

## CIVIL-MILITARY COORDINATION OF PUBLIC HEALTH RESPONSE TO URBAN DISASTERS IN MALAYSIA

Halyna Lugova, Ambigga Devi S. Krishnapillai, Aye Aye Mon, Wan Farizatul Shima

*National Defence University of Malaysia (Kuala Lumpur)*

**Introduction.** Direct and indirect impacts of disasters and emergencies on public health and health care systems, and the use of health outcomes as indicators of the effectiveness of disaster management activities highlight the importance of the role health sector plays in all phases of disaster management cycle. In Malaysia, several gaps have been identified with regards to humanitarian assistance and disaster relief (HADR) operations, including lack of coordination between agencies, and most of the agencies focusing on the preparedness and response phases.

**The purpose** of this narrative review was to obtain a broad appreciation of the extent of the research literature on the role of civil-military coordination during the disaster events in urban settings, particularly in the context of public health response to disasters and emergencies, and a broad understanding of any clear evidence which may have policy implications for KL, Malaysia.

**Materials and methods.** This study is a narrative review of literature on civil-military coordination of public health response to urban disasters in Malaysia. The databases that were individually searched included PubMed, PsychINFO and Pre-CINAHL. Google Scholar was also searched.

**Results.** The results of this study highlighted the importance of developing proactive approaches to public health and disasters as opposed to a general reactive approach. Ultimately, by establishing efficient partnership with the military as one of the key stakeholders, through civil-military coordination, an enhanced response to public health implications of disasters and emergencies can be achieved.

**Conclusions.** Optimizing multi-sectoral approach, interoperability and coordination of civil-military capabilities to address health-related impacts of disasters is especially important in the dense and complex urban setting of Kuala Lumpur (KL) metropolitan area.

**Key words:** health care, public health, disaster management, civil-military capabilities.

**Introduction.** Disasters are known for their numerous and devastating impacts on public health and health care systems. During the disaster event, health outcomes, such as mortality and morbidity, are often tracked, measured, and used as indicators of disaster resilience and preparedness [Chan & Ho, 2018] [1]. Health sector plays crucial role in the disaster management cycle, as commonly represented by mitigation, preparedness, response, and recovery phases [9, 10]. Apart from being directly involved in response to and preparedness for hazards, public health aspects should be integrated into all disaster risk prevention policies.

**The purpose** of this narrative review was to obtain a broad appreciation of the extent of the research literature on the role of civil-military coordination during the disaster events in urban settings, particularly in the context of public health response to disasters and emergencies, and a broad understanding of any clear evidence which may have policy implications for Kuala Lumpur, Malaysia.

**Materials and Methods.** This study is a narrative review of literature. Previous

publications related to coordinated efforts of public health aspects of disaster management in urban settings in Malaysia have been thoroughly reviewed. Before searching the evidence, a research protocol was created that specified inclusion and exclusion criteria. Only English-language studies that examined the aspects of coordination characteristics of urban disaster management were included. Exclusion criteria were set as studies on engineering aspects of disaster management and non-English studies. The databases that were individually searched included PubMed, PsychINFO and Pre-CINAHL. Google Scholar was also searched. Terms used in each database search included the following: disaster OR emergency AND coordination AND urban, AND Malaysia. Specific names of the policies and regulating documents used in disaster management were also searched. Obtained data provide a comprehensive overview based on available literature related to civil-military coordination of public health response to urban disasters in Malaysia.

**Results and Discussion.** Disaster management cycle involves 1) mitigation, or risk reduction, 2) preparedness, 3) response, and 4) recovery phases. An important measure of mitigation is setting in place 'safe' disaster-resistant health facilities, as well as eliminating hazards, such as through vector control, and reducing vulnerabilities by immunisations, food safety, etc. The priorities of the health sector in preparedness for disasters include health needs assessment, mass fatality planning, ensuring of safety of the health facilities, emergency medical and human resources, provision of hygiene and sanitation needs, measuring inequalities in health, etc. (Randolph et al., 2019) [12]. Additionally, health sector should contribute to improvement of social protection systems to increase resilience of population and early warning systems of humanitarian crisis (Lavers, 2013) [5]. During the response phase, health professionals not only directly provide preventive and curative care but have the capacity and responsibility to support other sectors with health-related information. Finally, recovery of the health system depends on the extent of the damage and availability of resources (Hill et al., 2014) [4]. Interestingly, the biggest share of avoidable mortality and morbidity follows the damage of vital lifelines and economy disruption rather than results from direct impacts of the disaster event (Nomura et al., 2016) [9]. Therefore, there is a need for a wider public health approach, that is informed by the people's vital needs, and the critical support functions of information, logistics, and coordination.

Hyogo Framework for Action highlighted the importance of efficient legislation and its enforcement to support disaster risk reduction (UN, 2005) [14]. From the public health perspective, this can be exemplified by the ongoing COVID-19 epidemic in Malaysia which has highlighted some gaps for improvement in guidance of directives under the Prevention and Control of Infectious Diseases Act 342 (MOH, 1988) [7]. Section 31 of the Act 342 provides Minister of Health with power to make regulations for several matters that may appear advisable for the prevention or mitigation of infectious diseases. Nevertheless, ambiguity in applying additional powers to deal with the individuals who deliberately hide medical information related to COVID-19, breach

movement control order (MCO) or refuse to cooperate with health officers to take the control measures, has been noted. The involvement of the military in curbing the epidemic of COVID-19 highlighted the importance of an appropriate communication with the public on the role the Malaysian Armed Forces (MAF) play in assisting civil authorities in enforcing the MCO to avoid panic and misunderstanding. Despite acknowledging the help of the military, some of the health NGOs' representatives highlighted that they were not trained as law enforcement officers, therefore the rules for military deployment should be clearly articulated to avoid any incidents (Prakash, 2020) [11].

Reducing the public health impact of disasters requires a multi-sectoral outlook. Coordination between different agencies is essential for HADR efforts to have the continuity that is needed to induce positive changes. Consorted multi-sectoral efforts are required even when dealing with hazards seemingly of a purely "health nature" such as COVID-19 pandemic (Chen, Cao & Yang, 2020) [2]. In Malaysia, more than 70 agencies are involved in provision of the HADR activities at federal, state and district levels based on the National Security Council (NSC) Directive No. 20 (1997) [6]. As one of the stakeholders, MAF work with a broad range of civilian agencies and non-governmental organizations. The military only augment the role and tasks of other mandated agencies. Their role in health response to disasters is limited to search and rescue operations and emergency medical services. The essential dialogue between civilian and military players that is crucial to avoid competition, minimize inconsistency and pursue common goals is achieved through civil-military coordination in HADR operations. Leveraging of readily available military resources and manpower including additional skilled and trained health personnel, and subject matter experts on peculiar topics such as chemical, biological, radiological, nuclear and high explosive (CBRNE) or bioterrorism can be achieved through establishing efficient partnership between civilian and military HADR agencies. This will increase an opportunity to promote and protect health and enhance response to emergencies (Nieves, 2012) [8].

However, lack of coordination between the agencies involved in HADR operations in Malaysia has been identified, with most of the

stakeholders being involved in disaster response only, and very few involved in all phases of disaster management cycle (Chong & Khamarudin, 2018) [3]. NSC Directive No. 20 does not articulate a specific mandate for the military in disaster management and its role appears to be more in support or response operations as needed. Establishing efficient multi-sectoral coordination and interoperability between the military and civilian agencies is important in the context of large cities which are particularly vulnerable to a wide variety of natural and man-made hazards due to high population density and over-dependence on infrastructure to support their essential services (Chan & Ho, 2018) [1].

In Malaysia, over the past three decades economic, business, and administrative activities have been concentrated in KL metropolitan area, which population has nearly quadrupled from 2.1

million people in 1990 to 7.8 million people in 2019 (UN, 2019) [13]. Increased risk of potential health implications due to emergencies and disaster events in Greater KL implies the importance of optimization of management of HADR operations in the city.

### Conclusions.

1. In Malaysia, several gaps have been identified in HADR operations. Emphasis should be on developing proactive approaches to public health and disasters as opposed to a general reactive approach.

2. The key role of health sector in all phases of the disaster management cycle must be emphasized.

3. Optimizing multi-sectoral approach, interoperability and coordination of civil-military capabilities to address health-related impacts of disasters is especially important in the dense and complex urban setting of KL metropolitan area.

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# ЦИВІЛЬНО-ВІЙСЬКОВА КООРДИНАЦІЯ РЕАГУВАННЯ СИСТЕМИ ГРОМАДСЬКОГО ЗДОРОВ'Я НА НАДЗВИЧАЙНІ СИТУАЦІЇ В МІСТАХ МАЛАЙЗІЇ

Г. В. Лугова, А. Д. Кришнапілай, А. А. Мон, В.Ф. Шіма

Національний університет оборони Малайзії (Куала-Лумпур)

**Вступ.** Прямі та опосередковані наслідки стихійних лих та надзвичайних ситуацій на систему охорони здоров'я та громадське здоров'я та використання результатів охорони здоров'я як показників ефективності заходів з ліквідації наслідків надзвичайних ситуацій підкреслюють важливість ролі сектору охорони здоров'я на всіх етапах циклу управління катастрофами. У Малайзії було виявлено декілька прогалин у питаннях гуманітарної допомоги та операцій з ліквідації наслідків катастроф (HADR), включаючи відсутність координації між відомствами та більшістю агентств, що зосереджуються на етапах готовності та реагування.

**Мета** цієї роботи є широкий критичний огляд науково-дослідної літератури щодо ролі цивільно-військової координації під час катастрофних подій у містах, особливо в контексті реагування на охорону здоров'я на катастрофи та надзвичайні ситуації, і широке розуміння будь-яких чітких доказів, які можуть мати наслідки для політики Куала-Лумпур Малайзії

**Матеріали та методи.** Це дослідження є оглядом літератури про цивільно-військову координацію реагування системи охорони здоров'я на міські катастрофи в Малайзії. Бази даних, які були індивідуально оброблені, включали PubMed, PsychINFO та Pre-CINAHL. Також був проведений пошук в Google Академії.

**Результати.** Результати цього дослідження підкреслили важливість розробки проактивних підходів до організації системи охорони здоров'я при катастрофах на відміну від загального реактивного підходу. Зрештою, встановивши ефективне партнерство з військовими як однією із ключових зацікавлених сторін, за допомогою цивільно-військової координації можна досягти посиленої реакції на наслідки катастроф та надзвичайних ситуацій для здоров'я населення.

**Висновки.** Оптимізація міжгалузевого підходу, взаємодія та координація цивільно-військових можливостей для подолання наслідків катастроф, пов'язаних із здоров'ям, особливо важливі у щільних та складних міських умовах мегаполісу Куала-Лумпур (KL).

**Ключові слова:** охорона здоров'я, громадське здоров'я, боротьба з катастрофами, цивільно-військові спроможності.

Конфлікт інтересів: відсутній.

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## Відомості про авторів:

**Лугова Галина Вікторівна** <sup>A,B,C,D,E,F</sup> к.мед.н, доц, керівник соціальної медицини, факультет медицини та військової охорони здоров'я, Національний університет оборони Малайзії, Сунгай Бесі, корп. 1., 57000, Куала-Лумпур, Малайзія.

**Кришнапілай Амбіга Д.** <sup>B,C,D</sup> магістр сімейної медицини, доц., факультет медицини та військової охорони здоров'я, Національний університет оборони Малайзії.

**Мон Ає Ає** <sup>B,C,D</sup> магістр мікробіології, доц., факультет медицини та військової охорони здоров'я, Національний університет оборони Малайзії.

**Шіма Ван Фарізатул** <sup>B,C,D</sup> викладач факультету медицини та військової охорони здоров'я, Національний університет оборони Малайзії.

A – концепція та дизайн дослідження; B – збір даних; C – аналіз та інтерпретація даних;

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## Information about authors:

**Halyna Lugova**, <sup>A,B,C,D,E,F</sup> MD, PhD (Epidemiology), MPH (International Public Health), Associate Professor, Head of Community Medicine, Faculty of Medicine and Defence Health, National Defence University of Malaysia, Sungai Besi Prime Camp, Sungai Besi, 57000, Kuala Lumpur, Malaysia, E-mail: [glugova@yahoo.com](mailto:glugova@yahoo.com), <https://orcid.org/0000-0001-8052-0580>.

**Ambigga Devi S. Krishnapillai**, <sup>B,C,D</sup> MBBS, MMed (Family Medicine), Associate Professor, Primary Care Medicine, Faculty of Medicine and Defence Health, National Defence University of Malaysia.

**Aye Aye Mon**, <sup>B,C,D</sup> MBBS, MMedSc (Medical Microbiology), Associate Professor, Microbiology, Faculty of Medicine and Defence Health, National Defence University of Malaysia.

**Wan Farizatul Shima**, <sup>B,C,D</sup> BSc (Biomedical Sciences), MSc (Public Health Research), Lecturer, Community Medicine, Faculty of Medicine and Defence Health, National Defence University of Malaysia.

A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation;

D – writing the article; E – critical revision of the article; F – final approval of the article.



Corresponding address: Sungai Besi Prime Camp, Sungai Besi, 57000, Kuala Lumpur, Malaysia