Background Quality Report

Biannual UK Armed Forces and UK Entitled Civilian Operational Casualty and Fatality Statistics

Overview

The biannual UK Armed Forces and UK Entitled Civilian Operational Casualty and Fatality Statistics was first published on 19 March 2015, it provides statistical information on the number of UK Armed Forces personnel and UK Entitled Civilians, who died, were injured or became ill on, Op KIPION (Middle East), Op SHADER (Iraq and Syria), Op TORAL (Afghanistan) and Op GRITROCK (Ebola crisis in West Africa). The report is now published biannually at least two weeks in arrears and covers the following time periods;

- 1 June 2011 (the earliest month casualty data is available for Op KIPION) to latest biannual reporting period.
- 6 August 2014 (the start of Op SHADER) to latest biannual reporting period.
- 15 September 2014 (the start of Op GRITROCK) to 11 November 2015.
- 1 December 2014 (the start of Op TORAL) to latest biannual reporting period.

Operation GRITROCK closed on 11 November 2015. The numbers of casualties from Operation GRITROCK are included in the overall results. Statistics for this operation are included in Annex A of the report.

1. Methodology and Production

Definitions:

Operation KIPION: UK's primary deterrence and presence patrol in the Middle East and has been running since 2011. Op KIPION is a combination of Royal Navy operations in the Middle East patrolling the Strait of Hormuz, Suez Canal and counter piracy in the Indian Ocean, and RAF operations in the Broader Middle East. See following link for further information on Op KIPION:http://www.royalnavy.mod.uk/news-and-latest-activity/operations/red-sea-and-persian-gulf/kipion

Operation SHADER: The MOD is providing military support to the US led Coalition to defeat Daesh in Iraq and Syria. This support includes training Kurdish forces, beginning with the use of UK gifted machine guns, and gifting and delivering over 320 tonnes of weapons, ammunition and other military equipment. Since the Parliamentary vote, the RAF has flown successful strikes and provided valuable intelligence and surveillance. See following link for further information on Op SHADER: https://www.gov.uk/government/news/update-air-strikes-against-daesh

Operation TORAL: The UK's post 2014 contribution to operations in Afghanistan under the NATO RESOLUTE SUPPORT MISSION. Casualty and fatality statistics for Operations VERITAS and HERRICK in Afghanistan (Oct 2001 to Dec 2014) have been published by MOD on a monthly basis since 2006, these are available on Gov.uk https://www.gov.uk/government/collections/op-herrick-casualty-and-fatality-tables-index (they are now located under Historical National and Official Statistics on the MOD National and Official Statistics by topic page of the website).

Operation GRITROCK: Following the World Health Organisation (WHO) declaring Sierra Leone free from Ebola Virus Disease (EVD) on 7 November 2015, and given that the Department for International Development (DfID) had requested military support only until Sierra Leone had reached zero cases plus 42 days, there was no further requirement for military support to DfID, and Operation GRITROCK came to an end when remaining UK Service personnel had returned to the UK on 11 November 2015.

Overall Operational Casualties:

UK Service Personnel

- The Overall figures for the number of casualties and fatalities on operations[1] are compiled from the multiple data sources used to report on operational deaths and casualties. A casualty or fatality will only be counted once for their injury or illness in this section, even if they appear in all datasets.
- A casualty will only be counted once, either as a surviving casualty or an operational related death.

UK Entitled Civilians

- The number of UK Entitled Civilians who have sustained an injury or illness on operations and the number of UK Entitled Civilians who have died as a result of operations.

For each Operation:

UK Service Personnel

- The Overall figures for the number of casualties and fatalities from the multiple data sources used to report on operational deaths and casualties. A casualty or fatality will only be counted once for their injury or illness in this section, even if they appear in all datasets.
- Details on the number of casualties that are recorded in each of the two key casualty data sources are provided in the additional data tables in Excel:
    i. Initial **Notification of Casualty**.
    ii. Number of UK Service Personnel **Aeromedically Evacuated**.

Defence Statistics are working with PJHQ to source field hospital admission data, including RFA Argus, deployed field hospitals and coalition field hospitals with the intention of including this data source in future publications of the bulletin.

UK Entitled Civilians

- The number of **UK Entitled Civilians** who have sustained an injury or illness on operations and the number of UK Entitled Civilians who have died as a result of operations. For Op KIPION the numbers of civilian casualties are presented in a table due to the number of Royal Fleet Auxiliary (RFA) personnel deployed on this operation.

For Operation GRITROCK only (Annex A):

- An additional section was provided on the number of patients treated at the Kerry Town Treatment Unit in Sierra Leone. The number of UK Service Personnel and the number of UK Entitled Civilians admitted to the Treatment Unit.

The report does not include statistical information on numbers seen at primary healthcare or numbers referred to secondary healthcare in the UK.

The injury, natural cause (including illness) or death is reported in the quarterly or biannual time period in which it occurred. If a UK Service person or UK entitled civilian has more than one casualty incident reported, each will be counted in the time period in which it occurred.

Data on operational casualties are compiled by Defence Statistics from the following data sources:

[1] Includes Operations KIPION, SHADER, GRITROCK and TORAL.

- Initial Notification of Casualty (NOTICAS)
- Aeromedical Evacuations
- Medical Audit Forms (MAF) for patients treated at the Kerry Town Treatment Unit (KTTU) in Sierra Leone.
- The Defence Patient Tracking System (DPTS) was used for cross-referencing NOTICAS and Aeromed data.

NOTICAS

Notification of Casualty (or "NOTICAS") is the name for the formalised system of reporting casualties within the UK Armed Forces. NOTICAS information is available from the start of each operation. The NOTICAS reports raised for casualties contain information on how seriously medical staff on operations judge their condition to be. They are not strictly medical categories but are designed to give an indication of the severity of the injury or illness to inform what the individual's next of kin are told. The NOTICAS system medically categorises casualties as either:

i. Very Seriously Injured/ill (VSI) – A patient is termed 'very seriously injured/ill' when his/her injury is of such severity that life is imminently endangered.

ii. Seriously Injured/ill (SI) – A patient is termed 'seriously injured/ill' when his/her injury is of such severity that there is cause for immediate concern but there is no imminent danger to life.

iii. Incapacitating Injury/Illness (III). Any illness or injury (including battle casualties) which does not warrant classification of VSI or SI but renders them physically and/or mentally incapacitated[2].

iv. Unlisted Casualties (UL). An individual whose illness or injury requires hospitalisation but whose condition does not warrant classification as VSI, SI or III. Casualties who have been unexpectedly admitted to hospital and medically categorised as UL in the following circumstances must have a NOTICAS raised:

(i) On duty away from their home base; on operations, overseas deployments and exercises.

(ii) On board HM ships at sea or away from home ports.

(iii) The casualty has been admitted to hospital for less than 72 hours, but their injuries were caused by circumstances that would be of public interest, i.e. personnel Wounded in Action (WIA)

(iv) When admissions exceed 72 hours they must be reported with effect from the date and time of admission

The NOTICAS system is initiated very early in the patient's admission, the classification of a casualty will change as time progresses. The initial signal listing may in some cases be followed by an updated less serious listing if the case appeared worse on admission than transpires. The listing provided in this publication is only the initial listing for each casualty and not any subsequent listing.

As the formalised system of reporting casualties within the UK Armed Forces the quality of NOTICAS data is good. Enough information is provided within the NOTICAS to inform the individual's next of kin. However, the remarks field, which indicates the nature of injury, is free text and on occasions, there is little or no information provided. Therefore, the cause of injury can sometimes be recorded incorrectly. For example, a casualty may be recorded as Natural Causes but once the data is compared against other records such as aeromedical evacuation data, it may be identified as a Non Battle Injury.

[2] By its very nature, the injury will be sufficiently serious to preclude communication with NOK, therefore a III patient will not be able to SELFKINFORM.

Aeromedical Evacuation

Aeromedical Evacuation is the medically supervised movement of patients to and between medical facilities by air transportation. The RAF Aeromedical Evacuation Service provides the worldwide patient air movement capability for Defence 24 hours a day, 365 days a year. Patients are risk assessed prior to flight, and when necessary, trained medical teams are provided to deliver care in the air.

Defence Statistics receive Aeromedical evacuation records fortnightly from the Aeromedical Evacuation Control Centre (AECC) at RAF Brize Norton for operations. The numbers presented in this section include the number of personnel aeromedically evacuated out of Theatre and the number of aeromedical evacuations (which includes connecting flights and reverse Aeromedical evacuations). If a casualty was Aeromedically evacuated from Theatre, returned to Theatre at a later date and then have been Aeromed again for the same original injury/illness, they will be counted twice.

Aeromed Priority: When patients require Aeromedical evacuation they will be given appropriate degrees of Priority so that if the aircraft space is limited the more urgent patients may be evacuated before those with conditions less serious. The Priorities are:

- Priority 1 – Urgent. Patients for whom speedy evacuation is necessary to save life, limb or eyesight, to prevent complication of serious illness, or to avoid serious permanent disability. Priority 1 patients will normally be returned to the UK within 24 hours.
- Priority 2 – Priority. Patients who require specialised treatment not available locally and who are liable to suffer unnecessary pain or disability unless evacuated with the least possible delay. Priority 2 patients will normally be returned to the UK within 48 hours.
- Priority 3 – Routine. Patients whose immediate treatment requirements are available locally but whose prognosis would definitely benefit by air evacuation on routine scheduled flights. Priority 3 patients will normally be returned to the UK within 7 days.

Critical Care Air Support Team (CCAST)

Some patients who are aeromedically evacuated will require intensive support and monitoring in-flight, such as patients requiring ventilation, monitoring of central venous pressure or cardiac monitoring. In these instances they may be evacuated by CCAST.

The Critical Care Air Support Team members consist of an anaesthetist, ITU Nurses, Medical Assistant and Medical and Dental Services Equipment Technician. They are all AE qualified and have expertise in the Aeromedical evacuation of critically ill patients.

The quality of Aeromed data is reasonable; the data fields that are critical to ensure medically supervised movement of patients to and between medical facilities by air transportation are fully populated and accurate. However, there are some fields that are not critical for the movement of the patient that occasionally require validation with other data sources to ensure higher data quality. For example:

- The operation name is not always provided and it isn't until the record is compared with other casualty data that it can be determined as an operational record.
- The diagnosis code in the Aeromed dataset has to be used to determine whether the casualty has a Battle Injury, Non Battle Injury or Natural Cause. There are some codes that can cover both injury and illness, making it hard to categories the casualty. On these occasions cross-validation with other casualty data or from speaking to the AECC team would normally provide the correct categorisation.

Ongoing treatment in the UK/Home Country: Patients aeromedically evacuated from Theatre will receive ongoing treatment in Primary or Secondary Care in their home country. In the UK, the principal location of secondary Care is provided by the NHS, through the Royal Centre for Defence Medicine (RCDM) in Birmingham.

Defence Patient Tracking System (DPTS)
The DPTS commenced on 8 October 2007 to monitor the progress of Armed Forces patients undergoing specialist treatment in the UK to ensure that their care is delivered promptly and coherently, and to coordinate clinical, administrative and welfare aspects of their support. The DPTS was set up as previously this information was not stored centrally.

Kerry Town Treatment Unit (KTTU)
The current Ebola crisis in West Africa was beyond the capacity of national authorities and non-governmental organisations (NGOs) alone. The Ministry of Defence was assisting the Department for International Development in providing a key component in the UK's response. 22 Fd Hospital deployed on the 16th October 2014 to support the international effort in the fight against the Ebola Virus by providing a high level of care to Foreign National Healthcare Workers. When capacity allowed it was also able to extend that to include Local National Healthcare Workers. The KTTU opened with 2 beds on 5 November 2014, rising to 12 beds a week later. The Treatment Unit expanded to 20 beds on 31 December 2014 and reduced to 12 beds again on 3 March 2015.

The KTTU provided a high level of diagnostic capability with biochemistry, haematology and microbiological testing enabling the management of the complications of Ebola as they would in the United Kingdom, with daily blood tests and intravenous fluids. Care may have been escalated to include central lines and blood transfusions when needed, as well as ultrasound assessment. The majority of doctors are consultants, with additional expertise in infectious and tropical diseases.

The MAF form was based on the World Health Organisation case record form. It was used to collect baseline presentation data (e.g. demographic and symptom details when they first arrived at the facility), daily data (e.g. laboratory and clinical data as it occurs) and outcome data (e.g. final diagnosis, discharge, death).

Operational Fatality Data
To record information on cause and circumstances of death, Defence Statistics uses the World Health Organisation's International Statistical Classification of Diseases and Health-related Problems 10th revision (ICD-10) as recorded by the Office for National Statistics (ONS) on the death certificate. In addition, Defence Statistics also record the casualty reporting categories used by the Joint Casualty and Compassionate Cell, used for reporting to the Chain of Command and for notifying the next of kin and also use information recorded on the Joint Theatre Trauma Registry (JTTR) to validate data.

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.

When providing statistics on suicides, Defence Statistics rely exclusively on the information provided by coroners in England and Wales and in Northern Ireland, and the Procurator Fiscal in Scotland. This ensures the Department's objectivity, as all accidental deaths and those resulting from violent action have to be referred to these officials for investigation. Statistics provided include both coroner-confirmed suicides and open verdict deaths, in line with the definition used by the Office for National Statistics (ONS), since research has shown that these deaths share many similarities with suicides except that in the case of open verdict deaths, the intention of the deceased to take their life has not been sufficiently proven to the satisfaction of the coroner. Any deaths where the cause is consistent with suicide are categorised as accidents until a coroner's inquest takes place and a verdict received.

The fatality data is compiled from; Notifications from Permanent Joint Headquarters (PJHQ) at the time of death for all operational deaths, weekly notifications of all regular Armed Forces deaths from the Joint Casualty and Compassionate Cell (formerly the single Service casualty cells) and additional information on cause of death from military medical sources in the single Services. These records are then validated against the UK's Joint Theatre Trauma Registry (JTTR), which contains information recorded by one the UK's Trauma Nurses who attends the post mortems.

Operational deaths are classified at the time of death by the Joint Casualty and Compassionate Cell as follows:

Hostile Action

- **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.
- **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.

Non-Hostile Action

- **Died on Operations (DOP):** A casualty who died whilst deployed on, or as a result of operations but is not KIA or DOW. Includes operational accidents, road traffic accidents, assaults, suicides and deaths as a result of natural causes.

Injuries or Illness during R&R

All Service personnel serving tours of six months or longer receive two weeks mid-tour leave. R&R gives troops the chance to recharge their batteries, improving morale and operational effectiveness.

- Injuries and illness that occur whilst a Service Person is on Rest and Recuperation (R&R) have been excluded from this publication unless they returned to operations and subsequently required treatment or Aeromedical evacuation back to the UK.

Defence Statistics receive:
UK Civilians

- The UK Civilian casualties presented in this report include Entitled Civilians. Entitled Civilians include patients eligible either without special financial authority or on a repayment basis for aero-medical evacuation. These patients include Royal Fleet Auxiliary (RFA) personnel, MOD United Kingdom Based Civilians (UKBC's), MOD Contractors, MOD Welfare Organisations and other Government Departments.

- Non-Entitled Civilians are excluded from overall numbers and initial NOTICAS and Aeromed Tables. However, Non-Entitled Civilians are included in the figures for the Kerry Town treatment facility (Op GRITROCK only).
- Any UK Entitled Civilian deaths presented in this report include UK Entitled Civilians employed by the Ministry of Defence only e.g. a Civil Servant and does not include any other type of UK Entitled Civilian.

2. Relevance

This report has been published to support the MOD's commitment to release information on operational causalities wherever possible. It was agreed to produce statistics on a quarterly basis which will be published on the Gov.uk website. This report became biannual following a consultation with internal and external stakeholders which ended on 24 August 2017.

The MOD are committed to making information on operational casualties public but have to draw a line between how much information is provided regularly in the public domain and information which compromise operational security of UK Armed Forces personnel or which risks breaching an individual's right to medical confidentiality.

The release is used to answer parliamentary questions and Freedom of Information requests. The report is also useful for internal customers in PJHQ, the Ops Directorate and the single Services.

This report is currently limited in terms of the amount of information it can include, specifically in relation to the type of casualties seen, as it can harm the operational security of service personnel that are still deployed on operations and due to the small numbers of casualties on current operations, it may affect the patient's rights to medical confidentiality.

3. Accuracy and Reliability

Defence Statistics use three sources of data to collate the casualty statistics (Initial Notification of Casualty (NOTICAS) signals, Aeromedical Evacuation Control Cell data and Medical Audit Forms (MAF) of patients treated at the Kerry Town Treatment Unit (KTTU) in Sierra Leone). Validation routines on each of the datasets are carried out to check on the names and Service numbers of casualties, to ensure the accuracy in counting UK Military casualties and to check whether they've previously been included in the statistics. Defence Statistics also then carry out additional validation of the casualty and fatality data by linking it with two other sources of data, namely the Defence Patient Tracking System (DPTS) and the Joint Theatre Trauma Registry (JTTR). This allows us to check on both the Operational Theatre and the classification of injury/illness/death. Any mismatches between the datasets are investigated and amendments are made to the raw data if necessary before the report is processed, ensuring accuracy.

Due to the lack of statistical analysis in this report, there are no estimates or potential for bias. The main sources of error within the report sit in the source data itself. It's possible for Service numbers and nationalities to be recorded incorrectly. If that casualty does not appear in another dataset, Defence Statistics have no other sources to validate against and will assume they have been entered correctly at source. It is therefore possible to exclude a UK casualty if the nationality and service number have been recorded incorrectly.

4. Timeliness and Punctuality

The initial release of the report was on 19 March 2015, all subsequent releases have been published at least a fortnight after the end of the six month period on a Thursday i.e. for the six months up to 31 March 2018; the statistics will be published on 26 April 2018. Data is provided from the relevant suppliers on a weekly or fortnightly basis. It takes approximately two weeks to ensure all of the data has been received, validated and the report produced.

Planned publication dates can be found on the Publication Release Dates can be found in the Statistics section of the Gov.uk website and on the UK National Statistics Publication Hub.

5. Accessibility and Clarity

The reports are published on the Gov.UK website at:

https://www.gov.uk/government/publications/mod-national-and-official-statistics-by-topic.

They can also be accessed via the UK National Statistics Publication Hub or through an internet search engine such as Google.

24 hour pre-release access to the report is available to a limited distribution list within the MOD. The full list can be found in the Pre-Release access list available on the Gov.UK website.

The statistics provided are straightforward counts in tables, with no deeper analysis provided. Each table has a number of footnotes clarifying what is included/ excluded and provides appropriate caveats.

6. Coherence and Comparability

The Defence Statistics figures in the biannual UK Armed Forces and UK Entitled Civilian Operational Casualty and Fatality Statistics are the definitive statistics in the MOD. There are no other publically available regular publications on the numbers of casualties with which to ensure coherence.

The information provided in this statistical bulletin is broadly comparable with those presented in the Statistical releases for previous operational deployments including Iraq and Afghanistan. These statistical releases presented numbers of UK Service personnel and entitled civilians for deaths, very seriously injured and seriously injured hospital admissions and aero-medical evacuations.

This current statistical bulletin has expanded the definition of very seriously injured and seriously injured to include those who were very seriously ill or seriously ill.

7. Trade-offs between Output and Quality Components

The main trade-off is between the level of information presented in the output, without breaching medical confidentiality or compromising operational security.

The MOD are committed to making information on operational casualties public but have to draw a line between how much information is provided regularly in the public domain and information which compromise operational security of UK Armed Forces personnel or which risks breaching an individual's right to medical confidentiality.

8. Assessment of User Needs and Perceptions

Defence Statistics developed the UK Armed Forces and UK Entitled Civilian Operational Casualty and Fatality Statistics in response to increased interest from the general public and Ministers for the injuries sustained by UK Service Personnel on operations.

Users are encouraged to provide feedback on the publication itself and Defence Statistics also welcome feedback from any other internal and external customers**.** Defence Statistics seek advice from key internal stakeholders to ensure the commentary provided helps to adequately explain the trends seen in the data for users.

There is currently no process in place to assess the satisfaction of users for this report, though it is an objective of Defence Statistics (Health) to assess each part of the quality report for all of our Official and National Statistics. This will result in an assessment of user needs and may lead to a consultation process for internal and external users to assess their satisfaction with the report.

9. Performance, Cost and Respondent Burden

To develop each report, it takes approximately 0.2 Full Time Equivalent (FTE) to perform the analysis and compile the report. The burden on the data providers is low as the upkeep of the databases forms part of their daily routines and they provide us with the latest data when it's available on a regular basis. Respondent burden is low as the data is obtained from administrative and clinical audit systems that are maintained by other teams within the MOD.

10. Confidentiality, Transparency and Security

Security

All Defence Statistics (Health) staff involved in the production of the casualty statistics have signed a declaration that they have completed the Government wide Responsible for Information- General User training and they understand their responsibilities under the Data Protection Act and the Official Statistics Code of Practice. All MOD, Civil Service and data protection regulations are adhered to. The data is stored, accessed and analysed using the MOD's restricted network and IT systems. The databases supplied by our external customers are password protected.

Confidentiality

Prior to analysis data sources have been linked using a pseudo-anonymisation process. The individual identifiers were stripped from datasets and replaced by a pseudo-anonymiser, generated, effectively, by an automated sequential numbering system. The key to the system is that it recognises previous occurrences of a given Service number and allocates the same pseudo-anonymiser on each occasion. This also enables the data to be linked with the other data sources, which have also already been pseudo-anonymised. The pseudo-anonymisation process can only be reversed in exceptional circumstances controlled by the Caldicott Guardian under strict protocols.

The tables in the report are scrutinised to ensure individual identities are not revealed inadvertently.

Deaths data in England and Wales are supplied by and used with the permission of ONS. Deaths in Northern Ireland are supplied by and used with the permission of Northern Ireland Statistics and Research Agency (NISRA) and General Registry Office (GRO) supply deaths in Scotland.

Transparency

The biannual UK Armed Forces and UK Entitled Civilian Operational Casualty and Fatality Statistics is currently a basic statistic, which contains tables and identifies any issues or caveats to the data with limited commentary. This quality report provides further information on the method, production process and quality of the output.

The biannual UK Armed Forces and UK Entitled Civilian Operational Casualty and Fatality Statistics is an Official Statistic and is produced in line with the UK Code of Practice for Official Statistics. The publication date is pre-announced on the UK National Statistics Publication Hub. 24 hour pre-release access is provided to an agreed list of people, with the list being available on the Gov.UK website (https://www.gov.uk/government/publications/defence-statistics-pre-release-access-list). A ministerial submission accompanies the pre-release publication, which contains the key information about the publication and also lines to take for Defence media communications.

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We welcome feedback on this Background Quality Report or any of the statistics mentioned.