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**An Analysis of International Military Health Systems Using the Military
Medical Corps Worldwide Almanac**

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STRUCTURED ABSTRACT

Introduction:

A number of organizations publish comparisons of civilian health systems between countries. However, the authors were unable to find a global, systematic, and contemporary analysis of military healthcare systems. While many databases exist for comparing national healthcare systems, the only such compilation of information for military medical systems is the Military Medical Almanac. A thorough review of the Almanac was conducted to understand the quality of information provided in each country's profile and to develop a framework for comparing between countries. This information is valuable because it can facilitate collaboration and lesson sharing between nations while providing a structured source of information about a nation's military medical capabilities for internal use.

Materials and Methods:

Each of the 142 profiles (submitted by 132 countries) published in the Almanac were reviewed. The information provided was extracted and aggregated into a spreadsheet that covered the broader categories of country background, force demographics, beneficiary populations, administration and oversight, physical structures and capabilities, research capabilities, and culture and artefacts. An initial sample of 20 countries was evaluated to test these categories and their subsections before the rest of the submissions were reviewed. Clear definitions were revised and established for each of the 69 subcategories. Qualitative and quantitative data was compiled in the spreadsheet to enable comparisons between entries.

Results:

Significant variation was found in how information was presented in country profiles and to what extent this was comparable between submissions. The most consistently provided information was in the country background, where the categories ranged from 90.15% to 100% completion across submissions. There was inconsistency in reporting of the numbers and types of healthcare workers employed within military medical services. Nearly 25% of nations reported providing medical care to family members of servicemembers, but retirees, veterans, reservists, and law enforcement personnel were also mentioned. Some countries described organizational structures, military medical education institutions, and humanitarian operations. A few reported military medical research capabilities, though each research domain was present in 25% or less of all submissions. Interestingly, cultural identities such as emblems were present in nearly 90% of profiles, with many countries also having badges, symbols, and mottos.

Conclusions:

The Military Medical Almanac is potentially a highly valuable collection of publicly available baseline information on military medical services across the world. However, the quality of this collection is highly dependent on the submission provided by each country. It is recommended that the template for collecting information on each health system be refined, alongside an effort to increase awareness of the value of the Almanac as an opportunity to raise the international profile of each country's military medical system. This will ensure that the Almanac can better serve the international military medical community.

INTRODUCTION

The provision of healthcare for military service-members is a widely accepted responsibility of governments. These health systems are diverse in their hierarchical arrangements, beneficiaries served, facilities, operational capabilities, and relationships with the wider civilian healthcare economy. Such variation creates an opportunity for comparison, but so far, efforts to do so have been less extensive than those comparing civilian national healthcare systems. This paper seeks to analyze such systems and emphasize the value of comparing them using a publicly available dataset.

Military health systems can be considered part of the security health sector, a network of health services provided to members of a country's security services, including the armed forces, police forces, and prisoners.¹ The security health system may also provide care to royalty, politicians, family members, retirees and veterans. These individuals make up a small proportion of a country's population and may receive services and benefits that are not necessarily reflective of the country's wider health system.

Several large-scale databases and analyses exist for national healthcare systems. However, the information each platform collects is variable and depends upon data availability. Such analyses generally include information on healthcare access, spending, demographics, mortality rates, and infection rates. Of the notable databases, the Organisation for Economic Co-operation and Development and the Commonwealth Foundation profiles are the most comprehensive for each country, though the World Bank and the World Health Organization cover the most nations.²⁻⁵

Unlike national civilian healthcare systems, military health systems have not been comprehensively compared across nations. The earliest comparison of military health systems across nations was published in 1902 as the *Handbook of the Medical Organization (chiefly for War) of Foreign Armies*.⁶ The book described the military health systems of 20

states and became a required study text for Royal Army Medical Corps members who sought to reach the rank of Lieutenant Colonel.⁷ A revision of the book took place in subsequent years, but no similar analysis could be identified until a 2005 paper by the Israeli Defense Forces comparing 7 categories of military health systems across 14 countries.⁸ However, this publication does not provide the original questionnaire to enable replication, the comparisons discussed are mostly high-level, and it is limited to a small percentage of nations.

The Military Medical Corps Worldwide Almanac is the most current and comprehensive platform that documents the features of international military healthcare systems.⁹ While initially published as a paper document, it has been fully online for the past 3 years. The publisher of the Almanac annually sends out a template requesting information from each country's military health system and the results are presented online in a common format as country profiles (Lutz Bandekow, email communication, May 29, 2020).

This paper presents the results of the first complete analysis of the Almanac's data to draw comparisons and conclusions about international military health systems. This information can increase the understanding of the evolution of military medical services within and between nations. This may assist global health engagement missions with international partners, support medical information sharing, and provide guidance for internal reform efforts.^{10, 19}

METHODOLOGY

The Almanac template requests that each country follow a basic structure. The first dataset is a summary containing the country location, national language, country population, number of armed forces personnel, military hospitals/institutes, the medical services flag, and the name and contact details for the Surgeon General. Then, entries have sections covering: the basic tasks of the medical services, the organizational structure, military health facilities,

military medical institutes, a summary of the breakdown of medical personnel, and a final section on missions. Each country is responsible for their own submission, so there is considerable variation in the actual information provided.

An initial list of quantitative and qualitative data was developed to provide a structured extract from each country's entry. These data categories summarize each military health system and provide a standard data set for comparison between countries. This was tested for a pilot group of 20 countries from the Almanac known to have large military health systems, with the intent of validating and updating the criteria. Data collation was undertaken for all 142 entries in the Almanac. These were then reviewed to establish definitions for common terms that had variations in use. The full quantitative data list with definitions is in Supplemental Table 2. Where countries provided additional information, this was collated to inform a potential revision to the data requested from all countries for the Almanac

RESULTS

The Almanac contains 142 submissions on military medical systems from 132 countries, listed in Supplemental Table 1 in the supplement. If there was more than 1 submission from a single country, which was the case for Germany, Chile, Thailand, and the USA, the information was consolidated into one joint profile for the country and analyzed.⁹ The Almanac lists 22 countries as not having armed forces or military medical systems and there is no information on the 43 other states categorized by the United Nations as independent members or permanent observers.¹¹ The Almanac's Editor-in-Chief could not contact this group (Lutz Bandekow, email communication, May 29, 2020). All un-reviewed countries are also listed in Supplemental Table 1.

Supplemental Table 2 shows the numbers and percentages for categories of data included by each Almanac country profile. Only 3 categories were addressed by 100% of submissions: Country Capital, Official Language(s), and Number of Military Hospitals. Only 16 categories of information were found in over 50% of submissions. This means that 53 out of 69, or 76.8% of the categories, did not have information from half or more countries.

Country Background, Force Demographics, and Covered Populations

Background information, including country population, capital, area, official language, and political status based on the nation's full title, were complete in between 90.15% to 100% of profiles. Language and capital in particular were present for 100% of profiles. About 99.2% nations listed their total number of armed forces personnel and 34.1% listed the number of medical officers. "Medical Officers" were physicians, but other personnel mentioned included nurses, veterinary officers, dental corps officers, enlisted members, other officers, and contractors. Only 13.6% listed the number of nurses, 9.1% listed veterinary officers, and 19.7% mentioned other officers. Additionally, only 8.3% mentioned civilian providers, 3.0% mentioned reservists, and 1.5% listed individual contractors. The types of covered populations listed across profiles included active servicemembers, reserve servicemembers, family members, veterans, retirees, civilians, and law enforcement personnel. Only 65.9% of profiles mentioned that they provided garrison healthcare to active servicemembers. Nearly 23% reported providing care to non-military beneficiaries, while 8.3% reported providing it to veterans and 7.6% provide care to retirees. A higher number, 34.1%, provide care to civilians. Law enforcement was mentioned as a source of beneficiaries in 5.6% of profiles and 3.0% mentioned providing care to VIP or Royal patients.

Administration and Oversight

This category covered information related to the structure of the system and its components. Over 95% of profiles reported the rank and title of the individual with the highest authority in their military health system. Diagrams to illustrate the organizational structure were present in 31.8% of profiles and a joint oversight body was found for 57.58% of profiles, with 56.1% providing the name of that body. Integration with a national healthcare system was mentioned by 15.9% of profiles.

Physical Structures and Missions

Military hospital numbers were reported by 69.7% of profiles, totaling 92 out of 132. A graphic map describing the location of these hospitals was present in 9.9% of profiles. Field structures and capabilities, including clinics at various echelons of care and medevac resources, were described in 45.5% of profiles. Medical health record systems were mentioned by 6.1% of countries. Military medical universities were listed for 23.5% of profiles and medic training institutes were present in 40.2%. Approximately 9.1% stated that they had military faculties at civilian institutions instead, and 0.75% listed scholarship programs. Regarding missions, 55 (41.7%) countries reported 1 or more being performed by their military health system. Regarding humanitarian aid capabilities, 26.5% mentioned accounts of providing external humanitarian assistance while 15.2% did so for internal national disasters. International peacekeeping efforts through the UN were mentioned by 5.3% of countries.

Research, Culture, and Artifacts

Supplemental Table 2 presents data on the percent of submissions which mentioned active research facilities focused on a variety of fields. The most prevalent research area was aerospace or aviation medicine, which was mentioned in 27.3% of the submissions. The remaining capabilities, with the exception of veterinary care or research, were present in 20% or less of profiles. Academic journals on military medicine were only described in 7.6% of profiles. Information on artifacts and culture was limited in scope, but included mottos, emblems, journals, and vision or task statements. Military emblems were included for 89.4% of profiles, a vision or task for 53.79%, and mottos for 41.67%.

DISCUSSION

This paper has presented the results from the first formal analysis of the data within the Military Medical Corps Worldwide Almanac. It shows that this information could provide valuable insights for comparison between military medical services across a number of domains of quantitative and qualitative domains, but there is considerable variation in the consistency of information reported.

The high-level organizational relationships between the medical services and the Armed Forces varied by country and was not always discussed. In nearly 60% of countries, there was reference to a ‘unifying’ authority for medical policies above the individual services of the Army, Navy and Air Force. In some countries, the medical services are unified under the Ministry of Defense or a Joint organization and separate from the services. Examples include Canada, Australia, Germany, Belgium, Jordan, and the Swiss Confederation.⁹ In some countries, this includes some command authority over components of ‘joint’ medical systems, but with the three services retaining authority over the parts of the medical capabilities that directly support their service; this includes the USA, United

Kingdom, and Italy. In some countries, including Albania, Azerbaijan, Nigeria, Chile, Thailand, and Pakistan, the medical services of the Army, Navy and Air Force remain under the independent command of their parent service, or the Army supports all 3 Services.

There is also variation in the organizational relationships outside the military medical services. These relationships provide accountability for policy, coordination, and command of a health system nested within the broader structure of a nation's military. This subject requires further codification regarding the choices between different organizational relationships and common methods of reporting.

On the individual level, there is variation in the rank and title of the health system's leader, as well as in the flatness and reporting structure of the organization. The most frequent title was Surgeon General, but "Director" or "Commander" variations were listed. Ranks also varied, ranging from a Lieutenant Colonel in Estonia to 3-star Lieutenant Generals and Vice Admirals in Germany.⁹ Additionally, some profiles contained diagrams to illustrate their organization, but this was not standardized across entries.

Beyond the internal structure, information on alliances and collaborations between countries were mentioned in some profiles, but not by all participants. France mentioned the NATO Center of Excellence for Military Medicine, but no other NATO members did.⁹ Similarly, Serbia mentioned the Balkan Medical Task Force, but no other Balkan states did. The International Committee on Military Medicine was not discussed by any nations. Such alliances and multinational organizations should be tracked and encouraged to allow for better international cooperation during military health exercises, disaster response measures, and military operations.¹²

Medical Force Personnel

Approximately 25% of submissions sought to quantify their “Total Medical Force,” or the number of individuals working within their military health system. However, classifying total medical force requires common definitions for members of the military medical services. While physicians, nurses, dentists, veterinarians, and pharmacists were mentioned in these profiles, a variety of other healthcare occupations may have important roles, including laboratory assistants, researchers, midwives, therapists, opticians, and health inspectors.¹³ Generally, there was no consistency on which healthcare personnel were discussed and what level of military training they had. There was also inconsistency in reporting the breakdown between officers, non-commissioned officer, and enlisted personnel, as well as between active duty, reserves and civilians.

An accurate understanding of the workforce employed by a military health system is crucial to see how its staffing compares to its capacity based on its physical facilities. Nations could benefit from understanding how other countries structure their staffing, with regard to which individuals are contracted or serving as civilians. The ratio of a total medical force to the number of clinics and hospitals could also eventually become a metric of healthcare capacity for a country’s military.

Garrison Healthcare

Military health systems utilize firm base healthcare facilities to provide care in garrison and during deployments.¹⁸ According to the Almanac profiles, the provision of garrison care to beneficiaries can be considered as a spectrum, with some nations providing care entirely in military facilities and others, like Estonia, sending military personnel to get healthcare entirely from the civilian system, but encouraging military physicians to practice in civilian settings.⁹ In between, there are systems that may refer specialist care to the civilian

system for cases beyond the capability of the military system, such as oncology or cardiology cases.

Dependent Populations and Beneficiaries

This analysis also codified the types of beneficiaries served by military health systems. A first consideration regarding beneficiaries is how nations distinguish between “veteran” and “retiree” populations. For the purposes of this analysis, the words were considered as synonymous. For example, Estonia mentioned care for injured former servicemembers, but not for uninjured veterans. Turkey mentioned that it provides support activities for veterans, but did not mention medical care. This highlights the fact that other welfare support systems like housing, education, and other financial or non-financial social benefits may be present across countries, but were not described in any profiles. All of these programs could be considered in an analysis of the services that military health systems provide to beneficiaries.

While Kuwait mentioned its National Guard, no other countries mentioned the provision of medical care to non-active duty soldiers, such as reservists. A surprisingly low number of profiles mentioned that they provide care to family members, despite the importance of such services.¹⁴

Non-family civilians were discussed in various profiles and received varying degrees of care. At the highest level of integration, the government public health systems may care for civilians and military members equally, like that of the United Kingdom. In other areas, they may provide care to all civilians at military facilities, either for free, or for a fee like it is done in Ghana. Still other military health systems may see civilians who work for the military, and many more may take care of civilians in disaster scenarios. These categories of civilian care should be included in an improved comparative framework.

VIP patients, such as heads of state, royalty, and foreign dignitaries, may also receive care in military health systems, but only 4 countries mentioned the provision of care to them, so this area requires greater clarification from nations in their Almanac submissions. One concern is that this information may generate security concerns because the public communication of VIP treatments at only military hospitals, could jeopardize the security of that hospital and its high-level patients.¹⁵

Deployed Operational Healthcare

Descriptions of operational healthcare in combat environments are crucial to understand the capacity of countries to care for their warfighters. Despite this importance, less than half of countries included information on field structures or operational capabilities. This information included references to Role 1-4 hospitals, casualty staging units, medical evacuation equipment like ambulances and helicopters, and supplies like pharmaceuticals, stretchers, and blood. Some countries like Cyprus stated that they do not have aeromedical evacuation capabilities.

Furthermore, only a third of countries stated that they participated in 1-or-more missions with their medical forces. To avoid any national security concerns about revealing this information, a system could be developed to have countries indicate a range of mission numbers. This would be dependent upon both their operational tempo and military size. This also applies to civil-military integration for disaster response, which was not uniformly described. Consequently, for this analysis, disaster response was split into internal disaster response and external deployment of military medical services for international humanitarian response. The lack of complete data limits the ability to fully understand this split, but even with the data provided, there is some uncertainty. For example, Montenegro states that it has capabilities for disaster response, but does not state whether it has responded to international

events or if those events are solely domestic.⁹ Furthermore, some countries like Nepal listed UN peacekeeping missions, but did not describe other humanitarian work, so this was categorized separately.

Training and Education

All military providers must undergo training and education, both to receive practice credentials and to learn military-specific skills. Various profiles mentioned education and training in their texts, leading to a classification of 3 models of educational structures: military healthcare universities, military faculties at civilian facilities, and military scholarship or conversion programs for civilian graduates. Additionally, there were military medic training centers that provided training to medics or military-specific training to providers. The definitions of each of these are described in Supplement 1. Clear information from nations and strict classifications could help in classifying unique structures like those mentioned in Greece, Pakistan, and Venezuela.

Without a system for direct recruiting and incentive programs for healthcare workers, it would be impossible to account for the presence of military providers in countries without military faculties or universities. However, only Taiwan mentioned a scholarship program.⁹ In countries without military universities, healthcare personnel must train in civilian settings, but it is unclear whether the military funds their medical education, whether they receive other benefits military services, or whether they are conscripted.

Understanding how different nations train their military providers highlight opportunities for internal improvements and external collaborations.^{20, 21} For example, Cyprus sends some trainees to military universities in Greece for their education and Belarus trains doctors from Kazakhstan. Such models may be followed by other nations with close ties. Furthermore, nations can weigh the value of each educational solution, determining

whether they should pay for a university, develop a faculty at a civilian school, or offer scholarships or other incentives. A breakdown of which models of training and education are present, as well as descriptions of courses available for higher level training like management courses, could facilitate international cooperation.¹⁶

Research, Innovation, and Technology

There was significant variation in the reporting of military medical research across profiles, so it was decided to use the categories listed in Supplemental Table 2. Countries that mentioned short training courses in these areas were not counted as having research capabilities; instead, that fell into the classification of a medic training center. Hyperbaric chambers were also counted separately from Naval or Dive Medicine institutes. There were fewer hyperbaric chambers counted than Dive Medicine institutes mentioned, but all such institutes would likely have one, so this highlights another discrepancy due to incomplete information.

Furthermore, there is wide variation in how research is organized. In some cases, different types of research are conducted under separate facilities, while in countries like Romania, multiple disparate fields like CBRN and psychology are researched within a single institute. When research topics are mentioned, it is also hard to tell whether there are extensive amounts of resources dedicated towards a field or if it is a single researcher conducting studies. Additionally, the infrequent and inconsistent references to medical logistics or information technology systems suggests that these topics should be explicitly described in refined terms for future profiles.

Culture and Artifacts

An understated but incredibly influential component of a military health system is the culture and the artifacts within it.¹⁷ Some features present in the Almanac profiles included mottos, tasks or visions, emblems, associations, and history. Each of these features can shed light upon the values that a military health system espouses. Although less than 20% of the nations shared mottos, nearly 90% included emblems to represent their militaries. Over half included some type of “Basic Task” or “Vision”, but those were often not concise or unique phrases. Some nations included historical background on their health systems. Mali described the historical trajectory in a narrative form, while Myanmar and Sri Lanka gave straightforward, extensive descriptions. This history may inform or reinforce the culture of systems, but may also offer insights into development and change for other nations. Other cultural components included descriptions of associations that build camaraderie amongst military healthcare professionals, such as those in Sweden and Sri Lanka. Furthermore, many countries posted photographs of their facilities or providers in action, with the potential intent of demonstrating pride in their capabilities.

GENERAL LIMITATIONS

Although this study was done using the Almanac as a single source, it has uncovered a variety of challenges for comparing military health systems. At the most basic level, it would help if every entry recorded its submission date. Without complete and updated information, one cannot accurately compare systems. Since many of the quantitative measurements were present in less than 50% of the profiles, it is impossible to determine whether the lack of information indicates true absence, or simply means that a country neglected to include it. However, the analysis was done with what was available in order to identify the lack of such data and offer examples of valuable comparisons that can be made with better data.

The language barrier is another important consideration. All profiles were written in English, but many countries did not have English as a primary language and were translating their information. The Almanac accepts submissions in both Spanish and French and these are professionally translated, but its Editor-in-Chief noted some reluctance from those nations (Lutz Bandekow, email communication, May 29, 2020). Ensuring that every profile is properly reviewed for mistranslations and standardizing terminology for institutes and centers will prevent this from happening.

Finally, the number of countries and submissions were misaligned. Thailand, Chile, and the USA submitted 3 profiles for their separate services and Germany submitted 5, covering their services and other joint support units. Differences in which representative provide this information in different countries could partly explain the variation. Ideally, all countries would provide a single profile. Additionally, not every country provided a submission, given that some countries were uncontacted and others did not report having military health systems.

CONCLUSION

This paper sought to generate the first modern and most comprehensive comparison of military health systems, utilizing the Almanac data. Qualitative and quantitative assessments were done to track their operational capabilities, staffing, beneficiaries, garrison facilities, research capabilities, and cultural features, amongst other factors. It also highlighted several the shortcomings of the current profiles and recommended methodologies for comparing them.

The importance of the Almanac as a public record cannot be understated. As the only current and adjustable source of information about different national military health systems, it has the potential to facilitate international collaboration,²² share lessons learned,²³ and

enable nations to display their capabilities in a central platform . It is essential that this value be emphasized, so further support from organizations like the International Committee for Military Medicine and the NATO Center of Excellence for Military Medicine could reinforce awareness of the Almanac's presence and the willingness of nations to contribute quality information.

Going forward, the template for country submissions should be refined and its use encouraged by all countries in profiling their systems. Case studies can also be done to create exemplar profiles that will serve as models for other nations. With a more complete set of profiles and a better framework for comparison, new pathways for cooperation and education between nations can arise.

Supplemental Table 1: Nations Included, Uncontacted, and Lacking Military Medical Capabilities *

Included (132)				Not Contacted by the Almanac (44)		No Military Medicine (21)
Afghanistan	El Salvador	Kyrgyzstan	Qatar	Antigua and Barbuda	Libya	Andorra
Albania	Estonia	Latvia	Republic of the Congo	Bahamas	Malawi	Costa Rica
Algeria	Finland	Lebanon	Romania	Barbados	Maldives	Dominica
Argentina	French Republic	Liberia	Russia	Belize	Mauritius	Iceland
Armenia	Gabon	Lithuania	Rwanda	Benin	Niger	Kiribati
Australia	Angola	Luxembourg	Saudi Arabia	Botswana	North Korea	Liechtenstein
Austria	Brazil	Madagascar	Senegal	Cabo Verde	Papua New Guinea	Marshall Islands
Azerbaijan	Burkina Faso	Malaysia	Serbia	Colombia	Saint Kitts and Nevis	Micronesia
Bahrain	Burundi	Mali	Singapore	Comoros	Sao Tome and Principe	Monaco
Bangladesh	Canada	Malta	Slovakia	Ecuador	Seychelles	Nauru
Belarus	Central African Republic	Mauritania	Slovenia	Equatorial Guinea	Somalia	Palau
Belgium	Georgia	Mexico	South Africa	Eritrea	South Sudan	Panama
Bhutan	Germany	Moldova	Spain	Eswatini	Suriname	Saint Lucia
Bolivia	Ghana	Mongolia	Sudan	Ethiopia	Syria	Saint Vincent and the Grenadines
Bosnia and Herzegovina	Greece	Montenegro	Sweden	Fiji	Timor-Leste	Samoa
Brunei	Guatemala	Morocco	Swiss Confederation	Gambia	Togo	Solomon Islands
Bulgaria	Guinea	Myanmar	Taiwan	Guinea-Bissau	Tonga	Tuvalu
Cambodia	Guyana	Namibia	Tajikistan	Haiti	Trinidad and Tobago	Grenada
Cameroon	Honduras	Nepal	Tanzania	Jamaica	Turkmenistan	San Marino
Chad	Hungary	Netherlands	Thailand	Kosovo	United Arab Emirates	Vanuatu
Chile	India	New Zealand	Togo	Laos	Yemen	Vatican City (Holy See)
Sri Lanka	Indonesia	Nicaragua	Tunisia	Lesotho	Zimbabwe	
Cyprus	Iran	Nigeria	Turkey			
China	Iraq	North Macedonia	Uganda			
Côte d' Ivoire	Ireland	Norway	Ukraine			
Croatia	Israel	Oman	United Arab Emirates			
Cuba	Italy	Pakistan	United Kingdom			
Czech Republic	Japan	Palestine	United States of America			
Democratic Republic of the Congo	Jordan	Paraguay	Uruguay			
Denmark	Kazakhstan	Peru	Uzbekistan			
Djibouti	Kenya	Philippines	Venezuela			
Dominican Republic	Korea	Poland	Vietnam			
Egypt	Kuwait	Portugal	Zambia			

Supplemental Table 2: Categories Present Across Profiles

Category	Database Category	Percent	Number	Definition
Country Background	Population	100.00%	132	Total population of the country. Reported in top section.
	Capital	100.00%	132	Capital city. Reported in top section.
	Area	99.24%	131	Geographic are in square kilometers. Reported in top section.
	Official Language	100.00%	132	Country's official language(s). Reported in top section.
	Political Status	90.15%	119	Nominal government held in a country. Taken from the country's full title (e.g. Republic of Guinea is counted as Republic).
	Year of Founding	7.58%	10	Year a military health system was first created. Included if reported in text.
Force Demographics and Statistics	Armed Forces Personnel	99.24%	131	Number of personnel. Reported in top section.
	Medical Officers (Top Section)	34.09%	45	Number of physician officers. Reported in top section.
	Medical Officer (Text)	21.97%	29	Number of physician officers. Included if reported in text.
	Dental Corps Officers	18.18%	24	Number of dental officers at any level. Included if reported in text.
	Veterinary Officers	9.09%	12	Number of veterinary officers at any level. Included if reported in text.
	Nurses	13.64%	18	Number of nurses in all categories. Included if reported in text.
	Other Officers	19.70%	26	Any other enumerated officers. Included if reported in text.
	Enlisted	9.09%	12	Number of enlisted personnel. Included if reported in text.
	Individual Contractors	1.52%	2	Number of individuals working in a contracting capacity. Included if reported in text.
	Organizational Contractors	1.52%	2	Number of organizations contracted to work for the military. Included if reported in text.
	Civilians	8.33%	11	Number of civilian personnel. Included if reported in text.
	Reserve	3.03%	4	Number of Reserve personnel. Included if reported in text.
	Total Medical Force	18.18%	24	Total number of personnel. Included if reported in text or summed from at least 4 listed personnel areas.
	Health Head Title	97.73%	129	Office held by the highest-ranking medical officer. Reported in the top section or in the text.
	Health Head Rank	95.45%	126	Military rank of the highest medical officer. Reported in top section.
	Degrees of Separation from MoD	23.48%	31	This was deduced from models that had a diagram. Included if reported in the diagram.
	Joint Oversight Body	57.58%	76	The classification of submissions as having joint oversight was done if they lacked a description that

Category	Database Category	Percent	Number	Definition
Administration and Oversight				separates the services, or had an explicit description of their role in overseeing care for all military service members. Included if reported in text.
	Joint Oversight Body Name	56.06%	74	Title of the oversight body described in "Joint Oversight Body". Included if reported in text.
	Organization Titles	44.70%	59	Any other important organizational titles that were mentioned. Included if reported in text.
	Organizational Diagram	31.82%	42	Graphic that shows the hierarchy of the health system's organization or its placement within the larger defense department. Included if reported in text.
	Integration with National Health Service	15.91%	21	Checked if a country explicitly states that its civilian and military health systems are unified (e.g. United Kingdom's structure). Collaboration or provision of care in infrequent or settings was not counted. Included if reported in text.
	Law Enforcement Inclusion	6.06%	8	Check mark for whether or not a country provides medical care to its law enforcement officers. Included if reported in text.
	Restructuring in Progress	5.30%	7	Checked if a profile stated that a country is currently undergoing a structural reform for its system. Included if reported in text.
Covered Populations	Active Garrison Care	65.91%	87	Checked if a system provides care to its active service members. Included if reported in text, but generally assumed for all systems.
	Reserves Garrison Care	8.33%	11	Checked if a system provides care to its reservist service members. Included if reported in text.
	Families	22.73%	30	Checked if a system provides care to family members of service members. Included if reported in text.
	Veterans	8.33%	11	Checked if a system provides care to any former service members, including retirees. Included if reported in text.
	Retirees	7.58%	10	Checked if a country explicitly stated that it provides care to only those who have retired. Included if reported in text.
	Civilians	34.09%	45	Checked if a country explicitly stated that it provides care to civilians. Included if reported in text.
	VIPs	3.03%	4	Checked if a country explicitly stated that it provides care to royalty, top government leaders, and other VIPs. Included if reported in text.
	Output Data	9.09%	12	Checked and described if a country reported any metrics about patient volumes or performance. Included if reported in text.
	Missions	36.36%	48	Listed as N/A, 1, or multiple missions conducted by a country's health system workers. Reported in top section.
	Field Structures	45.45%	60	Listed any structures that were described as being operational, including medical facilities, ambulances, and equipment. Included if reported in text.

Category	Database Category	Percent	Number	Definition
Physical and Operational Capabilities	Operational Medical System Graphic	4.55%	6	Checked if a country had a diagram that illustrated their deployed capabilities in operational settings. Included if diagram or graphic was included.
	Hospital Location Graphic	9.85%	13	Checked if a country provided a map with the locations of its military hospitals and/or clinics. Included if map diagram or graphic was included.
	Military Hospitals	69.70%	92	Number of hospitals extracted from the Military Hospital/Institute Ratio. Reported in top section.
	External Humanitarian Assistance	26.52%	35	Checked if a country explicitly states that it has conducted humanitarian or disaster care missions abroad which were not UN peacekeeping missions. Included if reported in text.
	Internal Disaster/Crisis Response	15.15%	20	Checked if a country explicitly states that its military health system is involved in disaster or crisis response within the country's borders. Included if reported in text.
	International Peacekeeping Efforts	6.82%	9	Checked if a country explicitly states that it has sent medical personnel on UN peacekeeping missions to other countries. Included if reported in text.
	EHR/Medical IT	6.06%	8	Checked if a profile mentioned anything about online medical records or technological infrastructure for the system. Included if reported in text.
	Blood Center	6.82%	9	Checked if a country has an explicitly stated blood center. Included if reported in text.
	Medical Logistics, Pharma, or Supply Chain Center	17.42%	23	Checked if a country has any center for medical logistics, supply chain, or pharmaceutical distribution. Included if reported in text.
Recruitment and Training	Military Medical University	23.48%	31	Checked if a nation explicitly described an independent university that grants degrees to military personnel, including but not limited to nursing and medical degrees. Included if reported in text.
	Military Faculty at Civilian University	9.09%	12	Checked if a nation explicitly described having a faculty for military medicine at an existing civilian university. Included if reported in text.
	Civilian Training Conversion/Scholarship	0.75%	1	Checked if a nation explicitly described a scholarship program or conversion program to recruit military physicians from civilian medical institutions. Included if reported in text.
Research Capabilities	Aviation/Aerospace Medicine Institute	27.27%	36	Checked if a country has a research institute and conducts research on aviation, aerospace, or flight medicine. Included if reported in text.
	Tropical Medicine/Infectious Disease/Microbiology Institute	6.06%	8	Checked if a country has a research institute and conducts research on tropical medicine, infectious diseases, or microbiology. Included if reported in text.
	Mental Health/Psych Institute	4.55%	6	Checked if a country has a research institute and conducts research mental health or psychology. Included if reported in text.
	Dive/Naval Medicine Institute	16.67%	22	Checked if a country has a research institute and conducts research on dive or naval medicine. This was

Category	Database Category	Percent	Number	Definition
				independently recorded from hyperbaric chambers. Included if reported in text.
	Hyperbaric Medicine Chamber	9.09%	12	Checked if a country explicitly mentioned the presence of a hyperbaric medicine chamber. Included if reported in text.
	Expeditionary Medicine Institute	0.00%	0	Checked if a country has a research institute and conducts research on "expeditionary medicine" or other operational terms. Included if reported in text.
	CBRN Medicine Institute	7.58%	10	Checked if a country has a research institute and conducts research on chemical, biological, radiological, or nuclear threats. Included if reported in text.
	Environmental Medicine Institute	6.06%	8	Checked if a country has a research institute and conducts research on environmental health. Included if reported in text.
	Public Health/Epidemiology Institute	10.61%	14	Checked if a country has a research institute and conducts research on public health or epidemiology. Included if reported in text.
	Veterinary Institute/Care	20.45%	27	Checked if a country has a research institute and conducts research on veterinary care, or if the country states that it provides veterinary care. Included if reported on text.
	Other	21.21%	28	Checked if a country had a research institute and conducted research that did not fall into the other listed categories. Included if reported in text.
	Other Description	21.21%	28	Description of the research noted in "Other". Included if reported in text.
	Journals	7.58%	10	Any explicitly stated military medical journals that a country publishes. Included if reported in text.
	Mottos	6.82%	9	Any short statements that are statements held at the organization's core. Included if reported in text.
	Vision/Task	53.79%	71	Mission described explicitly as a vision or task for the military health system by a country. Included if reported in text.
	Emblem	89.39%	118	Any logo that represents a country's military, military health system, or nation in general. Reported in the top section.

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