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COLLABORATION BETWEEN THE MILITARY HEALTH SERVICES AND THE PUBLIC HEALTH SECTOR IN THE CONTEXT OF THE INTERNATIONAL HEALTH REGULATIONS

COOPERAÇÃO ENTRE SERVIÇOS DE SAÚDE MILITAR E SAÚDE PÚBLICA NO CONTEXTO DO REGULAMENTO SANITÁRIO INTERNACIONAL

Júlio Manuel Coutinho Franco Gouveia-Carvalho
Major and Veterinary Surgeon in the Portuguese Army
Degree in Veterinary Medicine - Faculty of Veterinary Medicine of the University of Lisbon
Technical expert for the United Nations Biological Weapons Convention
Lecturer at the Military University Institute (IUM)
Researcher at the IUM Research and Development Centre
Researcher at the Military Academy Research Center
1449-027 Lisbon, Portugal
carvalho.jmcfg@mail.exercito.pt

Solange Carolino Alves
Master's Degree in Medicine - Faculty of Medicine (FM) of the University of Lisbon (UL)
Master's Degree in Veterinary Public Health - Faculty of Veterinary Medicine (FMV) of the UL
Degree in Veterinary Medicine - FMV of the UL
Consultant to the World Health Organization (WHO)
Researcher at the Instituto de Medicina Molecular João Lobo Antunes
1649-028 Lisbon, Portugal
solangealves@campus.ul.pt

Abstract

The inclusion of public health threats in the context of security has reframed Public Health Studies as a transdisciplinary field of knowledge. Given the importance of the Health Service to military institutions, modern military science studies are needed to explain the phenomena related to a vast range of Military Health activities in terms of their strategic and operational dimensions. This article addresses the issues surrounding civil-military public health cooperation in the context of the International Health Regulations. The research methodology consisted of an inductive approach complemented by qualitative methods and techniques, such as documentary analysis, focus group, and in-depth interviews. The article concludes by proposing a set of key elements from which to define and implement a model of collaboration between the Military Health Services and the Public Health sector.

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Keywords: Health Security, International Health Regulations, Multisectoral Cooperation, Military Health.

Resumo

A inclusão das ameaças à saúde pública no contexto da segurança, redimensiona os estudos em Saúde Pública como uma área do conhecimento de cariz transdisciplinar. Dada a importância dos Serviços de Saúde nas instituições militares, torna-se importante, no contexto das ciências militares, o desenvolvimento de trabalhos de investigação no sentido da compreensão dos diversos fenómenos relacionados com o amplo espectro de ação da Saúde Militar, nomeadamente nas suas dimensões estratégicas e operacionais. O presente artigo, propõe o estudo da problemática da cooperação entre Serviços de Saúde Militar e Saúde Pública no contexto do Regulamento Sanitário Internacional. Esta investigação resulta de uma abordagem metodológica indutiva, utilizando métodos e técnicas qualitativas, com recurso sobretudo a técnicas de análise documental, focus group (grupo de discussão) e entrevistas em profundidade. No final do artigo, é proposto um conjunto de elementos estruturantes para a definição de um arquétipo da colaboração entre Serviços de Saúde Militar e Saúde Pública, tendo em conta a perspetiva da sua implementação.

Palavras-chave: *Segurança sanitária, Regulamento Sanitário Internacional, Cooperação multissectorial, Saúde Militar.*

Introduction

The inclusion of public health threats in the context of security[1], which gave rise to the concept of health security[2], has reframed Public Health studies as a transdisciplinary field of knowledge.

This fact is amplified in the case of public health emergencies of international concern, as defined in the International Health Regulations, an international legal instrument drafted by the World Health Organization and signed by 196 States Parties, including all the organization's member States. Its main goal is to support the international community in preventing, detecting, and responding to public health risks that have the potential to cross borders and threaten the world's populations.

Against this background, Public Health Studies emerge as a paradigm where several fields of knowledge intersect, which encompass both the natural and social sciences.

This paradigm is also mentioned in the strategic security and defence documents of

[1] The approach used in this study concerns the issues surrounding public health in the context of security studies. This frames the topic within the epistemological context of military science from a transdisciplinary perspective.

[2] The concept of health security referred to here was taken from the official Portuguese translation of the International Health Regulations (2005), published in Notice No. 12/2008, in the Portuguese Official Gazette, Diário da República, 1st series, No. 16 of 23 January 2008.

several States. The following excerpt taken from the National Security Strategy of the United States of America, issued in December 2017, confirms the timeliness and relevance of this subfield of military science.

> *[…] Naturally emerging outbreaks of viruses such as Ebola and SARS, as well as the deliberate 2001 anthrax attacks in the United States, demonstrated the impact of biological threats on national security by taking lives, generating economic losses, and contributing to a loss of confidence in government institutions.*
>
> United States (2017, p. 9)

Considering the ubiquitous role of the Health Services in military institutions, and the importance of how these services are used and operated to the military in general, military science studies are needed to explain the phenomena associated with a vast range of Military Health activities in terms of their strategic and operational dimensions.

Therefore, this study will address the issues surrounding cooperation between civilian and military health services. It should be clarified at this point that the study will examine the phenomenon of civil-military public health cooperation from the perspective of the State's capacities of prevention, detection and response to public health emergencies, bearing in mind the key concept of health security and of the key tangible element that underpins it, the International Health Regulations.

Although these issues are also relevant to the topic of Civil-Military Cooperation[3] (CIMIC), they fall outside the scope of this study. CIMIC is usually studied from an operational perspective, especially in terms of how the CIMIC model of cooperation can be used to support military forces. That is, most studies that analyse the CIMIC concept are concerned with the legislation regulating the use of military force, and the CIMIC component provides a subsidiary means to achieve that goal.

Therefore, this study will use an essentially qualitative methodology to propose a systemic conceptualization of collaboration between the public health sector and the military health services by examining the generational and structural dimensions that affect the State as a whole, in order to outline a strategy that can be applied to an interministerial or pan-governmental approach. This approach (which refers to the Portuguese translation of the term "Whole-of-government approach") resulted from a concept initially titled Joined-Up Government, which dates to Tony Blair's premiership of the United Kingdom in 1997. It can be described as an approach in which public service agencies cooperate to achieve common goals through an integrated government response to specific issues. These approaches, which can be formal or informal, focus on policy development, programme management, and service delivery, and were presented as the opposite of the concepts of departmentalism or vertical silos (Christensen and Lægreid, 2006).

Its relevance to this study and to the issue of civil-military health cooperation has been

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[3] The concept of CIMIC was formally defined in the NATO doctrinal documents produced in the 1990s (Mockaitis, 2004). The Allied Joint Doctrine (AJP) 3.4.9 for Civil-Military Cooperation promulgated in 2013 defines CIMIC as "coordination and cooperation between the NATO commander and civil actors, including national population and local authorities, as well as international, national, and non-governmental organizations and agencies (North Atlantic Treaty Organization" [NATO], 2013).

confirmed by recent high-level cooperation initiatives between States and International Organizations as part of their capacity building efforts in the field of prevention, detection and response to public health emergencies.

In this respect, it is worth mentioning the table-top exercise held by the World Health Organization in October 2017, in Jakarta, titled *Managing Future Global Public Health Risks by Strengthening Civilian and Military Health Services*. This simulation exercise was carried out in the context of a cooperation agreement between the World Health Organization and the International Committee on Military Medicine[4]. The table-top exercise was held from the 24th to the 26th of October 2017, and was a high-level meeting that included a reception at the Istana Merdeka presidential palace, which was presided by the President of the Republic of Indonesia and attended by several ministers, military leaders and diplomatic representatives, confirming the strategic importance of the issues surrounding civil-military health cooperation. The delegations of the participating States included representatives of the national Health authorities and of the Military Health Services of their respective countries. This helped foster cooperation and ensure that the model proposed during the exercise would be transferred to their national contexts. The exercise was planned according to the simulation exercise manual issued by the World Health Organization in February 2017. Our participation in this exercise was instrumental to the elaboration of the research work on which this article was based.

This article is divided into four numbered chapters: the first chapter contains the theoretical and conceptual review, in which the main theories and concepts that explain the phenomenon under study are presented; the second chapter describes the methodology and techniques used in the investigation; the third chapter provides an analysis of the International Health Regulations, around which the study is organized; the fourth chapter contains the findings of the theoretical and conceptual review, the documentary analysis, and the data collection procedures, also describing the key instruments that can become policy tools through which a future model of civil-military health cooperation can be implemented.

1. Theoretical and Conceptual review

Over recent years, the international community has witnessed an increase in threats to health security, which include a broad range of infectious and non-infectious risks associated with the intentional release of chemical, biological, radiological and nuclear agents (CBRN). However, despite widespread awareness and concern about this reality, the preparedness levels for national and regional public health emergencies are still largely inadequate, with only a third of countries currently meeting the minimum implementation requirements defined in the International Health Regulations (World Health Organization [WHO], 2017b).

Recurrent public health emergencies in acute and protracted forms, such as the recent Ebola virus disease, Middle East respiratory syndrome coronavirus (MERS-CoV), and

[4] The collaboration agreement between the International Committee of Military Medicine and the World Health Organization dates to 1952 (International Committee of Military Medicine and Pharmacy - World Health Organization [ICMMP-WHO], 1952). The agreement was updated in 2001 (International Committee of Military Medicine - World Health Organization [ICMM-WHO], 2001) and 2004 (ICMM-WHO, 2004).

Zika virus outbreaks, in addition to emergencies arising from war and conflict, have led to a reversal of collective development gains, including the progresses achieved by national health systems. Furthermore, this situation has social, economic and political repercussions and leads to both tangible and intangible losses in the well-being of populations, with effects that often cross national borders. The situation calls for urgent attention from institutions and for the definition of integrated strategies at both national and international level (WHO, 2017b).

The latest revision of the International Health Regulations issued in 2005 binds 196 States Parties to detect, evaluate, notify and respond in a timely manner to potential public health emergencies of international concern, at all levels of governance, and to report such events promptly to the World Health Organization to determine whether a coordinated international response is needed.

However, this system has weaknesses which stem from the lack of enforcement mechanisms through which the international community can ensure that States adopt the International Health Regulations as a legally binding instrument. Therefore, as Katz and Fischer (2010, p. 12) explain, despite all States Parties being legally bound to follow the 2005 International Health Regulations, there are no formal penalties for failing to notify the World Health Organization of a potential public health emergency of international concern, or for not implementing basic surveillance, notification and response capacities. The World Health Organization does not have the authority to force States to meet their legal obligations. This absence of law enforcement mechanisms was a compromise that made the concessions on sovereignty included in the latest revision of the International Health Regulations more politically palatable, but it came at a price. The law's implementation depends on international trust and on the understanding that populations and threats are enmeshed. National leaders who take timely action will have the support of the international community in mounting a swift response to public health events, and thus gain political legitimacy at home and abroad. Another reason for States to adhere to the regulations was the realization that States cannot control the flow of information once a public health emergency becomes public knowledge, even if the national authorities do not follow the notification procedures. States that do not report a public health emergency can face potentially embarrassing and costly restrictions on travel and trade as soon as news of the event comes out, as well as collective accusations of poor domestic health governance (Katz & Fischer, 2010).

In order for States to implement the regulations, they must integrate them into their regulatory and legal framework and strategic planning processes. The plans set up for prevention and response to biological threats must be both general and specific and must involve all intervening areas, from the operations that are specific to each type of threat to the general areas common to different threats, such as security, defence, logistics, energy, transportation, engineering, among others (Gouveia-Carvalho, 2007, p. 279).

This study identifies the key principles of an approach to which the field of strategic studies can be of particular interest because it encompasses different components, such as capacity building, allocation, and employment, and strategy is involved in all generational, structural and operational activities through which new capacities are generated and created

(building), distributed, organized and articulated (allocation), and used (employment) (Ribeiro, 2010, p. 32).

Aiming to develop the essential capacities of Member States, Resolution WHA 61.21 tasked States with implementing the specific actions recommended in the global strategy and plan of action on public health, innovation and intellectual property and identified the crucial role of the World Health Organization, as well as that of its partners, donors and regional and international networks, in facilitating strategic cooperation and partnerships between and within States Parties (WHO, 2008).

Over the past decade there has been a large investment in global health security through initiatives such as the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (2018), the Global Health Security Agenda (GHSA, 2018), the Global Health Security Initiative (GHSI, 2018), among other regional initiatives and partnerships that aim to respond to emerging and reemerging infectious diseases. Despite this ongoing progress, cooperation on health and security in vulnerable countries is largely ad hoc, fragmented and lacks effective national structures that inform authorities about their respective roles, duties and responsibilities in the event of complex and rapidly evolving health problems (WHO, 2017b).

Therefore, in order to assist participating States in developing their public health response capacities, the World Health Organization is responsible for consulting with States Parties to issue guidelines and other tools to support States in formulating their strategic planning processes and elaborating a national health security plan. This is in line with the fundamental principles expressed in several legal documents, such as the country ownership principle, which determines that national governments are responsible for building and maintaining their own of health security, preparedness and public health emergency response capacities. It is urgent to mount a multisectoral response to public health and health security threats. This will require a coordinated multisectoral approach since surveillance, threat identification, risk assessment and response capabilities involve a number of sectors other than human health, such as animal health, food and agriculture, defence, security, internal affairs, transport, finance and energy (WHO, 2017a).

Therefore, according to the national planning guide issued by the World Health Organization in 2017, the following key government stakeholders should be involved in developing the national health security plan: the head of state and the prime minister, the coordinating ministry, and the ministries of health, defence, interior, finance, agriculture, livestock and fisheries, transport and energy, among other stakeholders and relevant partners, such as the World Organization for Animal Health, the Food and Agriculture Organization, and several other agencies of the United Nations System (WHO, 2017a).

As mentioned above, multisectoral capacity building also includes defence and security capacities, which results in a significant overlap in capacities and responsibilities, with the Military Health Services emerging as a common element.

While the involvement of the Military Health Services in situations that affect public health is not a recent issue, it has become increasingly complex. The changes in the threats posed by infectious diseases over recent decades have increased the complexity of the

involvement of the armed forces in public health both at home and abroad. Because these diseases increasingly carry security, economic, development and humanitarian concerns, military forces must use their capacities in new ways to support public health personnel within and beyond the territories they protect (Fidler, 2011).

Briefly summarising, in the face of evolving threats to health security, 196 States Parties have agreed to comply with the 2005 International Health Regulations and to detect, assess, notify and respond in a timely manner to public health emergencies of international concern. To that end, the signatories have agreed to develop coordinated multisectoral capacities, since surveillance, threat identification, risk assessment and response capabilities involve a number of sectors that go beyond human health in the strict sense. The processes involved in this approach should be planned strategically and should account for all the aspects related to the collaboration between the public health sector and the military health services.

2. Methodology

This study was conducted according to the theoretical and conceptual framework described in the previous chapter. It was determined that the issues surrounding civil-military health cooperation are extremely relevant to develop, strengthen, implement, and maintain the core capacities of the State, as provided for in the International Health Regulations.

This relevance stems from the fact that it affects States' strategic planning processes, hence the need for a multisectoral approach. Thus, the central objective of this study is to identify policy tools that can become the key elements of a model for cooperation between the Military Health Services and the Public Health sector.

The following research question was devised to guide the investigation: What policy tools can become the key elements that strengthen the collaboration between the Military Health Services and the Public Health sector in the context of the International Health Regulations?

The research process and study design were planned around the above research question. The study design consisted of an inductive research methodology complemented by qualitative methods and techniques such as document analysis, focus group and in-depth semi-structured interviews.

The documentary review used primary sources and mainly analysed official documents. This included the full text of the International Health Regulations (2005), especially in regard to structural and operational aspects, as this document is the central element of the present study on cooperation between health systems, services and structures, both civilian and military.

The analysis also included several World Health Assembly[5] resolutions pertaining to the International Health Regulations, as well as official World Health Organization guidelines, collaboration protocols, reports of meetings and working groups, and news pertaining to the topic of this investigation.

The focus group meeting took place during the exploratory phase of the research process

[5] The World Health Assembly (WHA) is the decision-making body of the World Health Organization. It holds annual meetings in Geneva, Switzerland, which are attended by delegations from all Member States.

and served to generate ideas and elements that would be used in the subsequent phases of the research process. The decision to use a focus group was based on the need to generate debate and discussion on a topic that merits a collective view (Ochieng et al., 2018) and to collect information and narratives for use in the later phases of the research process (Zander, Stolz, & Hamm, 2013 cited in Ochieng et al., 2018). This information helped define the structural and operational dimensions of the study, such as the research lines and the data collection process using semi-structured interviews, and was especially helpful in defining the structure of the script and the study sample, as well as in selecting the interviewees.

The focus group process was divided into four phases: planning, discussion, data collection and data analysis. At the core of this process was a panel discussion meeting on the topic under study, which was attended by eight experts. It was decided that the project would benefit from the meeting taking place face-to-face. The experts were selected by targeted sampling, according to their availability to attend the meeting. The focus group experts were selected for their experience in crisis response to public health emergencies and for their participation in joint planning and response activities between the Military Health Services and the Public Health sector.

The focus group meeting was planned and led by one of the project's researchers, who served as moderator for the discussion and who was also responsible for inviting the members of the panel of experts and providing them the theoretical and conceptual context they needed to prepare for the meeting.

The meeting began with an introduction concerning the focus group methodology, followed by an explanation of the rules and a brief introduction of the research topic and objectives. About two months before the meeting, one of the members of the panel of experts was asked to analyse the International Health Regulations, paying particular attention to the aspects relating to response to public health emergencies and highlighting those that would be of interest to a discussion on cooperation between the Military Health Services and the Public Health sector. After the introduction, an audio-visual presentation was shown to the other members of the panel of experts to provide a starting point for the discussion and to ensure a common understanding of the concepts. The presentation was followed by a discussion led by the moderator, who introduced topics drawn from the analysis of the International Health Regulations to initiate the discussion and direct it towards the issues surrounding cooperation between the Military Health Services and the Public Health sector. The meeting lasted about 30 minutes and the discussion was recorded using a portable digital stereo audio recorder. The recording was later transferred to a computer for analysis.

The focus group process was instrumental in defining the elements to assess the relevance and the basis for the collaboration between the Public Health sector and the Military Health Services in the context of health security in general, and in particular of the framework provided by the International Health Regulations and States' compliance to those regulations. The benefits of this cooperation were discussed and concrete actions were identified that could be used as key elements from which to define a model of civil-military health cooperation with a view to effective implementation. The elements collected during the focus group process were complemented by documentary analysis and a review of the

relevant literature, after which the semi-structured in-depth interviews were organized, their objectives defined and the subsequent research and data collection activities were planned.

The model used in the research was the semi-structured in-depth interview. The sample was selected using a snowball methodology, in which an initial group of experts proposes other experts with relevant experience and expertise for future interviews (Bryman, 2012). The interviews were conducted with national and international experts selected according to three requirements: having worked for governmental or intergovernmental organizations at various stages of planning and response to public health emergencies; having participated in cooperation activities between military and public health organizations; being familiar with the International Health Regulations and the topic of global health security. The final sample consisted of ten experts and the interviews were conducted face-to-face, by videoconference, or by telephone, depending on the availability of the interviewees and other logistic considerations. The interviews were recorded using a portable digital stereo audio recorder for later analysis, during which the elements deemed relevant to the investigation were transcribed.

The interviews followed a pre-defined script that covered the conceptual framework for cooperation between the State's Public Health and Military Health sectors. This script specifically addressed the response mechanisms provided for in the International Health Regulations, the benefits of cooperation and, finally, the policy tools that can be used to design a state-level process to structure the cooperation between the Public Health and Military Health components, and which can become specific measures that can be effectively implemented. Therefore, the interviewees were encouraged to refer to their experience as it provided a basis for the policy tools proposed during the interviews.

The interviews began with a brief introduction to the topic, followed by open-ended questions, with some time set aside for impromptu questions and discussion. All interviews included the following pre-defined, standardised questions: What is the importance of civil-military health cooperation in the context of the International Health Regulations? What specific features of the Military Health Services can be employed in these situations? What are the benefits of a collaboration between the Military Health Services and the Public Health sector? What activities or instruments of action can ensure that a collaboration between the Military Health Services and Public Health sector is effective?

The analysis of the data collected in the interviews revealed some consensual aspects, that is, on which all or most of the interviewees agreed. There was theoretical and conceptual consensus on the relevance of a broad reflection on the topic under study, as well as on the need to create and implement measures to ensure cooperation between military and civilian health organizations. Divergent perspectives also emerged regarding the existence or lack thereof of any specific features of military health with relevance to this study. These findings will be described over the next chapters. In the first phase, the International Health Regulations will provide the key contextual element to highlight the findings of the documentary analysis. The second phase will describe the tools of action that will become the key elements of a model of collaboration between the Military Health Services and the Public Health sector with a view to future implementation.

3. The International Health Regulations as a determinant for collaboration between the Military Health Services and the Public Health Sector

As established above, the 2005 International Health Regulations impose on 196 States Parties the obligation to implement measures for timely detection, assessment, notification and response to potential public health emergencies of international concern at all levels of government, and to report such events promptly to the World Health Organization to determine whether a coordinated global response is needed.

During the study, a comprehensive analysis of the International Health Regulations was conducted to identify issues pertaining to civil-military health cooperation. The version of the regulations used in the study was published in Notice No. 12/2008, in the Portuguese Official Gazette, Diário da República, 1st Series, No. 16 of 23 January 2008, and is the official Portuguese translation of the English version of the International Health Regulations (2005).

The International Health Regulations consist of a foreword, followed by ten parts subdivided into articles, which are further subdivided into chapters, and nine annexes.

The foreword addresses the revision and update process and refers in that regard to resolutions: WHA48.7 on revision and updating the International Health Regulations; WHA54.14 on global health security: epidemic alert and response; WHA55.16 natural occurrence, accidental release or deliberate use of biological and chemical agents or radionuclear materials that affect health: global public health response; WHA56.28 on the revision of the International Health Regulations, and; WHA56.29 on severe acute respiratory syndrome, with a view to responding to the need to ensure global public health.

The foreword is followed by the wording of the regulations, which includes the following parts:

– Part I includes the Definitions, purpose and scope, principles and responsible authorities;

– Part II refers to Information and public health response;

– Part III covers temporary and standing Recommendations;

– Part IV refers to Points of entry such as airports, ports and border posts,

– Part V is divided into four chapters, which detail Public health measures described as provisions for various areas;

– Part VI addresses Health documents;

– Part VII details Charges;

– Part VIII contains General provisions;

– Part IX is divided into three chapters that describe the IHR Roster of Experts, the Emergency Committee and the Review Committee;

– Part X contains the Final provisions.

The annexes include a set of requirements, models and decision-making tools, such as: the decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern, requirements concerning vaccination and vector-borne diseases, and core capacity requirements for surveillance and response.

The analysis of the 2005 International Health Regulations revealed several relevant aspects to this research. One of the most important concerns the expansion of the scope

of the Regulations. This expansion has several implications. On the one hand, the rules no longer refer to specific diseases, but to a general approach that encompasses known and unknown diseases. On the other, the inclusion of naturally occurring and deliberate threats is an element that confirms the relevance of the Military Health Services, whose CBRN capacities are in line with the All Hazards Approach. Finally, it expands the scope of participation and authority of the World Health Organization, and now also allow for the use of information obtained from non-governmental sources (Fidler, 2011). The Military Health Services can play an important role in this regard, for example, by providing medical intelligence.

Another relevant aspect to this study is the establishment of minimum requirements for States' core surveillance and response capacities. As the capacities referred to in the International Health Regulations encompass the air, sea and land dimensions, and these components already exist in the Military Health Services, they can be added to the State's overall capacities. The fact that the regulations are structured around these components is in keeping with the modus operandi of the Military Health Services, which already follow the component approach traditionally used in military operations. This positions the Military Health Services as a key stakeholder in building capacities across the various dimensions.

The above aspects support the theory that, in light of the obligations set by the 2005 International Health Regulations, the Military Health Services should be included in the State's health emergency response planning. The following excerpt was taken from an interview with the Director of the Country Health Emergency Preparedness and IHR of the World Health Organization:

> *[…] the partnership between the military health services and the civilian public health. We need to bring them together, they need to speak to each other, because in too many countries, the national plan, we shall develop to build these capacities, being prepared, does not involve the military health services.*
>
> G. Rodier (face-to-face interview, 26 October 2017)

This statement, taken in its context, stems from the observation that, in many countries, the Military Health Services are not integrated into the national response plans to public health threats, and corroborates the need to include these Services in the national planning processes and to strengthen that collaboration, as this is expected to lead to capacity gains.

The majority of interviewees in this study mentioned more than once the need and urgency of strengthening civil-military health cooperation, which is generally understood as the collaboration among the national health authorities, that is, between the national core capacities as defined in the International Health Regulations and the national Military Health Services. The interviewees also mentioned the expected gains in light of the obligations to which States are bound under the International Health Regulations.

Briefly summarising, the 2005 International Health Regulations expanded the scope of the rules from the perspective addressed in this study, creating the need and the opportunity to integrate the Military Health Services in the national response plan to public health threats, with a view to strengthening the State's core capacities.

4. Key elements of a future model of collaboration between the Military Health Services and the Public Health Sector

Having explained the role of the International Health Regulations as a determinant for collaboration between the Military Health Services and the Public Health sector, and bearing in mind the aspects presented in the previous chapters, this section will list the key elements that will provide the answer to the research question. To that end, the data obtained during the research process were integrated and analysed to search for the key elements of a future model of collaboration between the Military Health Services and the Public Health sector.

To provide some context, the analysis should take into consideration the legal and regulatory framework that defines the responsibilities of the various State institutions. This framework includes the Constitution, the Organic Laws that govern various entities, and other legal and regulatory documents.

The legal and regulatory framework provides a basis on which to build a matrix of responsibilities, so that omitted aspects, points in common, and areas where jurisdictions overlap can be identified and accounted for in the strategic planning process. This framework is the ontological and structural basis for the relationships between organizations and other State organizations, counterpart institutions of other States, among other entities.

The general consensus is that supporting the population is one of the missions of the Military Health Services, and that this can be done either in coordination with the health authorities or by providing direct support to the population. Therefore, generally speaking, a legal and regulatory framework for cooperation between civilian and military health services along the lines proposed in this study already exists.

In structural and operational terms, the study identified that collaboration protocols, memoranda of understanding, among other agreements (in the broad sense of the term, as they are sometimes referred to by other designations), are the key element around which the concept of civil-military health cooperation is built. The general perception is that this type of element can trigger processes of collaboration between organizations by providing a regulatory framework for cooperation and enabling the range of activities that result from it. Furthermore, in cases where ongoing informal cooperation processes require formal definition, it can provide a goal to be achieved.

The study identified another regulatory element, this time at the operational level, which refers to the elaboration of preparedness and contingency plans. These plans are important because they cover cooperation between highly specialised services and define how their assets and resources, both tangible and intangible, will be allocated.

The general consensus is that factors such as discipline, chain of command, training, and the ability to act in hostile contexts are features that differentiate (relatively, if not in absolute terms) military institutions such as the Military Health Services from civilian institutions, and that these factors would improve the national response to crises, especially in situations of public health emergencies.

Furthermore, it was ascertained that when the working groups responsible for developing the preparedness and contingency plans comprise representatives from the organizations involved in the execution of those plans, this fosters and strengthens inter-institutional cooperation.

Against this background, and considering the broad range of potential information sources provided for in the 2005 International Health Regulations, which include non-governmental sources of information, intelligence systems emerge as particularly relevant. Intelligence sharing is the cornerstone of prevention, detection and response to public health emergencies. As mentioned above, the medical intelligence sector is a key element to which inter-agency cooperation is of particular interest due to the overlap between the health sector and the security and defence sectors.

Likewise, the overlap between human and animal health is critical for intelligence systems. It is currently one of the most important factors for intergovernmental organizations such as the World Health Organization, the World Organization for Animal Health and the Food and Agriculture Organization, which have implemented tripartite information-sharing initiatives. The veterinary medicine component of the Military Health Services provides the system with an alternative information flow between the human and animal health sectors, which would prove particularly helpful when dealing with zoonotic diseases and emerging infectious diseases in general.

One of the most important challenges for health information systems is the need for information sharing at different levels between the health sector and the security and defence sector, among others. Therefore, the possibility of implementing joint or interoperable information systems should be considered.

Having defined the elements that constitute the regulatory matrix for collaboration between the Military Health Services and the Public Health sector (the legal and regulatory framework, memoranda of understanding, collaboration protocols or agreements, joint or interoperable information systems, and preparedness and contingency plans), the next section will list other elements that can become specific initiatives to strengthen the collaboration between the Military Health Services and the Public Health sector.

Simulation exercises are a key element around which the whole system comes together to respond to different types of high-impact, low-frequency emergencies.

According to the International Health Regulations, planning should cover both naturally occurring and deliberate threats, as well as known and unknown diseases, and include them in the exercise scenarios. Simulation exercises are invaluable to validate processes and procedures and to implement continuous improvement processes, and can trigger the cooperation process as a whole.

The following excerpt from an interview with a technical officer from the World Health Organization working group responsible for the simulation exercises component mentions the importance of those exercises in the context of the International Health Regulations and of civil-military health cooperation:

> *[…] one of the big benefits of the simulation exercises is [...] learn from each other [...] in that sense, simulation exercises are a great way to build those partnerships and enhance collaboration, in this case, between Public Health and Military Health Services.*
>
> F. Copper (face-to-face interview, 26 October 2017)

This study also identified a number of specific joint actions, such as the participation in missions involving organizations from both sectors and other elements that foster integration, such as strategic resource-sharing partnerships for the use of common infrastructures, staff exchanges, or participating in consortia involved in research, development and innovation projects with entities from various sectors. These actions, together with multisectoral working groups, constitute cross-cutting elements which can involve prevention, detection and response components.

Another element involved at all levels of the system relates to training, communication and awareness raising. Therefore, joint training activities are of crucial importance. The study revealed that the general perception is that the Military Health Services already have a doctrinal framework for training and education, as well as resources such as facilities and equipment that can be used for training purposes. For example, the range of public health emergency scenarios for which health personnel must be trained may call for the use of personal protective gear, which restricts the wearer's movements and peripheral vision. Thus, performing in disaster situations involves dealing with stressors that have a negative influence on performance and safety. In such cases, the Military Health Services may cooperate with other entities to train civilian health professionals by sharing training facilities, doctrine, and training frameworks.

Figure 1 shows the proposed model of collaboration between the Military Health Services and the Public Health sector, which integrates the key elements identified in this study.

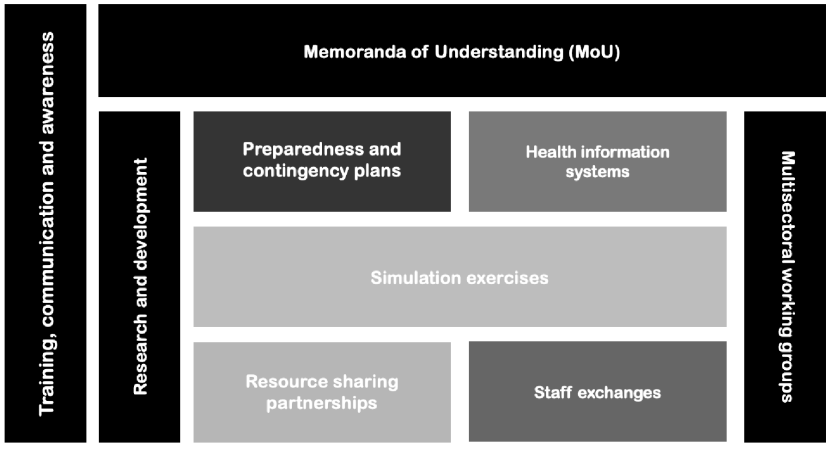

Figure 1 – Key elements of the model of collaboration between the Military Health Services and the Public Health sector.

In regard to cooperation between health services, this study revealed that the Military Health Services have specific features that stem from their use in military operations, that is, their military features, which can improve the response to public health emergencies. These features were mentioned by most interviewees and relate to factors such as chain of command, discipline, doctrine, standardisation of procedures, and expertise and specialisation in technical areas such as CBRN defence, which includes the use of individual protection gear and decontamination and medical countermeasures equipment.

To summarise briefly, having explained the role of the International Health Regulations as a determinant for collaboration between the Military Health Services and the Public Health sector, and bearing in mind the aspects presented in the previous chapters, the data collected during the research process were integrated and analysed to identify key elements to strengthen this collaboration according to their ontological, structural, and operational dimensions, and thus answer the research question.

The inclusion of threats to public health in the context of security, which gave rise to the concept of health security, has reframed Public Health studies as a transdisciplinary area of knowledge.

Considering the ubiquitous role of the Health Services in military institutions, and the importance of how these services are used and operated to the military in general, military science studies are needed to explain the phenomena associated with a vast range of Military Health activities in terms of their strategic and operational dimensions.

Concurrently, in the face of evolving threats to health security, 196 States have agreed to comply with the 2005 International Health Regulations in detecting, assessing, notifying and responding in a timely manner to potential public health emergencies of international concern, as well as to develop response capacities through a coordinated multisectoral approach. To do so, countries must adopt a planning process to which strategy is particularly relevant, as is integrating the aspects related to cooperation between the Military Health Services and the Public Health sector.

The expansion of the scope of the 2005 International Health Regulations in the terms addressed in this study has created the need and the opportunity to integrate the Military Health Services in the national response plan for public health emergencies, and thus strengthen the State's core capacities.

By integrating and analysing the data obtained during the research process, it was possible to identify key elements from which to define a proposed model of cooperation between the Military Health Services and the Public Health sector according to their ontological, structural, operational and executive dimensions.

These elements include: the legal and regulatory framework; memoranda of understanding, collaboration protocols or agreements; joint or interoperable health information systems; preparedness and contingency plans; simulation exercises; resource-sharing partnerships; staff exchanges; multisectoral working groups; research, development and innovation projects; training, communication and awareness raising.

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