Joint Concept for Health Services (JCHS)

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FOREWORD

The *Joint Concept for Health Services (JCHS)* describes in broad terms the Chairman of the Joint Chiefs of Staff's vision for what the future Joint Force will need to have from its collective medical enterprise in order to support Globally Integrated Operations. This concept encompasses the global employment of joint operational health services and the idea of interoperable Service capabilities guided by common standards and procedures, with the ability to tailor support to meet a wide variety of operational and strategic requirements.

The JCHS describes the fundamental purposes of comprehensive health services to deployed forces in an operating environment characterized by highly distributed operations and minimal, if any, pre-established health service infrastructure. This concept offers a way to address these challenges, defining a framework of key ideas to guide the provision of health services and to identify solutions to joint capability requirements that will enhance interoperability and global agility. This framework also establishes a perspective for joint health care to guide Combatant Command, Service, Defense Health Agency, and Joint Staff efforts to achieve unity of effort for joint health service operations.

Each Service has a vital role in providing health services that support Globally Integrated Operations. This concept was developed with representation from each of the Services and from across the Joint Staff in coordination with the Combatant Commands, multinational partners, and other key stakeholders.

The need for integrated medical support that keeps pace with the operational agility and organizational flexibility requirements to support Globally Integrated Operations is clear. The Joint Concept for Health Services is a critical step in ensuring that the Joint Force has the requisite capabilities to do so.

PAUL J. SELVA
General, U.S. Air Force
Acting Chairman

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EXECUTIVE SUMMARY

The *Capstone Concept for Joint Operations: Joint Force 2020* (CCJO) envisions a globally postured Joint Force that can quickly combine capabilities in a future security environment that may be more unpredictable, complex, and potentially dangerous than today's environment. These Globally Integrated Operations (GIO) will stress the Joint Force's ability to provide health services for deployed forces and mission partners. The *Joint Concept for Health Services (JCHS)* responds to these challenges, describing how the future Joint Force will provide health services in support of activities across the range of military operations.

Purpose and Scope. The JCHS seeks to apply the lessons learned from recent combat experiences as well as analysis of future concepts of operations (CONOPs) to shape future solutions to the many health-care challenges the Joint Force will face when conducting GIO. It applies to Combatant Commands, Services, the Joint Staff, and Combat Support Agencies and includes all medical components, active and reserve. While focused on Department of Defense (DoD) activities and capabilities, the concept acknowledges the likely participation of other interagency, foreign governmental, and nongovernmental mission partners during the conduct of military operations.

Future Operating Environment. This concept responds to a future security environment projected to remain uncertain and complicated with increasing trends of instability and conflict. In this environment the Quadrennial Defense Review and the CCJO envision a shift from the relatively static operations in Iraq and Afghanistan to sustained engagement and force projection/crisis response operations. These operations will require the future Joint Force to quickly combine capabilities; deploy long distances from multiple, widely dispersed locations; and conduct missions across the range of military operations, often in austere and contested environments.

Globalization and the proliferation of technology and information, however, will challenge the ability of U.S. Forces to maintain current capability advantages over state and non-state adversaries during these operations. These adversaries may well obtain equivalency or even superiority in the various operating domains, thereby increasing the threat to the health of the force, increasing operational risk, and potentially limiting Joint Force freedom of action.

The future operating environment and the Joint Force's GIO response pose several issues for the provision of health care. These issues include supporting forces that are dispersed over great distances and that must be able to rapidly aggregate/disaggregate, providing health services to forces that are increasingly being integrated at lower echelons than is currently the case, and integrating with non-DoD mission partners. These challenges must be addressed in a

strategic environment that is becoming more fiscally constrained while still meeting the high expectations for positive medical outcomes.

Military Problem. Faced with the challenges above, the JCHS seeks to address the following military problem:

How can the Joint Force provide comprehensive health services to deployed forces in an operating environment characterized by highly distributed operations and minimal, if any, pre-established health service infrastructure?

Central Idea. The future Joint Force will address this problem with Globally Integrated Health Services (GIHS). GIHS is the strategic management and global synchronization of joint operational health services that are sufficiently modular, interoperable, and networked to enable the Joint Force Commander to quickly and efficiently combine and synchronize capabilities. These future health services will be characterized by interoperable Service capabilities guided by common standards and procedures with the ability to tailor support to meet a wide variety of operational and strategic requirements.

Seven core supporting ideas describe GIHS:

- **Integrated Joint Requirements in Medical Force Development** that mitigate threats to health services specifically, and the Joint Force generally, in contested environments.

- **Global Synchronization of Health Services** that plan, integrate, and sustain medical resources efficiently and quickly on a global scale.

- **Modular and Interoperable Medical Capabilities** that meet a core set of joint standards and requirements while also conforming to Service-specific requirements.

- **Global Network of Health Service Nodes** that incorporate mission partners and are flexible enough to rapidly mobilize and deploy medical capabilities and resources.

- **Tailored Medical Forces and Operations** that reduce lift requirements, sustainment requirements, and physical presence while improving quality of care.

- **Leaders Integrating Joint Medical Capabilities** who are adaptive, skilled, and can synchronize multiple efforts across multiple domains to ensure unity of health service efforts.

- **Improved Performance** through appropriate balance between sustainment of current readiness through healthcare delivery in medical beneficiary markets, targeted warfighting clinical education and training, and investment in future capabilities.

Capability Requirements. This concept identifies 16 capabilities required to employ and sustain comprehensive, responsive, and flexible health services in support of GIO. These capabilities will be further examined during follow-on assessment and implementation.

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1. Introduction

The *Joint Concept for Health Services (JCHS)* describes how the future Joint Force will provide health-care services in support of Globally Integrated Operations (GIO) as articulated in the *Capstone Concept for Joint Operations: Joint Force 2020* (CCJO). The CCJO requires a globally postured Joint Force to quickly combine capabilities in a future security environment that may be more unpredictable, complex, and potentially dangerous than today's. GIO will stress the Joint Force's ability to provide health services for deployed forces and mission partners.

Elements of Globally Integrated Operations (GIO)

- Mission command
- Seize, retain, and exploit the initiative
- Global agility
- Partnering
- Flexibility
- Cross-domain synergy
- Flexible, low signature capabilities
- Minimize unintended consequences

The Department of Defense (DoD) effort to improve "jointness" across the force has continued to challenge military health-care efforts to adapt, as each Military Department maintains nominal responsibility for the health of its respective Service members from point-of-injury through rehabilitative care. In practice, health services are applied to eligible patients, irrespective of Service (and at times nationality), in an unanticipated patchwork of Service and partner capabilities that begins with the first responder, proceeding through forward resuscitative and definitive care in a Joint Operations Area (JOA), and culminating with longer-term care at complex and robustly resourced fixed facilities able to apply the full spectrum of definitive/rehabilitative medical capabilities.

In recent operations, Service collaboration overcame shortcomings across the Joint Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Policy (DOTMLPF-P) spectrum for health services. This collaboration significantly advanced the provision of joint health services, especially in the prevention of disease and injury; delivery of combat casualty care to include wound care and hemorrhage control; and the provision of critical care during evacuation. However, increases in the efficiency and effectiveness of operational medical support resulted from ad hoc, temporary solutions. The JCHS seeks to apply the lessons learned from recent combat experiences to propose a joint concept that will shape future solutions to the many additional challenges the Joint Force will face when conducting GIO.

The military medical community's performance in Iraq and Afghanistan provided valuable insight on the types of changes, concerns, and medical capabilities required for the future Joint Force. To take advantage of these insights, the Department of Defense must better synchronize policies, procedures, andinvestments in health services to sustain the current quality of care while ensuring the Joint Force can support GIO. Disparate application of

the Services' respective medical capabilities makes supporting the Joint Force difficult and inefficient without increasing effectiveness.

2. Purpose

The purpose of this joint concept is to offer a way to address these challenges and guide future force development by:

- Establishing a framework for the provision of joint health services for use by senior policy makers, Warfighters, and the medical community of interest.
- Informing studies, wargaming, and experimentation resulting in recommendations to DOTMLPF-P.
- Establishing a joint medical context to guide Combatant Command (CCMD), Service, Joint Staff, and Defense Health Agency efforts to achieve unity of effort for joint health service operations.

3. Scope

The JCHS applies to CCMDs, Services, Joint Staff, and Combat Support Agencies and includes all medical components, active and reserve, across the range of military operations. While focused on the employment of the United States (U.S.) Joint Force, this concept acknowledges the likely participation of interagency, nongovernmental organizations (NGOs), and foreign partners in the provision of health services in joint operations. While the JCHS identifies capabilities required to implement the concept, it does not establish specific programmatic requirements.

4. Health Service Challenges in the Future Operational Environment

The CCJO envisions a future operating environment that is more unpredictable, complex, and potentially dangerous than today. The 2014 Quadrennial Defense Review and the CCJO envision a shift from the relatively static operations in Iraq and Afghanistan to sustained engagement and force projection/crisis response operations. The DOD will respond with GIO using smaller, more agile forces that combine quickly and integrate capabilities across domains, echelons, geographic boundaries, and organizational affiliations.

GIO require the Joint Force to quickly combine capabilities, deploy long distances from multiple, widely dispersed locations, and conduct missions across the range of military operations in austere and non-permissive environments. Diverse enemies will employ traditional, unconventional, and hybrid strategies to threaten U.S. security and vital interests. Anticipating the demands of future armed conflict requires an understanding of the nature of war as well as an appreciation for changes in the character of armed conflict.

Threats may emanate from nation states or non-state actors such as transnational terrorists, insurgents, and criminal organizations. These conditions may complicate medical support, especially forward resuscitative care, theater hospitalization, and the entire spectrum of patient evacuation. Wide dispersion also inherently complicates medical support as medical functions tend to benefit from economies of scale. It is generally simpler to provide medical support to a single unit on a single line of communication than multiple units operating on multiple, disparate lines of communication.

Providing health services support to GIO will require constant medical planning and execution to keep pace with rapid operational transitions and to address a wide range of health threats. GIO calls for distributed units to be able to aggregate quickly; converge and combine rapidly into larger formations, often across unit, Service, agency or even national boundaries in response to emerging crises; and then disaggregate and reconfigure as the situation changes. This rapid aggregation/disaggregation of forces will stress current medical operational relationships and the ability to treat, evacuate, conduct biosurveillance and protection, use information technology, and employ medical logistics systems.

The integration of combat units at lower echelons in support of GIO will require better integrated delivery of health services than previously required. Accordingly, the future medical force must be able to support Service-unique missions while also operating with an optimal degree of inter-Service integration. This integration begins with a base level of interoperability in which capabilities from more than one Service can operate together to accomplish assigned tasks at a joint theater-wide scale. It is furthered when the Services embed aims of enhancing interoperability in capability development areas such as medical equipment and logistics; clinical databases, patient administration and management systems; techniques and procedures; and, to some degree, medical research and technology development. Interoperability goals should be applied judiciously so Service-specific capabilities may persist to support unique operational environments or characteristics.

The growing sophistication and specialization of military medicine will generate a greater demand and wider variety of medical capabilities in theater. Advanced technologies, new diagnostic tools, innovative treatment protocols, and increased specialization have dramatically increased the capabilities of medical care. Magnetic Resonance Imaging and Computed Tomography scans are just a few of the resource-intensive capabilities in widespread use that previously were rarely available. It is expensive to develop, acquire, and manage these resource-intensive medical capabilities and costs will likely increase. Greater medical capability tends to generate increased medical requirements.

Another challenge is the perishable nature of medical skills and knowledge and the difficulty in sustaining these skills given the individual's scope of practice and DoD fiscal realities. Enhanced combat casualty care training curriculums and Clinical Practice Guidelines contributed to battlefield survivability, but are more resource-intensive. Additionally, medical research, sophisticated diagnostic equipment, advances in resuscitative and rehabilitative care, and medical research, development, test and evaluation have all significantly increased achievable patient outcomes of medical care, but also incurred the consequences of increased expectations, costs, and complexity.

The joint assessment of medical requirements, following acceptance of this concept, will inform and guide the Services with their force development and risk management by increasing inter-Service communication regarding the integration of capabilities; this will assist with prioritization of resources in support of reducing redundancy and improving processes. The growing cost of health care relative to overall defense spending should provide additional impetus to jointly innovate to maximize resources.

An additional challenge in the future operating environment is the increasing incorporation of potential interagency, NGO, and multinational partners who may not meet U.S. accepted standards of care. This will require increasing engagement with respective medical partners and leveraging access to external medical resources for joint forces. The role and the commitment of medical partners will vary from situation to situation according to a large number of factors, such as the wills, skills, and resources available to partners.

Some partners will contribute medical support to the overall effort, whether in support of their own elements or in lieu of other contributions. Their medical capabilities will vary, as will their standards of care, medical proficiency, and diagnostic and treatment protocols/equipment. Other partners will look to the U.S. Joint Force as the partner with the most resources for medical support. The exact combination of partner contributions and requirements will be unique to each situation. U.S. Forces should expect to be the largest medical contributor to a coalition force, potentially placing additional demands on the provision of health services.

Integrating all partner capabilities and requirements into the broader medical effort will be necessary, and the United States may potentially guide the integration. Given the variety of medical material, protocols, and casualty/patient information systems, integration will be crucial to providing medical support at all echelons, especially when supporting small units in remote locations.

The future operating environment will additionally complicate health-care delivery with a dynamic array of medical challenges such as new chemical, biological, and radiological threats; man-made nanotechnology and bio-

engineered threats; and new types of wounds caused by evolving weapons technology. The lack of mature medical infrastructure in operational areas and the adversary anti-access/area denial efforts will challenge the ability to provide health care at the point of injury and stage patients for evacuation, as well as increase the transit time to definitive care. Enemy threats and constraints of the environment will challenge the application of a "golden hour" standard in a medical treatment/evacuation paradigm. These challenges may increase the need for partnering to provide medical support at all echelons, especially when supporting small units in remote locations.

Last, the future operating environment will challenge health services as U.S. Forces may not have the benefit of both a robust theater medical infrastructure and domain dominance to enable forward positioned care without significant threat from enemy forces. Additionally, advancements in military medicine throughout recent conflicts create increased expectations for positive medical outcomes for combat-related trauma.

5. The Military Problem

Given the expected operational environment and future way of operating as described in the CCJO and other joint concepts, the JCHS seeks to address the following military problem:

How can the Joint Force provide comprehensive health services to deployed forces in a contested operating environment characterized by highly distributed operations and minimal, if any, pre-established health service infrastructure?

6. The Central Idea

Globally Integrated Health Services (GIHS) is the strategic management and global synchronization of joint operational health services that are sufficiently modular, interoperable, and networked to enable their quick and efficient combination and synchronization by a Joint Force Commander (JFC). GIHS also promulgates the idea that the provision of health services to the future Joint Force will be characterized by interoperable Service capabilities guided by common standards and procedures with the ability to tailor support to meet a wide variety of operational and strategic requirements.

It is characterized by the following core supporting ideas (Figure 1):

- Integrated Joint Requirements in Medical Force Development
- Global Synchronization of Health Services
- Modular and Interoperable Medical Capabilities
- Global Network of Health Service Nodes
- Tailored Medical Forces and Operations

- Leaders Integrating Joint Medical Capabilities
- Improved Performance

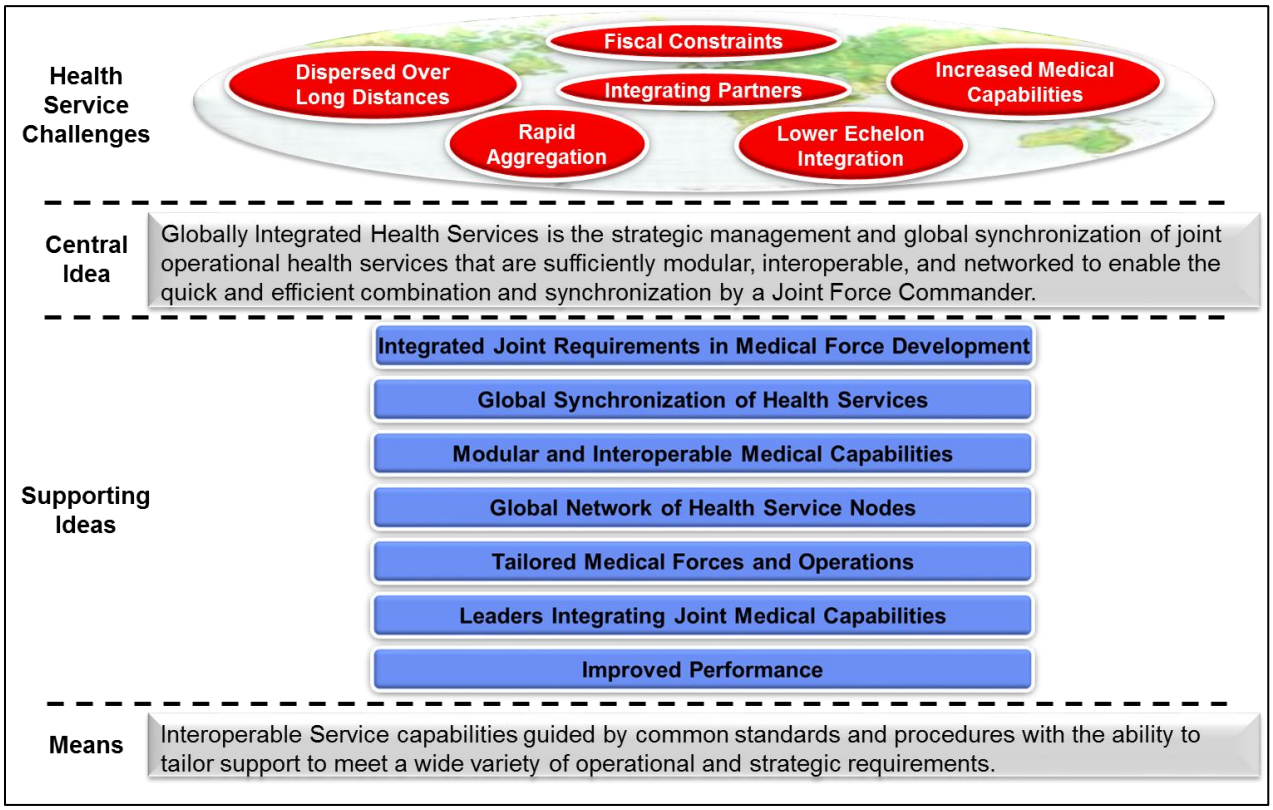

Figure 1. JCHS Visualization

While GIHS is a concept for providing joint medical operations, many required actions must occur well before the beginning of those operations. Examples include consideration of lessons learned from previous operations; advancement of medical issues in the research, development, and acquisition processes; identification of medical infrastructure requirements, including military medical treatment facilities (MTFs) and medical research laboratories; provision of education and training; inclusion of health service input into force development; and participation in contingency and operations planning to ensure alignment with strategic priorities.

The Joint Force will suffer casualties in the face of advanced and asymmetric threats. The enemy is unlikely to discriminate between combat and medical forces as targets. GIHS will allow medical forces to mitigate their possible attrition by selectively aggregating and disaggregating capabilities. Furthermore, medical integration will allow U.S. Forces to operate better in dispersed locations, thus complicating the enemy's area-denial efforts.

Another consideration is the evolving nature of battlespace geometry from a linear framework to one that is more multidimensional. Consequently, the

continuum of care must also break with its linear alignment and evolve to a networked configuration. Medical support must be capable of rapidly adapting to operational conditions, ensuring the right medical capabilities are available at the right place and right time. These medical capabilities will need to be provided through a scalable and interoperable joint health services network that puts a premium on prevention and mitigation; restoring health; and integrating life-, limb-, and eyesight-saving capabilities.

7. Supporting Ideas

a. Integrated Joint Requirements in Medical Force Development

Global agility, the foundation for GIO, comprises transporting and supporting combat power over extended distances from widely distributed locations. This makes GIO impractical without a joint integration of operational health services. Integrated force development will help mitigate the threats to health services specifically, and the Joint Force generally, in contested environments. Joint interoperable medical capabilities are the key to providing medical support to joint operations, especially in contested environments. Providing health services in contested environments will necessitate delivery of medical care that is not dependent upon existing facilities or new infrastructure. Interoperability and employment of complementary medical capabilities can reduce operational risk, especially when providing medical and surgical care that incorporates the latest medical technology.

Interoperable health service capabilities provide more options to support GIO. This may include use of medical capability solutions across Services, agencies, and coalition/national lines, where feasible. This may also minimize redundancies while sharing capabilities or alternating sources of the required capability (see Figure 2).

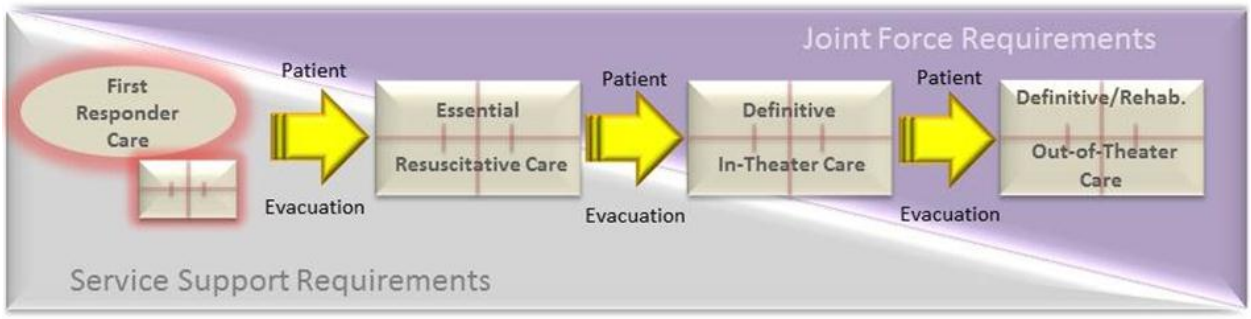

Figure 2. Consideration of Requirements for Medical Treatment Facility and Patient Evacuation Capabilities

Predictive joint analysis is another key aspect of force development. This means extracting information from existing data sets to determine medical patterns and predict future trends. These assessments, combined with health surveillance, develop robust global medical profiles that identify potential

health threats, provide data for regional and global biosurveillance, and assess a likely partner's medical capabilities. Expected threats may include trauma and burns as well as chemical, biological, radiological, nuclear, and explosives (CBRNE) agents and effects, which may also include naturally-occurring and biologically engineered emerging diseases. Adaptive adversaries combined with advances in technologies, including nanotechnology, may increase the risk to the Joint Force. Expected threats such as these should be assessed and mitigated with risk reduction measures through the application of health services and/or force development activities.

b. Global Synchronization of Health Services

This concept calls for mechanisms that can plan, integrate, and sustain medical resources efficiently and quickly on a global scale in support of the operational needs of the Combatant Commanders (CCDRs). Analysis of the future operational environment suggests that current methods of medical force management and allocation will likely be insufficient to meet the demands imposed by GIO. CCMDs will require systems and processes that can request tailored medical capabilities rather than a whole organization. This mechanism is an important part of the answer to the challenges of achieving global agility and maximizing efficient use of limited medical resources and capabilities.

This concept is agnostic to the form such mechanisms should take, whether procedures or organizations. Just as Global Force Management (GFM) strives for efficient and timely allocation and distribution of other functional capabilities, it must also pursue the same for medical capabilities. The intent is to ensure that CCMDs have better and timely access to any medical resources that could support their operations.

***c.* Modular and Interoperable Medical Capabilities**

While acknowledging that the Services will continue to have different constraints for various capabilities, this concept advocates an optimal balance of Service modularity and inter-Service interoperability. This will permit Services to detach capabilities from a parent unit and employ them with sister Service capabilities in an interoperable format in potentially austere environments. This employment will require capability sets to meet a core set of joint standards and requirements while also conforming to Service-specific capability requirements. This is an essential idea for GIHS and requires medical capabilities that are scalable and agile enough to support rapid aggregation of forces from distributed units and for joint integration at all levels.

Current Service medical support configurations, primarily designed for a major war against a regional or global power, may struggle to match actual requirements for GIO. Hence, medical capabilities should achieve more than

the sum of independently developed Service programs by maximizing opportunities for interoperability, and attain a more seamless provision of capabilities through joint development and adoption of joint standards.

GIHS must be more responsive than current health services to support diverse contingency operations. The growing trend toward smaller Joint Force deployments, conducting a variety of missions with different medical requirements from engagement to combat, requires a "pick list" of joint medical capabilities for tailored support and economy of force. Without compromising support to Service-unique missions, these capabilities need to be further developed jointly and optimized to support joint health service operations across the contingency spectrum.

The notion of interoperability implies a level of standardization and commonality of technology, procedures, and a mutual lexicon. Joint interoperability is maximized by the joint development of Service medical capabilities with joint interoperability and scalability inherent from the beginning. Where this is impractical due to differing mission requirements of the Services, deliberate assessment should take place to identify opportunities for optimizing interoperability.

While Service medical capabilities may not be interchangeable, they may be interoperable and, in some cases, interdependent. In some circumstances, resources can be optimized and redundancies minimized without compromising medical capabilities that are needed to support Service-unique requirements.

In all cases, rapid and effective medical treatment must be delivered with an emphasis on providing initial stabilizing care followed by forward/resuscitative treatment. Theater treatment facilities must be task organized, with a minimized footprint and proportionally supported by patient evacuation and medical logistics assets. These joint capabilities must be light, agile, interoperable, and able to globally support highly mobile and dispersed Joint Force assets.

d. Global Network of Health Service Nodes

GIHS can be thought of as a network of multi-purpose health service delivery points (e.g., MTFs, clinics, mission partner facilities, deployable/modular capabilities). These delivery points, or "nodes," are connected by virtual and physical lines of communication to ensure that the Joint Force receives the medical support needed to maintain global agility.

This worldwide network must be flexible enough to rapidly reconfigure and respond to changing conditions and threats in the operational environment, with activities and lines of effort synchronized to ensure rapid mobilization and deployment of medical capabilities and resources in support of GIO. Once

deployed and established, this network of nodes must be able to provide health services for joint forces conducting concurrent distributed operations in multiple theaters or in multiple locations within a single theater, to include in anti-access or area denial situations.

This global network may include non-DoD mission partners (interagency, foreign governmental, or non-governmental), which will require expansion of health service coordination and synchronization efforts. This requires working with partners to identify the precise medical capabilities they can offer, how each of these capabilities can interface with other nodes and capabilities, and how these partners will sustain their contributions to create an integrated package. It also includes continued leadership in developing multinational interoperability through standardization agreements among mission partners. This does not mean everything has to be integrated into one medical package, or necessarily delivered in one place. It does mean arranging all health services so partner contributions are not disjointed and are easily accessible for employment. This will involve coordinating and managing medical elements into an integrated set of capabilities, to include interagency and multinational partners.

Assisting partners to develop and sustain their health service networks to ensure capabilities are suitable and accessible when needed will require extensive, persistent engagement as well as coordination to facilitate bilateral or multilateral-negotiated access with foreign governmental and/or private partners. Investments in global health engagement may support the development of an improved understanding of non-U.S. health systems to better inform these activities. Even then, access to mission partner health services will not be guaranteed. A foreign nation's decision to provide access may be contingent on political circumstances, so it will be important to have a wide network of potential options from which to build an operational health system within an area of operations.

Providing global health services requires consideration of all potential partners. This also includes domestic and foreign private sector service contract networks, potentially providing even greater flexibility and agility for projecting military power across all domains to resolve crises and defeat enemies.

e. Tailored Medical Forces and Operations

In recent conflicts, U.S. Forces enjoyed unimpeded patient evacuation and access to medical logistics, combined with robust trauma care resulting in unprecedentedly low morbidity/mortality rates. Medical operations in the much more restrictive conditions of a contested environment or in broadly dispersed locations with limited physical presence will be challenged to achieve this same degree of positive medical outcomes. In contested environments, higher casualty rates may create the need to conduct deliberate combat

operations to open patient treatment spaces or “windows of opportunity” for evacuation corridors. These conditions may also require more mobile medical force packages (i.e., smaller and lighter) by leveraging more robust “off-shore” capabilities in safe havens or sea-based platforms.

Supporting GIO will require new health service employment concepts and policies, exploiting emerging technology and new platforms for resuscitative care, hospitalization, and en route care, etc., to simultaneously support multiple dispersed operations. Responding to these challenges may require medical capabilities like advanced patient holding, advanced stabilization technologies and capabilities, robust initial-entry trauma treatment, and tiered Tactical Combat Casualty Care for nonmedical personnel (self-aid/buddy-aid) and for pre-hospital providers (medics/corpsmen) with a greater clinical scope for conducting trauma, primary care, and en route care.

Developing smaller, lighter, energy-efficient medical equipment and supplies that are interoperable will reduce lift requirements. Maximizing medical technology to augment medical care, such as telemedicine and autonomous systems that are bandwidth efficient and integrated into the joint information environment, can provide capabilities with less physical presence. Increasing the shelf life and decreasing special handling requirements for medical supplies and blood products will reduce logistics infrastructure and simplify distribution operations.

f. Leaders Integrating Joint Medical Capabilities

Critical to implementing GIHS are adaptive, skilled medical leaders and planners who can synchronize multiple efforts across multiple domains to ensure unity of effort. To best support GIHS in the future operational environment, these medical leaders and planners must be deliberately developed and equipped with tools that enable effective, agile, and adaptive medical planning. Key elements in this process include consideration of lessons learned from previous operations and inclusion of information about joint medical capabilities in all career courses and functional schools to promote understanding of the sustainment implications of medical capabilities in force design and employment. It also requires that all medical career paths include Joint Professional Military Education to understand the profession of arms. This education and training should be developed in tandem with development of a career progression model that identifies key assignments that impart the experience and knowledge crucial to understand and solve the complex and dynamic challenges associated with GIHS. These steps could produce medical leaders and staffs who understand how to plan, coordinate, and build synergy from medical capabilities inherent in all the Services, interagency, multinational partners, and NGOs. The ultimate outcomes will be medical professionals capable of operating within a joint framework and warfighting leaders informed of the force-multiplying capabilities of joint health services.

g. Improved Performance

Likewise, GIHS requires resource programming and investments driven by force management needs of joint and Service medical capabilities to improve performance of operations and delivery of healthcare. Well-informed investment in research and development, medical infrastructure, and future medical performance is critical. The medical community must achieve appropriate balance between the sustainment of current readiness through healthcare delivery in medical beneficiary markets, targeted warfighting clinical education and training, and investment in future capabilities. This requires rethinking the role of programmatic oversight and collaboration to create medical capabilities more effectively and efficiently, and in the integrated and synchronized manner intended by the JCHS. As an example, the Joint Theater Trauma System (JTTS), modeled after a civilian system, was established as a joint clinical performance management system chartered to improve medical outcomes. The JTTS contributed to the improved survival after battlefield injury and established the standard for trauma care. The JCHS calls for integrated resourcing and minimizing redundancies without compromising Service-unique requirements, while maintaining flexible options for supporting strategic end-states. Integrated performance must be supported with adequate resourcing.

Historical Vignette: Antietam

In June 1862, MG McClellan promoted Maj. Dr. Jonathan Letterman to Medical Director of the Army of the Potomac. By September, Maj. Letterman devised an efficient system of casualty management, beginning with first aid adjacent to the battlefield, removal of the wounded by an organized ambulance system to field hospitals for urgent and stabilizing treatment, and then referral to general hospitals for longer-term definitive management. This three-stage approach to casualty management, strengthened by effective and efficient transportation, proved invaluable.

On the morning of 17 September 1862, 130,000 soldiers were ready for battle. Total casualties on both sides, killed, missing and wounded, were 23,000—more Americans died on 17 September 1862 than on any other day in the Nation's military history, including World War II's D-Day. Within 24 hours of the battle, all Federal wounded were secured in hospitals, and within 48 hours the abandoned Confederate wounded were secured as well. This contrasted starkly with the aftermath of previous battles, such as First Bull Run, where the wounded languished on the field for more than a week, often dying from exposure. Advances in battlefield medicine and casualty management were a success.

Shortly after the Civil War, many of these advances were lost. Institutional memory lapses combined with a downsizing of the force caused the U.S. to relearn these lessons at great human expense in future conflicts. The lessons of military medicine are on display in the operations in Iraq and Afghanistan. The medical community's performance in Iraq and Afghanistan has provided valuable insights on the types of challenges and medical capabilities required to support future joint operations. The Joint Concept for Health Services seeks to institutionalize the many advances in medical operations achieved through collaboration in the war zone. Additionally, it will codify an approach to capture changing medical capabilities in response to the evolving requirements of the Joint Force.

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8. Concept Required Capabilities

The JCHS entails a set of both evolved and potentially novel required capabilities for force development. After analyzing inputs from across the community of interest, the following capabilities emerged as essential to implementation of this concept. They constitute an initial proposal, not an exhaustive or authoritative listing, of required capabilities for additional thought and development. Furthermore, the required capabilities have implications for DOTMLPF-P as well as for integration with interagency and multinational partners. Following concept approval, review and consideration of lessons learned in conjunction with subsequent analysis of these proposed capability requirements within the Joint Capabilities Integration and Development System (JCIDS) shall provide the basis for developing capability solutions to close the operational gap the concept addresses.

Required Capability #1. ***Joint Medical Planning***.
Implement the ability to conduct Joint Force medical planning that integrates health service considerations across the JFC's staff; develop medical plans to support JFC intent; synchronize parallel planning at Service or subordinate levels, interagency, and multinational partners; and better support the conduct and sustainment of distributed operations.

Required Capability #2. ***Joint Theater Directed Coordination, Synchronization, and Medical Situational Awareness***.
Improve the ability to ensure unity of medical effort in the JOA through joint processes and tools that facilitate medical communication, collaboration, and coordination as well as a common operating picture of health service capabilities and threats to enable a JFC to decide in real time. Medical systems need to be integrated with other DoD and interagency systems where possible.

Required Capability #3. ***Monitor Patient Outcomes, Assess Clinical Effects, and Adapt Operations***.
Improve the ability to employ joint medical information systems that track clinical outcomes and trends as well as provide tools to inform and empower the JFC to dynamically adjust resources and capabilities.

Required Capability #4. ***Joint Force Development Framework for Health Services***.
Improve the ability to support identification of joint and Service-specific medical force requirements and the development and preparation of medical capabilities in order to meet present and future Service-specific operational needs and, as practical, those of the Joint Force.

Required Capability #5. ***Medical Mitigation of the Environment***.
Improve the ability to execute preventive medicine, public health, health surveillance, and health risk assessment that enable the Joint Force to predict, prevent, and mitigate the effects of climate, environment, or other health threats. The distributed nature of GIO may make it particularly difficult for certain mitigation capabilities, such as laboratory support, environmental science, and biosurveillance, which benefit from consolidated forces. This capability encompasses monitoring the health of populations, assessing human and animal disease effects, predicting the effects of the environment, and implementing required individual and patient protection measures and/or collective protection measures.

a. Apply joint technologies, practices, and procedures to create comprehensive preventive medicine, health disease risk assessment, and the ability to triage, treat, and transport individuals with diseases and/or injuries to effect early intervention and control strategies for all occupational and environmental health hazards and CBRNE threats.

b. Adopt joint processes for employment of medical countermeasures. This will minimize the incidence or the severity of disease or illness, including the protection of U.S. personnel against diseases or against CBRNE hazards through the application of uniform and timely Immuno- and Chemo-prophylaxis countermeasures as well as ensure effective use by the Joint Force.

c. Incorporate health risk assessment into all Joint Force planning to improve employment of Force Health Protection measures that may include medical countermeasures and exposure/threat avoidance or minimization through policies, guidance, standards, or criteria.

Required Capability #6. ***Joint Credentialing and Privileging***.
Establish the ability to confirm and communicate the qualifications of healthcare providers, as well as grant permissions and responsibilities to healthcare providers, within their scope of practice, among the Services and across the Department of Defense. This capability should seek to improve interoperability and clinical practice oversight in joint operational environments through development of joint standardized scopes of practice. This capability may also address coalition and interagency partners.

Required Capability #7. ***Medical Treatment Facilities (MTFs)***.
Improve the ability to employ a continuum of healthcare delivery units tailored and scaled for different domains, operational environments, and spectrums of conflict in support of Joint Force operations. MTFs function in multiple roles in support of joint health service support. MTFs provide the DoD's principal platform for attaining currency, as defined and managed by the Services, and developing and maintaining competency in addition to training affiliation agreements with civilian healthcare institutions that extend DoD's capability to train and sustain medical personnel with essential clinical skills.

a. Provide First Responder Care that meets joint clinical standards and promulgates best practices for initial triage and transition into patient status, and that balances the most advanced medical capabilities within the shortest possible time/distance from the point of injury.

b. Provide Essential Resuscitative Care for joint forces that may be integrated at lower echelons, such as battalion or group. This includes stabilizing the patient in preparation for transportation to higher capability treatment facilities.

c. Provide Definitive Care in the JOA to support joint or coalition patients as directed by the JFC, regardless of operational relationships through agile and mission-tailored capabilities that repair, restore, or stabilize patients. These include preparation for further evacuation, return to duty, or processes for rehabilitation, as appropriate.

d. Provide Definitive Care outside the JOA that is planned resourced, and accessed as a Joint Force support asset to improve the ability to provide long-term, complicated, or specialty care capabilities outside the JOA in a supporting CCMD areas of responsibility (AORs). These include the capabilities to repair, restore, stabilize, or rehabilitate the patient for return-to-duty,

improve patient status during planned evacuation stopovers, or prepare patient for transition out of the Department of Defense.

e. Integrate joint and Service clinical, as well as ancillary and support medicine, competency and training requirements, as defined and managed by the Services, into the resourcing and operation of fixed essential care and definitive care facilities and/or base support networks. This integration must account for the difference in training requirements between operational medical currency and garrison.

Required Capability #8. ***Patient Evacuation****.*
Advance the ability to integrate transportation, medical treatment, logistics, and command, control, communications, computers, and intelligence to provide effective en route care and efficient movement of patients to appropriate treatment facilities in support of joint operations. Effective patient evacuation ensures that patients are brought to definitive care as fast as necessary. En route care sustains or improves patient condition during evacuation.

a. Provide Joint Theater Patient Evacuation matching Service evacuation capabilities to Joint Force requirements and improving integration in the JOA by conducting joint planning, preparation, integrated execution, and assessment of performance until patient treatment needs exceed MTF capabilities and capacity in the JOA.

b. Provide Joint Global Patient Evacuation by conducting joint coordination and movement from a JOA to an appropriate definitive care facility with advanced staging and/or hospitalization, mission adjustable en route care, and globally directed management out of the JOA or among Geographic Combatant Command AORs.

Required Capability #9. ***Patient Management****.*
Improve the ability to effectively apply the required scope of health service capabilities for each casualty or injury accepted into care as a patient in order to achieve the lowest mortality and morbidity possible in support of Joint Force operations.

a. Adopt initial casualty and injury management protocols that meet joint outcome standards, apply jointly developed initial actions and practices at the point of injury by the individual, team, or unit non-medical personnel and leaders. This may include requesting medical evacuation, individual skills or collective drills, or employment of non-medical casualty evacuation to move casualties to medical care as required.

b. Ensure diagnosis processes that meet Joint standards, to the extent possible, for identification of a medical or dental condition, disease, or injury. Joint information systems should provide links between diagnostic procedures

and patient history, to include signs, symptoms, as well as results of physical examination for both ambulatory and inpatient diagnostic services.

c. Match treatment capabilities to patient needs by employing modular, scalable, deployable or fixed-facility, packaged elements, and by applying joint protocols that improve the ability to employ remedies to patients for a disease or injury.

d. Provide rehabilitation through aggregation of joint resources to restore skills and capabilities to a patient so they can regain maximum possible function as far forward in the operating environment, as necessary. This also requires application of joint standards and practices for addressing patients' physical, psychological, social, vocational, educational, and environmental needs.

Required Capability #10. ***Joint Medical Leader Development***.
Implement the ability to develop and manage Service medical leaders who can effectively plan and operate in the Joint Force environment, to include a process for joint qualification and JPME which accounts for the demands of health service leaders to provide JFCs with the best advice about potential health threats, the health readiness of the Joint Force, and the employment of joint medical capabilities.

Required Capability #11. ***Medical Intelligence***.
Improve the ability to collect, evaluate, analyze, and interpret foreign information on health systems, infectious disease, medical science and technology, and environmental health in order to support joint intelligence production and support biosurveillance objectives. Additionally, improve the ability to assess opportunities for leveraging partners to support GIO.

Required Capability #12. ***Joint and Service Medical Education and Training***.
Improve the ability to develop and implement capabilities-based individual and collective training for the Service medical forces in support of Joint Force requirements. These requirements may differ from those for garrison care. Joint and Service medical education that supports essential health service capabilities will prepare medical personnel to function in joint warfighting environments and enhance joint medical interoperability.

Required Capability #13. ***Joint Medical Research and Development***.
Enhance the ability to advance the state of medical science, technologies, and practices in areas relevant to GIO and to ensure the most promising medical solutions are developed and fielded for the future Joint Force.

a. Improve support for basic medical research directed toward greater knowledge and understanding of the fundamental principles of science and medicine that are relevant to the improvement of health services capabilities.

b. Improve joint refinement of biomedical technology concepts and ideas into potential solutions to military health and performance problems with a view towards evaluating technical feasibility and Joint Force requirements.

c. Improve support of promising medical technology candidate solutions that are selected for initial safety and efficacy testing in small-scale human clinical trials regulated by the U.S. Food and Drug Administration (FDA) prior to licensing for human use. This includes examining promising medical technology candidate solutions for initial safety and efficacy testing.

d. Improve Advanced Component Development support for medical products that are regulated by the U.S. FDA and the accelerated transition of FDA licensed and non-licensed (or FDA-unapproved) products and medical practice guidelines to the military operational user through clinical and field validation studies.

e. Improve development and demonstration of medical commodities delivered from Advanced Component Development efforts that are directed at meeting validated requirements prior to full-rate initial production and fielding, including initial operational test and evaluation and clinical trials.

f. Improve support for enhancement activities for fielded medical products and the pre-planned improvement of fielded medical products, including information management/information technology systems.

Required Capability #14. ***Medical Logistics***.
Improve the ability to provide and synchronize joint medical logistics and infrastructure support (JMLIS) in accordance with the JFC's plans and priorities. This includes the ability to integrate, network, and tailor medical logistics capabilities of health service mission partners to efficiently and responsively meet the needs of the supported joint force and mission.

a. Establish joint interoperability, interchangeability, and interdependency as a requirement in materiel development of health service capabilities.

b. Develop the ability to predict and fulfill the medical supply and maintenance requirements of modular medical force elements as they aggregate and/or disaggregate with other modular elements provided by health service mission partners.

c. Improve the ability to orchestrate the provision of medical logistics support (e.g. medical supplies, medical equipment, medical maintenance, blood, optical, medical facilities, medical services, and/or medical contracting) to the Joint Force. This involves the ability to tailor medical logistics capabilities to the needs of the supported force and mission.

d. Improve the quality and availability of authoritative medical logistics data necessary to accurately forecast requirements, reduce variation, establish equivalencies, and efficiently integrate end-to-end JMLIS activities required to sustain medical capabilities in joint operations.

e. Improve the integration of Service JMLIS capabilities into a scalable, responsive framework that provides joint visibility of requirements and enables timely fulfillment.

Required Capability #15. ***Health Services Contracts and Resource Programming***.
Improve the ability to augment and extend military health service capabilities through rapid and flexible acquisition and contract processes. This requires improved alignment of resource programmatic processes to enhance responsiveness to emergent Joint Force requirements and Service's priorities for medical force development.

Required Capability #16. ***Global Health Services Network***.
Establish the ability to leverage non-DoD, foreign, and NGO partners to build a collective healthcare capability with global reach to support GIO in austere, urbanized, and denied environments.

a. Establish a flexible worldwide network of health service nodes/MTFs and a mechanism to coordinate their activities to ensure the ability to rapidly mobilize medical capabilities and resource in support of GIO.

b. Implement processes to assess potential partner medical capabilities sets, availability for use by U.S. Forces, and their capacity to support.

9. Risks of Adopting this Concept

The risks of implementing this concept reside in the following areas: medical capabilities and readiness, technology, and resources.

- ***Integrated U.S. Military Medical Capabilities might become more vulnerable to interdiction or disruption***. Medically supporting GIHS relies on the ability to execute command, control, communications, computers, and intelligence solutions. Health services achieving the required level of integration may expose vulnerabilities concurrent with centralized information, coordination, or control.

- ***Joint Medical Standards and Integration might drive homogeneity***. While standardization among Services can support improved safety and quality assurance of medical care, it may lead to medical capabilities which are less able to support the diversity, flexibility, versatility, and ultimately, effectiveness derived from the complementary employment of diverse Service capabilities. In addition, adoption of this concept in such a way to create an imbalance

between efficiency and redundancy creates a future force that may not be resilient enough for the future operating environment.

• ***Joint Force development priorities might lead to Service gaps in development of organic health service capabilities***. The Services and the Defense Health Agency may fail to balance joint, integrated medical force development and implementation frameworks with Service-specific requirements. This could lead to a disparate sprint toward joint capabilities resulting in unanticipated gaps for Service-driven resource management.

• ***Increased focus on how operational Health Services affect the ability of MTFs to provide care to non-uniformed beneficiaries***. Changes in force design to better provide forward-positioned advanced trauma care and the disparate nature of medical care competencies/specialties required to support operational requirements (vice non-uniformed beneficiary care) may make the current way of providing health benefits for non-uniformed beneficiaries unsustainable. Mitigating this risk will require close coordination between MTFs and purchased care in employing a comprehensive approach to design a medical force responsive to both operational employment and day-to-day readiness requirements of operational forces. Cost (both in training to sustain casualty care skills and to provide beneficiary care) and risk to maintaining combat capabilities for operational capabilities will be major considerations.

• ***Efforts to maintain or improve medical outcomes through technology may increase resource burdens on the Joint Force***. This concept puts a premium on technology to offset requirements for reduced physical presence and to sustain the ability to maintain positive medical outcomes. Developing and sustaining these technologies to enable this level of performance may stress the budget resources of the Joint Force.

• ***Force reductions with insufficient force modernization*** place at risk the medical community's efforts to compensate for a smaller footprint with increased technology. This may be compounded by the expected capabilities of allied or partner nations proving insufficient. Improved interoperability with joint, interagency, and multinational partners may provide additional methods to mitigate this risk by improving synergy across all domains.

10. Conclusion

GIO are inherently complex and will occur in fast-paced, contested operating environments. Supporting GIO will stress the operational agility and organizational flexibility for providing GIHS. This document provides a conceptual foundation for medical capability development in response to the future operating environment. This concept document contains sufficient detail to initiate a capabilities-based assessment via the JCIDS process.

Implementation will require experimentation to test the concept and refine capabilities.

11. Annexes

Annex A. References

Annex B. Acronyms

Annex C. Glossary

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Annex A. References

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Annex B. Acronyms

AOR	area of responsibility
CBRNE	chemical, Biological, Radiological, Nuclear and Explosive
CCDR	Combatant Commander
CCJO	Capstone Concept for Joint Operations
CCMD	Combatant Command
CONOPS	concept of operations
DoD	Department of Defense
DOTMLPF-P	doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy
FDA	Food and Drug Administration
GFM	Global Force Management
GIHS	Globally Integrated Health Services
GIO	Globally Integrated Operations
JCHS	Joint Concept for Health Services
JCIDS	Joint Capabilities Integration and Development System
JFC	Joint Force Commander
JMLIS	Joint Medical Logistics and Infrastructure Support
JOA	Joint Operations Area
JPME	Joint Professional Military Education
JTTS	Joint Theater Trauma System
MTF	Medical Treatment Facility
NGO	nongovernmental organization
U.S.	United States

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Annex C. Glossary

Biosurveillance. The process of gathering, integrating, interpreting, and communicating essential information related to all hazards, threats, or disease activity affecting human, animal, or plant health to achieve early detection and warning, contribute to overall situational awareness of the health aspects of an incident, and to enable better decision making at all levels. (*National Strategy for Biosurveillance*, July 2012)

Denied Area. An area under enemy or unfriendly control in which friendly forces cannot expect to operate successfully within existing operational constraints and force capabilities. (JP 3-05)

Domain. A sphere of activity or influence. (JCHS)

Force Health Protection. The ability to sustain and protect the health and effectiveness of the human centerpiece of the American military. Force Health Protection is composed of activities that promote human performance enhancement; provide for a healthy, fit, and protected force; engage in health surveillance; encompass casualty management in the JOA; and enhance mission set preparedness and support to Homeland Defense/Civil Support operations. (Force Health Protection Concept of Operations [CONOPS])

Health Services. Medical capabilities designed to perform, provide, or arrange the promotion, improvement, conservation, or restoration of human mental and physical well-being that may be utilized to support the National Military Strategy and the readiness of the Joint Force. (JCHS)

Health Service Support**.** All services performed, provided, or arranged to promote, improve, conserve, or restore the mental or physical well-being of personnel, which include, but are not limited to, the management of Health Services resources, such as manpower, monies, and facilities; preventive and curative health measures; evacuation of the wounded, injured, or sick; selection of the medically fit and disposition of the medically unfit; blood management; medical supply, equipment, and maintenance thereof; combat and operational stress control; and medical, dental, veterinary, laboratory, optometric, nutrition therapy, and medical intelligence services.. (JP 4-02)

Health Service Delivery. The ability to build healthy communities by managing and delivering the TRICARE health benefit. This ability includes clinical preventive medicine, clinical diagnostics, treatment, rehabilitation, and reintegration. (Health Service Delivery CONOPS)

Health System Support. The ability to organize and execute key capabilities required to support and continuously improves Health Service Delivery and Force Health Protection in fulfillment of the Military Health System mission. It includes activities associated with the education, research and development,

Health Services contract development, Health Services contract management, and partnership development among health service organizations outside the Military Health System. (Health Readiness CONOPS)

Interoperability. Systems, units, and forces shall be able to provide and accept data, information, materiel, and services to and from other systems, units, and forces and shall effectively interoperate with other U.S. Forces and coalition partners. (DoDD 5000.01)

Node. Physical location for delivering health services. These can be fixed (e.g., MTFs, clinics, mission partner facilities) or mobile (e.g., deployable/modular capabilities). (JCHS)

Operational Level of War. The level of war at which campaigns and major operations are planned, conducted, and sustained to achieve strategic objectives within theaters or other operational areas. (JP 3-0)

Synchronization. The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time. (JP 2-0)


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