



PROGRAM STATEMENT

DOD COMBAT CASUALTY CARE RESEARCH PROGRAM: POLICY REVIEW



U.S. Army Medical Research and Materiel
Command & The Defense Health Agency

"A DECADE OF WAR AND THE SACRIFICES
OF A GENERATION HAVE TAUGHT THAT
THE NATION SHOULD NOT RELY ON
NONMILITARY ENTITIES TO ADVANCE
TRAUMA RESEARCH."

*COL. TODD E. RASMUSSEN, DIRECTOR,
COMBAT CASUALTY CARE RESEARCH PROGRAM*

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EXECUTIVE SUMMARY

The plan stays the same—always has, always will—no matter the day or the month or the year in question. *Stay ahead of the curve. Stay ahead of the curve.* That’s the directive. That’s the goal. That’s the plan.

Always.

Yet it’s the execution of that plan that remains so difficult, as—by their very nature, of course—curves are always turning, always twisting, always deviating from the norm...whatever the norm may be at the time.

Stay ahead of the curve.

Comprised of equal parts intention and desire, that plan, in all its varying iterations, nevertheless remains the same. And yet despite the unique frustrations associated with the quest for achievement in the field of military medicine, nowhere else does that plan come together more seamlessly and effectively than inside the halls of the Combat Casualty Care Research Program, located at Fort Detrick in Frederick, Maryland. Here, the term “military medicine” is accepted for what it truly is: a phrase that **d**emands, a phrase that **r**equires action. It’s a phrase that inherently assumes tireless effort from its front-end researchers while also requiring, oftentimes, immense sacrifice from its back-end users. The distance between these two endpoints then must represent the curve—the wavelength, the continuum—that all professionals associated with military medical research are trying to ride and, ultimately, conquer.

But how do we get there, exactly? How do we ride that wave and execute that plan?

We start here. We start by presenting the argument for military medicine—its impact, its importance and its future—and, in the process, we explain how the investments made in the Combat Casualty Care Research Program directly translate into life-saving knowledge, products and therapies for the U.S. military and beyond. After all, improved force health leads to improved national security, which in turn leads to improved global health. The connection is clear.

More than 150 years ago, guided by what was deemed “the best interests of the service,” the U.S. government promoted a young surgeon by the name of Jonathan Letterman to Medical Director of the Army of the Potomac.¹ In short order, Dr. Letterman proceeded to revolutionize both the means and methods of medical care for wounded soldiers — so much so that we still use many of his innovations today. Such history serves to encapsulate the constant mission of the Combat Casualty Care Research Program. In many ways, we still seek the same outcomes as Dr. Letterman did more than a century ago: to save the lives of American military personnel wounded on the battlefield. We always operate in “the best interests of the service.”

Welcome to the Combat Casualty Care Research Program Policy Review.



THE CORE

VALUES, GOALS, & LINES OF EFFORT

Action alone accomplishes little. To develop a culture of continuing success within any organization, you must first develop and then implement a strategic plan — a plan that pays particular attention to the team’s motive, direction and goals. Having already established the Combat Casualty Care Program’s directive to serve the warfighter, here is where we define our organizational purpose: our philosophy, methodology and desired results. In developing the following **Core Values, Goals**, and accompanying **Lines of Effort**, we have taken great care to implement proven tenets of organizational excellence and effectiveness — ideas and concepts that will guide our daily research and development efforts for years to come.

What follows, then, is our playbook: the elements that drive us, shape us and make us. These are, quite simply, the building blocks of the identity of the Combat Casualty Care Research Program.



CORE VALUES

MISSION STATEMENT

To drive medical innovation through development of knowledge and materiel solutions for the acute and early management of combat-related trauma, including point-of-injury, en route and facility-based care.

STRATEGY

Leverage the nation's vast medical research program with a dynamic in-house research program and investment in key military-specific research areas.

VISION

Optimize survival and recovery from combat-related injury in current and future operational scenarios.

GOALS

ONE

To develop knowledge and materiel solutions to improve hemorrhage control and resuscitation following combat-related injury

TWO

To develop knowledge and materiel solutions to enhance forward surgical and critical intensive care

THREE

To develop knowledge and materiel solutions to augment care during all phases of transport of combat-related injuries

FOUR

To develop knowledge and materiel solutions to advance care for traumatic brain injury and other forms of neurologic trauma

LINES OF EFFORT

ONE

Streamline internal processes with attention toward strategy

TWO

Maintain clinical alignment and relevance in all we do

THREE

Secure and leverage strategic relationships

FOUR

Ensure modern and innovative trauma science





INTRODUCTION TO PORTFOLIOS

“AMERICAN MEDICINE AND SURGERY
RAPIDLY ADVANCE WHEN LESSONS
LEARNED ON THE BATTLEFIELD ARE
TRANSLATED TO CIVILIAN CONTEXTS.”

The Combat Casualty Care Research Program organizes its sprawling efforts into four research portfolios: Neurotrauma and Traumatic Brain Injury, Hemorrhage Control and Resuscitation, Photonics and Light-Based Innovation for Severe Injury, and Forward Surgical - En Route Care. These portfolios are charged with translating the work of several subordinate task areas into focused efforts to provide medical care solutions.

NEUROTRAUMA & TRAUMATIC BRAIN INJURY

- Traumatic Brain Injury (TBI)
- Spinal Cord Injury
- Peripheral Nerve Injury

HEMORRHAGE CONTROL & RESUSCITATION

- Damage Control Resuscitation
- Improved Blood Products
- Hemostatics

PHOTONICS & LIGHT-BASED INNOVATION FOR SEVERE INJURY

- Laser Surgery for Wound Repair
- Photochemical Tissue Repair
- Photochemical Burn Therapy

FORWARD SURGICAL - EN ROUTE CARE

- Patient Transport
- System of Critical Care
- Cranio-Maxillofacial Trauma & Combat Dentistry
- Extremity Trauma/Repair
- Burn Injury



POLICY PAPERS

To make the case for military medicine, to truly and fairly represent its immense benefit to both the warfighter and the U.S. public as a whole, we will rely on the arguments submitted by the men and women most closely associated with the Combat Casualty Care Research Program: the researchers and principal staff. Specifically, this will involve an exploration of the current state of combat trauma care, a dissection of the contemporary events that have directly affected the Combat Casualty Care Research Program and, finally, a brief forecast of future program needs.

The following statements, viewpoints and quotations have previously appeared as published entries in a series of noteworthy medical journals and magazines, and are cited in full in the **References** section of this pamphlet. The opinions contained herein are solely the opinions of the cited authors, and do not reflect the opinions of any other entity, public or private.



**“...WE MUST BE BOLD AND KNOW THAT
“WHERE WE GO FROM HERE” IS SUS-
TAINING AND LOWERING THIS MEASURE
OF SURVIVABILITY FOR THE INEVITABLE
NEXT MILITARY CONFLICT.”**



SECTION I. GLOBAL SUCCESS

Perhaps no series of events makes a more clear and definitive case for military-oriented medical research than the recent wars in Afghanistan and Iraq. Given the unique clinical and logistical considerations confronted by military caregivers in these settings, the argument for increased and sustained funding of a requirement-driven, well-coordinated medical research program has subsequently revealed itself in a number of capacities.

From a strategic standpoint, the approach taken by military medical research is quite different from that sponsored by other federal research agencies, which typically fund investigator-initiated studies of interest to the scientific community, irrespective of the urgency of the question to society. Importantly, neither these agencies nor private foundations dedicate funding to injury research of the type or severity that can be anticipated in modern warfare, including terrorism. Military research has been shown effective in reducing the case fatality rate during combat and has established itself as the centerpiece of the military's continuously learning health system. It has also generated numerous advances that are being translated to improve civilian trauma care. The following paragraphs of this preface and the articles in this supplement provide examples that serve to emphatically answer the question, "Why military medical research?"

Between 2005 and 2013, the fatality rate for service personnel injured in Afghanistan decreased by 50% while the severity of injury was increasing. The reason for this unprecedented achievement is multifactorial, but two factors stand out. At the height of the wars in Afghanistan and Iraq, the military health system made (1) significant investments in requirement-driven, programmed trauma research and (2) an extraordinary effort to codify a trauma system that identified emerging needs for research and rapidly translated results from military research into best clinical practices.²

Consider now the substantial impact of raw data –of figures, digits, and percentages– when applied to an argument. Said data immediately provides perspective and clarity, thereby allowing for a deeper understanding of the issue at hand. To wit, the fatality reduction rate quoted above is indeed impressive. However, the concepts that beget these numbers are not strictly military-specific.

The final answer as to “Why military research?” becomes clearer as our nation approaches the terminal stages of war in Afghanistan. As reports of violent acts on U.S. soil become more frequent, so do reports on the translation of advances in military trauma care to the civilian community. Many of the results stemming from military research have contributed not only to the survival and recovery of U.S. service personnel but also victims injured in civilian settings. Similar to the military experience, the need for improvements in hemorrhage control, resuscitation, en route care, and damage control surgery in the civilian setting are being propelled by reports of mass shootings, stabbings and the use of explosive devices. These events generate surges of casualties with injuries resembling those the military’s health system has learned to manage in an optimized manner. Although civilian health care is not the main objective of military research, American medicine and surgery rapidly advance when lessons learned on the battlefield are translated to civilian contexts. This was true after World War II and the wars in Korea and Vietnam. It will also be true after the wars in Afghanistan and Iraq.²

With the overall importance of military-oriented medical research now established, we now delve deeper into the ancillary benefits of such research as it applies to the civilian sector of U.S. society. Specifically, as occasional and unique incidences of mass casualty events occur within U.S. borders, the availability of the lessons learned in Afghanistan and Iraq take on a new and greater importance.

Violence from explosives and firearms results in mass casualty events in which the injured have multiple penetrating and soft tissue injuries. Events such as those in Boston, Massachusetts; Newtown, Connecticut; and Aurora, Colorado, as well as those in other locations, such as Europe and the Middle East, demonstrate that civilian trauma may at times resemble that seen in a combat setting. As the civilian sector prepares for and responds to these casualty scenarios, research and trauma practices that have emerged from the wars in Afghanistan and Iraq provide a valuable foundation for responding to civilian mass casualty events. Several lessons learned by the U.S. military were implemented during the response to the bombings in Boston of April of [2013]. Military research has found that approximately 25% of persons who die as a result of explosive or gunshot wounds have potentially survivable wounds. These individuals have injuries that are not immediately or necessarily lethal and have a chance to survive if appropriate care is rendered in a timely fashion. The military has learned that implementation of evidence-based, clinical practice guidelines can reduce potentially preventable death. Certain aspects of these lessons also apply to multiple casualty scenarios in civilian settings.³

Specifically, the three aspects located on this continuum include **care at the point of injury** (the early, immediate control of blood loss), **care during transport** (the evacuation of the wounded person), and **hospital-based care** (the reception of care within a designated trauma center).

These lessons from the wars in Afghanistan and Iraq are a product of the nation’s investment in military trauma care and combat casualty care research. However, few military clinical practice guidelines are the result of standard, randomized clinical trials. Instead, these lessons are the result of a process of focused empiricism, or by “identifying what works and what does not, refining it over time and embracing a culture of continuous



process improvement.” This pragmatic approach adopted for military combat casualty care has allowed for rapid adoption of life-saving strategies through practical methods. In this context, the evidence base supporting the military’s clinical practice guidelines is driven by the results of basic science, translational large animal research and retrospective cohort analyses. Despite the lack of randomized trials, the net outcome of the military’s approach and other improvements in trauma care is the lowest case fatality rate for U.S. service personnel recorded in the history of war. As the United States and other nations continue to prepare for casualty scenarios from explosives or mass shooting events involving civilians, lessons from wartime trauma care and resuscitation may be helpful in planning responses. The trauma practices that have resulted from more than a decade of combat casualty care and research are transferable to the civilian world. Continuing to translate these lessons from war should provide a foundation to help reduce mortality and morbidity among civilians injured in future mass casualty events.³

And yet the very transfer of that knowledge from one world to the next could not have occurred without first experiencing the unique, specific types of geopolitical pressures (i.e., armed conflicts) that the U.S. military has experienced and processed over the past 40 years. It’s a simple process: pressure begets change, which ultimately begets constant refinement. For the world of military medical research, every opportunity must be identified and seized.







SECTION II. HISTORY & SILVER LININGS

In the world of combat medicine, the concept of war assumes a devastatingly unique role: without the brutal realities of armed conflict, there would be few, if any, advancements in the field of combat casualty care. As such, the recent wars in Afghanistan and Iraq provided military medical professionals the opportunity to deliver a variety of medically advanced products and therapies that otherwise may never have been developed.

Examples in this regard are legion, and specific to the aforementioned wars include the innovative deployment of tourniquets and topical hemostatic agents for hemorrhage control, the development of advanced prosthetic limbs for warfighters sustaining extremity amputation and the implementation of the global Defense Center of Excellence (DCoE) Joint Trauma System as a means of standardizing and coordinating all trauma-related activities for the Army, Navy, and Air Force.⁴

These examples exist as only a sampling of the recent, practical progress made in the field of military medicine, and yet that such products and therapies exist **at all** is a direct result of the circumstances — both past and present — that initiated their creation in the first place. In a recent interview with Defense Procurement International, Col. Todd Rasmussen, the current Director of the Combat Casualty Care Research Program, was quoted as saying the following:

“Without the tremendous burden of injury from war we would never have realised these advances,” observes Colonel Todd Rasmussen. “Some of the advances we have made in combat casualty care transfer rapidly into civilian trauma care, and [these advances are] the silver lining of what is an otherwise dark cloud of war.”⁵

Indeed, the concept of the “silver lining” within the context of war is a concept that contemporaries within the military medical field have been able to harness with great effectiveness over the past decade, owing specifically to the time and energy spent tending to the care gaps revealed by the wars in Afghanistan and Iraq. To that end, the nation’s investment in combat casualty care research since 2001 has resulted in the lowest case fatality rate ever recorded in war history.⁶ Additional debt is owed to a system of military medical research that has been refined over the past 40 years, since the end of the Vietnam War. Per Rasmussen:

Trauma care in Vietnam has been the prologue to today’s much-improved care, which is attributable to a volunteer surgical workforce with greater trauma and systems training, the establishment of a global Joint Trauma System and a sizable, requirements-driven program of intramural and extramural trauma research. If sustained, remaining limitations and deficiencies of current military trauma care stand to be resolved by the systemically inculcated process improvement mechanisms of the Joint Trauma System and their identification of remaining and new gaps in care—gaps which will be resolved by knowledge and material solutions generated in the course of clinical experience and programmed research. The unprecedented intensity and alacrity of change in trauma care during the wars in Afghanistan and Iraq is a fitting tribute to the sacrifices of this generation. These efforts must be maintained and even amplified to ensure that the war fighter in future combat scenarios will receive the care required to optimize survival and other outcomes.⁴

Furthermore, it’s relevant to mention the actual and documented improvements in contemporary war fighter treatment realized as a result of the aforementioned refinements of delivery of medical care. In addition, special attention must be paid to the long-term goals that must be met to fully satisfy the mission and vision of the Combat Casualty Care Research Program.

Other significant advancements that came out of Iraq and Afghanistan were in the area of haemorrhage control. According to the U.S. Army Institute of Surgical Research, hemorrhage was the leading cause of death in 90% of the potentially survivable battlefield cases and 80% of those who died in a military treatment facility during Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) in Afghanistan.

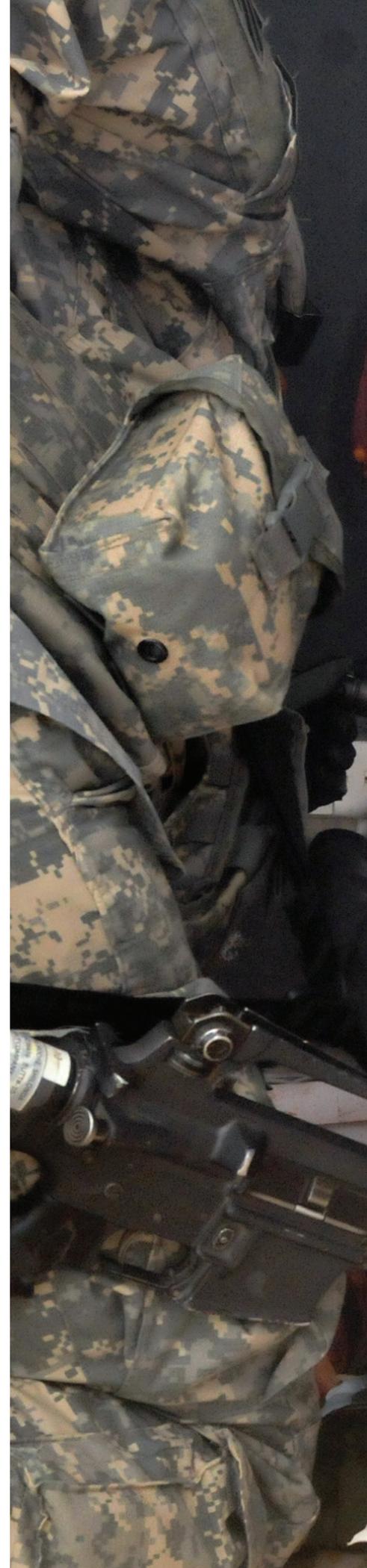
“We have used tourniquets for hundreds of years, but reappraisal of their use has probably saved thousands of lives during these recent wars,” says Rasmussen. One particular study of battle injury data from OIF and OEF showed that most medical interventions were for hemorrhage control with 89 tourniquets applied to 66 casualties. The report showed that of casualties with tourniquets, almost all reached the next level of care alive (95%) and ultimately survived (94%).

All the advances mentioned above undoubtedly contributed to a reduction in the case fatality rate (CFR) — the percentage of those injured in combat who died. In Afghanistan, the CFR for U.S. personnel went from a high of approximately 18% in 2005 to less than 10% in 2013. Yet, given its limited research budget, Rasmussen says the Combat Casualty Care Research Programme cannot solve every medical gap identified from battlefield experience. “Some gaps in combat medicine are not solvable. We have to be prudent or realistic with the investment and not be distracted by topics that are unduly expensive or those that are not likely to result in meaningful near or mid-term solutions for the war fighter. We must also be aware of science that is being funded by other federal entities such as the National Institutes of Health or the Centers for Disease Control and Prevention. In this context we want to leverage and not replicate research that is supported by other federal entities, which have significantly larger budgets than the Combat Casualty Care Research Programme.”⁵



And yet despite these numbers — the compilation of these data sets — we have only seen the **benefits** of change, as opposed to the full **codification** of that change. The difference is key. To best serve the military war fighter in the most complete manner possible, agents of change first identified by top program decision makers must then be assimilated into best practices before being consistently and systematically supported by the force through action.

As such, the concept of the “golden hour” is our next stop: the seamless and codified product of both our assembled combat history and the lessons learned **from** that history. This is where the Combat Casualty Care Research Program truly shines.







SECTION III. THE GOLDEN HOUR

Now we move closer to the tip of the spear, the intersection of knowledge, intention and action. While the “golden hour” has long been the guidepost by which medical success — and specifically medical success on the battlefield — is judged, the Combat Casualty Care Research Program has been charged with reappraising that standard as part of our effort to support the **Force 2025** and **Beyond** initiative.

In the past, the concept of the golden hour was chiefly concerned with the movement of an injured person to a fixed location or echelon of care within 60 minutes. Moving forward, however, the concept has evolved to incorporate the delivery of advanced resuscitative capabilities to the injured person regardless of location or echelon of care.⁷ In short, the key factor in sustaining life has now become the expediency of care to the location of the injured person, as opposed to the expediency of the injured person to the location of care. As stated by Rasmussen et al. (and further reinforced by the figure on the next page):

Now that advanced resuscitative capability can be pushed closer to the point of injury, regardless of setting or location, we must redefine the golden hour end point.⁷

And yet other reasons compel the U.S. military — and specifically the Combat Casualty Care Research Program — to revisit the concept of the golden hour and its sprawling, concentric-like impact on force health and, by proxy, general societal health. Consider the following combat-injury-related pressures on the CCCRP moving forward:

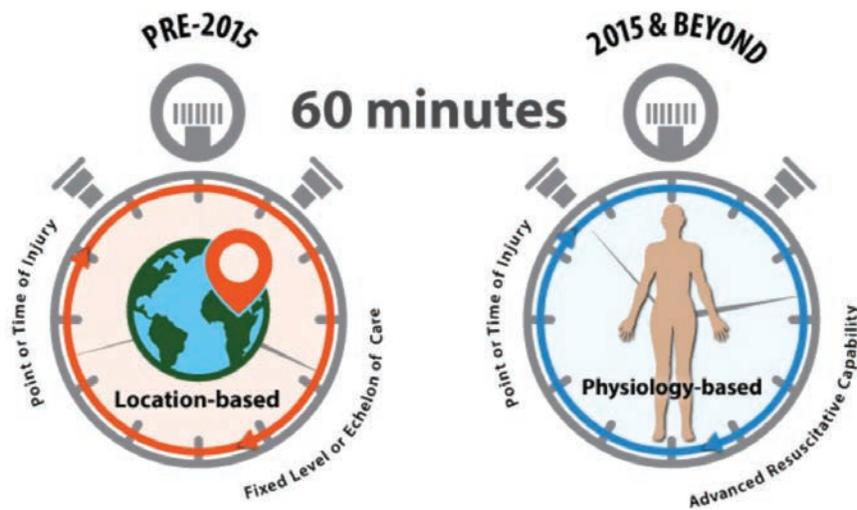


Figure 1. Rasmussen T, Baer D, Doll B, Carvalho J: In the 'Golden Hour'. Army AL&T Magazine 2015; January-March: 80-85.

- A limited number of troops executing counterinsurgency operations in remote locations.
- Large, conventional troop formations conducting operations in a Pacific theater.
- Troops deployed and conducting combat operations in large urban areas (i.e., mega-cities).

Looking ahead to potential scenarios, CCCRP must ensure that medical innovation rises to the challenge by providing flexibility to combatant commanders regardless of operational complexities — for example, anti-access and area denial, prolonged field care, long-distance medical evacuation or large volumes of casualties.

In this effort, the program must be willing to turn the doctrine of fixed or traditional echelons of care on its side and innovate for scenarios in which Level II and III care is performed aboard transport vehicles (land-, air- or sea-based) or within local structures of opportunity. In such circumstances, field care may be prolonged, lasting for days or even weeks. Combat casualty care research with these complex scenarios in mind prom-ises to enhance resuscitative capability for injured service personnel regardless of environment, leveraging communications networks (i.e., telementoring) and targeted resupplies of materials. In the future, CCCRP must focus on transforming the concept of the golden hour into one bound not by the time to reach traditional echelons of care or fixed facilities, but the time until enhanced resuscitative capability can be delivered to the injured troop, regardless of location or need for transport.⁷

So once again we see the inherent benefit of the CCCRP's structure and methods — specifically, how strong leadership dictates both the direction and function of the rest of the unit.

The CCCRP's uniquely "top-down" requirements-driven medical research is recognized nationally as an effective alternative to other federal entities that fund investigator-initiated research without specific urgency. CCCRP is essential, as no other entity — federal or private — funds trauma research. As the program sets its eyes on 2025 and beyond, including reappraisal of the golden hour, its efforts will continue to be patient- and physiology-focused, aimed at developing solutions to meet warfighters' needs and enable an agile joint force in future combat missions.

And yet that future remains undecided. Still, however, remains our next and final stop: a place where the application of the conjoined concepts of form, function, and funding awareness will be critical as the Combat Casualty Care Research Program looks forward to new challenges and, undoubtedly, even greater victories.





SECTION IV. BEYOND THE HORIZON LINE

As we look past today and into tomorrow, past **the now** and **into the future**, it is important to note that outside the United States federal government, no other entity — public or private — funds trauma research as performed on the scale of the Combat Casualty Research Program.⁸

In other words, **there is no safety net for us.**

This reality alone justifies the value of the program, as the various products, therapies and knowledge aided and developed by the CCCRP have touched countless lives both inside and outside the U.S. military family. In addition, and also considering the shifting role of the nation in the various current conflicts across the globe, it is only reasonable — and perhaps necessary — to ask “what now?”

In the terminal stages of the longest war in US history, the question must be asked, “Where do we go from here?” More specifically, where do we propose the CFR start for the next military conflict? The nation did not start this period of war with a military trauma system, and we did not start with a significant programmed investment in combat casualty care research. Through unrelenting commitment and the sacrifices of a generation, we now have both.⁹

Maintenance, then. Maintenance is a must in this situation — yet only a start. Indeed, while we must continue to fund the Combat Casualty Care Research Program for the sake of all the men and women who **will** embark on the battlefield to protect the sovereignty and safety of the United States of America, we must also do so for those who have served in that capacity **already**. For the sake of our returning service members and their respective physical and mental states and needs, there can be no other consideration.

There should be no drift from commitment to military trauma care and combat casualty care research. Recognition of the extreme burden of injury stemming from malicious acts on U.S. soil provides sage perspective on the value of medical advances made during war and their translation to civilian trauma care.

A decade of war and the sacrifices of a generation have taught that the nation should not rely on nonmilitary entities to advance trauma research - especially that required to optimize survival following explosive injury. The gap in funding for civilian trauma research has been documented for decades. These reports have called for the formation of a National Institute for Trauma, but little funding has been appropriated, and no such federal institute has been established. Despite being identified by the Agency for Healthcare Research and Quality as the second most expensive public health problem facing the United States (ahead of cancer, mental illness, and diabetes), funding for trauma continues to lag.⁶

And yet there is more than just funding to consider. We must also consider the scope and vision of our work, and the people and organizations with whom we choose to partner regarding our various research and development efforts. This is where the concept of transparency enters the conversation, and stands as one that must be explored to its complete ends in order to fully realize the most robust iteration of the Combat Casualty Care Research Program.

Led and funded by the military, civilian institutions must continue to play the role of expert partner and mentor with this research program. Foremost, collaboration with civilian centers able to perform research is needed as a matter of expediency. Simply put, civilian partners provide expertise for aspects of basic research as well as a larger capacity for clinical trials. Second, interaction with civilian academic organizations by military researchers must be supported to scrutinize combat casualty care research, process, and results. Open and transparent review of such research at scholarly meetings is necessary to validate findings and promote translation of results into civilian trauma care.⁶

Just as we've referenced multiple times previously, the Combat Casualty Care Research Program wholly and fully embodies the nonstop cycle of improvement required to serve the modern warfighter. The twin concepts of transparency and translation, then, are only natural extensions of our mission. The work we perform contains numerous easily applicable public sector benefits. As such, no one else is more ideally suited to expand and saturate our message than our current staff, stakeholders and beneficiaries. Such efforts, however, must be enacted immediately, for time is a luxury that we are never afforded.

A sustained commitment to these undertakings is one way by which to positively answer the question "Where do we go from here?" Sustained commitment to combat casualty care research funding in the coming years will also allow for translation of the foundation of knowledge developed during the past decade. "Finishing the job" or translating this science to best trauma care practices, both military and civilian, provides another means by which to positively answer the question "Where do we go from here?" As we look to an inter-war period, we must not waiver in our commitment to injured service personnel and allow the CFR to increase from this historic low. Instead, we must be bold and know that "where we go from here" is sustaining and lowering this measure of survivability for the inevitable next military conflict.⁹



Conclusions do our mission no justice. In fact, in many ways they serve to undermine the nature of our work, for the Combat Casualty Care Research Program cannot ever afford to close chapters and conclude efforts; these are impossibilities as we see them, as the work we do cannot ever be completed. Instead, perhaps the more appropriate route here is to submit a synopsis of our vision and policy appeals thus far. After all, finalities are a luxury, and certainly not applicable to a program where the top objective is to stay ahead of the curve.

Stay ahead of the curve.

It's a concept that demands constant motion from its disciples; a never-ending commitment to the highest levels of research and development and improvement. As the only arm of the U.S. government dedicated to trauma research, that mentality is woven into the very fabric of the work we produce every day, and witnessed further by the refinement of various battlefield medical techniques over the past 40 years — some of which have later been seamlessly applied to sectors and populations outside of the U.S. military. The value of the Combat Casualty Care Research Program is clear, then, its importance stated and supported in this very document.

But **what of the cost**, you ask. What are our needs? What is required, exactly, to continue this kind of work? Fortunately, the needs of the Combat Casualty Care Research Program remain the same as they always have. As such, the health and welfare of the men and women of the United States armed forces demand nothing less than the full and continued interest, attention, and funding support of the United States government. Very simply, the consistency supplied by our partners and stakeholders directly translates into our dynamism, our efforts in any number of capacities.

Many years before Dr. Letterman's time, it was another transcendent man — a scientist, this time, a man by the name of Sir Isaac Newton — who taught the world that "a body in motion tends to stay in motion." Perhaps no other concept best describes the realities of the Combat Casualty Care Research Program. We evolve as the science evolves, as —by necessity— each entity rotates around the other in perpetuity. That's how ideas are developed and solutions realized.

That's how we stay ahead of the curve.



CLOSING



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CONTACT

ABOUT US:

The Combat Casualty Care Research Program is a requirements-driven, medical research and development program charged to plan, program, budget and oversee the execution of a DoD RDT&E equity dedicated to the topic of military trauma or combat casualty care.

WORK WITH US:

The CCCRP is located at the U.S. Army Medical Research and Materiel Command at Fort Detrick, Maryland. We are always eager to partner with dynamic institutions, companies and organizations through various cooperative research and extramural funding programs. For more information on submitting research proposals or new product ideas, please visit:

<https://ccc.amedd.army.mil/>

To find out more about the U.S. Army Medical Research and Materiel Command, please visit:

<http://mrmc.amedd.army.mil/>





U.S. ARMY MEDICAL RESEARCH AND MATERIEL COMMAND

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