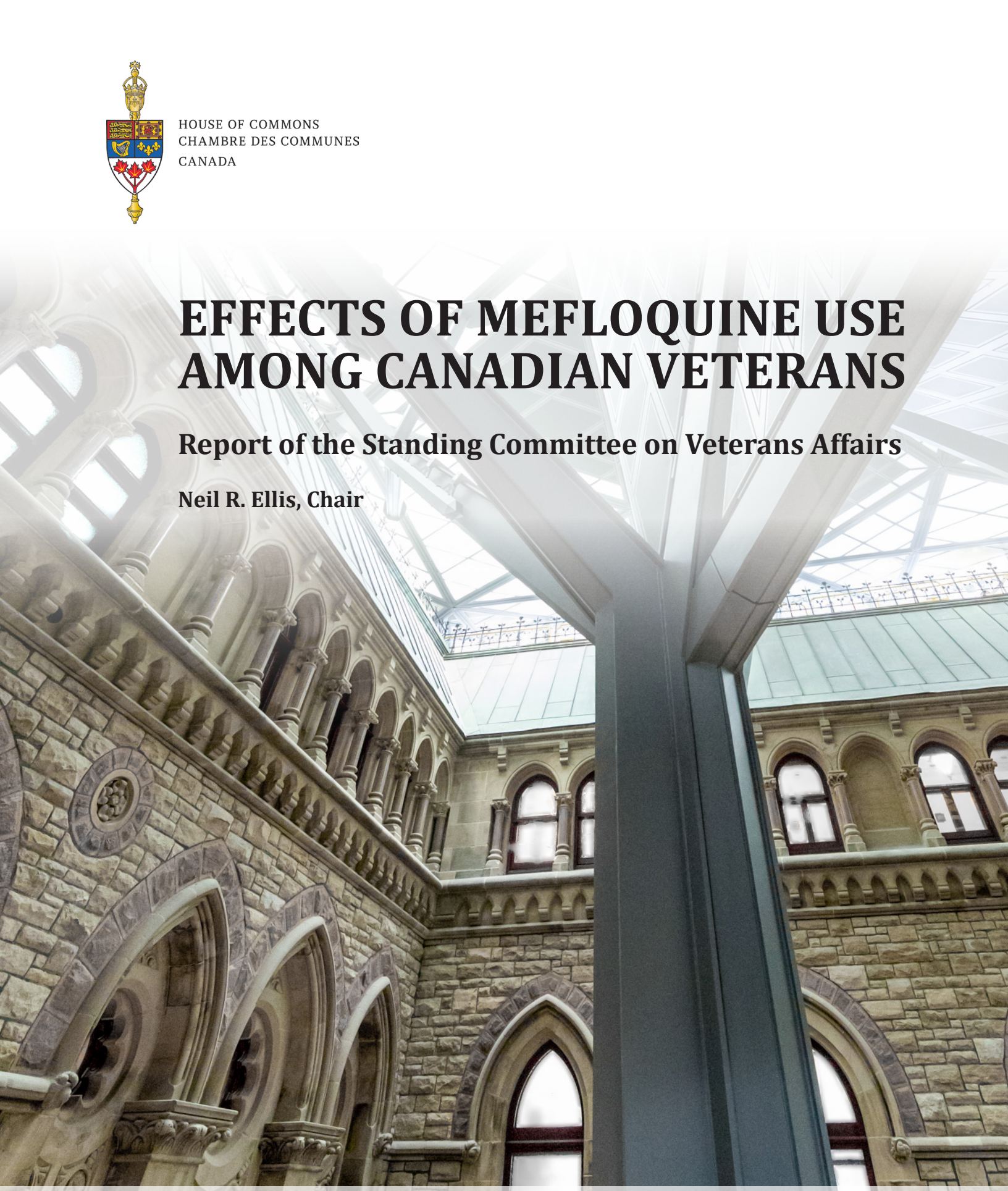
HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

EFFECTS OF MEFLOQUINE USE AMONG CANADIAN VETERANS

Report of the Standing Committee on Veterans Affairs

Neil R. Ellis, Chair



JUNE 2019
42nd PARLIAMENT, 1st SESSION

EFFECTS OF MEFLOQUINE USE AMONG CANADIAN VETERANS

Report of the Standing Committee on Veterans Affairs

Neil R. Ellis
Chair

JUNE 2019

42nd PARLIAMENT, 1st SESSION

NOTICE TO READER

Reports from committee presented to the House of Commons

Presenting a report to the House is the way a committee makes public its findings and recommendations on a particular topic. Substantive reports on a subject-matter study usually contain a synopsis of the testimony heard, the recommendations made by the committee, as well as the reasons for those recommendations.

STANDING COMMITTEE ON VETERANS AFFAIRS

CHAIR

Neil R. Ellis

VICE-CHAIRS

Phil McColeman

Rachel Blaney

MEMBERS

Bob Bratina

Shaun Chen

Doug Eyolfson

Robert Kitchen

Stéphane Lauzon (Parliamentary Secretary – Non-Voting Member)

Karen Ludwig

Darrell Samson

Cathay Wagantall

OTHER MEMBERS OF PARLIAMENT WHO PARTICIPATED

Luc Berthold

Michael Cooper

Kerry Diotte

Marilyn Gladu

T.J. Harvey

Angelo Iacono

Wayne Long

Alexandra Mendès

Robert-Falcon Ouellette

Terry Sheehan

Borys Wrzesnewskyj

CLERK OF THE COMMITTEE

Michael MacPherson

LIBRARY OF PARLIAMENT

Parliamentary Information and Research Service

Jean-Rodrigue Paré, Analyst

THE STANDING COMMITTEE ON VETERANS AFFAIRS

has the honour to present its

FOURTEENTH REPORT

Pursuant to its mandate under Standing Order 108(2), the Committee has studied the effects of mefloquine use among Canadian veterans and has agreed to report the following:

TABLE OF CONTENTS

LIST OF RECOMMENDATIONS

As a result of their deliberations committees may make recommendations which they include in their reports for the consideration of the House of Commons or the Government. Recommendations related to this study are listed below.

EFFECTS OF MEFLOQUINE USE AMONG CANADIAN VETERANS

INTRODUCTION

In September and early October of 2016, veterans of Canada's 1992–1993 mission to Somalia, as well as veterans from other deployments, including Afghanistan, made representations to the Canadian government, stating that they believed they were suffering from health problems due to mefloquine, an antimalarial drug they were required to take during their missions. The matter was then referred to the Committee by the government. As it had just begun its study on mental health and suicide prevention among veterans, the Committee decided to address the issue of mefloquine as a theme of its study, and dedicated a chapter of its report to this subject. Having determined that the Committee had not analyzed the research on the effects of this drug in enough depth, a new motion was passed on 1 November 2018: that the Committee "review the latest research, and compare with the experience of our allies; [and] that the testimony and report be limited to recognized medical, scientific, and research experts, [including those of our allies]." A dozen witnesses appeared before the Committee between 29 April and 15 May 2019.

This report is divided into five parts. The first part provides a historical overview of the development and use of mefloquine, as well as an overview of the research on its side effects. The second part reviews the key findings of the Committee's 2016-2017 study on how mefloquine became an issue within the Canadian Armed Forces and among veterans. The third part examines the key scientific debate on mefloquine – that is, the debate on the long-term risk of neuropsychiatric effects, given that the short-term risks have been identified and recognized by the scientific community. The fourth part describes what led the Canadian Armed Forces to considerably limit its use of mefloquine during deployments in malaria risk zones, and, in 2017, to make it a drug of last resort. The fifth part reviews the reasons that may or may not allow Veterans Affairs Canada to compensate veterans who claim that their long-term health problems were caused by mefloquine.

HISTORICAL OVERVIEW OF THE USE OF MEFLOQUINE FOR MALARIA PREVENTION

Mefloquine, a medication that is used to prevent or treat malaria, was discovered as part of an ambitious research program launched by the U.S. Army in the late 1960s following a high prevalence of malaria which, at its height, was responsible for the daily deaths of 1% of troops deployed in Vietnam.[1] The drug began to be marketed as "Lariam" in the late 1980s by the pharmaceutical Hoffmann-La Roche, and was approved by Health Canada in January 1993.[2] Mefloquine became the drug of choice for travellers who visit areas at risk of malaria. This preference is due, in part, to its slow elimination from the body, which limits the dosage to one dose per week. This is in contrast to the alternative drug, doxycycline, that needs to be administered daily. It is reported that about 30,000 western travellers contract malaria each year and between 300 and 1,000 of them die of the disease.[3]

Until the mid-2000s, the documented side effects of mefloquine were gastrointestinal disorders and minor neuropsychiatric events such as dizziness and sleep disturbances. The widespread use of the drug gradually revealed rare but severe episodes of anxiety, depression, hallucinations and psychosis. The rarity of these events, however, prevented the establishment of a causal relationship to the use of the drug. In the early 2010s, following the results of peer-reviewed scientific studies, the risk of serious events was set at 1 to 10,000.[4] The risk of side effects is higher for those to whom the drug has been prescribed in higher doses for therapeutic purposes, rather than as a prophylactic.[5]

The World Health Organization has recommended that mefloquine be contraindicated for individuals with a personal or family history of psychiatric disorders.[6] In 2014, the European Medicines Agency recommended adding warnings about possible long-term neuropsychiatric effects, stating that: "In a small number of patients, it has been

1 Dr. Ashley M. Croft, "A lesson learnt: the rise and fall of Lariam and Halfan," *Journal of the Royal Society of Medicine*, Vol. 100, No. 4, April 2007, pp. 170–174.

2 Ms. Maria Barrados, Deputy Auditor General, Standing Committee on Public Accounts, 18 November 1999, 1535.

3 Dr. Patricia Schlagenhauf et al., "The position of mefloquine as a 21st century malaria chemoprophylaxis," *Malaria Journal*, Vol. 9, No. 357, 2010.

4 Dr. Patricia Schlagenhauf et al., "The position of mefloquine as a 21st century malaria chemoprophylaxis," *Malaria Journal*, Vol. 9, No. 357, 2010.

5 Dr. Tuan M. Tran et al., "Psychosis with paranoid delusions after a therapeutic dose of mefloquine: a case report," *Malaria Journal*, Vol. 5, No. 74, 2006.

6 Dr. Patricia Schlagenhauf et al., "The position of mefloquine as a 21st century malaria chemoprophylaxis," *Malaria Journal*, Vol. 9, No. 357, 2010.

reported that neuropsychiatric reactions (e.g., depression, dizziness or vertigo and loss of balance) may persist for months or longer, even after discontinuation of the drug."[7]

Lariam ceased to be commercialized in Canada on 2 May 2013, but the generic mefloquine, produced by AA Pharma Inc., continues to be marketed. Documented long-term psychiatric side effects are rare, but significant enough for most regulatory agencies to request that a warning be included in the product information provided with the drug. Dr. John Patrick Stewart of Health Canada supported this position during his November 2016 testimony: "Some of the reports of adverse events with neuropsychiatric symptoms said that the symptoms persisted afterwards. It's not clear whether that's been caused by the medication, but it's there, so it's in the monograph to alert practitioners that this is something to consider when they're thinking of prescribing the drug."[8]

According to a 2014 report by the European Medicines Agency:

> There is enough evidence from the presented drug safety reports, the submitted literature report and the FDA assessment report supporting a causal relationship between mefloquine and the occurrence of long lasting and even persistent neuropsychiatric side effects. Additionally, based on the pharmacodynamic profile of mefloquine, the neuropsychiatric side effects of Lariam can be explained to a large extent by the neuro(patho)physiology and can be predicted by mechanistic aspects as well.[9]

This conclusion is consistent with the one found in an assessment published by Health Canada in June 2017: "A small number of human studies, of which most were based on surveys of patients who had taken mefloquine, suggested that psychiatric adverse events could be long-lasting." According to the same study, there would be "about 1.5 reports of long-lasting neurological or psychiatric adverse events for every 100,000 prescriptions filled in Canada." This conclusion excludes, however, situations where warnings would not have been adequately followed, i.e., when patients "had past or ongoing neurological or psychiatric conditions."

---

7 European Medicines Agency, Pharmacovigilance Risk Assessment Committee, *PRAC recommendations on signals*, EMA/PRAC/65788/2014, 24 February 2014.

8 House of Commons, Standing Committee on Veterans Affairs [ACVA], *Evidence*, 3 November 2016, 1630 (Dr. John Patrick Stewart, Director General, Marketed Health Products Directorate, Health Products and Food Branch, Department of Health).

9 European Medicines Agency, *Updated PRAC rapporteur assessment report on the signal of permanent neurologic (vestibular) disorders with mefloquine*, EMA/63963/2014, p. 31.

In a study of nearly 9,000 American Peace Corps volunteers, a slight increase was noted in the probability of obtaining a psychiatric diagnosis among mefloquine users. However, the study found: "When excluding those with prior psychiatric illness, there were no differences in psychiatric diagnosis rates."[10] According to Dr. Michael Libman of McGill University, other recent studies tend to show that, in terms of the long-term side effects of all antimalarials, neuropsychiatric effects may perhaps be more common among mefloquine users.[11]

These various epidemiological studies tend to support the hypothesis that the risk of neuropsychiatric effects of mefloquine, in both the short and long term, can be largely attributed to incorrectly administering the medication. According to this hypothesis, mefloquine exacerbates other risk factors, instead of being the direct cause of neuropsychiatric effects.

That is what the July 2017 Canadian Forces' Surgeon General Task Force Report On Mefloquine indicates as well. One conclusion identifies the biggest risk as being that CAF members will be prescribed mefloquine "despite evidence of potential contraindications or precautions in their medical records" (p. 38). In fact, between December 2013 and December 2016, 12% of mefloquine prescriptions were to CAF members with precautions or contraindications, and 62% of patients who received a prescription were not assessed for those contraindications or precautions. The Surgeon General of the Canadian Armed Forces, Brigadier-General Andrew Downes, confirmed that, in response to these findings, a very robust system was put in place to ensure that this type of prescription problem does not happen again.[12]

Putting aside the debate arising from Dr. Remington Nevin's research on the long-term toxicity of mefloquine, which will be addressed in Chapter 3, the following provisional statements can be made:

- The short-term neuropsychiatric risks of mefloquine, that is, the effects that cease when the patient stops taking the medication, are well

10 Tan, K. et al., "Long term health outcomes among returned Peace Corps volunteers after malaria prophylaxis, 1995-2014", Travel Medicine and Infectious Disease, 2017, 17, 50-55.

11 Dr. Michael Libman (Professor, Department of Medicine, McGill University Health Centre, As an Individual), ACVA, 15 May 2019, 1545. See also the remarks of Dr. Ashley Croft (Consultant Public Health Physician, As an Individual), ACVA, 15 May 2019, 1555.

12 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1555.

documented, can be severe, and are largely recognized by the scientific and medical community;[13]

- There is a theory that long-term neuropsychiatric risks, that is, permanent effects, may be present in rare cases, but the current state of research does not establish a conclusive link with mefloquine;

- The European Medicines Agency is the only regulatory body to conclude that "there is enough evidence … supporting a causal relationship between mefloquine and the occurrence of long lasting and even persistent neuropsychiatric side effects."

HISTORICAL DEBATE ON THE USE OF MEFLOQUINE BY THE CANADIAN MILITARY

In 1992, tens of thousands of mefloquine tablets were made available to Canadian Armed Forces' troops deployed in Somalia as part of a clinical trial.[14] However, according to a 2017 report by the CAF Surgeon General: "The CAF members deploying to Somalia did not participate in the [safety monitoring study], since the guidelines of the study were not compatible with the operational requirement to deploy to Somalia."[15]

According to Dr. Remington Nevin, this statement is proof that the Canadian Armed Forces "had no intention of abiding by the terms of that clinical research study. … The clinical study was the mechanism by which the Canadian Forces obtained industrial quantities of the drug that they otherwise could not have obtained."[16]

As General Auger said during his testimony before the Standing Committee on Public Accounts in 1999: "Canadian Forces members were forced to take this medicine to protect against malaria while they were deployed to Somalia."[17]

---

13 See, for example, remarks by Dr. Edward Sellers (Professor Emeritus, University of Toronto, As an Individual), ACVA, 13 May 2019, 1545.

14 Ms. Maria Barrados, Deputy Auditor General, Standing Committee on Public Accounts, 18 November 1999, 1535.

15 *Surgeon General Task Force Report on Mefloquine*, p. 4.

16 Dr. Remington Nevin (Executive Director, The Quinism Foundation), ACVA, 1 May 2019, 1645.

17 Brigadier-General Claude Auger, Surgeon General and Commander, Canadian Forces Medical Group, Department of National Defence, Standing Committee on Public Accounts, 18 November 1999, 1610.

During the Somalia mission, which lasted from December 1992 to May 1993, members of the Canadian Airborne Regiment caused the death of Shidane Arone, a Somali who had snuck into the camp. Master Corporal Clayton Matchee was charged with second-degree murder and Private Kyle Brown was convicted of manslaughter. The events led to the disbanding of the regiment in 1995. A few days after the events, Matchee attempted suicide and was left with brain damage. He was declared unfit to stand trial. On 15 September 2008, the Directorate of Military Prosecutions (DMP) used its prosecutorial discretion to withdraw the charges, concluding that "the public interest, including the interests of the [Canadian Armed Forces], does not require that the prosecution against Ex-MCpl Matchee be continued."

Several months after the mission ended, suspicions were raised about the possible link between mefloquine and the aggressive actions of some military personnel, including Clayton Matchee. The Commission of Inquiry into the Deployment of Canadian Forces to Somalia lacked the time to explore these allegations, but included relevant statements in its 1997 report.[18] Similar cases were reported within the American armed forces.[19]

Among these statements, in October 1993, Major Barry Armstrong said: "I believe that the UN's failures in Somalia are rather exceptional, considering previous peacekeeping successes. I believe that a simple reason may exist. Canadian and American troops may have been impaired by the use of mefloquine."[20] Shortly thereafter, Major Armstrong made the following comment concerning Master Corporal Matchee: "The suicide attempt in theatre may also be mefloquine related."

In an audit note found in his April 1999 report, the Auditor General criticized the Department of National Defence for not following the clinical trial protocol. Specifically, the audit found that the medication was administered without documenting the informed consent of the soldiers, and without a systematic monitoring of side effects in deployed military personnel. According to military authorities, these problems were the result of a misunderstanding with Health Canada about the application of the study protocol. Departmental officials noted that the roughly 1,300 deployed members were informed of the risks known at the time and they had to report any major side effects to

18 *Dishonoured Legacy: The Lessons of the Somalia Affair*, Report of the Commission of Inquiry into the Deployment of Canadian Forces to Somalia, 1997, Volume 5, Chapter 41, "The Mefloquine Issue," pp. 1383-1400.

19 Dr. Elspeth Ritchie (As an Individual), Evidence, ACVA, 1 May 2019, 1535.

20 *Dishonoured Legacy: The Lessons of the Somalia Affair*, Report of the Commission of Inquiry into the Deployment of Canadian Forces to Somalia, 1997, Volume 5, Chapter 41, "The Mefloquine Issue," p. 1385.

medical personnel.[21] According to General Auger, "we documented the significant side effects and in 15 cases identified where these effects were intolerable, we discontinued the use of the drug."[22]

Despite the difficulties with the protocol guiding the clinical study, the overall judgment of military authorities at the time was that "if used properly, this drug is safe and effective. And even if its proper use still carries risks, it provides protection against an infection that can be fatal, and this is a benefit that far outweighs its risks."[23] This viewpoint was shared by the Deputy Auditor General: "We do not question the fact that the drug has been given to the soldiers. They had to be protected against malaria."[24]

No subsequent research was conducted to determine the link between mefloquine and the behaviour of military personnel in Somalia overall, and the possible effects of mefloquine on the actions of Master Corporal Matchee and Private Brown, in particular.

Dr. Nevin and Dr. Elspeth Ritchie both stated that the evidence available today, without showing direct causality, raised suspicions that mefloquine had played a role in the behaviour of some military personnel during their deployment.[25]

DEBATE ON THE LONG-TERM EFFECTS OF MEFLOQUINE

Current scientific debate on the long-term adverse effects attributed to mefloquine is largely based on the work of Dr. Remington Nevin. In his view, the symptoms of long-term mefloquine toxicity are unique enough to establish a diagnosis of "mefloquine toxicity syndrome," which he recently renamed "quinism" to show the link between quinoline, the active ingredient of mefloquine, and the adverse effects of the drug.

One of the distinctive markers of quinism he has identified is the presence of vestibular disorders, which are generally not found among people suffering from anxiety disorders, such as post-traumatic stress disorder. The existence of some of these vestibular

21 Mr. Dann Nichols, Director General, Therapeutic Products Directorate, Health Protection Branch, Department of Health, Standing Committee on Public Accounts, 18 November 1999, 1630.

22 Brigadier-General Claude Auger, Surgeon General and Commander, Canadian Forces Medical Group, Department of National Defence, Standing Committee on Public Accounts, 18 November 1999, 1610.

23 Mr. Dann Nichols, Director General, Therapeutic Products Directorate, Health Protection Branch, Department of Health, Standing Committee on Public Accounts, 18 November 1999, 1545.

24 Ms. Maria Barrados, Deputy Auditor General, Standing Committee on Public Accounts, 18 November 1999, 1535.

25 Dr. Remington Nevin (Executive Director, The Quinism Foundation), ACVA, 1 May 2019, 1655; Dr. Elspeth Ritchie (As an Individual), Evidence, ACVA, 1 May 2019, 1655.

disorders could be established by a neuro-optometry or neurotology exam.[26] To date, no medical association has recognized the diagnosis proposed by Dr. Nevin.

However, according to Dr. Nevin, the Government of Canada has implicitly recognized the long-term adverse effects of mefloquine. In his opinion, the product monograph filed by AA Pharma shows that Health Canada recognizes the link between mefloquine and its long-term effects, raising the possibility of a distinctive diagnosis. His interpretation is based primarily on the following warning, found five times in the product monograph:

> In a small number of patients it has been reported that neuropsychiatric reactions (eg. depression, tinnitus, dizziness, vertigo or loss of balance) may continue for months or years after discontinuation of MEFLOQUINE, and permanent vestibular damage has been seen in some cases.[27]

The manufacturer, and by extension Health Canada, explicitly recognize that adverse effects have been "reported," but this is not an admission that these effects are attributable to the drug. Of course, it raises concerns about the possible long-term effects of mefloquine on some patients, but, as Dr. Michael Libman explained to Committee members, the warnings found on drug labels or in product monographs do not establish a direct causal relationship between the medication and the reported side effects: "The warnings that came onto mefloquine are there because there have been cases that have been reported, not because it has been definitively shown that those cases were due to mefloquine but that it is a potential risk."[28] Furthermore, the only mention of "permanent" side effects was for vestibular damage, not the psychiatric disorders that were reported. Dr. Nevin uses another warning from the product monograph in an attempt to demonstrate that the manufacturer, and thus Health Canada, recognize the link between the medication and its long-term effects:

> During prophylactic use, if signs of acute anxiety, depression, restlessness or confusion occur, these may be considered prodromal to a more serious event. In these cases, the drug must be discontinued and an alternative medication should be substituted.[29]

---

26 Dr. Remington Nevin (Executive Director, The Quinism Foundation), ACVA, 1 May 2019, 1605. See also remarks by Dr. Penelope Suter, (Optometrist, As an Individual), Evidence, ACVA, 29 April 2019, 1625; and by Mr. Jonathan Douglas (Psychologist, Central Ontario Psychology, As an Individual), Evidence, ACVA, 29 April 2019, 1545.

27 AA Pharma, Product Monograph – Mefloquine, p. 4.

28 Dr. Michael Libman (Professor, Department of Medicine, McGill University Health Centre, As an Individual), ACVA, 15 May 2019, 1625.

29 AA Pharma, Product Monograph – Mefloquine, p. 6.

According to Dr. Nevin:

> To be clear, this more serious event is in fact the development of the long-term psychiatric and neurologic symptoms that in some cases can contribute to disability … those symptoms that are specifically listed as being prodromal to the more serious event, which we understand is a euphemism for the development of disability from the drug's use.[30]

This link suggested by Dr. Nevin between a "more serious event" and a permanent disability attributable to the drug cannot be found in the product monograph. What is designated as a "more serious event" could very well be a short-term serious event, such as a psychotic episode. It is also therefore impossible to infer that the Government of Canada, through Health Canada, has recognized, implicitly or explicitly, a causal relationship between mefloquine and long-term adverse effects.

As for the Canadian Armed Forces, Brigadier-General Andrew Downes acknowledged "that there is some scientific evidence indicating the possibility of long-term or even permanent neuropsychiatric effects. Certainly, this is listed as a potential in the product monograph."[31] However, he added: "Our assessment of the literature is that there remain many unanswered questions around this hypothesis. The evidence supporting it is insufficient and has been challenged by many experts."[32]

For now, the Canadian Armed Forces will wait for the results of a major study currently underway in the United States.[33] In 2018, the prestigious U.S. National Academies of Sciences, Engineering and Medicine launched a research project on the Long-Term Health Effects of Antimalarial Drugs at the request of several U.S. government departments, including Veterans Affairs. It has already been established that the ad hoc committee conducting this study will not provide recommendations, but its findings will help establish, based on the scientific data available, whether there is a strong or a weak causal link between mefloquine and certain long-term health conditions. Its findings should be available in 2020. The Committee therefore recommends:

---

30 Dr. Remington Nevin (Executive Director, The Quinism Foundation), ACVA, 1 May 2019, 1550.

31 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1535.

32 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1535.

33 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1535.

Recommendation 1

That Veterans Affairs Canada commit to recognizing the findings of the study conducted by the U.S. National Academies of Science, Engineering and Medicine, regardless of whether they strengthen or weaken the hypothesis that there is a causal link between mefloquine and certain long-term neuropsychiatric effects.

Given the lingering suspicions about the long-term effects of mefloquine, some witnesses recommended launching a systematic screening campaign to determine, in individual cases, whether the problems veterans are experiencing could be attributable to mefloquine. According to Dr. Nevin:

> By implementing screening for symptomatic mefloquine exposure systematically, meaning as a result of some directive from the Minister of Veterans Affairs or some decision at VAC, this would serve as a tacit acknowledgement that the government recognizes this is a problem. It would permit clinicians to begin to identify those who may be suffering disability from this condition.[34]

Dr. Edward Sellers, Professor Emeritus at the University of Toronto, enthusiastically supported this recommendation. In his opinion, the multi-factorial nature of neuropsychiatric problems makes it difficult to make an unequivocal diagnosis, but screening would reveal whether the drug may have been administered without taking contraindications into account, and whether it may have played a direct role in some circumstances.[35] Even without a recognized diagnosis, according to Dr. Sellers, it is possible to determine the role that a drug may have played in the development of symptoms, even over the long term. However, it would be only in very rare cases that the drug would be established as the sole cause: “It’s convenient to talk about how the drug causes it all, but it’s always a little more complicated than that when you’re dealing with these kinds of disorders. The drug can very well be an important contributor, and

34 Dr. Remington Nevin (Executive Director, The Quinism Foundation), ACVA, 1 May 2019, 1655. See also comments by Dr. Elspeth Ritchie (As an Individual), Evidence, ACVA, 1 May 2019, 1545; and Prof. Jane Quinn (Associate Dean for Research, Faculty of Science, Charles Sturt University, As an Individual), ACVA, 13 May 2019, 1535.

35 Dr. Edward Sellers (Professor Emeritus, University of Toronto, As an Individual), ACVA, 13 May 2019, 1600; see also remarks by Colonel Rakesh Jetly (Senior Psychiatrist and Mental Health Advisor, Directorate of Mental Health, Canadian Forces Health Services Group, Department of National Defence), ACVA, 6 May 2019, 1550; and by Mr. Jonathan Douglas (Psychologist, Central Ontario Psychology, As an Individual), Evidence, ACVA, 29 April 2019, 1605.

that is just as important to determine as those rare cases when it was the only antecedent factor that caused it."[36]

Dr. Ashley Croft also said that every effort must be made to contact all military personnel who may have experienced the adverse effects of mefloquine.[37] This kind of screening would involve identifying approximately 18,000 CAF members who were prescribed mefloquine.[38]

When he appeared before the Committee, Brigadier-General Downes explained that such screening would not be useful:

> One of the purposes of doing screening is to be able to do something about it. The current situation is that, although we could ask questions about what people did or did not take, as far as the understanding or the science around actually conducting a test is concerned, there is no specific test to be conducted.[39]
>
> Related to mefloquine specifically, we are not planning to do a screening of all people who may have taken this drug. What we are doing is encouraging people who have symptoms to come forward for care, regardless of whether the symptoms are related to mefloquine or something else.[40]

Until the hypothesis that mefloquine has long-term psychiatric effects has been supported by reliable scientific evidence, the CAF's chosen approach can be justified. However, if the United States National Academies of Science, Engineering and Medicine finds that there is significant scientific evidence, the Committee members are of the opinion that systematic screening should be carried out. The Committee therefore recommends:

Recommendation 2

That, should the findings of the ad hoc committee of the National Academies of Science, Engineering and Medicine on the long-term effects of mefloquine justify it, Veterans

---

36 Dr. Edward Sellers (Professor Emeritus, University of Toronto, As an Individual), ACVA, 13 May 2019, 1605. See also comments by Mr. Jonathan Douglas (Psychologist, Central Ontario Psychology, As an Individual), Evidence, ACVA, 29 April 2019, 1630.

37 Dr. Ashley Croft (Consultant Public Health Physician, As an Individual), ACVA, 15 May 2019, 1605.

38 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1530.

39 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1540.

40 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1610.

Affairs Canada, together with the Department of National Defence, task an independent research organization with implementing a systematic screening program for military personnel and veterans who may be experiencing the long-term effects of mefloquine.

RECENT USE OF MEFLOQUINE BY THE CANADIAN ARMED FORCES

Risks associated with the drug have led some scientists, military personnel and veterans to recommend that mefloquine simply be removed from the choices available to service personnel when they are deployed to a region where there is a risk of contracting malaria, or at least that it be a drug of last resort and that all necessary precautions be taken. The former Surgeon General of the Canadian Armed Forces told the committee in 2016 that mefloquine has rarely been prescribed during deployments over the past 15 years:

> In the early 2000s, mefloquine was the most often used antimalarial. This started changing in the mid-2000s, and now mefloquine is our least often selected medication. It accounts for about 5% of our current antimalarial prescriptions, whereas atovaquone/proguanil, first licensed in 2002, now accounts for about 80%. The remainder of prescriptions are for doxycycline.[41]

When the Surgeon General Task Force Report on Mefloquine was tabled in June 2017, a Canadian Armed Forces press release stated that mefloquine "will now only be recommended for use if a CAF member requests it, or if there are contraindications to the member being prescribed other anti-malarials." In 2018, mefloquine was prescribed to three CAF members, and, in 2019, no prescriptions for mefloquine have been issued to date.[42]

As regards whether mefloquine should be maintained as a prophylactic option, given its effectiveness against malaria, three positions were presented by witnesses:

- Continue to make the option available for all Canadians, but ensure they are closely monitored, in terms of antecedents, contraindications and follow-up, should side effects occur;[43]

41 ACVA, *Evidence*, 3 November 2016, 1535 (Brigadier-General Hugh MacKay, Surgeon General and Commander, Canadian Forces Medical Group, Department of National Defence).

42 Brigadier-General Andrew Downes (Surgeon General, Department of National Defence), ACVA, 6 May 2019, 1615.

43 Dr. Michael Libman (Professor, Department of Medicine, McGill University Health Centre, As an Individual), ACVA, 15 May 2019, 1550; Dr. Remington Nevin (Executive Director, The Quinism Foundation), ACVA, 1 May 2019, 1615.

- Continue to make the option available, but not for individuals whose activities would be at a higher risk should psychiatric symptoms appear, including CAF members;[44]

- Completely ban the drug, given that there are other, equally effective, lower-risk alternatives available.[45]

Choosing between these three options exceeds the scope of this study, as it is a general public health issue. Given the CAF decision to no longer prescribe mefloquine except in exceptional circumstances, this choice will affect only a very small number of CAF members in years to come.

That said, Committee members are aware of the possible ramifications of negative press involving mefloquine and antimalarials in general. It is important to note that the short-term adverse effects are well known, and that a patient experiencing psychiatric symptoms should immediately stop taking the drug. As for the long-term risks, which have been reported for all antimalarials, they should never be used to discourage individuals from protecting themselves against malaria. As Dr. Libman said: "The benefits are clear – preventing malaria is paramount."[46]

VETERANS COMPENSATION FOR HEALTH ISSUES ATTRIBUTABLE TO MEFLOQUINE

In Australia, the Repatriation Medical Authority (RMA) is the body responsible for making recommendations to the Department of Veterans Affairs on the medical conditions to which the benefit of the doubt (statement of principle) can be given as to the connection of these conditions to military service. The RMA recommended that the benefit of the doubt be given as to the link between mefloquine and 14 medical conditions: acquired cataract, anxiety disorder, bipolar disorder, depressive disorder, epileptic seizure, heart block, myasthenia gravis, peripheral neuropathy, psoriasis, sensorineural hearing loss, schizophrenia, suicide and attempted suicide, tinnitus and trigeminal neuropathy.

---

44 Dr. Ashley Croft (Consultant Public Health Physician, As an Individual), ACVA, 15 May 2019, 1630; Dr. Elspeth Ritchie (As an Individual), Evidence, ACVA, 1 May 2019, 1620.

45 Prof. Jane Quinn (Associate Dean for Research, Faculty of Science, Charles Sturt University, As an Individual), ACVA, 13 May 2019, 1625.

46 Dr. Michael Libman (Professor, Department of Medicine, McGill University Health Centre, As an Individual), ACVA, 15 May 2019, 1615.

In a report dated 18 August 2017, the RMA recommended that the benefit of the doubt as to the causal link between mefloquine and a "chemically acquired brain injury" should not be given. This generic term includes a series of terms used by Dr. Nevin in publications or communications: "mefloquine toxicity syndrome," "chronic mefloquine toxicity syndrome," "mefloquine intoxication syndrome" and "chronic mefloquine-induced encephalopathy."[47]

In the United States, the links between military service, mefloquine and certain medical conditions are treated on a case-by-case basis. They have not been the subject of a general directive.[48]

Veterans Affairs Canada has not issued a directive on giving benefit of doubt to the possible causal link between the use of mefloquine and certain medical conditions. In its 17 October 2017 response to the Committee's report on mental health, the government did not directly address those issues associated with mefloquine use, failing to even mention the drug by name.

According to the Chief Medical Officer at Veterans Affairs Canada, Dr. Cyd Courchesne, compensation is not based on cause, but on a diagnosed medical condition. For mental health issues, "these veterans served in a special duty area, and all they need is a record of having deployed and a confirmed diagnosis by their treating physician, and that's enough for us to give them a disability award."[49] In other words, veterans who deployed during a military operation and thereafter suffer from issues that the Department attributes to their military service do not need to identify the cause of the issue.

This presumption is certainly useful in routine cases where the cause and effect can be easily established, but its limitations become clear in situations where mental health issues lead to other problems. For example, if a person experienced psychotic episodes after having taken mefloquine, which is plausible based on what is known about the drug, and that this psychotic episode led to a serious injury with permanent effects, either before or after deployment, the cause – in this case, mefloquine – would become relevant, because it is only by identifying the cause that it would be possible to attribute the disability to the individual's service.

---

47 See, for example, Dr. Remington Nevin (Executive Director, The Quinism Foundation), ACVA, 1 May 2019, 1545. See also the terms used by Prof. Jane Quinn (Associate Dean for Research, Faculty of Science, Charles Sturt University, As an Individual), ACVA, 13 May 2019, 1530.

48 See: U.S. Department of Veterans Affairs, "Mefloquine (Lariam®)," *Military Exposures*.

49 Dr. Cyd Courchesne (Director General, Health Professionals Division, Chief Medical Officer, Department of Veterans Affairs), ACVA, 6 May 2019, 1620.

The potential link between mefloquine and the behaviour of certain individuals on deployment is completely separate from the debate on the long-term effects of the drug. In fact, in the case of Somalia, for example, it was a matter only of the possible short-term side effects. Today, these short-term side effects are clearly recognized by the scientific and medical community, and screening for risk factors before prescribing the drug can be done far more systematically. By applying benefit of doubt, a principle underpinning all Canadian legislation governing compensation for Canadian veterans for more than a century, it would appear to be reasonable for Veterans Affairs Canada to recognize that the erratic and well-documented behaviour of some CAF members could be attributable to the use of mefloquine, and thus could be attributed to their military service.

This recognition would have no direct implications on the debate on the long-term effects of mefloquine, as the effects would be indirect. For example, if a CAF member experienced serious psychotic symptoms in the short term, which is plausible, based on scientific data, and that these short-term problems led to a suicide attempt with permanent ramifications, or to the aggravation of another undiagnosed pre-existing condition, VAC could recognize and compensate for a permanent disability indirectly attributable to mefloquine.

This situation is similar to one described by Dr. Ashley Croft as part of study conducted on 600 British military personnel deployed to Kenya in 1995 for six weeks. To protect them from malaria, 300 of them were given mefloquine, and 300 were given another drug. Among those who were given mefloquine, two serious psychiatric events took place, one of which led an individual to commit suicide. No serious events took place among those in the other group.[50]

VAC's current policy is that any mental health issue that comes to light during a deployment is considered attributable to military service. This recognition could be a considerable relief to veterans and their family members who may be dealing with long-term consequences associated with the recognized short-term side effects of mefloquine.

The Committee therefore recommends:

50 Dr. Ashley Croft (Consultant Public Health Physician, As an Individual), ACVA, 15 May 2019, 1600. See also the case described by Dr. Edward Sellers (Professor Emeritus, University of Toronto, As an Individual), ACVA, 13 May 2019, 1540.

Recommendation 3

That Veterans Affairs Canada and the Department of National Defence recognize that certain known short-term side effects of mefloquine could have led, indirectly, to permanent disabilities among certain veterans.

As for the rare cases where long-term psychiatric effects have been reported, some witnesses, including Dr. Jane Quinn, said they did not understand why a lack of established diagnosis would prevent VAC from recognizing that the possibility exists, even in just a very small number of cases.[51] If this acknowledgement would affect the nature of treatment, whose costs would be covered by the government, VAC has the responsibility to ensure that veterans receive the best possible treatment.

CONCLUSION

Mefloquine has been proven useful in preventing malaria. Its short-term side effects are serious, but the benefits for military personnel deployed in malaria risk zones far exceed the issues that some people have unfortunately experienced. When there were no viable alternatives, it was essential to continue prescribing it. Today, only a very small number of CAF members are prescribed mefloquine, and it is possible that the drug will not even be offered as an option in the near future.

It is important to recognize, however, that an undetermined number of CAF members experienced neuropsychiatric side effects, sometimes serious, after taking mefloquine, and that, in some cases, these short-term side effects led to erratic behaviour, or to the aggravation of other conditions, and the long-term consequences of such effects deeply affected the lives of these CAF members and their families.

Some believe that mefloquine is also the direct cause of long-term neuropsychiatric issues that many veterans are facing today. Given the current state of knowledge, it is impossible to satisfactorily establish this link. Veterans who say they are experiencing long-term effects due to mefloquine must accept the limits of what the Canadian government can recognize as the possible causes of their health problems, given that its decisions must be based on the best data available. Conversely, the absence of a clearly established diagnosis should not prevent VAC from acknowledging the possibility that a small number of veterans could truly be experiencing consequences due to taking mefloquine, even if it was only one factor among many that could explain their

51 Prof. Jane Quinn (Associate Dean for Research, Faculty of Science, Charles Sturt University, As an Individual), ACVA, 13 May 2019, 1530.

problems. This openness is needed so that the Department is able to provide the best possible treatment options to veterans whose medical conditions are linked to their military service.

Each of these contentious issues may be one step closer to being resolved when the United States National Academies of Science, Engineering and Medicine reveal the findings of the ad hoc committee's study on the long-term health effects of antimalarial drugs commissioned by the American government. If the findings of this study indicate that there is a strong causal link between mefloquine use and certain long-term conditions, the responsible approach for VAC and the Department of National Defence would be to begin systematic screening for individuals who may have experienced adverse effects due to the drug. If, to the contrary, a strong causal link is not established, veterans who attribute their health problems to having taken mefloquine should accept that the Government of Canada cannot responsibly share their stance.

However, this possible disagreement will not change anything as regards VAC's responsibility to ensure that all veterans experiencing health problems due to their military service, or exacerbated by their military service, receive all the treatment options and financial support measures to which they are entitled. When the Department assesses the possible link between a medical condition and military service, the benefit of doubt principle must continue to be applied. The generosity and openness of this principle have governed all compensation policies for Canadian veterans since World War I.

APPENDIX A
LIST OF WITNESSES

The following table lists the witnesses who appeared before the Committee at its meetings related to this report. Transcripts of all public meetings related to this report are available on the Committee's webpage for this study.

Organizations and Individuals	Date	Meeting
As an individual	2019/04/29	115
Dr. Jonathan Douglas, Psychologist Central Ontario Psychology		
Dr. Penelope S. Suter, Optometrist		
As an individual	2019/05/01	116
Dr. Elspeth Cameron Ritchie		
The Quinism Foundation	2019/05/01	116
Dr. Remington Nevin, Executive Director		
Department of National Defence	2019/05/06	117
BGen Andrew Downes, Surgeon General		
RAdm Haydn Edmundson, Deputy Commander Military Personnel Command		
Col Rakesh Jetly, Senior Psychiatrist and Mental Health Advisor Directorate of Mental Health, Canadian Forces Health Services Group		
Department of Veterans Affairs	2019/05/06	117
Dr. Cyd Courchesne, Director General Health Professionals Division, Chief Medical Officer		
As an individual	2019/05/13	118
Prof. Jane Quinn, Associate Dean for Research Faculty of Science, Charles Sturt University		
Dr. Edward Sellers, Professor Emeritus University of Toronto		

Organizations and Individuals	Date	Meeting
As an individual	2019/05/15	119
Dr. Ashley Croft, Consultant Public Health Physician		
Dr. Michael Libman, Professor Department of Medicine, McGill University Health Centre		

REQUEST FOR GOVERNMENT RESPONSE

Pursuant to Standing Order 109, the Committee requests that the government table a comprehensive response to this Report.

A copy of the relevant *Minutes of Proceedings* (Meetings Nos. 115 to 119, and 123) is tabled.

Respectfully submitted,

Neil R. Ellis
Chair

Supplementary report of the Conservative Party of Canada on Effects of Mefloquine Use Among Canadian Veterans

Mefloquine was licensed in Canada for public use in 1993 but its darker past began earlier in Somalia with a United Nations peace keeping mission known as *Operation Deliverance*. Significant quantities of Mefloquine were given to the Canadian Armed Forces (CAF) in exchange for conducting a clinical trial tracking the efficacy of the anti-malaria drug. The clinical trial ultimately did not fit the operational parameters of the mission, so it was not completed but CAF members were still required to take the drug as refusal was not a career enhancing option.

While using Mefloquine during *Operation Deliverance* multiple atrocities occurred which were out of character for Canadian peace keepers. The most public of these was the torture and killing of Shidane Abukar Arone. These events became known as the Somalia Affair and they were investigated by the *Commission of Inquiry into the Deployment of Canadian Forces to Somalia* which produced a report titled: *Dishonoured Legacy: The Lessons of the Somalia Affair.*

In Chapter 41 the report reviews the limited scientific information that was then available about Mefloquine and it details many of the concerns raised about the drug's effect on CAF members performance. In its concluding observations the report states: "If Mefloquine did, in fact, cause or contribute to some of the misbehavior… CF personnel who were influenced by the drug might be partially or totally excused for their behavior." [1]

This observation lingered for years as the inquiry was cut short before these and other hypotheses could be examined.

In 2017 the issue was taken up by House of Commons Standing Committee on Veterans Affairs in its study of *Mental Health of Canadian Veterans: A Family Purpose*. In this study the Committee heard from individual veterans who detailed their experiences with Mefloquine and leading researchers in the field. Most of the individual testimony was washed from the final report because it was considered anecdotal. Much of the expert testimony given at the committee was deemed unscientific and unproven by the government members of the committee and in their response to the tabled report, the Government ignored the subject of Mefloquine all together.

Through four more studies Conservative members continued to raise the issue of Mefloquine whenever appropriate for the witnesses before them. This determination culminated in the committee agreeing to a motion by M.P. Wagantall to undertake a dedicated study of Mefloquine which would be titled: *Effects of Mefloquine Use Among Canadian Veterans*. This study focused on the latest research in the field and the recent experiences of our allies.

[1] *Dishououred Legacy: The Lessons of the Somalia Affair (Page 1396)*

There have been significant milestones concerning Mefloquine both in Canada and throughout the world over the past few years, including but not limited to the following:

- March 2019 - Australia, announced a 2.1-million-dollar initiative which includes a comprehensive health assessment for veterans concerned about having taken anti-malaria drugs. The Australia Repatriation Medical Authority recommended that the benefit of the doubt be given to the link between Mefloquine and 14 medical conditions.

- December 2016 - Germany took Mefloquine off the list of medications to be prescribed for their soldiers. The decision to do so was made after two separate reports were published: the 2013 USFDA's and European Medicines Agency Report.

- August 2016 - In Great Britain MP's chided the Ministry of Defense for showing "lamentable weakness" in its duty to protect soldiers, sailors and airmen. They called for new and independent studies as military research provided to them did not reflect the public outcry they were hearing.[2]

- In August 2016, Health Canada quietly stated that: "Psychiatric symptoms … on occasions … have been reported to continue long after Mefloquine has been stopped" and "In a small number of patients it has been reported that dizziness or vertigo and loss of balance may continue for months or years after discontinuation of Mefloquine, and in some cases vestibular damage may be permanent."[3]

- In 2013 - A boxed warning added to the United States drug label noted that Mefloquine may cause "neuropsychiatric adverse reactions that can persist after Mefloquine has been discontinued". Prescribing guidance recommends to discontinue the medication at the onset of neuropsychiatric symptoms, due to a risk of "more serious psychiatric disturbances or neurologic adverse reactions" that could occur with continued use of the drug. The United States Drug label now cautions that psychiatric reactions "ranging from anxiety, paranoia, and depression to hallucinations and psychotic behavior can occur with Mefloquine use" and "have been reported to continue for months or years after Mefloquine has been stopped" and "have been reported to be permanent in some cases."[4]

[2] UK Telegraph August 31, 2016
[3] Mefloquine [product monograph] Vaughan (ON): AA Pharma; 2016. Aug 4
[4] U.S. Mefloquine product insert, June 2013.

- In 2014 - Regulators at the European Medicines Agency recommended that substantially similar warnings to those of the United States be added throughout the European medicines regulatory network. The EMA concluded that there was sufficient evidence "supporting a causal relationship between Mefloquine and the occurrence of long lasting and even persistent neuropsychiatric effects" and speculated that these were due to "permanent brain damage."[5]

Frustrated with government dithering veterans are taking their frustrations and claims to the public and to court.

- December 2017 – Ireland settled a lawsuit with a veteran suing for damages he suffered to his health due to Lariam (another name for Mefloquine). This case was the first of 57 in the cue to sue for the same damages.

- May 2019 – Eight Canadian veterans filed suit to for damages caused by Mefloquine after being ordered to take it without adequate warning about the possible side effects.

- 2019 -2020 – Hundreds more Canadian veterans are expected to file lawsuits for damages caused by Mefloquine after being ordered to take it without adequate warnings regarding side effects.

- Veterans hold an annual rally supporting research and protesting government inaction annually in September on the steps of the House of Commons.

A longstanding source of the frustration that is driving veterans to the courts for relief versus Veterans Affairs Canada (VAC) is the reluctance of VAC to recognize that their condition is caused by Mefloquine.

In answering a question related to receiving a disability award for Quinism or Mefloquine toxicity Dr. Cyd Courchesne replied: "At Veterans Affairs the message has been consistent: Any service member who has developed any illness or injury as a result of their service can apply. That includes if they believe that Mefloquine is a cause of their illness or injury.

We don't compensate for cause, however. We compensate for a diagnosed medical condition. It is possible that some veterans have applied for a disability award for PTSD, but we don't track what the cause of their PTSD is. If you serve and you have a diagnosis of PTSD, you get your disability award and treatment and benefits that go along with that."[6]

[5] Pharmacovigilance Risk Assessment Committee. EMA/63963. London (UK): European Medicines Agency; 2014. Updated PRAC rapporteur assessment report on the signal of permanent neurological (vestibular) disorders with Mefloquine.

[6] Dr. Cyd Courchesne (Director General, Health Professionals Division, Chief Medical Officer, Department of Veterans Affairs): ACVA, 6 May 2019, 1620.

This is a colossal false equivalence. Unlike PTSD events veterans are prescribed Mefloquine with its known side effects and injest it into their bodies for an extended period of time. Although very real to the veteran, the side effects from taking Mefloquine are not a diagnosed medical condition as committee member Dr. Doug Eyolfson noted, there are currently no published criteria for Quinism or Mefloquine toxcicity.[7]

This is the ultimate example of a catch 22. The government is saying we gave you pills that made you sick but since we don't have a definition of the disease we gave you we can't help you!

Professor Jane Quinn (Associate Dean for Research, Faculty of Science, Charles Sturt University) and Dr. Jonathan Douglas (Psychologist, Central Ontario Psychology) highlighted how not recognizing the cause of the condition is problematic and potentially damaging to our veterans.

"Mefloquine causes permanent neurological and neuropsychiatric changes in a significant minority of those who take it. Many of these veterans have been told they have treatment-resistant post-traumatic stress disorder, without it being acknowledged that their symptoms were actually caused by an ongoing neurological brain injury…

Recognition that Mefloquine causes long-term brain injury and other systemic medical conditions is a first and necessary step to getting effective and appropriate treatment, and ongoing medical support for those impacted ...

The disease cannot be identified by name in a diagnostic manual under a discrete code in either DSM-5 or ICD-10, but this is not the same as the condition not existing."[8]

"Acceptance that Mefloquine causes long-term harm is critical to resolving the health issues for those affected, and I believe that this evidence is not in doubt."[9]

"One of the significant issues that veterans have faced is the fact that the role of the drug in their ongoing medical conditions has not been formally acknowledged and has therefore not been allowed to be taken into account in their treatment"[10]

[7] Dr. Doug Eyolfson (committee member) ACVA, 12 May 2019, 1555.
[8] Prof. Jane Quinn, (Associate Dean for Research, Faculty of Science, Charles Sturt University) ACVA, 13 May 2019, 1530.
[9] Prof. Jane Quinn, (Associate Dean for Research, Faculty of Science, Charles Sturt University) ACVA, 13 May 2019, 1535.
[10] Prof. Jane Quinn, (Associate Dean for Research, Faculty of Science, Charles Sturt University) ACVA, 13 May 2019, 1550.

The reluctance of VAC to recognize Quinism or Mefloquine toxicity creates Sanctuary Trauma: "the idea is that the level of injustice somebody experiences subsequent to an injury predicts very strongly the duration of that disability. It predicts that, independent of the severity of the physical injury that occurs. It applies to both psychological and physical illnesses.

I have absolutely no doubt that it's a very common reaction really in anyone who's up against that system that says, "Prove to me you're sick." That person's going to experience that at some point. Some people are going to be embittered by that experience and, as a result of that, their injuries are going to get worse."[11]

The time has come to recognize Quinism or Mefloquine toxicity and provide veterans suffering from it the care they need. The Royal Canadian Legion has recognized the significant problems cause by Quinism or Mefloquine toxicity and they have taken action on behalf of veterans by funding a study at the University of Saskatchewan and donating $25,000 to the Quinism foundation to fund additional research.

The Conservative Party of Canada stands with our veterans and the Royal Canadian Legion in their call concerning Mefloquine; "for more research into its use and long-term consequences, in particular as it pertains to veterans who received this drug when deployed. We want affected individuals to receive proper diagnosis, care and tailored support."[12]

CPC Recommendations:

1. **That the Government of Canada notify all veterans who were administered Mefloquine about the potential side effects of the drug.**
2. **The government conduct an independent inquiry to study the effects of the anti-malarial drug mefloquine on members of the Canadian Armed Forces.**

[11] Dr. Jonathan Douglas, (Psychologist, Central Ontario Psychology) ACVA, 29 April 2019, 1645.
[12] Royal Canadian Legion advocacy agenda 2019 - Mefloquine (Lariam) toxicity.

Effects of Mefloquine Use among Canadian Veterans

Dissenting Report of the New Democratic Party (NDP)

The NDP strongly disagrees with the contents of this report. The committee heard from multiple expert witnesses about the need for screening of Canadian Armed Forces (CAF) veterans for long-term symptoms related to mefloquine exposure, the need for Veterans Affairs Canada (VAC) and the Department of National Defence (DND) to publicly acknowledge the effects their decisions have had on CAF veterans, and for the need for a public information campaign. These necessary measures were not adequately addressed in this report.

The NDP are not in agreement with the first recommendation of this report. The committee heard multiple references, some of which were included in this report, to the fact that the European Medicines Agency found enough evidence to indicate "a causal relationship between mefloquine and the occurrence of long lasting and even persistent neuropsychiatric side effects.".[1] According to Dr. Jonathan Douglas, Australia and the U.K. have also identified the risk mefloquine poses in the development of neuropsychiatric disorders.[2]

To base Canada's recognition of any long-term effects resulting from mefloquine exposure exclusively on the results of a single American study, when other studies are already available, is erroneous and wilfully ignorant.

The NDP disagrees with the second recommendation of this report for the same reasons stated above, but as the committee heard from multiple witnesses, a systematic screening program is vital for military personnel and veterans who, as a result of their service, may be experiencing long-term effects resulting from exposure to mefloquine.

Based on what the committee heard from witnesses, the screening process would not be complicated or expensive to implement. As stated by Dr. Elspeth Ritchie:

… we need to do a better job of screening veterans for exposure to mefloquine. That would be fairly simple. Have you ever taken the once-a-week anti-malaria pill? As a follow-up to that, have you ever experienced a variety of symptoms that include dizziness and nystagmus?[3]

Implementing systematic screening for veterans is worth both the resources and effort because it could give veterans a concrete diagnosis for symptoms that have either been undiagnosed or misdiagnosed. In addition, veterans having knowledge of the cause of these symptoms provides them with much needed peace-of-mind. Beyond that, the committee heard from Dr. Penelope Suter that management of some of the associated symptoms, particularly those related to vision and balance, is possible and veterans should be given access to this treatment as needed.[4]

Therefore, the NDP recommends:

That Veterans Affairs Canada, together with the Department of National Defence, task an independent research organization with implementing a systematic screening program for military personnel and veterans who may be experiencing the long-term effects of mefloquine.

The committee heard that CAF veterans who may be experiencing long-term symptoms related to mefloquine exposure are asking for three things: acknowledgement, outreach and research.[5] Though acknowledgement may seem like a simplistic request, the impact would be profound.

Multiple expert witnesses testified about the reality of refusing to take a drug or wishing to discontinue the use of a drug following the onset of negative side-effects while in theatre. For many CAF members, doing so could have negatively impacted their careers; from being ridiculed by their peers and superiors to lost opportunities for promotions. For veterans to finally hear the government admit that their experiences are a result of a drug they were, in most cases, forced to take while deployed is a vital first step.

Therefore, the NDP recommends:

That Veterans Affairs Canada and the Department of National Defence publicly acknowledge that mefloquine was improperly prescribed and administered to Canadian Armed Forces members during various deployments and issue a formal apology to all those who have been affected.

The second request is that of outreach. This is being requested by CAF veterans as well as by the witnesses who appeared before the committee. Outreach must take different forms, as there are different audiences that require distinct information to address the issues around mefloquine. Healthcare professionals must be made aware of the issue and trained for the aforementioned screening; CAF veterans who may have been exposed to mefloquine have to know to seek that screening; and the general Canadian public needs to be informed so that they better understand the experiences and realities of service veterans.

Dr. Jonathan Douglas clearly showed the need for healthcare providers to have more information, especially those who work closely with the veteran community:

I have worked with veterans for about 15 years now, and as part of my work I have completed many psychological disability assessments. For most of these, the issues associated with quinism have simply not been on my radar. It's not something there's much awareness of in my field.[6]

Therefore, the NDP recommends:

That Veterans Affairs Canada create and disseminate a public awareness campaign on the suspected long-term effects of mefloquine toxicity with specific information campaigns for healthcare providers and veterans so that healthcare providers, veterans, and the Canadian public at large, have the necessary information to address this issue.

The final request is that of research. This report references the forthcoming study by the U.S. National Academies of Science, Engineering and Medicine on the effects of mefloquine exposure on American veterans. The committee also heard from several witnesses who have conducted research of their own and examined the research of others on the same topic. The NDP does not believe it is necessary to repeat this research in Canada, and instead would like to see a gap in the research filled.

Due to the only recent or complete lack of acknowledgement among governments around the world on the effects of mefloquine exposure, very little research has been conducted on the ways in which permanent symptoms resulting from mefloquine exposure can be managed or cured.

Dr. Jane Quinn recommended several treatments be made available to veterans following a diagnosis:

A 360-degree health review should be implemented to look holistically at the health and well-being of these veterans and their families, and appropriate support strategies should be applied, including access to occupational therapists, psychologists, psychiatrists or other health care professionals as appropriate.[7]

Access to treatment must be given priority, but as multiple witnesses mentioned, some veterans may not be receiving the appropriate treatment. Symptoms related to mefloquine exposure may closely mirror those of PTSD, and in some cases, veterans may be experiencing both these and other issues.

Therefore, the NDP recommends:

That Veterans Affairs Canada, in partnership with the Canadian Institutes of Health Research, establish and fund a study to determine the best possible treatments to manage and/or cure the long-term effects of mefloquine exposure.

Mefloquine was given to CAF members without their informed consent, and the horrifying effects during and following exposure have been dismissed by the DND and the Government of Canada for far too long. The NDP hopes that the recommendations made here will encourage CAF veterans speak out and demand the respect, treatment and closure that they have earned by serving this country.

[1] European Medicines Agency, Updated PRAC rapporteur assessment report on the signal of permanent neurologic (vestibular) disorders with mefloquine, EMA/63963/2014, p. 31.

[2] Dr. Jonathan Douglas, (Psychologist, Central Ontario Psychology, As and Individual), ACVA, 29 April 2019, 1600

[3] Dr. Elspeth Ritchie, (As and Individual), ACVA, 1 May 2019, 1540

[4] Dr. Penelope Suter, (Optometrist, As an Individual), Evidence, ACVA, 29 April 2019, 1540

[5] Dr. Remington Nevin, (Executive Director, The Quinism Foundation), Evidence, ACVA, 1 May 2019, 1705

[6] Dr. Jonathan Douglas, (Psychologist, Central Ontario Psychology, As and Individual), ACVA, 29 April 2019, 1545

[7] Dr. Jane Quinn, (Associate Dean for Research, Faculty of Science, Charles Sturt University, As an Individual), ACVA, 13 May 2019, 1535