnel..... | 20 |

Supplementary tables containing all data presented in this publication, including numbers, rates and 95% confidence intervals, can be found at: <https://www.gov.uk/government/collections/uk-armed-forces-deaths-in-service-statistics-index>

Note that previously published rates and SMR may have changed in this release and in the accompanying tables. This is because they have been re-calculated using the 2019 armed forces population as a standard population, to allow comparisons over time. Full details of methods used are provided in the section '**Methodology**'.

National Statistics Status

National Statistics Status means that our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards.

The continued designation of these statistics as National Statistics was confirmed in November 2013 following a compliance check by the Office for Statistics Regulation (https://www.statisticsauthority.gov.uk/wp-content/uploads/2015/12/images-letterofconfirmationasnationalstatisticsassessmentreport19_tcm97-43516.pdf). The statistics last underwent a full assessment (https://www.statisticsauthority.gov.uk/wp-content/uploads/2015/12/images-assessmentreport197statisticsondefencehealth_tcm97-41724.pdf) against the Code of Practice in 2012.

Since the latest review by the Office for Statistics Regulation, we have continued to comply with the Code of Practice for Statistics, and have made the following improvements:

- added value by introducing reporting of on-duty UK armed forces reservist deaths and providing more detailed analysis of Land Transport Accident deaths, one of the largest causes of death among UK armed forces personnel.
- aided user understanding by improving explanations on rates, confidence intervals and Standardised Mortality Ratios.

Introduction

This Notice provides information on the major categories of cause of death in the UK regular armed forces for the ten-year period 2010-2019. This Notice also presents information on comparisons to the UK general population. Data is presented for the Naval Service (Royal Navy and Royal Marines), the Army (including Gurkhas), the Royal Air Force, and for the armed forces as a whole (Tri-Service). UK armed forces reservists who died whilst deployed on operations are included in the data presented since they are classed as 'regulars' whilst on deployment.

For data on suicide, this Notice includes suicides in line with the definition used by the Office for National Statistics (ONS) in the publication of National Statistics. More detail on this data can be found in the Official Statistic, "Suicides in the UK Regular Armed Forces 1984-2019", also published on 26 March 2020 at:

<https://www.gov.uk/government/collections/uk-armed-forces-suicide-and-open-verdict-deaths-index>.

The bi-annual Official Statistic 'Training and Exercise Deaths in the UK Armed Forces', also published on 26 March 2020, provides a detailed breakdown on the number of UK regular armed forces and on-duty reservist personnel who have died whilst taking part in training or on exercise. This report presents the number of deaths since January 2000 and the training activity being conducted at the time of death and can be found at:

<https://www.gov.uk/government/collections/training-and-exercise-deaths-in-the-uk-armed-forces>.

Details of the data sources and the methods used to collect and analyse the data and additional information are described briefly in the section '**Methodology**' and in more detail in the Background Quality report which can be found at: <https://www.gov.uk/government/collections/uk-armed-forces-deaths-in-service-statistics-index>. In line with National Statistics protocols, amendments have been annotated by the letter 'r' and explanations provided in the section '**Changes to previously published data**'.

The information presented in this publication has been structured in such a way to release sensitive deaths information into the public domain in a way that contributes to the MOD accountability to the British public but which doesn't compromise the operational security of UK armed forces personnel by revealing detail on individual incidents such as mechanism of injury or type of military vehicle involved; nor that risk inadvertently revealing individual identities and therefore breaching the rights of the families of the deceased personnel (for which the MOD has a residual duty of care).

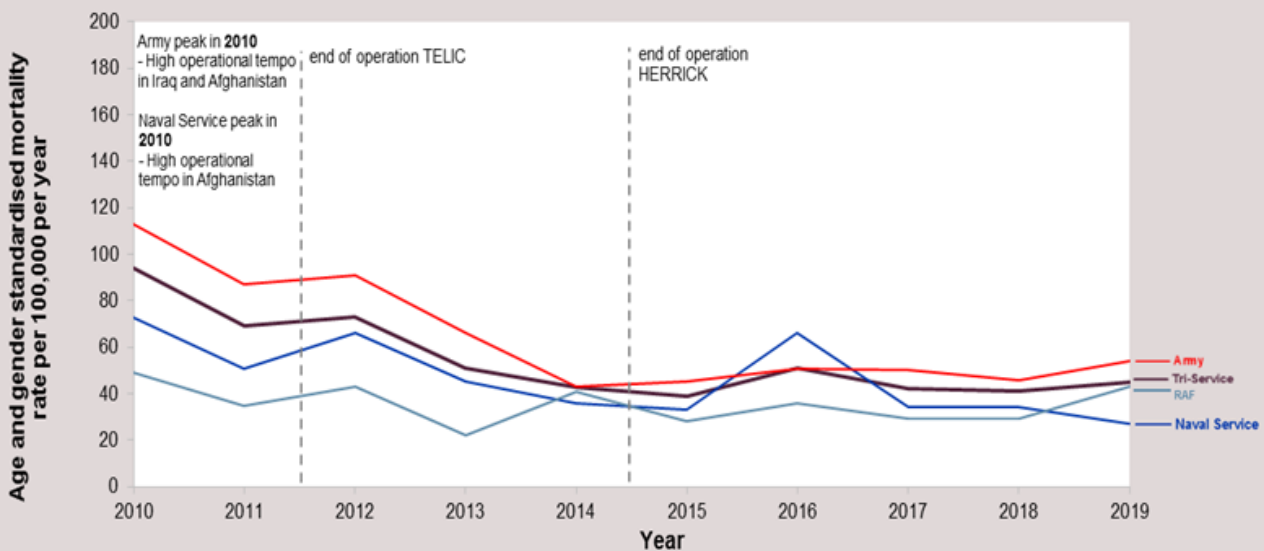
UK regular armed forces overall and service comparison

In 2019, there were **66** deaths to serving personnel in the UK regular armed forces. Of these, **nine** deaths were in the Naval Service, **40** in the Army and **17** in the RAF.

Figure 1 provides details of the age and gender standardised mortality rates (per 100,000 personnel at risk) by service for the ten-year period, 2010-2019. The rates have been age and gender standardised to take into account the different age and gender structures of each of the services.

Rates enable comparisons between groups over time, taking into account the number of personnel in a group (personnel at risk) at a particular point in time. The number of events (i.e. deaths) is divided by the number of personnel at risk and multiplied by 100,000 to calculate the rate. In order to compare time trends and to take into account the different age and gender structures of their respective single service strengths, rates have been age and gender standardised.

Figure 1: UK regular armed forces mortality rates¹ by service² 2010-2019



Source: Defence Statistics Health

¹Rates have been age and gender standardised to the 2019 UK regular armed forces population, expressed per 100,000 personnel at risk.

²Naval Service includes Royal Navy and Royal Marines.

³Operation TELIC is the name for UK operations in Iraq which began March 2003 and ended on 21 May 2011.

⁴Operation HERRICK is the name for UK operations in Afghanistan which began 1 April 2006 and ended on 30 November 2014.







Following the drawdown of operations in Iraq and Afghanistan the rate of deaths in the UK regular armed forces has fallen

In 2019, the age and gender standardised mortality rate for the UK regular armed forces was **45 per 100,000**. This is similar to the rate in the previous year, which was 41 per 100,000. Within each of the services, the highest mortality rate in 2019 was observed in the Army (**54 per 100,000**). However, as in previous years, there was **no statistically significant difference** in the mortality rates between each of the services (see **Table 1, page 9**).

UK regular armed forces overall and service comparison (cont.)

Latest Year

In 2019:

-   The Naval Service mortality rate fell 21% from 34 per 100,000 in 2018 to **27 per 100,000** in 2019. This was a fall of three deaths from 2018.
-   The Army mortality rate increased 17% from 46 per 100,000 in 2018 to **54 per 100,000** in 2019. This was an increase of two deaths from 2018.
-   The RAF mortality rate increased 48% from 29 per 100,000 in 2018 to **43 per 100,000** in 2019. This was an increase of six deaths from 2018.

Ten-Year Trends

There was a **downward trend** in the rate of deaths among UK regular armed forces personnel over the latest ten-year period. This was the result of a higher number of deaths during the period 2010 to 2012 due to operational activity in Iraq and Afghanistan with the rate falling following the drawdown of troops from Afghanistan. Since 2014, there have been only two lives lost as a result of hostile action (one in 2015, one in 2018).

Historically, Land Transport Accidents (LTA) have been one of the largest cause of deaths among the UK armed forces. The advancement of vehicle safety systems and road safety campaigns run by MOD throughout this period has contributed to a declining trend in the rate of deaths as a result of LTA. Since 2011, trends have remained stable. Further analysis can be found in **Annex A**.

When looking at the changes in the rate of death for specific years:

- In 2016, the Naval Service experienced a high mortality rate. This was due to a rise in the rate of cancer deaths for that year which has since returned to a rate similar to that seen in previous years.
- In 2019, the Army and RAF experienced high mortality rates. These were due to a rise in the rate of cancer deaths for both the Army and RAF and an increase in LTA deaths in the RAF.

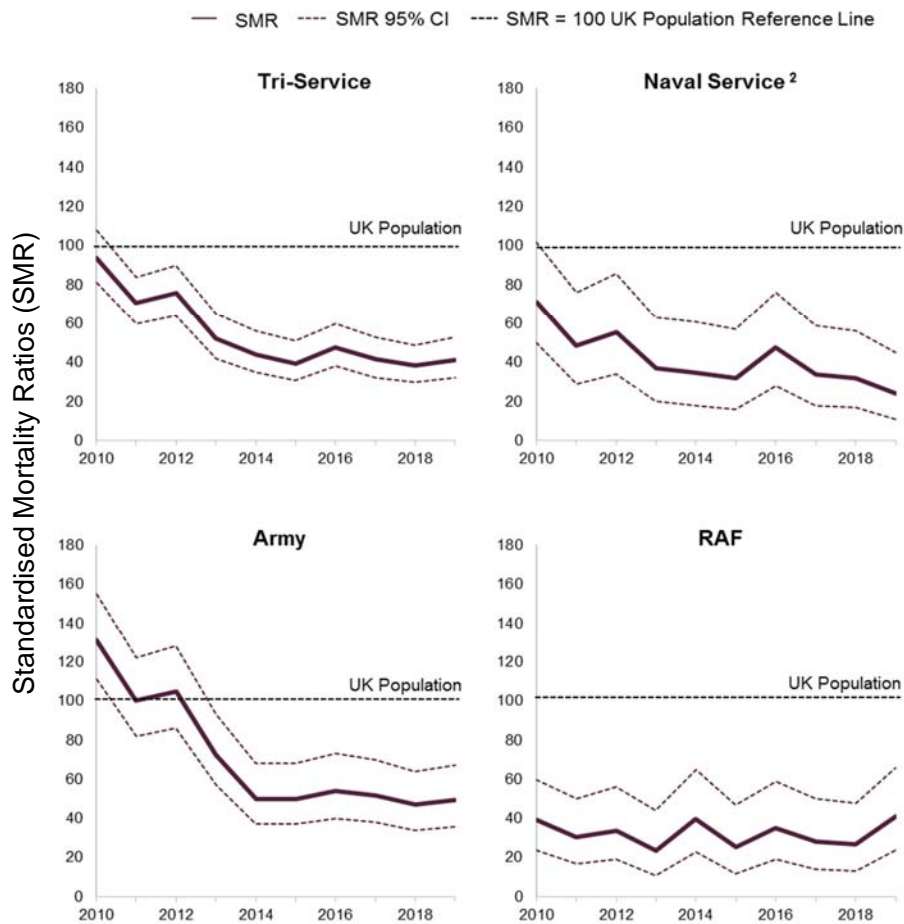
Operational activity and accidents resulted in multiple deaths from the same incident on several occasions during the latest ten-year period. Following the start of drawdown of operations from Afghanistan in 2013, the number of deaths per incident has fallen. All 66 deaths in 2019 were single incidents. For further details see **Annex B**.

UK regular armed forces overall and service comparison to the UK general population

Standardised Mortality Ratios (SMR)

To make comparisons between death rates in the UK armed forces and the UK general population, an SMR is calculated which takes account of the different age and gender structure in the two populations. The SMR is the ratio of the number of deaths observed in the armed forces to the number of deaths expected if the armed forces population had the same age and gender specific rates as the UK general population in each year. An SMR over (or under) 100 indicates a higher (or lower) number of observed deaths than expected compared to the UK general population and represents whether the armed forces are at an increased or decreased risk of death compared to the UK population. An SMR of 100 implies there is no difference in rates when comparing the UK regular armed forces population with the UK population. An SMR where the 95% confidence interval does not encompass 100 implies there is a statistically significant difference in rates when comparing the UK regular armed forces population with the UK general population.

Figure 2: UK regular armed forces deaths by service¹, standardised mortality ratios^{2,3} (SMR) (95% confidence intervals (CI)) 2010-2019



Results in the top left graph of Figure 2 show that with the exception of 2010, the UK armed forces as a whole were at a **statistically significantly lower risk** of dying compared to the UK general population.

For the period 2010 to 2012, a high number of operational deaths in Iraq and Afghanistan resulted in Army personnel being at a **statistically significant higher risk** or at the same risk of death as the UK general population.

RAF personnel were at a **statistically significantly lower risk** of dying compared to the UK general population throughout the latest ten-year period, as were Naval Service personnel for all years other than 2010.

Source: Defence Statistics Health

¹ Naval Service includes Royal Navy and Royal Marines.

² Standardised mortality ratios have been age and gender standardised.

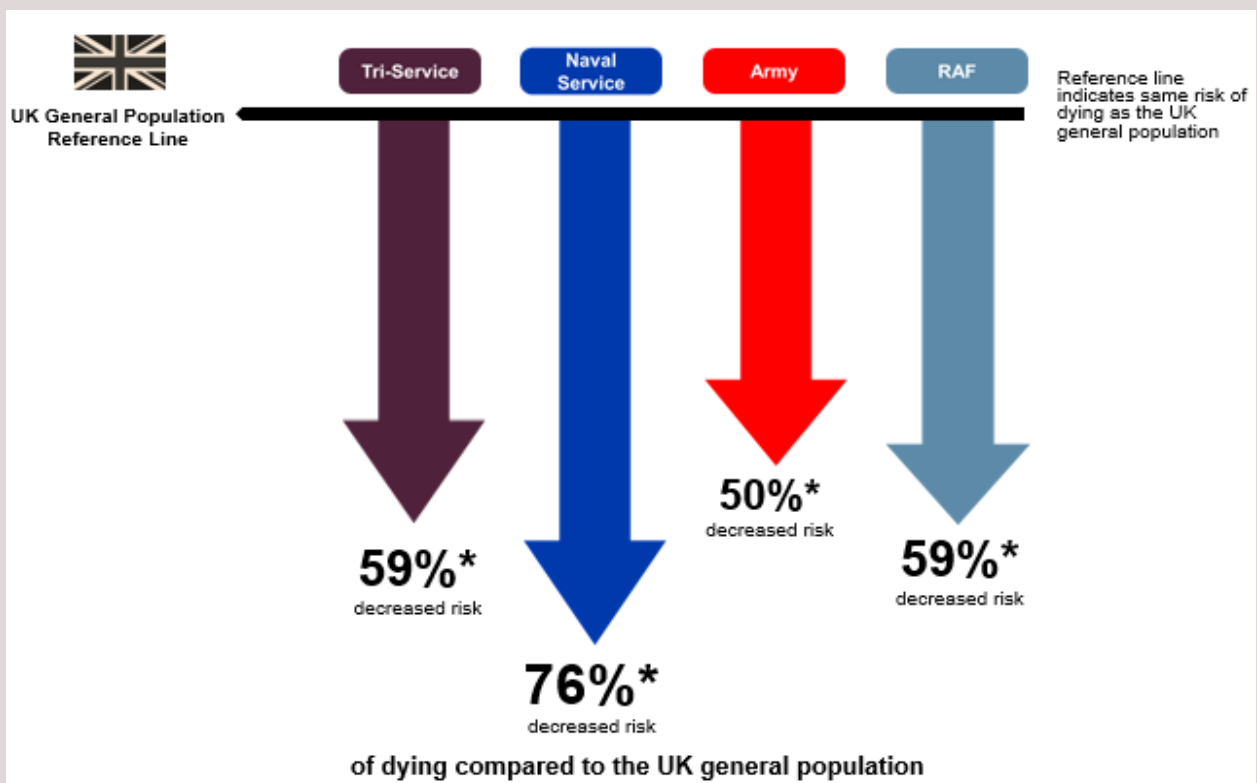
³ An SMR below, equal to, or above 100 indicates that the rate for the armed forces or the service is respectively below, equal to, or higher than the rate in the general UK population (see 'Methodology' section for further clarification).

UK regular armed forces overall and service comparison to the UK general population

For the latest year (2019), all three services were at a **statistically significantly lower risk** of dying compared to the UK general population (see **Figure 3**).

The lower risk of death among the armed forces may partially be explained by the ‘healthy worker effect’ often observed in occupational studies¹. This is deemed to occur when ‘workers’ are found to have lower mortality or other adverse health outcome rates than the general population due to the fact that certain groups of people are excluded from military employment, particularly those who are ill or who have disabilities. This is to be expected in studies of armed forces mortality, as this population are generally a selected group of individuals who are likely to have higher than usual levels of fitness and are at lower risk of developing disease-related illness as a result.

Figure 3: UK regular armed forces deaths by service¹, standardised mortality rates² 2019



¹ Naval Service includes Royal Navy and Royal Marines

² Standardised mortality ratios have been age and gender standardised

* Statistically significant risk of dying compared to the UK general population. No asterisk(*) indicates there was no statistical significant difference between the military and the UK general population

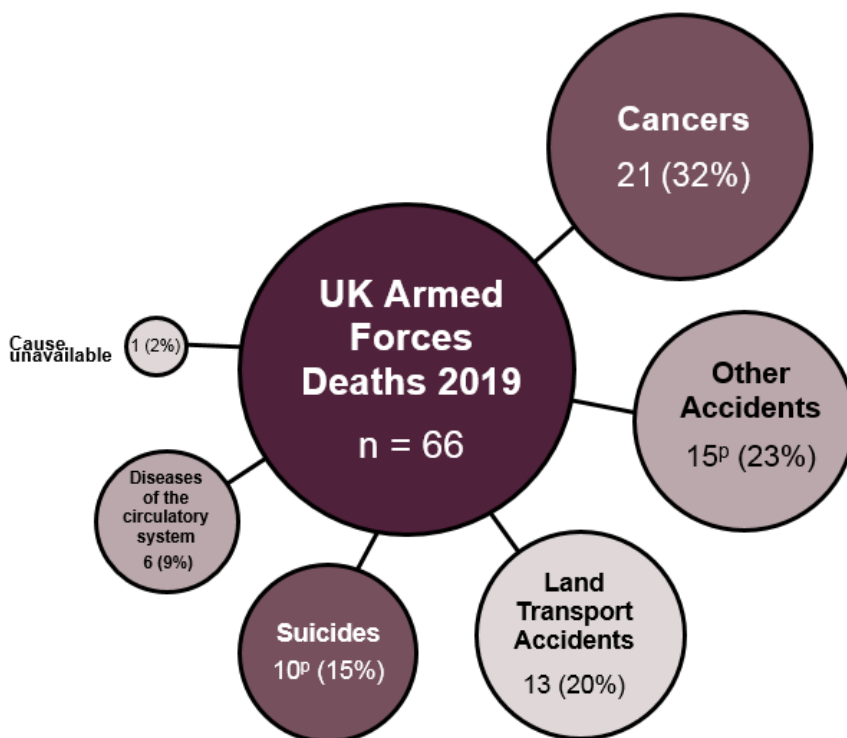
¹ McLaughlin et al., (2015) An Evaluation of the Effect of Military service on Mortality: Quantifying the Healthy Soldier Effect

Cause of death

Figure 4 provides a summary of the cause of death for the UK regular armed forces as a whole and is also presented in **Table 1** along with a breakdown for each of the single services in 2019.

The information provided in Figure 4 and Table 1 include all deaths that occurred whilst in-service both on and off duty. This Notice does not identify those deaths that were work related that may or may not have been the result of health and safety failures. Further information on health and safety related injuries, illness and deaths are available at: <https://www.gov.uk/government/collections/defence-health-and-safety-statistics-index>.

Figure 4: UK regular armed forces: Cause of death, proportion 2019



Source: Defence Statistics Health

*Percentages may not add up to 100% due to rounding.

^p Provisional, subject to change following coroner's inquests into eight deaths currently awaiting verdicts.

In 2019, the three leading causes of death among the UK regular armed forces consisted of one disease related and two accident related causes. These were:

- **Cancers** (n=21; 32% of all deaths).
- **Other Accidents** (n=15^p; 23% of all deaths), of which eight are awaiting verdicts and may be recategorised following a coroner's inquest.
- **Land Transport Accidents** (n=13, 20% of all deaths).

In the UK general population, the three leading causes of death were all diseased related (cancers, diseases of the circulatory system and other diseases).

In 2019, there were eight deaths where the mechanism of injury suggests possible suicide but a coroner's inquest has not yet been held. These deaths are reported as Other Accidents until the coroner returns a verdict and therefore may be determined as a suicide following inquest. Thus, the suicide number presented in this report is provisional and may change.

Cause of death (cont.)

Table 1: UK regular armed forces deaths by cause of death and service¹, numbers, rates² and SMR^{3,4}
1 January 2019 to 31 December 2019

| Cause | All | | | | Naval Service | | | | Army | | | | RAF | | | |
|------------------------------------------------|-----------------|------|----------|--------------|----------------|------|----------|--------------|-----------------|------|----------|--------------|----------------|------|----------|---------------|
| | n | rate | (95% CI) | SMR (95% CI) | n | rate | (95% CI) | SMR (95% CI) | n | rate | (95% CI) | SMR (95% CI) | n | rate | (95% CI) | SMR (95% CI) |
| All | 66 | 45 | (35-57) | 41 (32-53) | 9 | 27 | (12-51) | 24 (11-45) | 40 | 54 | (39-73) | 50 (36-67) | 17 | 43 | (25-69) | 41 (24-66) |
| Disease-related conditions | 27 | 18 | (12-27) | 30 (20-44) | 6 | 18 | (6-38) | 27 (10-60) | 11 | 18 | (9-33) | 26 (13-47) | 10 | 20 | (10-37) | 39 (19-73) |
| Cancers | 21 | 14 | (9-22) | 76 (47-116) | 6 | 18 | (6-38) | 88 (32-191) | 8 | 12 | (5-24) | 63 (27-124) | 7 | 13 | (5-27) | 86 (34-176) |
| Diseases of the circulatory system | 6 | 4 | (1-9) | 24 (9-53) | 0 | - | - | - | 3 | 6 | (1-17) | 26 (5-77) | 3 | 7 | (1-20) | 42 (9-122) |
| Other | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| External causes of injury and poisoning | 38 | 26 | (19-35) | 56 (41-78) | 3 | 9 | (2-28) | 20 (4-58) | 28 | 34 | (23-49) | 75 (50-109) | 7 | 23 | (9-48) | 46 (18-95) |
| Deaths due to accidents | 28 | 19 | (13-27) | 72 (48-104) | 1 | 3 | (0-17) | 11 (0-64) | 20 | 24 | (15-37) | 93 (57-144) | 7 | 23 | (9-48) | 79 (32-162) |
| Land Transport Accidents | 13 | 9 | (5-15) | 182 (97-311) | 0 | - | - | - | 8 | 10 | (4-20) | 196 (85-386) | 5 | 16 | (5-38) | 337 (109-787) |
| Other | 15 ^P | 10 | (6-17) | 47 (26-78) | 1 ^P | 3 | (0-17) | 14 (0-78) | 12 ^P | 14 | (7-24) | 69 (36-121) | 2 ^P | 7 | (1-26) | 27 (3-97) |
| Deaths due to violence⁴ | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Hostile Action | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Other | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Suicide and Open verdicts | 10 ^P | 7 | (3-12) | 37 (18-69) | 2 ^P | 6 | (1-23) | 33 (4-121) | 8 ^P | 10 | (4-20) | 54 (23-107) | 0 ^P | - | - | - |
| Cause not currently available | 1 | 1 | (0-4) | 37 (1-204) | 0 | - | - | - | 1 | 1 | (0-6) | 71 (2-395) | 0 | - | - | - |

Source: Defence Statistics Health

¹Naval Service includes Royal Navy and Royal Marines.

²Rates have been age and gender standardised to the 2019 UK regular armed forces population, expressed per 100,000 personnel at risk. Individual rates may not add up to totals due to rounding.

³Standardised mortality ratios have been age and gender standardised.

⁴An overall SMR for deaths due to violence has not been calculated due to lack of comparable UK population data for deaths as a result of Hostile Action.

^P Provisional, subject to change following coroner's inquests into eight deaths currently awaiting verdicts

Cause of death (cont.)

Results presented in **Figures 4, 5 and 6** and **Table 1** present numbers, rates per 100,000 personnel at risk and comparisons with the UK general population (SMRs) by cause of death for 2019 and time trends over the latest ten-year period. With the exception of deaths as a result of Hostile Action which are operational specific, trends in the cause of death among UK armed forces personnel over the last ten years have remained stable.

Deaths due to disease

Throughout the last ten years, the UK regular armed forces were at a significantly decreased risk of dying as a result of disease related conditions compared to the UK general population. In 2019, there was **70% statistically significant decreased risk compared to the UK general population.** The lower risk of death among the armed forces may partially be explained by the 'healthy worker effect' often observed in occupational studies¹ as discussed on page 7 of this notice.

In 2019, **27** UK regular armed forces deaths (**41% of all deaths**) were caused by disease-related conditions. In 2018, disease-related deaths accounted for 31% of all deaths (n=19). Of the disease-related conditions in 2019, **21** were due to cancers and **six** were due to circulatory system disorders.

The overall UK armed forces rate of deaths due to disease related conditions in 2019 was **18 per 100,000**, an increase of 38% from 13 per 100,000 in 2018.

Deaths due to external causes of injury and poisoning

The UK regular armed forces have had a statistically significant lower risk of dying due to external cause of injury and poisoning since 2014 compared to the UK general population, but were at a statistically significant increased risk between 2010 and 2012 during a period of high operational activity. In the latest year, the UK regular armed forces were at a **44% statistically significant decreased risk** of dying due to external causes of injury and poisoning compared to the UK general population.

In 2019, **38** deaths (**58% of all deaths**) were due to external causes of injury and poisoning, a rate of 26 per 100,000 and the number and rate of deaths remained similar to that in 2018.

Of deaths due to external causes of injury and poisoning in 2019, **28** were due to accidents and **10** were a result of suicide.

Deaths due to hostile action

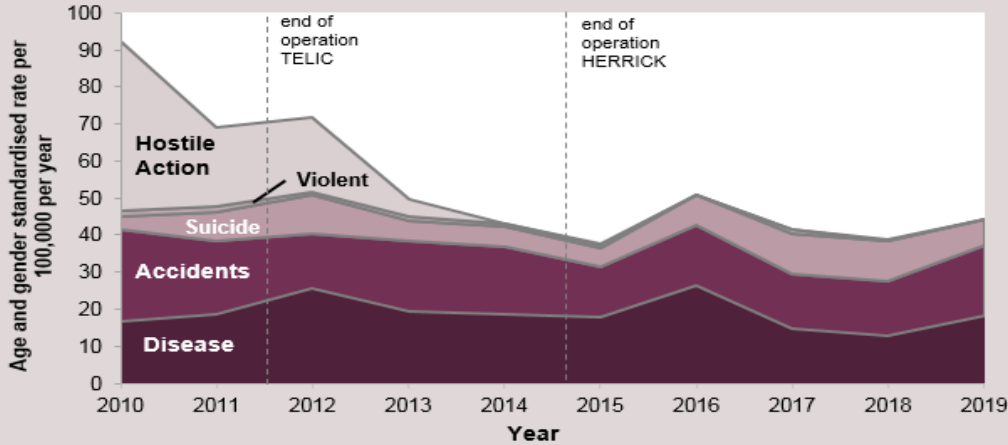
Deaths as a result of hostile action accounted for the single largest cause of death each year between 2010 and 2012 (**Figure 5**). Following the start of the drawdown of operations in Afghanistan in 2012, the number of deaths as a result of hostile action has fallen. Since 2014, there have been two deaths as a result of hostile action. In 2015 one service person died from wounds sustained in Afghanistan in 2012, and in 2018 one service person was killed in action in Syria.

Deaths due to accidents

In 2010, the UK regular armed forces were at a significantly increased risk of dying as a result of accidents compared to the UK general population. However, for all other years (apart from 2015-2018 when there was a statistically significant lower risk) **there was no significant difference in deaths due to accidents between members of the UK armed forces and the UK general population.**

Cause of death (cont.)

Figure 5: UK regular armed forces deaths by cause, area chart, rates^{1,2,3}
2010-2019



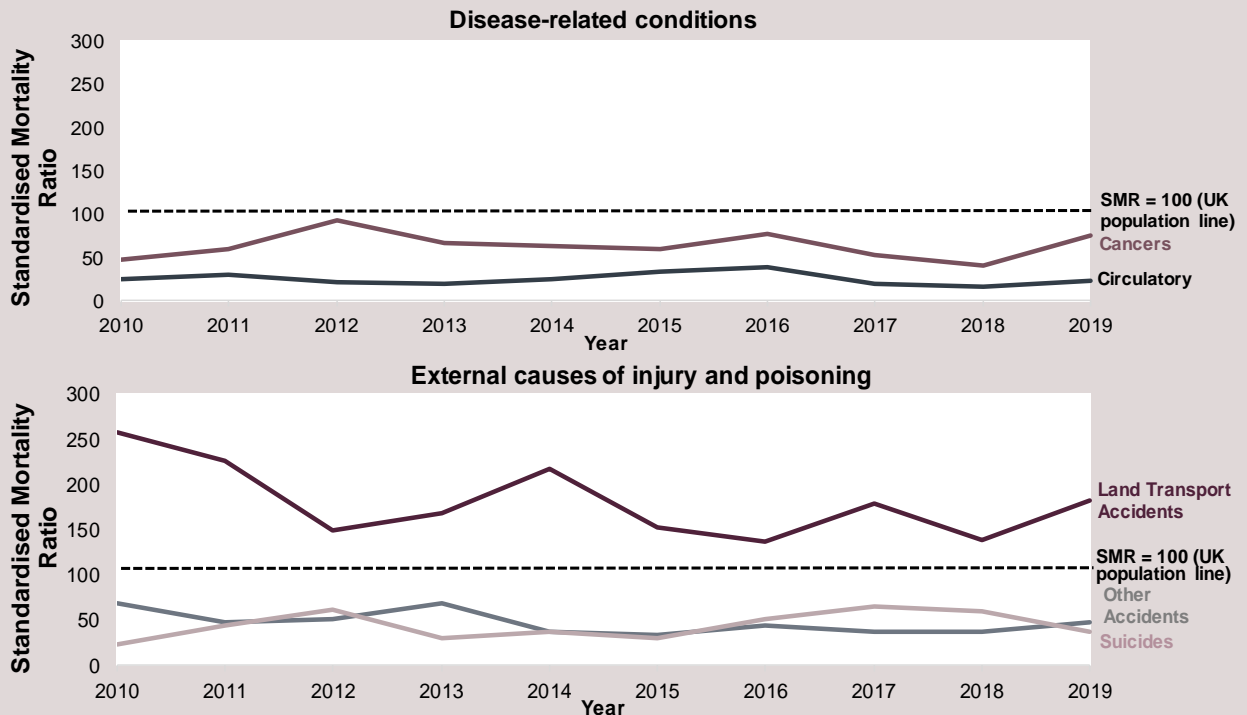
Source: Defence Statistics Health

¹Rates have been age and gender standardised to the 2019 UK regular armed forces population, expressed per 100,000 personnel at risk.

²Operation TELIC is the name for UK operations in Iraq which began March 2003 and closed on 21 May 2011.

³Operation HERRICK is the name for UK operations in Afghanistan which began 1 April 2006 and ended on 30 November 2014.

Figure 6: Deaths in the UK regular armed forces: Causes, standardised mortality ratios^{1,2,3,4}
2010-2019



Source: Defence Statistics Health

¹Standardised mortality ratios have been age and gender standardised.

²No comparisons between members of the UK regular armed forces and members of the UK general population for deaths due to hostile action were made as there is no equivalent cause of death in the UK population.

³An overall SMR for deaths due to violence has not been calculated due to lack of comparable UK population data.

⁴An SMR below, equal to, or above 100 indicates that the rate for the armed forces or the service is respectively below, equal to, or higher than the rate in the general UK population (see 'Methodology' section for further clarification).

Cause of death (cont.)

In 2019, **28 deaths (42% of all deaths)** were caused by accidents in the UK regular armed forces with Other Accidents accounting for **15^P** of these deaths (**23%^P of all deaths**). Note that eight deaths in the Other Accidents category are awaiting coroner's verdicts and thus may be placed in a different cause of death category once an inquest has been held.

In three of the last ten years, the UK regular armed forces have been at a significantly increased risk of dying as a result of Land Transport Accidents compared to the UK general population (2010, 2011, 2014). Since 2015, there was **no statistically significant different risk of dying compared to the UK population**. Land Transport Accident deaths accounted for **13 (20%)** of all deaths in 2019. **Annex A** provides a more detailed analysis of recent trends and populations at risk of Land Transport Accident deaths.

Suicides

The rate of suicide remained low between 2010 and 2019 and the **UK regular armed forces were at a statistically significant lower risk of dying as a result of a suicide compared to the UK general population** throughout the period. Please note that this comparison includes deaths among males and females. The Statistical Notice 'UK armed forces suicides: 2019' provides comparisons to the UK general population for males only due to the small number of suicides among UK armed forces females:
<https://www.gov.uk/government/collections/uk-armed-forces-suicide-and-open-verdict-deaths-index>

As at 1 February 2020, there were **10** coroner-confirmed suicides in 2019, a rate of **7 per 100,000**. There were **eight** deaths which occurred in 2019 that are awaiting a coroner's inquest and it is therefore likely that the suicide data presented here may be revised when the results of any outstanding inquests are known (see 'Methodology' and 'Changes to previously published data' sections).

Additional Tables 1- 4 provide a breakdown of the main causes of death for the UK armed forces from 2010-2019 by service and can be found in the supplementary web tables.

^P Provisional subject to change

Glossary

Army - The British Army consists of the General Staff and the deployable Field Army and the Regional Forces that support them, as well as Joint elements that work with the Royal Navy and Royal Air Force. Its primary task is to help defend the interests of the UK.

Confidence Interval - For a given statistic calculated for a sample of observations (e.g. the mean), the confidence interval is a range of values around that statistic that are believed to contain, with a certain probability (e.g.95%), the true value of that statistic (i.e. the population value). This enables us to estimate the precision of results.

Coroner - A government official whose standard role is to confirm and certify the death of an individual within a jurisdiction. A coroner may also conduct or order an inquest into the manner or cause of death, and investigate or confirm the identity of an unknown person who has been found dead within the coroner's jurisdiction.

Died of Wounds (DOW) - A battle casualty who dies of wounds or other injuries received in action, after having reached a medical treatment facility. This only includes those who have died of wounds whilst under the care of Defence Medical Services.

Hostile Action (HA) includes deaths categorised as Killed in Action or Died of Wounds.

International Statistical Classification of Diseases and Health-Related Disorders 10th edition (ICD-10) is the standard diagnostic tool for epidemiology, health management and clinical purposes. It is a medical classification list developed by the World Health Organisation.

Killed in Action (KIA) A battle casualty who is killed outright or who dies as a result of wounds or other injuries before reaching a medical treatment facility.

Land Transport Accident - In line with the definitions in ICD-10 a land transport accident is defined as any accident involving a device that has been designed for, or is being used at the time for, the conveyance of either goods or people from one place to another on land. The scope of this definition covers incidents that occur on and off the public highways and incidents that involve non-motorised forms of transport and does NOT include any deaths occurring in a vehicle as a result of Hostile Action. The definition therefore includes all occupational specific vehicles (specific to the UK armed forces) irrespective of where the accident took place. Road traffic accidents refer only to accidents on a public road.

Naval Service includes the Royal Navy and Royal Marines.

Operation HERRICK is the name for UK operations in Afghanistan which started in April 2006. UK Forces were deployed to Afghanistan in support of the UN authorised, NATO led International Security Assistance Force (IASF) mission and as part of the US-led Operation Enduring Freedom (OEF).

Operation TELIC is the name for UK operations in Iraq which started in March 2003 and finished on 21 May 2011. UK Forces were deployed to support the Government's objective to remove the threat that Saddam Hussein posed to his neighbours and his people and, based on evidence available at the time, disarm him of his weapons of mass destruction. The Government also undertook to support the Iraqi people in their desire for peace, prosperity and freedom.

Operational Accident is any accident that occurred whilst deployed on operations.

Procurator Fiscal is a public prosecutor in Scotland. They investigate all sudden and suspicious deaths in Scotland (similar to a coroner in other legal systems), conduct fatal accident inquiries (a form of inquest unique to the Scottish legal system) and handle criminal complaints against the police.

Road Safety Campaigns - Over time, there have been safety improvements in vehicles and roads as well as an increase in campaigns on road safety² both within the UK general population and the armed forces. In 2000, the Government targeted a 40% reduction in people killed or seriously injured in road accidents to be achieved by 2010, with campaigns continuing to run³. In addition, the following MOD road safety campaigns were launched:

- 'Ride it Right' targeting motor cycle riders was launched in 2006 and again in 2007 following a rise in the number of off-duty motorcycle deaths
- 'Grim Reaper' video shown to personnel returning from operational deployment since 2007 who are shown to have an increased likelihood of being involved in an accident.
- 'You're tough but you're not invincible' series of British Forces Broadcasting Services (BFBS) television and radio commercials began in 2008 aimed at young soldiers returning from operational deployment with the message that whilst soldiers may have survived their tour of duty in Afghanistan, they are not invincible and are still at risk of being involved in a road traffic accident.
- A poster campaign aimed at militating against the risk of off-duty service personnel attempting to walk home after a night out by making taxi funds available was developed in 2012 following a number of service personnel pedestrian deaths which occurred whilst walking home after a night out.
- 'Hidden Dangers' posters for motorcyclists were launched in 2014 following a rise in the number of off-duty motorcycle deaths.
- 'Driver Distractions' awareness campaign ran for mobile phone use and driver distractions in 2015.
- 'The Honest Truth' campaign ran informing about safer driving using real stories in 2017.
- 'Survive the Drive' campaign focussed on risky driving behaviours in 2018.

Royal Air Force (RAF). The Royal Air Force (RAF) is the aerial defence force of the UK.

Royal Marines (RM) Royal Marines are sea-going soldiers who are part of the Naval Service.

Royal Navy (RN) The sea-going defence forces of the UK but excludes the Royal Marines and the Royal Fleet Auxiliary service (RFA).

Strength is defined as the number of serving UK armed forces personnel.

Suicide includes deaths given an underlying cause of intentional self-harm or an injury/poisoning of undetermined intent. In line with the definition used by the Office for National Statistics (ONS) in the publication of National Statistics, all deaths are coded to the International Classification of Diseases 10th edition (ICD-10) which is produced by the World Health Organisation (WHO). Text held in death certificates is analysed and assigned the appropriate ICD code to ensure that deaths included in this notice are only those which meet the National Statistics definition of Suicide. The codes used to define suicides are:

ICD-10 codes: X60-X84: intentional self harm; Y10-Y34: injury or poisoning of undetermined intent; Y87.0 and Y87.2: sequelae of intentional self harm, injury or poisoning of undetermined intent.

² ROSPA - A History of Road Safety Campaigns: <http://www.rospea.com/road-safety/advice/road-users/campaign-history/>

³ <http://think.direct.gov.uk/>

UK regulars are full time service personnel, including Nursing services, but excluding FTRS personnel, Gurkhas, Naval activated reservists, mobilised reservists, Military Provost Guarding service (MPGS) and Non regular Permanent Service (NRPS). Unless otherwise stated, includes trained and untrained personnel.

- **FTRS (Full-Time Reserve Service)** are personnel who fill service posts for a set period on a full-time basis while being a member of one of the reserve services, either as an ex-regular or as a volunteer. An FTRS reservist on:

Full Commitment (FC) fulfils the same range of duties and deployment liability as a regular service person;

Limited Commitment (LC) serves at one location but can be detached for up to 35 days a year;

Home Commitment (HC) is employed at one location and cannot be detached elsewhere.

Each service uses FTRS personnel differently:

- The Naval Service predominantly uses FTRS to backfill gapped regular posts. However, they do have a small number of FTRS personnel that are not deployable for operations overseas. There is no distinction made in terms of fulfilling baseline liability posts between FTRS Full Commitment (FC), Limited Commitment (LC) and Home Commitment (HC).
 - The Army employ FTRS(FC) and FTRS(LC) to fill regular Army Liability (RAL) posts as a substitute for regular personnel for set periods of time. FTRS(HC) personnel cannot be deployed to operations and are not counted against RAL.
 - The RAF consider that FTRS(FC) can fill regular RAF Liability posts but have identified separate liabilities for FTRS(LC) and FTRS(HC).
- **Gurkhas** are recruited and employed in the British and Indian Armies under the terms of the 1947 Tri-Partite Agreement (TPA) on a broadly comparable basis. They remain Nepalese citizens but in all other respects are full members of HM Forces. Since 2008, Gurkhas are entitled to join the UK regular Forces after 5 years of service and apply for British citizenship.
 - **Military Provost Guard Service (MPGS)** provides trained professional soldiers to meet defence armed security requirements in units of all three services based in Great Britain. MPGS provide armed guard protection of units, responsible for control of entry, foot and mobile patrols and armed response to attacks on their unit.
 - **Mobilised reservists** are Volunteer or regular Reserves who have been called into permanent service with the regular Forces on military operations under the powers outlined in the Reserve Forces Act 1996. Call-out orders will be for a specific amount of time and subject to limits (e.g. under a call-out for warlike operations (Section 54), call-out periods should not exceed 12 months, unless extended.)
 - **Non regular Permanent Staff (NRPS)** are members of the Army Volunteer Reserve Force employed on a full time basis. The NRPS comprises Commissioned Officers, Warrant Officers, Non Commissioned Officers and soldiers posted to units to assist with the training, administrative and special duties within the Army Reserve. Typical jobs are Permanent Staff Administration Officer and Regimental Administration Officer. Since 2010, these contracts are being discontinued in favour of FTRS (Home Commitment) contracts. NRPS are not included in the Future Reserves 2020 Volunteer Reserve population as they have no liability for call out.

Methodology

Data sources

Defence Statistics receive weekly notifications of all regular armed forces deaths from the Joint Casualty and Compassionate Cell (formerly the single service casualty cells). Defence Statistics also receive cause of death information from military medical sources in the single services. At the end of each calendar year, Defence Statistics cross-reference the medical information it holds against publicly available death certificate information available from NHS Digital and The General Registrars Office Scotland. Regarding suicides, to ensure the highest accuracy of information and that all cases previously recorded as 'waiting verdict' have been followed up, Defence Statistics carry out an annual audit of MOD data held by the ONS and other authorities.

Defence Statistics regularly check all deaths for information on coroner's verdicts (England & Wales) and the results of investigations by the Procurator Fiscal for Scotland where possible. For Northern Ireland, Defence Statistics liaise with the Northern Ireland Statistics and Research Agency (NISRA) who handle the official information on behalf of the Northern Ireland Office. In this notice, all these sources of information are referred to as 'coroner's verdicts'. There is an obligation for all accidental deaths and those resulting from violent action to be referred to these officials. Inquests are usually held within a few months of the death, but occasionally a few years may elapse. Therefore, some recent deaths may not have clearly defined cause information. Where this is the case, deaths are included as 'Other Accidents' in the cause breakdowns.

To record information on cause of death, coding is carried out according to World Health Organisation's International Classification of Diseases 10th edition (ICD-10) and internationally agreed rules. This allows for international comparisons.

A definition of which Land Transport Accident deaths are excluded from analysis in Annex A can be found on page 20.

For calculations including breakdowns by deployed status in Annex A, Defence Statistics maintains a database of individual deployment records from November 2001. Data prior to April 2007 was derived from the single services' Operation Location tracking (OPLOC) systems and Souls on Board (Navy) and data since April 2007 is obtained from the Joint Personnel Administration (JPA) system. The data covers deployments on Operation TELIC (Iraq) (2003-2011), and Operations VERITAS, HERRICK and TORAL (Afghanistan) (2001-present).

At the end of each calendar year Defence Statistics cross reference the medical information it holds against publicly available death certificate information available from NHS Digital.

Data coverage

The information on deaths presented in the main report are for the regular armed forces, including all trained and untrained personnel and non-regulars who died on deployment are also included since they are classified as 'regular' personnel for the duration of their overseas deployment. The data in the main report exclude the Home Service of the Royal Irish Regiment, full time reservists, Army reserve and Naval Activated reservists since Defence Statistics do not receive routine notifications of all deaths among reservists and non-regulars, and because reliable denominator data to produce interpretable statistics are not available. However, Defence Statistics are informed of on-duty deaths among non-regular armed forces personnel; Annex B presents this information.

The Naval Service includes both the Royal Navy and the Royal Marines.

Methods

Calculating a rate

Rates enable comparisons between groups and over time, taking account of the number of personnel in a group (personnel at risk) at a particular point in time. The number of events (i.e. deaths) is divided by the number of personnel at risk and multiplied by 100,000 to calculate the rate.

In order to compare time trends and to take into account the different age and gender structures of their respective single service strengths, rates have been age and gender standardised. In order to facilitate comparisons with previously published reports data has been standardised to the 2019-armed forces population. For this direct standardisation process, Defence Statistics have estimated the rates that would have been observed if each study population (i.e. each of the single services) had the same age and gender structure as the standard population (the 2019 armed forces population).

The small number of deaths in some of the sub-group analysis may result in wide confidence intervals in the corresponding rate or ratios. The impact of this is that the range in which we expect the true value of that statistics to lie is much larger, making it harder to interpret the true underlying trend.

Calculating Standardised Mortality Ratios (SMR)

The 95% confidence interval for a SMR provides the range of values within which we expect to find the real value of the indicator under study, with a probability of 95%. If the confidence interval for an SMR does not include 100, the result is deemed to be statistically significant. The width of the confidence interval gives us some idea about how uncertain we are about the reported statistic. The small numbers in some of the sub-group analysis may result in wide confidence intervals. The impact of this is that the range in which we expect the true value of that statistic to lie is large and there is a risk of misinterpreting a chance occurrence for a true finding.

The UK population estimates and deaths data for 2019 were not available for this report to calculate standard mortality ratios (SMR), therefore, Defence Statistics has used the 2018 data as an estimate for the 2019 figures as there is little year on year variation for the UK figures. Thus, any patterns reported here may be subject to minor fluctuations when the UK population 2019 data becomes available.

Strengths and weaknesses of data presented in this notice

A strength of this publication is that considerable validation is undertaken against military and public records to ensure that the information provided is complete and accurate and users of this publication should be confident that the numbers of fatalities presented are accurate. However, some causes of death (including possible Suicides) require a Coroner's report before the cause of death can be formally classified and there is often a time lag between when the death occurred and when the Coroner's inquest takes place. This can result in final cause of death information not being timely and complete for recent years and these deaths are reported as 'other accidents' or 'cause not available' whilst waiting for final cause of death to be determined. This can lead to revisions in the cause of death categories when these verdicts are returned (see 'Changes to previously published data' section for more information about the extent of these revisions).

In addition, deaths certificates for personnel who die overseas are issued by the MOD and if buried overseas, are not always subject to a coroner's inquest to certify cause of death. Users should be aware of this when using cause of death information.

The release of the information in this notice is controlled by the statistics code of practice as outlined in the Statistics and Registration Act, 2007. This stipulates that statistics in their final form cannot be released prior to a publication. Thus, because it can take many months or even years for a coroner's inquest, Defence Statistics do not update the numbers in between the publication of this notice, to ensure

there is no breach of the code of practice. Therefore, any requests for information on deaths among the UK armed forces are provided using the underlying dataset used to compile this notice.

The information presented in this publication has been structured in such a way to release sensitive deaths information into the public domain in a way that contributes to the MOD accountability to the British public but which doesn't compromise the operational security of UK armed forces personnel by revealing detail on individual incidents such as mechanism or type of military vehicle involved; nor that risk inadvertently revealing individual identities and therefore breaching the rights of the families of the deceased personnel (for which the MOD has a residual duty of care). Defence Statistics are regularly asked to release information such as date of death, location of death, deaths within a unit or rank held by the deceased, however, these requests are assessed on a case by case basis to ensure the information presented is aggregated to a level to ensure individuals cannot be identified or that compromises operational security.

Changes to previously published data

In preparing this document, Defence Statistics carried out a review of the data recorded on deaths to service personnel to ensure the highest accuracy of information and that all cases previously recorded as 'awaiting verdict' have been followed up with the ONS and other authorities.

Amendments to the classifications given to the cause of death previously reported in the 2018 report:

For 2018:

- Eleven 'Other Accidents' amended to Suicide
- One 'Cause Unavailable' amended to Other accidents
- One 'Cause Unavailable' amended to Cancers
- One 'Cause Unavailable' amended to Other diseases

For 2017;

- Three 'Other Accidents' amended to Suicide

For 2013;

- One 'Other Accidents' amended to Suicide

Where trends over time have been presented, an update on previous data published has been annotated with an 'r' to indicate a revision has been made.

More detailed information on the data, definitions and methods used to create this report can be found in the Background Quality Report (BQR) published at www.gov.uk/government/publications/mod-national-and-official-statistics-by-topic.

Further Information

Contact us

Defence Statistics welcome feedback on our statistical products. If you have any comments or questions about this publication or about our statistics in general, you can contact us as follows:

Defence Statistics Health: Telephone: 030 6798 4423
Email: Analysis-Health-PQ-FOI@mod.gov.uk

If you require information which is not available within this or other available publications, you may wish to submit a Request for Information under the Freedom of Information Act 2000 to the Ministry of Defence. For more information, see:

<https://www.gov.uk/make-a-freedom-of-information-request/the-freedom-of-information-act>

Other contact points within Defence Statistics are:

| | | |
|------------------------------|---------------|----------------------------------------------------------------------------------------------------|
| Defence Expenditure Analysis | 030 6793 4531 | Analysis-Expenditure-PQ-FOI@mod.gov.uk |
| Price Indices | 030 6793 2100 | Analysis-Econ-PI-Contracts@mod.gov.uk |
| Naval Service Manpower | 023 9254 7426 | Analysis-Navy@mod.gov.uk |
| Army Manpower | 01264 886175 | Analysis-Army@mod.gov.uk |
| RAF Manpower | 01494 496822 | Analysis-Air@mod.gov.uk |
| Tri-Service Manpower | 020 7807 8896 | Analysis-Tri-Service@mod.gov.uk |
| Civilian Manpower | 020 7218 1359 | Analysis-Civilian-Enquiries@mod.gov.uk |

If you wish to correspond by mail, our postal address is:

Defence Statistics Health
Ministry of Defence, Abbey Wood North
#6028, Oak, 0, West
Bristol
BS34 8JH

For general MOD enquiries, please call: 020 7218 9000

Annex A - Number of Land Traffic Accidents (LTA) resulting in deaths among UK regular armed forces personnel

Introduction

Annex A provides summary information on Land Traffic Accident (LTA) deaths whilst in service among UK regular armed forces personnel for the five-year period 2015-2019. LTA were the third largest cause of death in the UK regular armed forces during this period after deaths due to Cancer and Other Accidents.

This information is being released to advise the MOD and the public of the loss of life by LTA and has been developed in response to requests from the MOD road safety and health promotion areas for detailed analysis and to contribute to the MOD's commitment to release information where possible.

Analysis by service and vehicle types associated with LTA deaths and comparisons to the UK general population are presented in this Annex. In order to provide a balance between presenting analysis for a sufficient time period from which to provide meaningful data with the need to monitor the impact of MOD policy, this report presents time trend graphs since the start of data collection in 1984 and all tables and remaining graphs as numbers and rates aggregated for the latest five-year period.

The main purpose of Annex A is to provide evidence to internal stakeholders to monitor and measure the impact of road safety policy for UK armed forces personnel. The following deaths were excluded from the analysis in Annex A since they are beyond the scope of road safety policy or the numbers are too small to provide meaningful analysis:

- deaths relating to vehicles that have been determined by a coroner as suicide.
- deaths relating to incidents on bicycles, horses and rail related incidents.
- deaths occurring in vehicles as a result of hostile action.

Latest five-year period results (2015-2019)

For the latest five-year period, 2015-2019:

- LTAs were the **third largest cause of death** (18%, n=58) after deaths due to cancers (26%, n=83) and other accidents (19%, n=60).
- The proportion of all deaths accounted for by LTA fluctuated between 20% in 2015 and 18% in 2019.

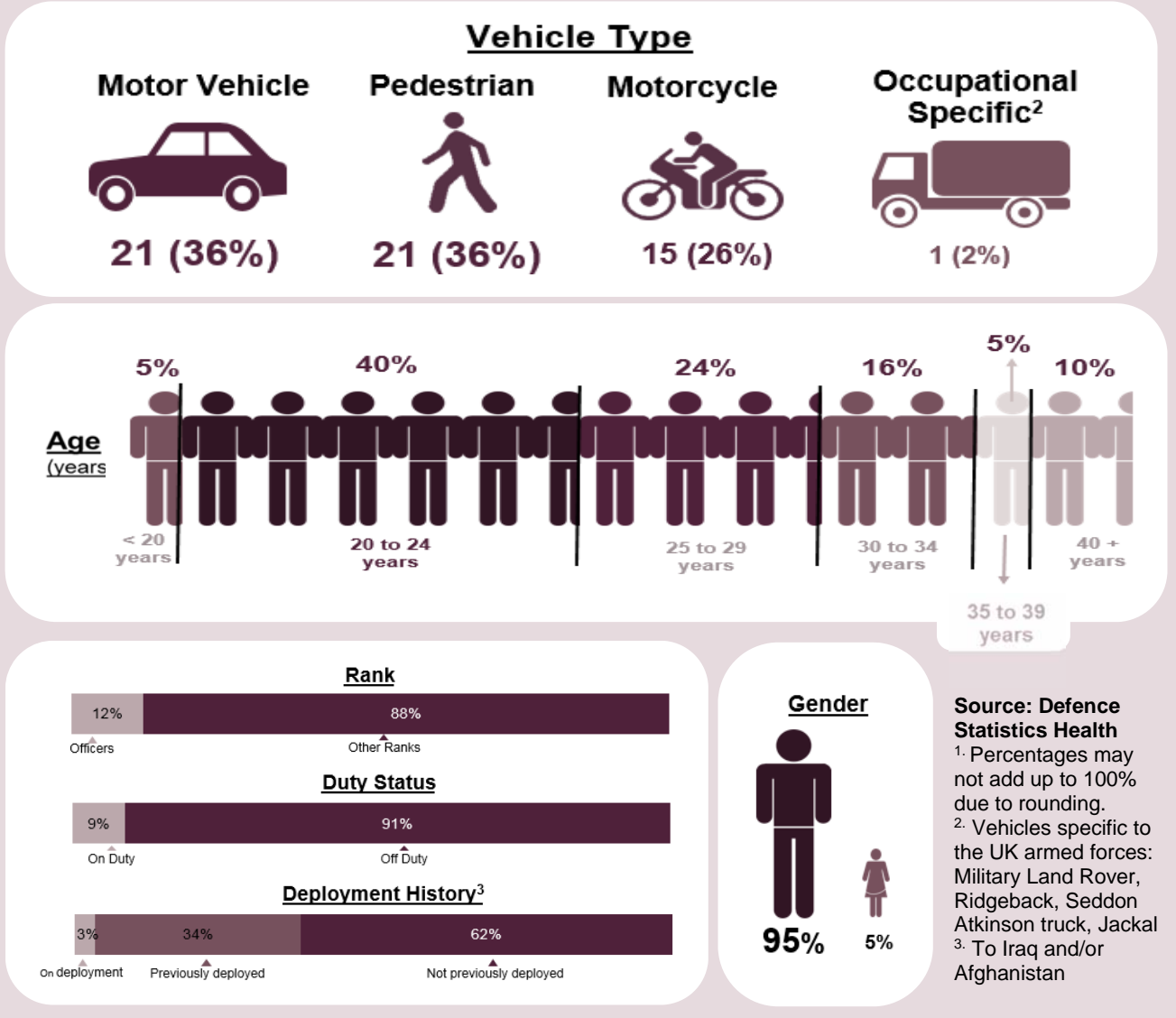
| | |
|----------------------|---------------------------------------------------------------------------------------------------------------|
| Tri-Service | For the latest five-year period the Tri-Service rate of deaths due to LTA was 8 per 100,000 . |
| Naval Service | For the latest five-year period the Naval Service rate of deaths due to LTA was 3 per 100,000 . |
| Army | For the latest five-year period the Army rate of deaths due to LTA was 10 per 100,000 . |
| RAF | For the latest five-year period the RAF rate of deaths due to LTA was 5 per 100,000 . |

- For the five-year period 2015-2019, the number of UK regular armed forces personnel dying as a result of a LTAs remained stable at around an average of 12 deaths each year.

Figure A1 below provides a breakdown of LTA deaths by key characteristics. In the latest five year period, motor vehicle and pedestrian deaths have each accounted for around a third of all LTA deaths. The majority of deaths (91%) occurred when personnel were off duty.

Annex A - Number of Land Traffic Accidents (LTA) resulting in deaths among UK regular armed forces personnel

Figure A1: UK regular armed forces LTA Deaths by key characteristics, percentages¹. 2015 - 2019



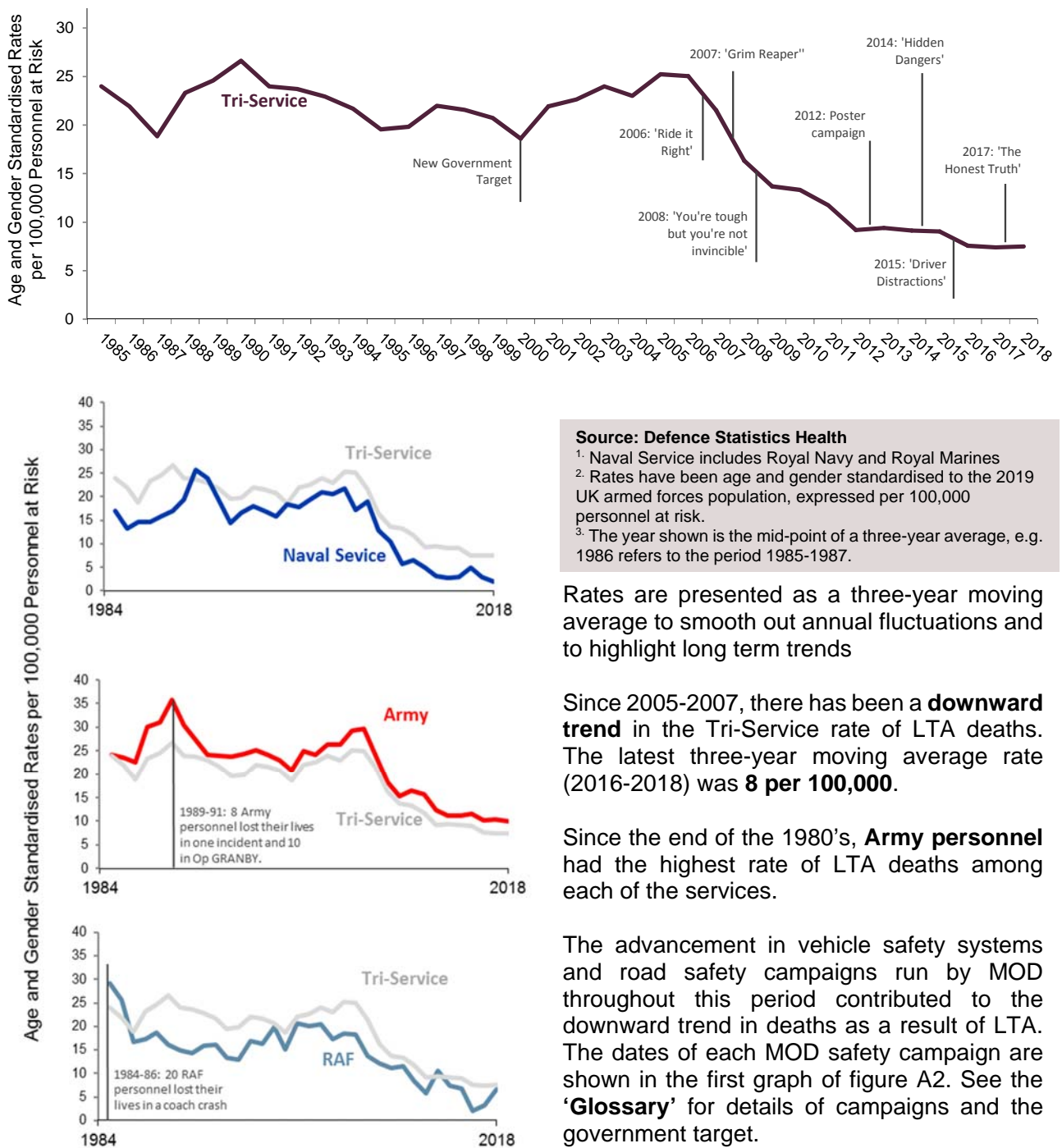
Note that high percentages of LTA deaths amongst certain groups may be explained by those groups experiencing higher risk factors, or they may be a reflection of the breakdown of these characteristics in the UK armed forces. For example 95% of LTA deaths among males may be due to the risky driving found to be associated with males⁴, or may be explained by the fact males account for 90% of UK regular armed forces (<https://www.gov.uk/government/collections/uk-armed-forces-biannual-diversity-statistics-index>).

⁴ Fear et al., (2008) Risky Driving Among UK regular armed forces Personnel from the United Kingdom, American Journal of Preventative Medicine, 35, 230-236.

Annex A - Number of Land Traffic Accidents (LTA) resulting in deaths among UK regular armed forces personnel (cont.)

Trends over Time

Figure A2: UK regular armed forces LTA deaths by service¹, three-year moving average, rates^{2,3} 1984 – 2019



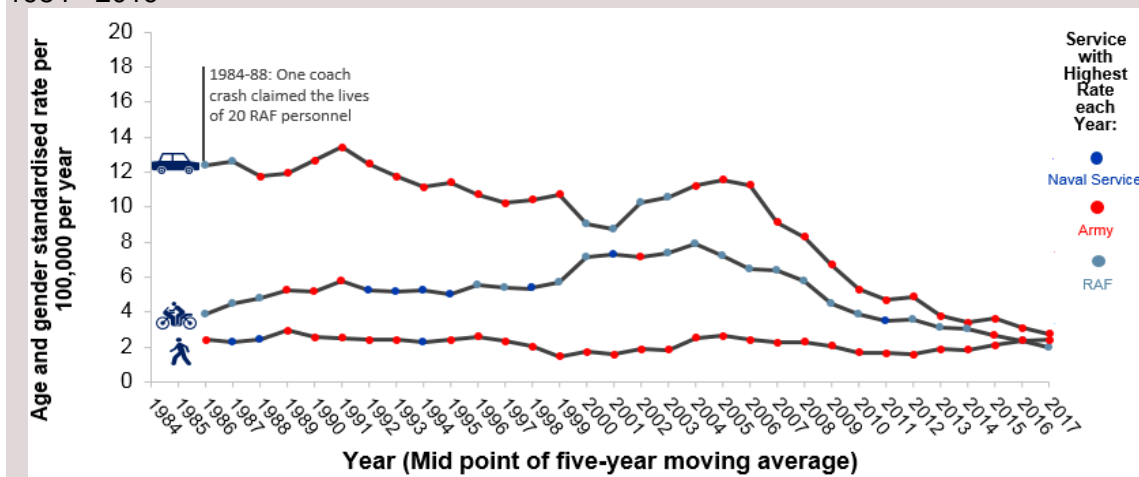
Annex A - Number of Land Traffic Accidents (LTA) resulting in deaths among UK regular armed forces personnel (cont.)

Trends over Time for LTA Deaths by Vehicle Type

Due to the small numbers of deaths for individual vehicle types five-year moving averages have been used for the following section to eliminate some of the random year on year variation.

Figure A3: provides a summary of LTA mortality rates by vehicle type for the time period 1984-2019. The marker colours on the graph represent the service for which the LTA rate was highest in each year.

Figure A3: UK regular armed forces LTA deaths by vehicle type, five-year moving average, rates^{1,2} 1984 - 2019



Source: Defence Statistics Health

¹ Rates have been age and gender standardised to the 2019 UK armed forces population, expressed per 100,000 personnel at risk.

² The year shown is the mid-point of a five-year average, e.g. 1986 refers to the period 1984-1988.

³ Naval Service includes Royal Navy and Royal Marines

Throughout the period 1984-2018, LTA mortality rates as a result of motor vehicle accidents were highest, followed by motorcycle accidents and pedestrian accidents. However, in the latest five-year period the rate of deaths for pedestrian accidents was higher than motorcycle accidents rates. This was due to a fall in the rate of motorcycle accidents. The rate of pedestrian accidents has remained stable over time whereas the rates of both motor vehicle and motorcycle accidents have decreased in the last decade.

Comparisons based on a five-year moving average:



Motor vehicle mortality five-year moving average rates decreased from **4.9** per 100,000 in 2010-2014 to **2.8** per 100,000 in 2015-2019.



Motorcycle mortality five-year moving average rates decreased from **3.6** per 100,000 in 2010-2014 to **2.0** per 100,000 in 2015-2019.



Pedestrian mortality five-year moving average rates increased from **1.6** per 100,000 in 2010-2014 to **2.4** per 100,000 in 2015-2019.

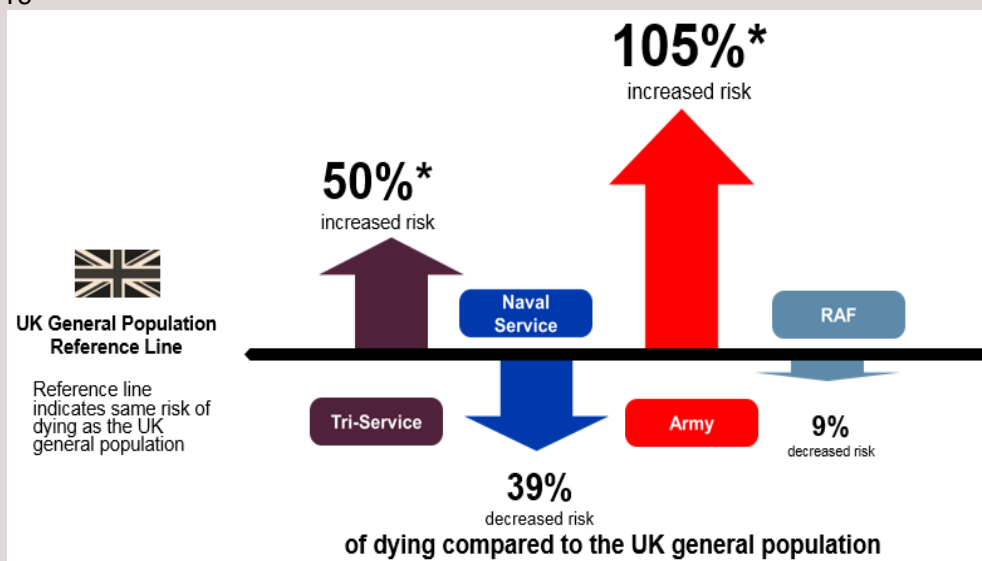
Comparisons with UK General Population

To enable comparisons with LTA deaths in the UK population, **Standardised Mortality Ratios (SMR)**, adjusted for age, gender and year, were calculated. **Figure A4** compares five-year (2015-2019) Standardised Mortality Ratios by service.

Annex A - Number of Land Traffic Accidents (LTA) resulting in deaths among UK regular armed forces personnel (cont.)

For the five-year period 2015-2019, UK regular armed forces personnel were at a **50% statistically significant increased risk** of dying due to an LTA compared to the UK general population, with **Army** personnel being at a **105% statistically significant increased risk** of dying as a result of a LTA. See **Figure 5** in the main report for SMR time trends for the armed forces as a whole and **Additional Figure 1** in the Excel supplementary tables for three-year SMR moving average comparisons by service over time.

Figure A4: UK regular armed forces LTA deaths by service¹, standardised mortality ratio^{2, 3} 2015 - 2019



Source: Defence Statistics Health

¹ Naval Service includes Royal Navy and Royal Marines.

² Standardised for age, gender and calendar year.

³ An SMR below, equal to, or above 100 indicates that the rate for the armed forces or the service is respectively below, equal to, or higher than the rate in the general UK population (see 'Methodology' section for further clarification).

* Statistically significant risk of dying compared to the UK general population. No asterisk(*) indicates there was no statistical significant difference between the military and the UK general population

Comparisons by vehicle type, service and age groups at risk, 2015 to 2019

There was **no statistically different risk** of the UK regular armed forces personnel dying as a result of a **motor vehicle accident** compared to the UK general population in the period 2015-2019.

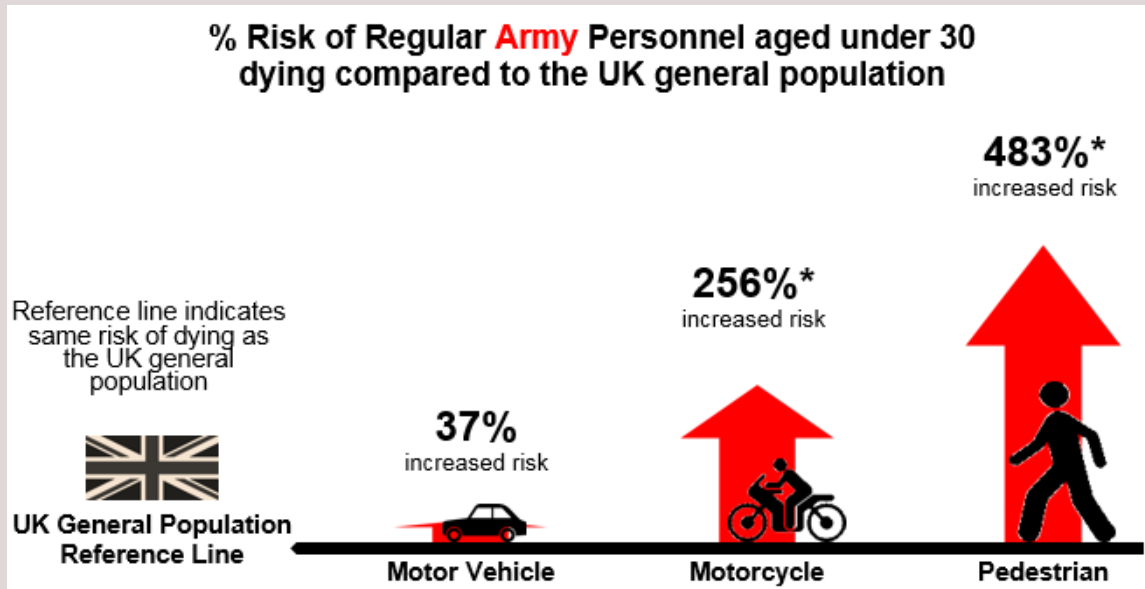
UK regular armed forces personnel were at a **101% statistically significant increased risk** of dying as a result of a **motorcycle accident** and at a **308% statistically significant increased risk** of dying as a result of a **pedestrian accident** compared to the UK general population in the period 2015-2019.

When split by service, Army personnel were the only service to be at a **statistically significant risk** of dying as a result of both motorcycle and pedestrian accidents compared to the UK general population (see **Figure A5**). This was a result of a higher risk of death among Army personnel aged below 30, who were at a **statistically significant increased risk** of dying for motorcycle and pedestrian compared to the UK general population.

Additional Tables 6-8 and Additional Figures 2-7, available in the supplementary tables accompanying this report, give full details of SMRs by vehicle type, service and 30-year age split.

Annex A - Number of Land Traffic Accidents (LTA) resulting in deaths among UK regular armed forces personnel (cont.)

Figure A5: UK regular Army personnel LTA deaths by vehicle type and age band, standardised mortality ratio¹ 2015-2019



¹ Standardised Mortality Ratios have been age and gender standardised
 * Statistically significant risk of dying compared to the UK general population. No asterisk(*) indicates there was no statistical significant difference between the military and the UK general population.

Note that the number of deaths in each of the categories in Figure A5 are small. In the five-year period 2015-2019 there were **13** Motor Vehicle deaths, **nine** Motorcycle deaths, and **nine** Pedestrian deaths amongst UK regular Army personnel aged under 30.

Annex B - Number of Incidents resulting in deaths among UK regular armed forces personnel

As multiple deaths occurred in the same incident on several occasions during the latest ten-year period, **Table B1** provides details of the number of separate incidents and the number of individual deaths, by year of occurrence, for all accidental and violent deaths excluding suicides.

Table B1: UK regular armed forces Accidental and Violent deaths (excluding Suicides) by service, deaths and incidents, numbers¹
2010-2019

| Year ² | All | | Naval Service ³ | | Army | | RAF | |
|-------------------|-----------------|-----------------|----------------------------|----------------|-----------------|-----------------|----------------|----------------|
| | Deaths | Incidents | Deaths | Incidents | Deaths | Incidents | Deaths | Incidents |
| 2010 | 150 | 137 | 22 | 22 | 118 | 105 | 10 | 10 |
| 2011 | 86 | 78 | 11 | 10 | 68 | 62 | 7 | 7 |
| 2012 | 70 | 55 | 8 | 8 | 55 | 45 | 7 | 5 |
| 2013 | 44 ^r | 41 ^r | 3 | 3 | 36 ^r | 34 ^r | 5 | 4 |
| 2014 | 32 | 26 | 3 | 3 | 22 | 17 | 7 | 7 |
| 2015 | 24 | 23 | 5 | 5 | 16 | 16 | 3 | 2 |
| 2016 | 25 | 24 | 4 | 4 | 17 | 17 | 4 | 3 |
| 2017 | 25 ^r | 23 ^r | 3 ^r | 3 ^r | 20 ^r | 18 ^r | 2 ^r | 2 ^r |
| 2018 | 23 ^p | 23 | 3 ^p | 3 | 17 ^p | 17 | 3 ^p | 3 |
| 2019 | 28 ^p | 28 | 1 ^p | 1 | 20 ^p | 20 | 7 ^p | 7 |

Source: Defence Statistics Health

¹In some instances, personnel from more than one service have been killed in the same incident, therefore, the data for single services may not add up to the total provided in the 'All incidents' column.

²'Year' refers to the year in which the death or incident occurred.

³Naval Service includes Royal Navy and Royal Marines.

^r indicates a change in previously published data (see 'Changes to previously published data' section)

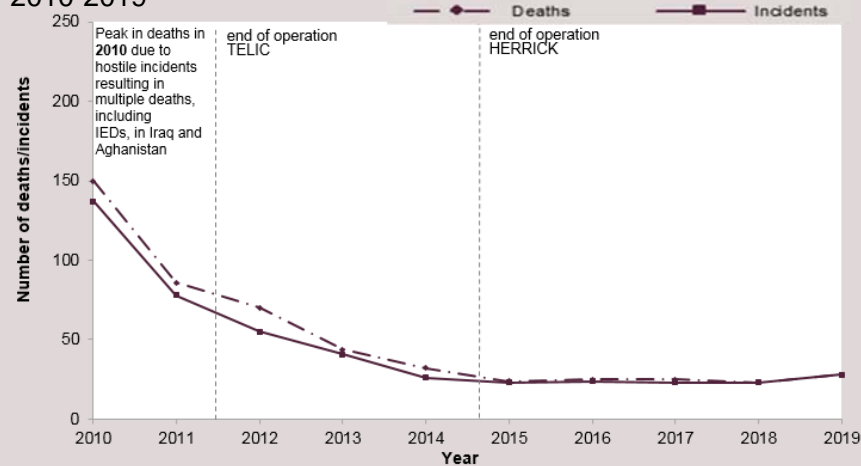
^p indicates that numbers are provisional and subject to change.

Table B1 shows a fall in the number of fatal incidents resulting in multiple deaths since 2012.

For the period 2010 to 2013, hostile action incidents in Iraq and Afghanistan contributed to the majority of deaths; for example in 2010, 86 (63%) incidents were due to hostile action and resulted in 95 (63%) deaths in that year.

These findings are illustrated in **Figure B1**, which shows both the annual changes in the number of deaths and the incidents for the total armed forces population.

Figure B1: UK regular armed forces deaths and fatal incidents, numbers^{1,2}
2010-2019



Source: Defence Statistics Health

¹ Operation TELIC is the name for UK operations in Iraq which began March 2003 and closed on 21 May 2011.

² Operation HERRICK is the name for UK operations in Afghanistan which began 1 April 2006 and ended on 30 November 2014.

³ Year refers to the year in which the death or incident occurred.

Annex C – On duty deaths in the UK armed forces reservist forces, 2010-2019

Table C1: UK armed forces reservist^{1,2} deaths whilst on duty, by type of reservist, numbers 2010-2019

| Reserve type | Year | | | | | | | | | | |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|
| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| All | 2 | 5 | 2 | 3 | 2 | 1 | 0 | 1 | 1 | 3 | |
| Territorial Army | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Other Volunteer Reserves | 2 | 3 | 1 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | |
| Full-Time Reserve Service | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| Military Provost Guard Service | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Non Regular Permanent Staff | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |

Source: Defence Statistics Health

¹ UK armed forces reservists who died whilst deployed on operations are included in the data presented in the main report, and are therefore not included in this Annex.

² Includes UK armed forces non-regular personnel, Military Provost Guard service (MGPS) and Non regular Permanent Staff (NRPS). 'r' indicates a change in previously published data (see 'Changes to previously published data' section)

Table C2: UK armed forces reservist^{1,2} deaths whilst on duty, by cause of death, numbers 2010-2019

| Cause | Year | | | | | | | | | | |
|------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|------------|------------|----------|--|
| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | |
| All | 2 | 5 | 2 | 3 | 2 | 1 | 0 | 1 | 1 | 3 | |
| Disease-related conditions | 2 | 3 | 2 | 0 | 2 | 0 | 0 | 1 r | 1 r | 2 | |
| Cancers | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Diseases of the circulatory system | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | |
| Other | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| External causes of injury and poisoning | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | |
| Deaths due to accidents | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Land Transport Accidents | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Other | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Deaths due to violence | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Hostile Action ¹ | - | - | - | - | - | - | - | - | - | - | |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Suicide and Open verdicts | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| Cause not currently available | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

Source: Defence Statistics Health

¹ Non-regular members of the UK armed forces who died whilst deployed on operations are included in the data presented in the main report, and are therefore not included in this Annex.

² Includes UK armed forces non-regular personnel, Military Provost Guard service (MGPS) and Non regular Permanent Staff. 'r' indicates a change in previously published data (see 'Changes to previously published data' section)

There was **three** on-duty UK reservist deaths in 2019, one was due to cancers, one was due to circulatory system disorders and one was due to land transport accidents.

The number of on-duty UK reservist deaths over the last ten years remains small.

The information presented in this Annex does not include deaths to all UK armed forces reservist personnel as MOD are not routinely informed of deaths among this population which occur off-duty.

References and useful links

References

1. McLaughlin et al., (2015) An Evaluation of the Effect of Military service on Mortality: Quantifying the Healthy Soldier Effect
2. ROSPA - A History of Road Safety Campaigns:
<http://www.rospa.com/road-safety/advice/road-users/campaign-history/>
3. <http://think.direct.gov.uk/>
4. Fear et al., (2008) Risky Driving Among UK regular armed forces Personnel from the United Kingdom, American Journal of Preventative Medicine, 35, 230-236.

Useful links

Reported Road Casualties in Great Britain: Main Results 2014:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/438040/reported-road-casualties-in-great-britain-main-results-2014-release.pdf

Statistics and Registration Act, 2007:

http://www.legislation.gov.uk/ukpga/2007/18/pdfs/ukpga_20070018_en.pdf