

# Background Quality Report

---

## Mefloquine Prescribing in the UK Armed Forces

### Introduction

1. This biannual official statistic provides information on the number of mefloquine prescriptions given to UK armed forces personnel at MOD medical facilities.
2. Mefloquine (also known as Lariam) is used to prevent or treat malaria. It may be prescribed as one of a number of alternative chemoprophylactic drugs for military personnel deployed to areas where there is a high risk of chloroquine resistant malaria.

### Background

3. A number of individuals including former Service personnel and their families, members of the public and MPs have campaigned to prevent the use of mefloquine in the UK armed forces due to the reported neuropsychological adverse reactions of the drug.
4. In 2015 the House of Commons Defence Committee (HCDC) conducted an inquiry into the use of mefloquine (Lariam) in the UK armed forces. The HCDC published its report into the use of mefloquine by the armed forces in May 2016, and made a number of recommendations concerning the future prescribing of the drug<sup>1</sup>.
5. In response to the inquiry and these recommendations, the MOD amended its policy on preventing malaria in military personnel which was implemented on 12 September 2016 and further revised in June 2017. In addition, the government response to the HCDC report was published in September 2016<sup>2</sup>.
6. The HCDC stated that they would monitor the MOD's policy in relation to malaria protection by requesting six monthly updates on the MOD's use of mefloquine. Publication of this official statistic is to meet this requirement, support the MOD's commitment to release information where possible and ensure that the public has equal access to the information.

### Methodology

7. Data on prescriptions for mefloquine were extracted from the electronic patient medical record (DMICP) data warehouse. DMICP is a live data source and subject to change. The rollout of DMICP commenced during 2007 and comprises an integrated primary Health Record (iHR) for clinical use and a pseudo-anonymised central data warehouse. Prior to this data warehouse,

---

<sup>1</sup> <https://www.publications.parliament.uk/pa/cm201516/cmselect/cmdfence/567/567.pdf>

<sup>2</sup> <https://www.publications.parliament.uk/pa/cm201617/cmselect/cmdfence/648/648.pdf>

medical records were kept locally, at each individual medical centre. By 2010, DMICP was in place for the UK and the majority of Germany. Rollout to other overseas locations commenced in November 2011.

8. Information presented relates to the number of antimalarial drug prescriptions. Individuals may have received more than one prescription during the reporting period. Please note it is not possible to identify from the prescription data whether the drug was prescribed as a chemoprophylaxis to prevent malaria or if it was prescribed to treat malaria. All prescriptions for antimalarial drugs have been included and categorised as chemoprophylaxis.
9. The overall number of antimalarial prescriptions provided in this official statistic include a drug called doxycycline. Doxycycline can be prescribed as either an antimalarial or an antibiotic. Defence Statistics have developed a methodology to identify which doxycycline prescriptions were for antimalarial use (rather than as an antibiotic). This official statistic (first publication on 18 May 2017) includes only those doxycycline prescriptions identified for antimalarial use.
10. A patient was categorised as having received a face to face risk assessment if codes were entered into their electronic record on the day of the prescription or prior to the mefloquine prescription.
11. A sample of records were reviewed by clinicians in December 2016. Clinicians who gave a prescription of mefloquine were asked to review the individual medical record if no coded data could be found to identify a risk assessment or alternative drug offered. Having checked the record, the clinician then completed a spreadsheet to indicate whether or not a face to face assessment was completed and alternative drug offered. If a clinician confirmed that a face to face risk assessment was carried out or alternative drug offered then these records have been categorised as such, even if there is no centrally coded data.
12. The data on mefloquine presented is based on personnel who have been prescribed the drug; it does not ensure the individual has taken the drug.

## **Relevance**

### **Coverage**

13. The report covers mefloquine prescriptions and risk assessments to Regular and Reservist service personnel (trained and untrained). Regular personnel include Gurkha regiments and Military Provost Guard Service.
14. Doxycycline, atovaquone + proguanil (Malarone), proguanil, chloroquine + proguanil and chloroquine can be supplied to UK armed forces personnel through a Patient Group Direction (PGD). A PGD is a specific and detailed written direction for the administration or supply of named medicines, including those classified as Prescription Only Medicines (POM), by a named nurse, pharmacist or other authorised healthcare professional, in a specific clinical situation. A PGD is not a form of prescribing or an authority to prescribe. It is an

authority to supply or administer. Mefloquine cannot be prescribed through a PGD.

15. In some cases, for example when a PGD is applied, it is possible that a patient has been supplied antimalarial drugs with the appropriate authorisations, but because of the separate process of authorisation and supply, the name of the drug was not always captured in the electronic patient record. In such cases, Defence Statistics were unable to identify which drug was prescribed from the data warehouse. Therefore, these cases were not included in the total numbers of antimalarials given. The information may have been included as free text in the patient's record.

### **User Needs**

16. The HCDC stated that they will monitor the MOD's policy in relation to malaria protection by requesting six monthly updates on the MOD's use of mefloquine. In addition MOD continues to receive requests for information from the media and members of the public; publication of this official statistic is to meet this requirement, to support the MOD's commitment to release information where possible and ensure that the public has equal access to the information.

### **Accuracy**

17. Individual MOD medical centres are responsible for ensuring the accuracy of clinical information in the electronic patient record. All coded (not free text) information is saved into the central data warehouse at regular intervals, usually every three days. The electronic patient record system is a large clinical and administrative database and is subject to the data quality issues of any large administrative system with data collated by a large number of medical and administrative staff for clinical delivery purposes.
18. The main sources of potential error in the mefloquine official statistic are as follows:
  - Incomplete or inaccurate data from the data warehouse.
  - Manual error during production of report.
  - Data entered as free text are not available from the data warehouse.
19. To ensure that potential errors are identified and resolved, Defence Statistics implement a series of data quality checks throughout the report production. When required, these checks involve close liaison with personnel in Defence Primary Health Care headquarters who are responsible for providing service delivery, to ensure the accuracy of the figures published.

## **Timeliness and Punctuality**

### **Timeliness**

20. Data are entered into the electronic patient record in real time and the data warehouse is updated every three days. Defence Statistics extract data and publish mefloquine prescribing figures on a biannual basis.
21. Figures are published seven weeks after the end of the reporting period. This is due to the time lag in data availability and to allow time for the production of the statistic.

### **Punctuality**

22. The official statistics reports have been published on time to meet preannounced release dates. A one-year release schedule outlining the following financial year's publication date is published on the Gov.UK website. Future publication dates will also be announced on the UK Statistics Authority hub at least one month in advance.

## **Accessibility and Clarity**

### **Accessibility**

23. Mefloquine prescribing statistics are published on the Gov.UK website. The publications are available from 0930 hours on the day of release.
24. 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.

### **Clarity**

25. Users with an interest in the key findings can read a short summary of main messages immediately on the front page.

## **Coherence and Comparability**

### **Coherence**

26. At the time of publication, it was not possible to identify information relating to the numbers of prescriptions for antimalarial drugs including mefloquine for the total UK population or other foreign militaries for comparative purposes.

### **Comparability Over Time**

27. Data for the latest six-month period were compared to the previous six-month period and totals for the whole report coverage were presented.

28. DMICP is a live data source and is subject to change due to late reporting. Therefore, the total number of antimalarial prescriptions cannot simply be derived by adding together the number of prescriptions from the last six months of monitoring to the number of prescriptions reported in the previous edition of the official statistic. If you require the total number of antimalarial prescriptions, use the figures reported in the most recent edition.

### **Trade-offs between output quality components**

29. Where possible, Defence Statistics minimise the cost to Government of producing these statistics by using data already collated for operational delivery purposes within MOD. The main source of data used for compiling these statistics is the electronic patient medical record (DMICP) data warehouse. DMICP data was cross referenced with the MOD's Joint Personnel Administration (JPA) system to identify UK armed forces personnel and remove civilians. Both data systems are large administrative databases, and as such, data quality across fields is of varying quality and completeness.

### **Assessment of User Needs and Perceptions**

30. In reference to the UK Statistics Authority report, The Use Made of Official Statistics, the Mefloquine Prescribing Statistic is used for:
- (i) Policy making and monitoring
  - (ii) Informing general public of the performance of government
31. External organisations such as the HCDC use the official statistic for monitoring the numbers of mefloquine prescriptions to UK armed forces and compliance to policy; specifically the use of face to face risk assessments and offers of alternative antimalarials.

### **Description of Users and Usage of Statistics**

32. The Mefloquine Prescribing Statistic has been published in response to recommendations by the HCDC following an inquiry into the use of mefloquine in the UK armed forces.
33. The publication of the statistic also plays an important part in ensuring the department's accountability to the British public.

### **Strengths and Weaknesses in Relation to User Needs**

34. Users external to the MOD are encouraged to give feedback via the MOD website. The publication provides details of how to give feedback.
35. The key strength of the Mefloquine Prescribing data is that the prescription data used is the information held at each MOD medical centre. The timeliness of this

data and the regular updates to the data model mean the most up to date information is available for analysis.

36. The key weakness is that Defence Statistics have no control over the quality of the raw data in the data warehouse that was used to collate figures. The prescription and associated risk assessment data in DMICP were input by medical centre staff. Information may have been recorded in a patient's medical record as free text which was not available in the data warehouse. It is possible that some patients received a risk assessment but it was not entered into the medical record as coded information and therefore was not available for analysis. In order to partially overcome this problem, Defence Statistics engaged with Defence Primary Healthcare (DPHC) to investigate missing information relating to face to face risk assessments and alternative drug offered in medical records for the period 12 September 2016 to 31 December 2016. DPHC continue to monitor mefloquine prescriptions and compliance with policy.

## **Performance cost and respondent burden**

### **Operational Cost**

37. The production of the Mefloquine Prescribing official statistic requires 0.2 FTE per year.
38. The Mefloquine Prescribing official statistic uses administrative data sources already collected by the MOD. As such, there is no respondent burden, and the main operational cost to production of the statistics is for quality assurance and data interpretation.

## **Confidentiality, Transparency and Security**

39. All Defence Statistics Health staff involved in the production of Mefloquine Prescribing Official Statistic have signed a declaration that they have completed the government-wide Responsible for Information training and they understand their responsibilities under the Data Protection Act and the Official Statistics Code of Practice. All staff involved in the production process have signed the Data Protection Act, and all MOD, Civil Service and data protection regulations are adhered to.
40. Defence Statistics Health also adhere to Joint Service Publication 200 (October 2017). Defence Statistics Health ensure that the mefloquine prescribing data is kept confidential by holding this data on a secure server. Only individuals who work on the reports have access to the data.
41. Defence Statistics Health adhere to the principles and protocols laid out in the Code of Practice for Official Statistics and comply with pre-release access arrangements. The Defence Statistics Pre-Release Access lists are available on the Gov.UK website (<https://www.gov.uk/government/statistics/defence-statistics-pre-release-access-list>).