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“For the Best”

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Sulpizio, Donald J., Major, USA

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Marine Corps University
2076 South Street
Quantico, VA 22134-5068

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The following concept is a blueprint for change within Army aviation to do more with less. In accordance with General Dempsey’s guidance, “the Joint Force of tomorrow must be able to achieve our national security objectives against a threat that is increasingly difficult to define, even as we reduce budgets.” The following research question provides the framework for Army Aviation to address some of these challenges: Under fiscal constraints, how does the U.S. Army provide the Joint Force optimal aeromedical evacuation that is adaptive, agile, and interoperable in the current and future operating environment? Optimal CASEVAC is using the Army’s current inventory of utility and cargo airframes, to posture and organize a standardized CASEVAC capability to both compliment the Army’s MEDEVAC capability and enhance the Joint Forces’ ability to anticipate, and rapidly respond to contingencies and threats.

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Marine Corps University
2076 South Street
Marine Corps Combat Development Command
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AUTHOR: Major Donald J. Sulpizio

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Mentor and Oral Defense Committee Member: Dr. Paul D. Gelpi
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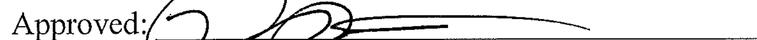
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Title: Optimal Casualty Evacuation for Joint Force 2020, "*For the Best*"

Author: Major Donald J. Sulpizio, United States Army

Thesis: The U.S. Army's doctrine and policy governing medical evacuation (MEDEVAC) and casualty evacuation (CASEVAC) reflects parochial concepts with narrow visions of function and capability thereby degrading the posture and organization of the joint force to anticipate and respond to injured personnel.

Discussion: The following concept is a blueprint for change within Army aviation to do more with less. This concept describes the precepts and imperatives that may enable combatant commanders to succeed in the future operational environment as characterized by the Joint Force 2020. In accordance with General Dempsey's guidance, "the Joint Force of tomorrow must be able to achieve our national security objectives against a threat that is increasingly difficult to define, even as we reduce budgets.[1]" The following research question provides the framework for Army Aviation to address some of these challenges: Under fiscal constraints, how does the U.S. Army provide the Joint Force optimal aeromedical evacuation that is adaptive, agile, and interoperable in the current and future operating environment? Optimal CASEVAC is using the U.S. Army's current inventory of utility and cargo airframes, to posture and organize a standardized CASEVAC capability to both compliment the Army's MEDEVAC capability and enhance the Joint Forces' ability to anticipate, and rapidly respond to contingencies and threats. Normalizing Optimal CASEVAC across the spectrum of Army Aviation recognizes the ground force commander's (GFC's) demand signal for expeditionary aviation in order win the current fight, further Army Aviation interoperability, and and defeat an adaptive adversary in the future operating environment.

Conclusion: The mission essential task list (METL) of a command aviation company (CAC) or general support flight company cannot differentiate so far from an air assault flight company to thus limit the spectrum of what a ground force commander (GFC) receives in support. Moreover, neither can the METLs of MEDEVAC and non-MEDEVAC aviation elements differentiate so far as to add constraints to the GFC. Beyond the scope of patient evacuation, Optimal CASEVAC illuminates an approach for Army Aviation leaders to forge viable options when called upon to rapidly respond in support of humanitarian assistance, disaster relief, and threats to the United States or allied nations.

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Optimal Casualty Evacuation for Joint Force 2020
"For the Best"

As we reflect on our combat and operational experiences over the last decade of war, we must do so from both joint and Service perspectives to conduct a holistic assessment. Then we must train and educate on what we have learned…We also understand that we must be proficient in more than combat, and must remain versatile to conduct security, engagement, relief and reconstruction. This endeavor requires all Joint Warfighters to engage in a serious dialogue to chart the way ahead to strengthen our profession as we develop Joint Force 2020. We must ensure we remain responsive and resilient; the American people deserve nothing less.

-General Dempsey, CJCS

There are eight key elements to globally integrated operations. The first is mission command. This is all about people, it's all about empowering leaders to be able to operate on trust and on commander's intent," Flynn said. This means, he said, developing leaders who understand the environments they are working in, react well to surprise and uncertainty and who can lead transitions.

-Lt. Gen. George J. Flynn, USMC

The Joint Force will accomplish these missions in a security environment characterized by several persistent trends: the proliferation of weapons of mass destruction, the rise of modern competitor states, violent extremism, regional instability, transnational criminal activity, and competition for resources. Armed conflicts will be inevitable in such an environment—as will be opportunities for cooperation and peaceful competition…

These are some of the continuities. We also anticipate differences going forward. The diffusion of advanced technology in the global economy means that middleweight militaries and non-state actors can now muster weaponry once available only to superpowers. The proliferation of cyber and space weapons, precision munitions, ballistic missiles, and anti-access and area denial capabilities will grant more adversaries the ability to inflict devastating losses. These threats place our access to the global commons at risk, target our forces as they deploy to the operational area, and can even threaten forces at their points of origin. Meanwhile, adversaries continue to explore asymmetric ways to employ both crude and advanced technology to exploit U.S. vulnerabilities. Consequently, the capability advantage that U.S. forces have had over many potential adversaries may narrow in the future. Adversaries will not only have more advanced capabilities in every domain. More of them will have the ability to simultaneously fight across multiple domains.

The operational challenge that emerges can be summarized as this: How will future Joint Forces with constrained resources protect U.S. national interests against increasingly capable enemies in an uncertain, complex, rapidly changing, and increasingly transparent world?

-General Dempsey, Joint Force 2020

Introduction

The U.S. Army's doctrine and policy governing medical evacuation (MEDEVAC) and casualty evacuation (CASEVAC) reflects parochial concepts with narrow visions of function and capability thereby degrading the posture and organization of the joint force to anticipate and respond to injured personnel. U.S. Army policy, doctrine, and standard operation procedures (SOP) must be refined and normalized into experimentation, operational planning, and operations to enable combatant commanders to be adaptive and succeed in a dynamic and politically complex operational environment. The following concept is a blueprint for change within Army aviation to do more with less. This concept describes the precepts and imperatives that may enable combatant commanders to succeed in the future operational environment as characterized by the Joint Force 2020. In accordance with General Dempsey's guidance, "the Joint Force of tomorrow must be able to achieve our national security objectives against a threat that is increasingly difficult to define, even as we reduce budgets.[1]" The following research question provides the framework for Army Aviation to address some of these challenges: Under fiscal constraints, how does the U.S. Army provide the Joint Force optimal aeromedical evacuation that is adaptive, agile, and interoperable in the current and future operating environment? Optimal CASEVAC is using the Army's current inventory of utility and cargo airframes, to posture and organize a standardized CASEVAC capability to both compliment the Army's MEDEVAC capability and enhance the Joint Forces' ability to anticipate, and rapidly respond to contingencies and threats. Normalizing Optimal CASEVAC across the spectrum of Army Aviation recognizes the ground force commander's (GFC's) demand signal for expeditionary aviation in order win the current fight, further Army Aviation interoperability, and and defeat an adaptive adversary in the future operating environment.

While branches of Army Aviation and Medical Service success since 2001 illuminates rotary wing relevance, in crisis and war, complacency in maintaining the status quo affords too much risk in the future operating environment. As military professionals, leaders cannot fall victim to assuming what has worked before will necessarily apply in the future. Assuming TTPs (tactics, techniques, and procedures) from the Civil War would succeed in World War I may seem an obvious absurdity in present day dialogue. However, historical recollection may provide some humility of where such assumptions lead to costly American blood and treasure. Adding further context, the nineteenth century reflects German military leaders who recognized the importance of lessons from combat and the heavy task of revising doctrine in order to organize and posture in such a way as to hold the upper hand in the face of threats to their national interests. It may be a fair argument to say the Germans, while conquered in World War II, generated military innovation which can still be recognized in today's profession of arms. Just as Germany found after World War I, the current transition or "interwar period" America finds itself in, coupled with the traditional fiscal constraints often observed following long periods of war mirrors a historical window of opportunity to revisit pillars of Army doctrine governing the characteristics of war. The demand signal from the trenches of Afghanistan and Iraq requires a generation of seasoned staff officers (i.e. Majors and Lieutenant Colonels) to not only teach war as Clausewitz argued, but as Moltke and Schlieffen professed, fulfill their responsibility to ensure the study of military history serves the soldier.[2] Ultimately, Army aviation must provide GFCs with innovative ideas and viable options to conduct patient evacuation of America's greatest blood and treasure, the warrior.

Further discussion of vertical lift casualty evacuation demands terms of reference. CASEVAC is broadly accepted across the Joint Force as the transport of casualties on a non-

standard platform (i.e. UH-60 Blackhawk) that does not include medical capabilities to sustain the casualties while enroute from point of injury (POI) to a medical treatment facility (MTF).[3] Among the U.S. Army's rotary wing enterprise, CASEVAC is a capability provided by the Army Aviation branch. Whereas MEDEVAC is characterized as the evacuation of patients on dedicated, medically configured platforms that include enroute patient care by medical trained personnel.[4] The role of providing vertical lift MEDEVAC capabilities is restricted to the Medical Service branch within the U.S. Army. The U.S. Army's Medical Evacuation Proponency Directorate (MEPD) provides governance over doctrine, organization, training, maintenance, leadership, personnel, and facilities (DOTMLPF) or more simply stated, the requirements and capabilities of vertical lift patient evacuation in support of the Joint Force. As an organization, the U.S. Army DOTMLPF process has manifested into a program of silos assuming an almost tribal culture of territorial friction concerning capability and functions among branches (i.e. Infantry, Aviation, Medical Service, Logistics, Intelligence, etc). In the absence of a burning platform to draw branches of the Army together, each branch has traditionally been given their crayon to color, man, equip, and train in their respective corners until needed for their subject matter expertise or function. However, success over the past decade of war has given birth to a generation of officers, non-commissioned officers (NCO) and soldiers who recognize the Army's potential when cross pollinating these functions and subject matter experts (or silos). In the same manner as our adversaries, the U.S. Army must transcend ideology across the silos of the Medical Service branch and Army Aviation.

British naval aviator, Lieutenant Hugh Williamson said it best, "a long peace breeds conservatism and hostility to change in senior officers. Consequently, revolutionary ideas which were readily accepted when war came, were unthinkable in the peacetime atmosphere of

1912.[16]" Williamson was a pioneer arguing for carrier aviation during the interwar period between World War I and World War II. The argument can be made that America is not in a long period of peace. However, the American profession of arms finds itself in transition from a decade of war and under fiscal constraints that may in fact breed similar conservatism. This is the time to demonstrate in the face of bureaucracy, fiscal constraints, and an unwavering demand for Army aviation to determine what more can be done with less. Leaders at all levels must build on their legacy functions and recognize their mission in the context of the future operating environment.

Optimal CASEVAC will require Army Aviation and Medical Service branches to craft a blueprint for innovative change thereby providing enroute patient care via standard and non-standard platforms. By integrating observations-insights-lessons-learned (OILL) from Army aviation and Medical Service branches into doctrine and tactical standardized operating procedures (TACSOP), combat aviation brigades (CAB) and supported ground elements may normalize optimal CASEVAC capability as a part of the CAB and GFC operational planning, training, and operations. Just as the red cross preserves and provides GFCs a predictable capability to depend on when planning and prosecuting objectives, optimal CASEVAC provides additional capability to complement MEDEVAC and provides the greatest coverage in the absence of MEDEVAC. The optimal CASEVAC concept offers an opportunity for Army aviation to posture an expeditionary force capable of anticipating, adapting, and defeating a complex enemy compounded with uncertain threats in the future operating environment.

Background

Since Vietnam, a parochial battle has targeted aeromedical evacuation procedures to shed the red cross and embrace an expeditionary mindset of utility. The Army MEDEVAC

proponency embraces a heritage anchored by the legacy of veterans such as Major Charles R. Kelly, third Commander of the 57th Medical Detachment. Kelly coined the mantra of "No compromise. No rationalization. No Hesitation. Fly the mission. Now!"[5] The 57th was comprised of five Bell UH-1A, proudly displayed the red cross and defied attempts by the likes of Brig General Joseph Stilwell to absorb the 57th into general support aviation for troops in Vietnam.[5] From Vietnam to present day, the nature of this argument is very sensitive, almost tribal in nature, and deeply rooted in a conflict between risk mitigation and adaptation. The risk mitigation refers to the aircraft, crew members, and patient care balanced by adapting to an adversary who's proven to be vigilant and agile without regard to international law principles. Over a decade of marshaling violence for democracy has left seasoned patriots scarred with the memories of fallen heroes. From the trenches, removing the red cross has been discussed repeatedly under precepts that assume gaps in aeromedevac capability (in the context of a troops in contact (TIC) scenario) may be resolved by removing the red cross, thereby arming the MEDEVAC airframes with crew served weapons.

This impulse to remove the red cross from MEDEVAC airframes carries the notion of the red cross serving as a constraint to both flight crews and their ground force brethren. Since Vietnam, MEDEVAC helicopters maintain a "privileged status" in accordance with the Geneva Convention for the Amelioration of the Condition of the Wounded and Sick (GWS) in Armed Forces in the Field, dated 12 August 1949. Under the GWS, "Article 36 provides that medical aircraft 'exclusively employed for the removal of wounded and sick and for the transport of medical personnel and equipment, shall not be attacked, but shall be respected by the belligerents, while flying at heights, times and on routes specifically agreed upon between the belligerents concerned." From the GWS guidelines, the red cross has evolved into an

institutional shield whereby MEDEVAC airframes serve a purely non-offensive role in combat. Under Article 21 of the GWS, "medical facilities lose their protection if they commit 'acts harmful to the enemy.' The commentary explains that 'acts harmful to the enemy' are acts whose purpose or effect is to facilitate or impede military operations." MEDEVAC crews do not rush to failure in the face of threat with bandages and peroxide. Rather, Article 22 of the GWS recognizes "conditions not depriving medical units and establishments of protection."

In accordance with Article 22 guidelines, MEDEVAC flight crews may be armed "in their own defense, or in that of the wounded and sick in their charge." A legal review of defensive weapons on MEDEVAC airframes by the Department of the Army (DA) Office of the Judge Advocate General, International and Operational Law Division in 2008 highlighted under Article 13 of the GWS, defensive weapons are characterized as "light individual weapons" which "includes rifles, pistols, and sub-machine guns, capable of being operated by one person, which excludes crew-served machine guns." The analysis by the legal review concluded by "removing the distinctive insignia and mounting the M240 Medium Machine Gun (a crew served weapon according to Army doctrine), in order to conduct escort/support missions, would be an 'act harmful to the enemy." Codifying policy to maintain the red cross on MEDEVAC airframes, the legal review illuminated strategic considerations with respect to conducting weaponized MEDEVAC missions. U.S. forces "could be accused of 'perfidy,' a law of war violation that involves feigning protected status to gain an advantage on the enemy, should the aircraft be armed with crew-served weapons and marked as MEDEVAC." What is not addressed in the DA's legal review is the complete abandonment of the red cross insignia from MEDEVAC airframes to re-designate MEDEVAC as CASEVAC platforms in order to provide a much greater offensive capability against an adaptive and determined enemy. Further, the DA's legal

review begs the question, in context of modern warfare between U.S. forces and non-state actors, or "belligerents," what conditions have ever been agreed upon to support designating airframes MEDEVAC only? Does the red cross on MEDEVAC airframes serve as a shackle to flight crews and troops on the modern day battlefield?

For years, such criticism has been fixated on the Army MEDEVAC proponency to improve responsiveness and enroute patient care. In response to critics from the trenches of Afghanistan to Washington D.C., the Joint Chiefs of Staff (JCS) directed a review of MEDEVAC procedures over the past decade, both in war and crisis. The results of the review supported Army leaders' decision to preserve the red cross on MEDEVAC helicopters (i.e. HH-60s). The JCS justification was anchored in the responsiveness, quality of care, and strategic communication MEDEVAC helicopters bring to the Joint Force. Nevertheless, the demand signal from ground force elements for an optimal rotary wing patient evacuation capability has highlighted a gap within Army aviation over the assumed role and responsibility of the medical service branch (aka silo). Framing the problem of future vertical lift patient evacuation capability requires exploration into both removing and preserving the red cross on MEDEVAC airframes.

Demand Signal from the Trenches

"Ensuring Service members receive the necessary medical care required in a timely manner is critical, not only for saving lives but in reinforcing our message of commitment to Service members, their families, and our Nation."

-Robert Gates, Secretary of Defense, 15 June 09

On September 8, 2011, Specialist (SPC) Chazray Clark, 4-4 CAV suffered fatal wounds as a result of an improvised explosive device (IED) detonated while on a mission in support of Operation Enduring Freedom (OEF) in Regional Command (RC) South, Afghanistan.[6]

Following his initial injuries and 9-Line radio request for MEDEVAC, members of his unit applied tourniquets to both his right and left legs and left arm while they waited for the MEDEVAC aircraft to arrive. [6] The launch of the MEDEVAC airframe was delayed for twenty nine minutes while waiting for an armed escort aircraft to become available.[6] He was still alive when the MEDEVAC arrived. Reports stated that SPC Clark arrived at the medical treatment facility fifty nine minutes from the initial 9-line request submission.[6] According to policy governing MEDEVAC, this timeline was in accordance with the established 1 hour requirement, aka *the golden hour*. Clark was pronounced dead minutes after arriving to the medical treatment facility (MTF).[6] Reporting on the loss of SPC Clark ignited the media and seventeen members of Congress into discussion over why armed escort could not be allocated sooner, whether SPC Clark's wounds were survivable from the point of injury, and called into question as to why commanders would delay a MEDEVAC helicopter for twenty nine minutes for a wounded warrior. The seventeen members of Congress addressed a letter on February 3rd, 2012 to Secretary of Defense, Leon Panetta. The letter expressed concerns about the Pentagon's policy on MEDEVAC procedures in Afghanistan being too constraining, thereby *needlessly* restricting medical care or hindering commanders from evacuating their casualties from the battlefield.[7] On March 20, 2012 Chairman of the Joint Chiefs of Staff, General Dempsey requested U.S. Central Command (USCENTCOM) to conduct a review of MEDEVAC procedures in Afghanistan.[8] The methodology of the review assessed the following requirements:

- Provision of rapid evacuation and high-quality enroute medical treatment integrated into the continuum of battlefield casualty care.
- Maintenance of a trained and ready rotary-wing evacuation system that supports the Commander, ISAF Joint Command (IJC), requirements.
- Risk management and launch execution procedures that reduce the risk to patients to the maximum extent possible from the standpoint of the Commander, IJC.

- Rotary-wing asset allocation and employment, which balances aircrew risk against resource demands and mission accomplishment. [8]

While the the loss of SPC Clark was tragic, his death served as a catalyst for the Army to publicly address growing skepticism over MEDEVAC risk mitigation, adaptation, and exploit the progressive characteristics of the Army's MEDEVAC proponency. Specifically, dialogue between Army leadership and congress centered on launch procedures, restraints and the decision over whether or not to arm MEDEVAC airframes. Bottom-line: Unites States Central Command (CENTCOM) which governs policy over deployed forces in Afghanistan, recommended no change to the employment of Army MEDEVAC airframes.[6] Further, the review team recommended "risk management procedures should remain as is to maximize CAB (combat aviation brigade) and RC commander flexibility."[6]

The report did note, "a standardized set of definitions for what constitutes low, moderate, and high enemy threat would improve transparency across the CJOA-A of threat related data, allow more meaningful comparison of current practices, and support enhanced risk management processes."[6] Variances for threat mitigation procedures and the criteria for designating levels of threat which translated to asset (i.e. AH-64 Apache aircraft) allocation had become a systemic issue across Regional Commands (RCs). From this disparity over threat designation, friction was observed well beyond the scope of MEDEVAC profiles to include missions of general support, air assault, and attack. Commanders, to include those of organizations, Pilots-in-Command of aircraft, and Air Mission Commanders buy risk with each decision and through establishing procedures. The issue surrounding threat levels and limited resources such as Apache and MEDEVAC aircraft allocation illuminates a much greater concern centered on communication and battle space owners failure to work collectively for greater effectiveness.

The review team concluded "risk management is undertaken concurrently and the decision is made at the appropriate level of risk acceptance."[6] Their report discusses the balance between MEDEVAC responsiveness and risk mitigation with flexibility given to the RC and combat aviation brigade (CAB) commanders. However, the report does not establish the red cross on the MEDEVAC airframes as having any direct impact on responsiveness. Of historical note, before the Army migrated MEDEVAC flight companies from a stand-alone organization to the current command and control (C2) structure under the general support aviation battalion (GSAB) and CAB, MEDEVAC aircraft routinely launched with or without armed escort. If armed escort was required (IAW line 6 of the 9-line MEDEVAC request), common practice would allow MEDEVAC airframes to conduct in-flight link-up with armed helicopters enroute to the point of injury (POI). In the event link-up was not available MEDEVAC flight crews had the discretion to launch and assume risk. Additional findings highlighted clinical staff members in RC-South West integrated into the launch tasking process.[6] These staff members were considered value added to the assessment of patient injury as it related to requirements surrounding the patient.[6] However, like the red cross, clinical staff did not delay responsiveness of MEDEVAC missions.[6]

The review team's attempt to frame the problem associated with launch delay in support of SPC Clark limited their analysis to the MEDEVAC capabilities. This narrowed scope was a product of their tasking by the Chairman of the Joint Chiefs of Staff (CJCS) to conduct a review of MEDEVAC procedures in Afghanistan.[6] By not tasking the team to review MEDEVAC and CASEVAC procedures or patient and casualty evacuation practices, this limited the effectiveness of the study. This is a reflection of the Army's lexicon, doctrine and normalized practices to limit the primary responsibility for patient evacuation to the capability of the medical service

silo. Thus, the report did not discuss CASEVAC launch procedures which do provide evacuation enhanced by defensive or suppressive armament (i.e. M240 crew-served weapon), are often the closest vertical lift airframe to the POI thereby more responsive than MEDEVAC. The review team missed an opportunity to capture data, observations, insights, and lessons from seasoned veterans to frame the problem surrounding patient evacuation in the context of high risk in which troops are in contact with an enemy force and armed airframes are required to mitigate further harm to the patient. When America's warriors become injured on the battlefield they are all casualties waiting to become a patient. The transition from casualty to patient is recognized when the injured personnel receives care by a trained medical professional (i.e. combat medic, flight surgeon, etc). He or she does not lose their patient status upon boarding a non-standard platform (i.e. non-designated MEDEVAC airframe). Their patient status hinges on the medical provider remaining with their patient. Under the optimal CASEVAC concept, non-standard vertical lift platforms enhanced by medically trained personnel and MEDEVAC cross trained aircrews will provide enroute patient care in order to posture in a manner that enables the combat aviation brigade (CAB) to anticipate and respond to the demand signal from the trench-to the soldier. To better illustrate this point an examination of common CASEVAC launch procedures is required.

Absent from doctrine, TACSOPs and Department of Defense policy tactical army aviation leaders implemented local level policy governing the conduct of CASEVAC in order to mitigate harm to injured personnel and avoid friction between the functions of MEDEVAC and general support aviation. The following outlines an example of CASEVAC guidelines developed and implemented in support of Operation Enduring Freedom, 2007:

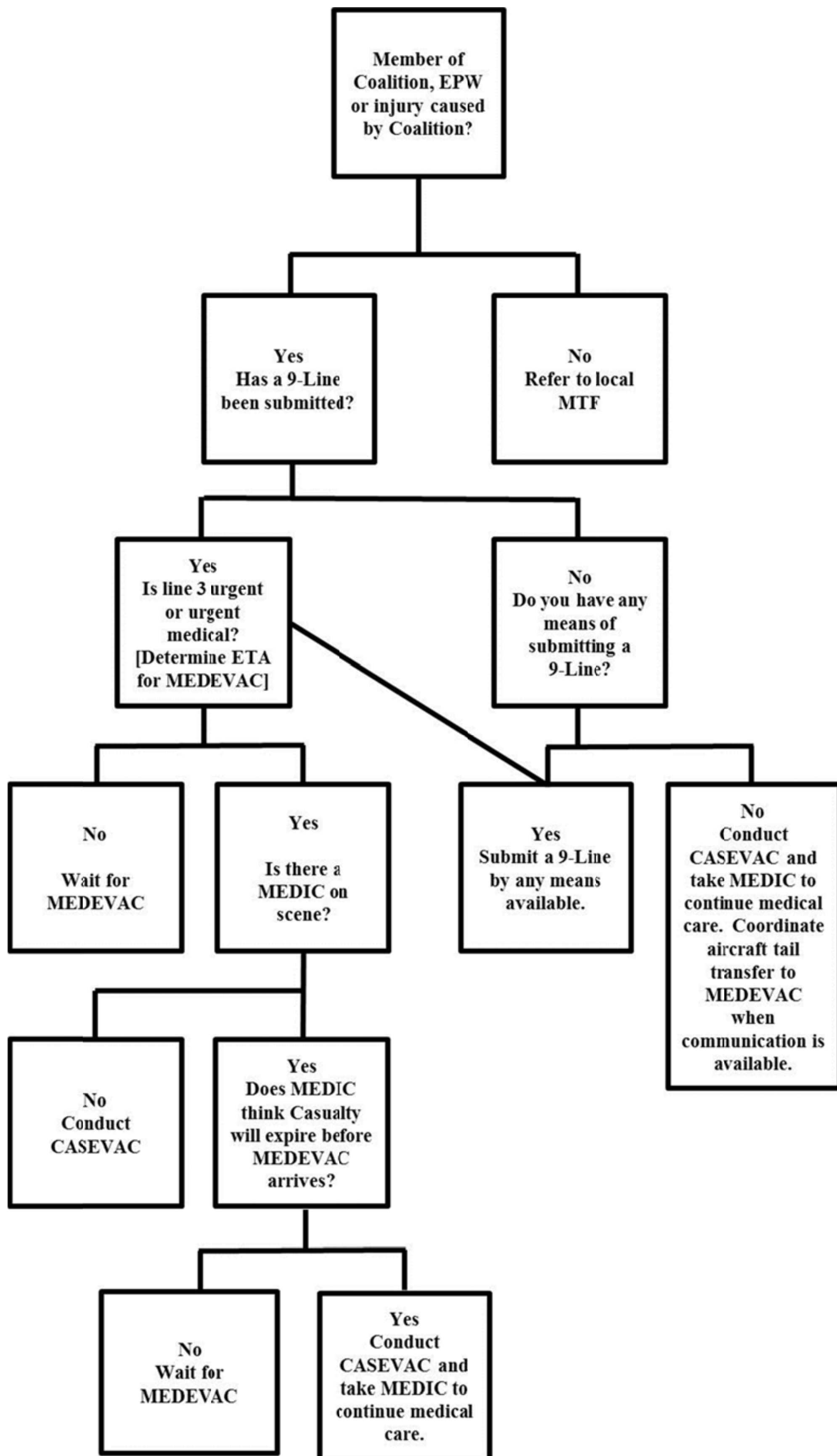
- If casualty is not in danger of losing life, limb or eyesight DO NOT CASEVAC.

- Conduct CASEVAC only if the sensitive nature of the injury outweighs the risk of moving the casualty without care.
- Transport the casualty to the nearest medical treatment facility (MTF) capable of stabilizing the injuries as determined by the senior medical authority on the scene.
- Consideration should be given to conducting tail to tail transfer to a MEDEVAC flight crew at the nearest safe landing area if the flight time to a suitable MTF is more than a few minutes.
- The person capable of providing the highest level of care on scene will accompany the casualty.
- Conduct CASEVAC only if the time sensitive nature of the injury outweighs the risk of moving the casualty without care.
- Transport the casualty to the nearest MTF capable of stabilizing the injuries as determined by the senior medical authority on the scene.
- Consideration should be given to tail-to-tail transfer to a MEDEVAC crew at the nearest safe landing area.
- If the flight time to a suitable MTF is more than a few minutes the person capable of providing the highest level of care will accompany the casualty.[9]

Figure 1 illustrates an example of a decision matrix used by Army aviation general support crew members in Afghanistan when faced with the scenario of deciding to conduct CASEVAC or to allow the casualty to wait for a dedicated MEDEVAC airframe. Lessons from standardized procedures of conducting CASEVAC cultivated more effective communication between general support aviation, MEDEVAC crews, and ground force elements. From this standardization, casualties benefited through a much greater process by which general support aircrews' patriotic enthusiasm to save lives did not conflict with quality of patient care from point of injury to (POI) a medical treatment facility (MTF). Further, ground force commanders (GFCs) gained a better understanding for the capabilities and risks associated with of MEDEVAC and CASEVAC.

Legend for Fig. 1:

EPW-Enemy Prisoner of War
9-Line-Medcial Evacuation Request
MTF-Medical Treatment Facility
ETA-Estimated Time of Arrival


Member of Coalition, EPW or injury caused by Coalition?
Yes
Has a 9-Line been submitted?
No
Refer to local MTF
Yes
Is line 3 urgent or urgent medical?
[Determine ETA for MEDEVAC]
No
Do you have any means of submitting a 9-Line?
No
Wait for MEDEVAC
Yes
Is there a MEDIC on scene?
Yes
Submit a 9-Line by any means available.
No
Conduct CASEVAC and take MEDIC to continue medical care. Coordinate aircraft tail transfer to MEDEVAC when communication is available.
No
Conduct CASEVAC
Yes
Does MEDIC think Casualty will expire before MEDEVAC arrives?
No
Wait for MEDEVAC
Yes
Conduct CASEVAC and take MEDIC to continue medical care.

The review team assessed the feasibility of arming MEDEVAC airframes with focus on enemy threat mitigation, aircraft performance, medical capabilities, training requirements, dedicated asset availability, personnel requirements, and equipment requirements.[6] The review team's report reflects less than 1% of all MEDEVAC missions conducted in Afghanistan fall into the profile in which armed escort was required.[6] In his testimony before Senate for the Department of Defense (DoD) authorization for appropriations for fiscal year 2013 General Odinero stated, "MEDEVAC delays attributed to "waiting for escort" equate to 0.6% of all urgent point of injury missions, or six times out of 1,000 is a MEDEVAC mission delayed outside of the standard due to escort related issues."[10] With respect to mitigating enemy threat to airframes, arming MEDEVAC airframes assumes armed escort airframes will remain postured for high threat missions. It was determined by the review team, armed escorts (i.e. AH-64 Apache) deliver an imperative capability towards securing safe passage of patient transfer.[6] While no other rotary wing airframe in the U.S. arsenal measures up to the Apache to find, fix, and destroy enemy combatants, the issues surrounding patient evacuation on high threat missions begs the following question. Is the requirement to destroy or to suppress the enemy force in order to safely expedite patient evacuation? Through optimal CASEVAC, security for patient evacuation may be supported by armed utility airframes (i.e. UH-60 and CH-47) thereby reducing the demand for additional escort airframes such as the AH-64.

Considerations towards weaponizing MEDEVAC airframes included additional ammunition, crew-served weapons, structural modifications (HH-60M has no door gunner windows), and additional personnel would add weight thereby impacting lift, speed, range capability and capacity for patients. The Medical Evacuation Proponency Directorate (MEPD) Futures Study Team of the U.S. Army Medical Department (AMEDD) analyzed the future of

Army aeromedical evacuation units and equipment in 2012.[11] In their study the futures team explored the concept of weaponizing MEDEVAC airframes for current and FVL (future vertical lift). The article indirectly highlights questions centered on weaponizing MEDEVAC, as a result of attention by the media, military leadership and the U.S. Senate surrounding the delay of SPC Clark's evacuation in Afghanistan, 2011.[11] The futures study team assessed the following research question: "How does the additional weight of weaponizing the current MEDEVAC fleet affect range, coverage radius, and response time?"[11] Their findings may be summarized by the following:

- Although the exact affect for the FVL is not known, it is known that increasing weight and flat plate drag reduce response time. Given the requirement for two ships per mission that currently limits launch time, leaders will have to assess whether planning for quick launches is a better solution than arming MEDEVAC aircraft
- The weaponizing of FVL will have an adverse effect on coverage capability and the potential reduction of force structure possible in stability operations[11]

The article fails to guide the reader to understand the connection between two ship requirements, launch effectiveness, and the issue of weaponizing. Optimal readiness of MEDEVAC assumes both airframes have been pre-flighted, run up and a health indication test of the engines has been completed. Assuming the escort airframe is weaponized (i.e. UH-60, AH-64) the commander is not in a forced position to choose between responsiveness and weaponizing MEDEVAC. Further, Army aviation already possesses a weaponized platform (CASEVAC) capable of transporting patients from the POI to a medical treatment facility (MTF). The missing link is standardization through normalized practice with trained medical personnel and a more thorough cost-benefit analysis.

Additional training requirements to arm MEDEVAC assumed medics would be required to undergo aerial gunnery. Of note, it has been common practice to augment squad and platoon size elements dedicated as door gunners to aviation flight companies in order to meet mission requirements in support of combat operations. The augmenting concept is a reflection of the Army's transition to a modular force in which slices of elements (i.e. maneuver, support, and combat service support) may integrate to form task forces tailored to GFC requirements for capability. However, the review team recognized the overwhelming training requirements already facing MEDEVAC personnel coupled with one the shortest dwell times in light of the operational tempo and demand signal for MEDEVAC.[6] The findings complemented recommendations to not arm MEDEVAC airframes. However, these findings beg the question; did the review team consider the option of a collective effort among the combat aviation brigade to provide trained door gunners to the MEDEVAC company in order to mitigate impact on already limited calendar space? The finding did not conclude training cannot be done, but that it would be hard. Responsibilities of the general staff include overcoming the "too hard" and making the impossible look easy. Army combat aviation brigades have demonstrated this level of professionalism for decades by providing GFCs with innovative ideas and viable options regardless of the level of difficulty. The future vertical lift should be no different. The answer: Optimal CASEVAC. The concept has been practiced at the tactical level for years, with limited continuity during a RIP (relief in place) and among recently seasoned aviators until transferred to a new organization thereby losing the organizational knowledge. The failure to better serve the soldier rests with not capturing innovative ideas in doctrine in order to normalize new TTPs in operational planning and garrison training.

"That's the reason they're called lessons the Gryphon remarked; because they lesson from day to day."

–Lewis Carroll, Alice's Adventures in Wonderland.

Institutional Shield

The Army's decision to sustain the red cross has produced a "92 percent survival rate for those wounded in Afghanistan, which is the highest in history." [10] The marking of Army MEDEVAC platforms serves several invaluable functions. The red cross "sends a strategic message that these U.S. military assets are engaged in a humanitarian operation in accordance with international law principles… Marking the aircraft also contributes to the Army's ability to provide this capability and assets to the Joint Force Commanders to manage them as a dedicated medical capability, preserving them from being expended for other non-medical missions." [10] By General Odierno's account before the committee on armed services, United States Senate, the red cross has evolved into an institutional shield used to reserve a dedicated aeromedical capability combatant commanders count on for operational planning, training and employment when prosecuting objectives. Not satisfied with the status quo of 92 percent, enhanced-standardized CASEVAC moves Army aviation forward towards reaching an optimal patient evacuation capability.

Prescription

The demand signal from combatant commanders and America's warriors for an optimal aeromedical capability in the future operational environment cannot be ignored. From their demand signal, several attempts to optimize vertical lift patient evacuation have defaulted to the Medical Evacuation Proponency Department (MEPD). As recent as 2012, there's been suggestion to develop rotary wing MEDEVAC airframes capable of flying 260-350 knots ground speed in order to provide CAB commanders and GFCs sufficient patient coverage. [12] "The

increased capability of aeromedical evacuation assets reduces the support locations required (and thus the associated logistical support footprint such as forward operating bases, refueling points, and perhaps even the number of aircraft)."[12] With the introduction of the MV-22 Osprey, the tilt vertical lift airframe provides longer range and greater speeds for expeditionary forces when compared to rotary wing platforms. However, movement by Army aviation in this direction would only mirror constraints the Marine Corps has already discovered. While the MV-22 breeches new horizons for vertical lift capability, it exceeds the velocity and range of rotary wing airframes which secure safe passage and armament in vicinity of the objective. Of note, a prescription for the future vertical lift platform exceeds the scope of the enhanced CASEVAC concept. A capabilities based assessment to forge future vertical lift platforms demands an integrated process team who recognizes the shortfall of airframes not capable of interoperability with sister ships and failures to nest capability with doctrine and TTPs. Just as the U.S. Navy recognized in the 1930's that the introduction of aircraft carriers exceeding the range and velocity of sister ships, future concept development for vertical lift demands the influence of seasoned aviators integrated with the demand signal of their ground force brethren.

The Joint Force framing the vertical lift patient evacuation problem around the MEPD has limited the scope for critical thinking on the issue and stifled innovation. MEPD has successfully answered the demand for better MEDEVAC capability. At a 92 percent success rate, Army MEDEVAC flight elements provide is greatest patient evacuation ever seen in history.[10] However, the Joint Force cannot afford to become complacent or simply maintain the status quo that resonates from Iraq and Afghanistan. In an effort to close the 8 % gap in MEDEVAC success and to prepare Army Aviation for a future operating environment characterized by uncertainty, leaders must pursue a responsive, adaptive, and interoperable

aeromedical capability (optimal) by enhancing and standardizing the Army's concept of CASEVAC. In the context of a kinetic operation scenario, in a non-permissive environment, optimal CASEVAC provides GFCs additional options and time. This does not suggest CASEVAC can replace the capability of MEDEVAC. Rather, in the event MEDEVAC assets cannot not meet demands of the operational tempo, optimal CASEVAC will complement MEDEVAC assets to organize and posture additional patient evacuation capability. Further, during the infiltration and exfiltration of troops in vicinity of an objective, optimal CASEVAC capability will provide a significant increase in responsiveness despite threats from enemy forces.

Whereas current CASEVAC does not standardize enroute patient care from point of injury (POI) to a medical treatment facility (MTF)[3], optimal CASEVAC would provide patient care and become a capability recognized by the GFC in operational planning. Specifically, this concept applies during troop movement (i.e. air assault), when postured for a quick reaction force, and as additional asset to complement MEDEVAC coverage when operational tempo exceeds maintenance, crew resource management, or asset allocation. Already practiced, but not standardized or normalized into operational planning; general support and air assault aviation must cross train with MEDEVAC brethren to adopt best practices for enroute patient care. As previously discussed, the turn-point from casualty to patient is the assumption of responsibility for the casualty by a medical provider. A crew chief with combat life saver training falls short when compared to the capability of a flight medic.

MEPD overcame their own disparity in medical provider capability in May 2012 under the fiscal year 2013 National Defense Authorization Act.[13] Previously, flight medics fell short when compared to counterparts in the Navy, Air Force and fell short in capability when

compared to that of a civilian emergency medical technician (EMT).[13] Within Army Aviation, general support non-rated crew members share with MEDEVAC crew members and flight medics the heavy demands for dwell and training time. From this limited window of time, crew chiefs do not have the opportunity to pursue the fifty weeks of training to become equivalent medical providers. This issue highlights a requirement for additional personnel, but from where? The MEDEVAC flight medics cannot be sliced out to general support aviation thereby degrading the same capability this concept aims to enhance. One option could be to add flight medic billets to the combat aviation brigade (CAB) headquarters in order to facilitate training and allow allocation to the respective battalions or task forces according to the Commander's intent and demand signal. Another notion worth exploring aims at a more habitual relationship between Army aviation and ground elements (i.e. brigade combat teams). Identification of combat medics organic to the GFC supported by the CAB and certification through bi-lateral training on CASEVAC airframes could incorporate best practices from the MEDEVAC community. This practice is already observed by Army Special Operations Forces (ARSOF) to include, but not limited to Special Forces and Civil Affairs. During a deliberate operation or "air assault," combat medics organic to the supported ground force and certified to conduct optimal CASEVAC would already be integrated into the planning process and thus provide additional insight into the mission details. Further, the habitual relationship between the ground force and CASEVAC platforms would cultivate a partnership to continuously learn, anticipate, and evolve in order to provide optimal coverage.

Beyond the requirement for trained personnel, optimal CASEVAC would require a modular pallet with a standard medical equipment package (versus the standard three first aid kits in a UH-60) in order to provide enroute patient care. This pallet would replace the Army's

current CASEVAC conversion kit. The CASEVAC conversion kits, (NSN: 6545-01-536- 9315) "are available through the military supply system and commercial vendors. These kits provide a means to secure a litter and patient/casualty to the floor of the aircraft and the ability to transfer the casualty to an air or ground ambulance for movement to an MTF." [3] Further exploration into the necessary configuration and the equipment demands the dialogue of an integrated process team to include, but not limited to representation from Army aviation, MEPD, and ground force elements.

In the quick reaction force scenario (QRF), common practice observes two UH-60 airframes dedicated to a battle space under the launch criteria established by the CAB and ground force commanders. In order to better anticipate and adapt to an unforeseen mission and uncertain threats, one of the two airframes must be manned and equipped to perform enhanced CASEVAC. A priority troop movement or emergency resupply may rapidly evolve into a troops in contact scenario whereby casualties may required the expeditionary capability of enhanced CASEVAC when seconds matter and MEDEVAC is not a viable option. Commanders and pilots-in-command cannot forecast when and where casualties will take place. Nonetheless, lessons from over a decade of war on two fronts provides staff officers the insight to implement systems whereby Army aviation platforms are organized, trained, and postured serve requirements of the GFC.

Not Enough MEDEVAC

"Speaking at the annual Association of the U.S. Army Aviation Symposium and Exhibition here, Lt. Gen. James D. Thurman, G-3/5/7, told members and contractors that no force-wide transformational change to the aviation force was more important or consequential than the decision to increase aircraft in MEDEVAC companies from 12 to 15." [14] Almost a

decade into a war in Afghanistan, compounded by America's return to Iraq in March 2003, Army leaders began to recognize a shortfall with only 12 MEDEVAC airframes per combat aviation brigade. "We've got to get our men and women off the battlefield - that's non-negotiable," Thurman said. "This demonstrates the Army's resolve and commitment to troops in combat operations as well as their families and loved ones."[14] Further, the demand signal for additional aeromedevac capability gave way to nine additional MEDEVAC companies within the Army Reserve component.[14] How much blood and treasure must be expended before recognizing a valid requirement and providing the adequate capability? How long do soldiers endure failing forward (aka trial and error) before policy and doctrine transform to what the operational environment and tempo demand? As the Germans of interwar periods demonstrated, drawing from the past decade of military lessons will enable leaders to provide viable options to better serve the soldier of today and preserve the force for tomorrow. Under fiscal constraints, the prospect of growth within Army aviation or the Army as a whole appears a far cry from reality. This forces a strategy with Army aviation of doing more with less, thus becoming expeditionary whereby combat aviation brigades must organize and adapt to meet the mission requirements of crisis or war. Optimal CASEVAC reduces the demand on both MEDEVAC and traditional escort airframes such as the AH-64 Apache through expanding the functional use of the current utility and cargo fleet (UH-60s and CH-47s).

Additional constraints may be observed during current transitions from theaters such as Afghanistan, by which the President of the United States and Congress establish limitations on the footprint of troops and platforms. Tactical leaders may be required to provide operational reach to an area that exceeds their operational planning and posture. From the Vietnam War to present day generations of commanding generals and members of the Joint Chiefs of Staff (JCS)

have sought additional troops and platforms in order to secure America's interests abroad. Driven by foreign and domestic politics, strategy, and fiscal constraints, the reply from Washington has often come in the form of "No" or at best, a fraction of the requested quantity.

In a press release on February 11, 2015, President Obama "submitted a draft resolution seeking from Congress a three-year Authorization for Use of Military Force (AUMF) against the Islamic States of Iraq and Syria (ISIS). The resolution notably restricts the use of American ground troops and seeks to avoid a prolonged conflict in the fight against ISIS, which has taken control of large swathes of Syria and northern Iraq in its quest to establish a religious state in the Middle East." [15] What is predictable for the future operational environment is for the general staff and military leaders to organize and train a force that is not only agile to an adaptive enemy abroad but also to a politically complex operational environment at home. Reflecting on the growth of Army MEDEVAC capability in 2010, under fiscal or perhaps political constraints how can Army aviation answer a future demand signal that exceeds a deployed MEDEVAC footprint? By, with, and through optimal CASEVAC normalized into training, operational planning and operations to complement (not replace) MEDEVAC elements.

In a utopia scenario, every Army Combat Aviation Brigade would be granted an additional battalion of thirty HH-60 MEDEVAC airframes, a battalion of thirty CH-47 Chinooks (also high demand low density among joint force), and every air movement would be escorted by an AH-64 Apache to negate the necessity new strategy or innovation. While the reality of fiscal constraints will never allow utopia to become a realized future for America's profession of arms, the next decade requires leaders from the Medical Evacuation Proponency Directorate and Army Aviation to collectively provide optimal aeromedical evacuation to the Joint Force and partnered nations. Innovation is born from the grass roots and forged into governance by leadership. Only

by the U.S. Army Aviation Center of Excellence integrating recent lessons from tactical formations around the globe, through formalizing optimal CASEVAC manning, training, and capability development across Army aviation may innovation be realized. Army aviation must provide a balanced and fully integrated vertical lift capability to Combatant Commanders. Organizations must be postured in such a way to enable aviation commanders the agility to rapidly respond and enhance combatant commanders whether in crisis or war, against state or non-state actors, and regardless of the environment. The optimal CASEVAC concept serves as the azimuth to meeting that demand.

Conclusion

Secular tactics-techniques-procedures (TTPs) among Army Aviation can no longer be tolerated along with the failure to generate a profession of arms that can effectively link requirements and capability with the demand signal from the trenches. The mission essential task list (METL) of a command aviation company (CAC) or general support flight company cannot differentiate so far from an air assault flight company to thus limit the spectrum of what a ground force commander (GFC) receives in support. Moreover, neither can the METLs of MEDEVAC and non-MEDEVAC aviation elements differentiate so far as to add constraints to the GFC. To ensure the MEDEVAC elements, complemented by Army Aviation is agile, adaptive, and responsive for the Joint Force, the Army Aviation Center of Excellence in concert with the Medical Evacuation Proponency Directorate must pursue a disciplined and deliberate dialogue with their ground force brethren; the best. From this dialogue, optimal CASEVAC may become realized by forging new doctrine that is normalized across the Joint Force through operational planning, bilateral training, and operations. Beyond the scope of patient evacuation, Optimal CASEVAC illuminates an approach for Army Aviation leaders to forge viable options

when called upon to rapidly respond in support of humanitarian assistance, disaster relief, and threats to the United States or allied nations.

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