



Scoping review protocol

Medicine in the shadows: a scoping review protocol exploring unconventional warfare medicine

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Abstract

Introduction Unconventional warfare medicine operates within the complex and covert nonpermissive environment of irregular conflict, where traditional systems of medical support are often untenable. This field encompasses medical care delivered through underground, auxiliary or guerrilla networks in denied or resource-limited settings. Despite its operational significance, unconventional warfare medicine remains poorly defined and underrepresented in the academic and policy literature. The aim of this review is to examine the existing evidence to provide an overview of what is known about unconventional warfare medicine in developed countries.

Methods This review will follow the Joanna Briggs Institute (JBI) methodology for scoping reviews. Databases, including Embase, MEDLINE, Web of Science, EBSCOhost, CINAHL, Google Scholar, JSTOR and Epistemonikos, will be searched from inception using defined descriptors and index terms related to unconventional warfare and medical support. Grey literature will also be searched using OpenGrey, Google, Bing and AI-assisted platforms to capture non-indexed materials. Two reviewers will independently conduct title, abstract and full-text screening, with a third reviewer consulted for consensus where required. Data extraction will be performed using a customised charting form and results will be presented narratively with reference to key themes, concepts and gaps in the literature.

Keywords unconventional warfare, special operations, medicine.

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Introduction

Unconventional warfare represents a strategic subset within the broader spectrum of irregular warfare, characterised by covert, irregular and indirect methods, such as guerrilla warfare, subversion, sabotage and support of resistance movements.¹ It operates below the threshold of open confrontation, leveraging underground and auxiliary forces to coerce, disrupt or overthrow an adversary's government or occupying power. The US Department of Defense defines unconventional warfare as activities conducted through or with underground, auxiliary and guerrilla forces to undermine enemy control, often blending political, military and psychological operations to achieve objectives without large-scale engagement.²

Unconventional warfare medicine exists within this complex and austere environment, where prolonged field care and tactical medical support must adapt to the unique challenges posed by irregular combat zones. The nature of unconventional warfare demands flexibility in medical tactics and strategies, including integration of guerrilla trauma systems, covert medical intelligence networks and specialised planning to sustain force health and effectiveness in denied or resource-scarce environments.³

Unconventional warfare medicine thereby differs fundamentally from conventional warfare, in that the primary patient envisaged by the system is the guerrilla, as opposed to the uniformed combatant of one's own military. The systems of medical support developed during the past twenty years of expeditionary military operations envisage backloading a casualty internationally to return home and to advanced forms of care. In unconventional warfare medicine, the casualty at point of injury is also close to their home, but distant from forms of advanced care.

As unconventional warfare persists in global conflict zones, mapping and examining what is known about medicine in these contexts is critical to advancing knowledge, improving outcomes and preparing medical forces for future operational demands.

Despite its significance, unconventional warfare medicine requires increased operational security and has long operated in the shadows, often confined to classified programs, fragmented operational reports, and practitioner knowledge shared within closed networks. This lack of visibility has limited wider understanding of its principles and evolution, leaving critical gaps between policy, practice, research and innovation.

By systematically clarifying known information, this scoping review seeks to bring existing evidence into the public domain, responsibly, enhancing collective understanding without compromising operational security. In doing so, it aims to create a foundation for future collaboration and evidence informed development in this vital but underexplored field of medicine.

Aim

This scoping review protocol outlines the process by which the authors will seek to examine the existing evidence to provide an overview of what is known about unconventional warfare medicine in developed countries. This review is not intended to conduct an in-depth analysis of medical support during individual unconventional warfare missions or conflicts. Rather it aims to explore unconventional warfare medicine more broadly and identify conceptual boundaries related to the topic to systematically synthesise existing literature, identifying key themes, practices, challenges, and knowledge gaps. Our review will guide future research and improve medical strategies in unconventional warfare settings.

Review question

The review question is: What is known about unconventional warfare medicine practice in developed countries?

Key definitions

The term developed country is used throughout to refer to a country that has a developed economy and advanced technological infrastructure relative to other less industrialised nations, as reported by the United Nations in the World Economic Situation and Prospects 2020 report.⁴ Colloquially, the distinctions of first-world, second-world and third-world are offered in international relations literature, yet this is a misnomer from the Cold War-era, in which first-world referred to those democratic nations; the second-world as communist-controlled or influenced; and the third-world which was contested. Despite, this misnomer, an alignment between what were known as first-world countries—the United States and Canada, Western Europe, Australia, Japan and New Zealand—and the developed world, is relatively strong. We mean those nations with mature health care systems, economies, and military capabilities.

The term ‘unconventional warfare’ is defined above, but in simple

terms, its meaning is the mobilisation of local populations against an occupying or oppressive government. Unconventional warfare thus involves combatants who were formerly, and recently, civilians. The level of violence is generally intimate involving small arms or close engagements. The intensity of conflict is thus generally lower than that of conventional warfare.

Inclusion criteria

To guide the search strategy, a set of parameters has been developed that encompasses inclusion and exclusion criteria, scientific databases, grey literature locations, search terms (Table 1), search limitations and experts to consult. Editorial articles will be included owing to the valuable theoretical information that will help to inform this review.

Studies will be included if they examine, review, or explore aspects of unconventional warfare medicine in developed countries, or in contexts initiated by them.

Studies will be excluded if they only briefly mention unconventional warfare medicine or related concepts without substantive exploration or analysis; if they focus on unconventional warfare medicine by developing countries; or if they are not written in English. This review will specifically explore unconventional warfare and not irregular warfare more broadly, recognising that unconventional warfare medicine represents a distinct subset within the wider irregular warfare framework. Accordingly, studies that focus on other forms of irregular warfare outside the scope of unconventional warfare, such as counterinsurgency or stability operations, will be excluded to maintain conceptual clarity and relevance.

Participants

Individuals involved in providing or supporting medical care in unconventional warfare environments, including military medics, special operations medical personnel and other healthcare providers (military or civilian) operating in irregular or hybrid conflict zones in developed countries.

Concept

The review will focus on the concept of unconventional warfare medicine encompassing the systems, principles and practices that underpin medical support in non-traditional or irregular warfare. It aims to examine how unconventional

Table 1. Search strategy including system descriptors that were combined with index terms.

System Descriptors	Index Terms
Unconventional warfare	hybrid warfare, asymmetric warfare, non-traditional warfare, guerrilla warfare, counterinsurgency, low-intensity conflict, special operations, grey zone conflict, proxy war, resistance operations
Medicine and medical support	unconventional warfare medicine, special operations medicine, combat medicine, battlefield medicine, austere medicine, tactical medicine, prolonged field care, remote medical support, forward medical care, medical logistics, medical evacuation
Boolean terms	The Boolean terms used will be AND and OR organised around differences in spelling and terminology, such as: non traditional OR non-traditional OR nontraditional AND unconventional warfare medicine.

warfare medicine is defined, organised and applied; identify key themes, practices and challenges; and delineate the conceptual boundaries that distinguish this field from conventional military and civilian medicine.

Context

The context is developed-world unconventional warfare or hybrid conflict operations that occur or are planned for by military, paramilitary and security organisations. The review will not focus on specific missions or historical case analyses but will instead examine how medical support is conceived, structured and discussed across academic, military and policy literature relevant to developed nations.

Types of studies

Studies evaluated in this review will include qualitative or quantitative study designs, including original peer-reviewed research, systematic, narrative and scoping reviews; policy statements; and government or industry reports. All literature must be unclassified.

Methods

This scoping review will follow the Joanna Briggs Institute (JBI) scoping review methodology.^{5,6}

A preliminary search of existing systematic and scoping reviews on the topic was conducted on 21 October 2025. Databases searched included the JBI Database of Systematic Reviews and Implementations Reports, the Cochrane Database of Systematic Reviews, CINAHL, PubMed, EPPI and Epistimonikos. One recently published systematic review was found;⁷ however it focused on synthesising medical support lessons learned in irregular warfare from 2000 to 2024 with an emphasis on identifying doctrinal gaps and strategic recommendations within the US military context.

The research team considered a scoping review to be the most appropriate design to address the objectives of this study for several reasons. First, the purpose of the review is broad and aims to identify knowledge gaps.⁸ Second, unlike a systematic review, the review is not trying to answer a specific question, but rather examine the extent, range and nature of the literature surrounding the concept.⁹

Search strategy

A search strategy using the terms listed in Table 1 will be conducted in Embase, MEDLINE, Web of Science, EBSCOhost, CINAHL, Google Scholar and Epistimonikos to ensure that the optimal combination of databases needed to conduct efficient searches in health, military and industrial based journals is obtained.¹⁰ A subject specialist librarian will be consulted to provide guidance on search strategy. Additionally, one of the authors applied a forward-backward search technique of all relevant articles.

Due to the topic of this scoping review, it is highly likely that a great deal of information exists that was not in the scientific literature. Accordingly, a comprehensive search of the grey literature will be undertaken in OpenGrey, Google, and Bing, with additional AI-assisted searches conducted using Perplexity to identify non-indexed but relevant materials. The same search terms listed in Table 1 will be applied across all platforms. The search focused on government and industry reports and policy statements.

In order to capture all literature related to the topic, we will search all articles dating to the inception of MEDLINE.

Finally, experts within the field of unconventional warfare will be contacted to ensure we have explored all relevant literature. The panel will include academics, physicians and medics employed within military special operations units in English-speaking developed countries. The experts will be invited to review the literature list and provide comment or feedback on our findings.

All searches will be conducted by members of the research team, and a combination of reference management software, Covidence and Endnote X9 (Clarivate Analytics, PA, USA) used to store and assess all relevant literature.^{11,12}

Source of evidence screening and selection

We will conduct the study selection process in two stages. First, two reviewers will evaluate and assess titles, abstracts or website content based on the defined inclusion and exclusion criteria. If the reviewer is uncertain at this stage, the article or website will be included. In the second stage, full-text articles will be obtained, and both reviewers will independently review the articles and websites that have been collected in the first stage. The articles and websites will be grouped into three categories: included, excluded and uncertain. The reviewers will then compare categories to ensure inter-rater reliability and validity. If there are any discrepancies that cannot be resolved, a meeting will be held with a third reviewer to discuss the articles and websites until a consensus is reached. If a consensus cannot be reached, the decision of the majority will be taken.

Data extraction

In this stage, we will extract the relevant data from included studies and websites that will help address the aims of the scoping review. A custom data collection form will be used to support the extraction of data that enables charting of a mix of both general information contained within the article and information that best answers the research question¹¹.

Data presentation

In order to adequately address the aim of this scoping review, the results will be presented in the following ways. First, we will use the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flow chart template reporting the

search process.¹² Second, a narrative analysis which will include a description of key findings and an analysis of the literature.

Ethics and dissemination

This scoping review will be the first study to explore what is known about unconventional warfare medicine practice in developed countries on a wide scale. It will contribute to future studies in the field of unconventional warfare.

The results will be disseminated through a peer-reviewed publication and national and international conferences targeting a broad array of military clinicians and leaders. As the methodology applied consists of reviewing and collecting data from publicly available materials, this study does not require ethics approval.

Limitations

This scoping review protocol acknowledges several anticipated limitations. First, the limited availability of publicly accessible literature on unconventional warfare medicine is expected to constrain the breadth of evidence identified. This reflects the inherently sensitive, operational and often classified nature of the field, which may limit access to detailed accounts, contextual information and historical records. Second, the decision to include only English-language sources from developed countries may lead to the exclusion of relevant perspectives from non-English speaking or resource-limited settings where unconventional warfare has also been prominent. Third, conceptual overlap between unconventional warfare and broader constructs such as irregular, hybrid or proxy warfare introduces challenges in maintaining clear definitional boundaries; as a result, some sources may be excluded to preserve alignment with the review's operational definition of unconventional warfare. Finally, consistent with the objectives of a scoping review, this study will explore the nature and extent of available evidence without formally appraising methodological quality. Consequently, the robustness and reliability of the evidence base will require further critical evaluation in subsequent research.

Conflict of interest

The authors declare no competing interests. Each author of this paper has completed the ICMJE conflict of interest statement.

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References

1. Moor R. Unconventional warfare: an overview. *Australian Defence Force Journal*. 1999;136:43–49.
2. Grdovic M. Developing a common understanding of unconventional warfare. *Joint Force Quarterly*. 2010;57:136–139.
3. Jasinskas N, Lyon R, Baker J. Unconventional warfare medicine is the ultimate prolonged field care. *Medical Journal, US Army Medical Center of Excellence*. 2022;1:31–39.
4. United Nations. *World Economic Situation and Prospects 2020*. New York: Stylus Publishing; 2020.
5. Aromataris E, Lockwood C, Porritt K, Pilla B, Jordan Z. *JBIM Manual for Evidence Synthesis*. JBI :2020.
6. Peters MD, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. *JBIM Evidence Synthesis*. 2020;18(10):2119–2126.
7. Licina D, Cherenfant C, Gurney J, Gonzalez C, Hardin R, Remondelli M, et al. Medical support to irregular warfare: a systematic literature review, 2000–2024. *Military Medicine*. 2025;10:212.
8. Munn Z, Peters MD, Stern C, Tufanaru C, McArthur A, Aromataris E. Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*. 2018;18(1):143.
9. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implementation Science*. 2010;5(1):69.
10. Bramer WM, Rethlefsen ML, Kleijnen J, Franco OH. Optimal database combinations for literature searches in systematic reviews: a prospective exploratory study. *Systematic Reviews*. 2017;6(1):245.
11. Booth A. Searching for qualitative research for inclusion in systematic reviews: a structured methodological review. *Systematic Reviews*. 2016;5(1):74.
12. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;7(1):339.