Defining and Measuring the Construct of Readiness: Implications for Prevention

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Department of Defense leadership has established a new path to revive the warrior ethos through high standards of readiness and build warfighter capability through enhanced lethality (Hegseth, 2025). Enhancing human psychological performance to accomplish the military mission is inherently grounded in these goals. In meeting these goals, what does it actually mean that a warfighter at the individual level is "ready" for a mission? Warfighting doctrine includes broad statements about readiness being "the ability of military forces to fight and meet the demands of assigned missions" (Joint Chiefs of Staff, 2020) or the scores in the Defense Readiness Reporting System (Lipsky, 2020), but how do we operationalize and standardize that concept? How do we really measure whether or not a given capability is "ready" for the military mission?

One way to think about readiness is "time." When we consider military vehicles—everything from the tires on an MRAP to the skin panels on a stealth aircraft—we usually think about readiness in terms of maintenance time intervals. How long has it been since the oil was changed, and how long until the oil will need to be changed again? How long has it been since a particular component was replaced, and how long can we expect that component to function? How long has a particular piece of equipment been in service, and has it hit the lifecycle replacement point? Of course, there can always be a catastrophic accident like a vehicle rollover that suddenly negates the well-planned maintenance schedule, but overall, we know approximately how long the vehicle will be combat ready before it needs to be back in the maintenance bay.

Similarly, individual deployment readiness can be defined as the length of time for which a given service member has sufficient knowledge, skills, abilities, resources, and well-being to participate in military operations under austere conditions that do not provide definitive access to training or interventional services. This comes back to time: How long can you stay in the field without access to your primary care physician and an outpatient clinic with laboratory and radiology capability? How long can you use a piece of equipment before you need someone to verify that you are still using it correctly? What is the amount of time that an individual as part of the military unit can survive in an austere environment without external intervention to sustain their wellbeing and warfighting capability? At its core, readiness is ensuring that the individual service member has the knowledge, skills, abilities, and resources needed to function successfully in an austere environment, but the common factor in any aspect of this readiness is the time before additional resupply, restoration, recertification, or retraining is required.

Consider a few examples. If it has been more than 12 months since you qualified with your assigned weapon, then you have to recertify your proficiency in order to maintain your readiness (e.g., Department of the Army, 2019). If you deploy to the combat zone with a 180-day supply of your blood pressure medication, then we assume that you will be "ready" from a pharmacological standpoint for 180 days. At a unit level, we know exactly the number of days that a given group of service members can survive in an austere environment before they need to be resupplied with food, water, fuel, or ammunition. In terms of sleep readiness, we measure exactly how many hours a UH-60 crew has had for rest and recovery between each mission (U.S. Army Aeromedical Research Laboratory & U.S. Army Safety Center, 1997). If we exceed the operational time of the crew without sufficient sleep, then we significantly increase the likelihood of a catastrophic loss.

This "time" metric can be expanded to other forms of readiness as well. If I were to deploy again to a combat environment as a clinical psychologist, my primary "readiness" requirement would be my state license to practice. My license from the state of Maryland expires every 24 months, and I have to complete a certain number of hours of continuing education each renewal cycle. If I don't meet this requirement, then my license is no longer valid, and I'm not authorized to treat patients. Regardless of my other qualifications, this time-based requirement ensures against "drift" in my mission-related knowledge, skills, and abilities.

If I need an eye exam or new glasses every 12 months, then my issued pair of ballistic inserts are only "valid" or "ready" for 12 months of time in an austere environment before I need to receive a new pair. If I don't get the updated prescription, then I might not hit the target I was aiming at when trying to utilize my assigned weapon, or I might miss a threat because it was outside the range of my visual acuity.

The original sources are disputed (see Knowles, 2005), but it was either Napoleon or Fredrick the Great who said, "An army marches on its stomach." Regardless of the source of the quote, it still has direct implications for the readiness of the military as assessed by nutrition. Indeed, one of the reasons that the Allied Force was successful in North Africa during World War 2 was that the Germans were eating "Iron Rations" that consisted of 300 grams of canned meat with 150 grams of grey rye bread (see Collingham, 2011). In contrast, the Allied rations included more nutritional value from potatoes and onions, plus a greater variety of meat, grain, and dairy products. Converting nutritional readiness into time, the Army's current policy for Field Feeding only allows field rations or

MREs to be consumed as the sole source of subsistence for up to 21 days (Department of the Army, 2010). I'm not exactly sure of the physiological changes that occur if you eat nothing but MREs for more than three weeks, but I'm sure that cardiovascular, gastrointestinal, immune, and endocrine systems will start to be impaired. For the individual, and the unit, to remain at fighting capacity, supplements and enhancements such as bread, fruit, and milk are needed to maintain nutritional readiness for more than 21 days.

Recent studies have examined the degradation of orthopedic surgical skills that are critical to expeditionary medicine (e.g., Osborn & Tansey, 2023). When our surgeons are limited to garrison or aid station medicine, they may have fewer opportunities for wound debridement, limb amputation, or bone fixation. In order to maintain this critical mission skill, military medicine must determine what degree of initial training in these battlefield-relevant tasks is needed to maximize the amount of time before a surgeon needs retraining. Alternatively, what degree and format of continuing education might extend that time before a surgeon's skill begins to degrade?

What about family readiness? This might be the most difficult one, because there's always the old saying that "If the Army wanted you to have a family, they'd have issued you one." Anecdotally, we know that a service member with a better-functioning family is going to have fewer distractions and be able to focus on the mission (e.g., Kizer & Le Menestrel, 2019). As far back as World War II, aviation psychologists had identified that family problems were one of the primary human factors that contributed to aviation mishaps and pilot error (Murray, 1944). In the garrison environment, it might be possible to quantify "dwell time" (or readiness recovery time) as the number of nights that the individual service member actually got to spend at home, sleeping in their own bed. When nighttime duties, field exercises, or temporary duty travel for military training decrease the number of nights spent at home, family strain likely increases, in turn leading to an increased likelihood that problems at home will contribute to potential distractions—and accidents—in the operational environment.

Why is a common metric needed for determining readiness? Although readiness metrics from a logistics perspective often fall back on "supply and demand" of beans, bullets, and bandages, we are really talking about people, which means we are talking about the utilization of people for a period of time. No matter how autonomous our warfighting capabilities have become, we still rely on people to make battlefield decisions, maintain equipment, and engage with the local populace. One of the struggles of "service member readiness" is that the status of "ready" simultaneously is fluid and time bound. That is, "readiness" can change instantly due to factors that are outside the control of an individual service member or unit commander. Another factor that makes readiness dynamic is that your readiness across all these factors is limited by the shortest time factor out of all the ones you can identify. Whichever factor will run out of time first be-

comes the commander's priority, contributing to the Variability, Uncertainty, Complexity, and Ambiguity that characterize modern warfare. A common operating picture of readiness as defined by time allows commanders to prioritize and allows planners to maximize overall readiness as they operate in the resource-constrained environment.

As we seek to enhance human performance on the battlefield through technological innovation, let's think about those human performance elements as time factors. Our innovations must inherently increase the amount of time that the service member can function in austere conditions, whether we are innovating in wound care or compact nutrition.

For example, if a service member with a mental health condition requires face-to-face follow up with a psychologist at least once every six weeks to prevent deterioration or a medical evacuation, then we know that that individual typically will have up to a 6-week period of readiness when deployed to a combat environment. To facilitate that readiness, unit leadership must ensure that he is stationed in a location that allows for these 6-week mental health maintenance checks, probably somewhere close to a Role 2 or Role 3 facility. Here is where innovation in human performance comes into play. If a check-in via telehealth can extend that mental health readiness window by another 3-weeks, then the investment in this technology can be quantified in the extended time that a service member is still psychologically ready before needing additional assessment or follow up. Similarly, if the service member is able to complete some coping skill training on an asynchronous or self-directed basis (perhaps through a mobile application), this might also add additional weeks of psychological readiness before additional support is needed. When implemented on the battlefield, these technology innovations have significantly improved the overall availability of service members for the mission.

The Role of Prevention in Promoting Readiness

Although we have seen significant innovation in battlefield psychological care during the past two decades (e.g., Cooper et al., 2024), the next set of innovations will need to anticipate and prevent problems well before an intervention by deployed medical personnel is required. Instead of incremental increases and marginal returns on our time investment in personnel readiness, we must be able to prevent emerging risk factors from becoming crises. A prevention-based model is going to be needed in order to address a myriad of potential threats to readiness. A small investment in effective prevention programs might pay tenfold dividends in addressing the challenges of future warfare.

In 2019, the first Prevention Plan of Action for the Department of Defense was released, enhancing focus on improving readiness through the prevention of adverse events (see Department of Defense, 2022a). By getting "left of bang" rather than optimizing response capabilities, the goal is to avoid costly downtime or medical evac-

uations. Thus, the "time" associated with readiness is a direct byproduct of prevention activities. If we invest time in preventive maintenance checks and services, there will be more overall time available for a vehicle, or a warfighter, to be mission ready. If we invest time in realistic training that allows the service member to predict the actual conditions of the battlefield, they are less likely to have adverse psychological reactions or develop posttraumatic stress disorder. Deliberate prevention activities that address the root cause of problems before they arise is where we will see the greatest dividend in increasing readiness.

As a historical example, dental casualties during World War I numbered in the tens of thousands due to acute necrotizing ulcerative gingivitis or "trench mouth." By World War II, military-wide programs were implemented to ensure that oral health was taught during basic training. Every service member was issued tooth powder and required to brush their teeth as part of the daily hygiene regimen. A new invention also facilitated the promotion of oral hygiene: the military became the largest buyer of nylon-bristle toothbrushes, which were a substantial innovation compared to brushes made of boar hair. These preventive measures—including health education, systematic changes to the daily routine of service members, and adoption of a new technology solution—significantly reduced the dental casualty and emergency rates, in turn reducing lost warfighter time (see Tuckman, 1953).

Fast-forward to today, and Military Psychologists are taking on serious problems that are even worse than necrotizing ulcerative gingivitis. We are working to prevent suicide, sexual assault, drug use, domestic violence, child abuse, and the entire range of harmful behavior that erodes the time that otherwise would contribute to readiness. Tens of thousands of service members—the equivalent of entire divisions—have their lives disrupted each year by harmful behavior in these categories, to say nothing of the direct loss of life from associated suicide, homicide, and accidental deaths. Over the past decades, we have perfected many of our response processes in this space: We have detailed tracking for the reporting of sexual assault, we have a comprehensive database of psychosocial risk factors for suicide, we can test for new designer drugs, and we have processes in place to conduct community risk assessments after incidents of domestic violence. The problem is that these processes don't always talk to each other. When fatality review boards are held (see Department of the Army, 2023), every support structure on the installation typically knows the name of the decedent months before an incident, but often the fatality review board is the first time these resources have ever been in the same room together. One person knew about the problems at work, and one person knew that the individual was the subject of a pending investigation, and another knew that his wife was planning to divorce him, and another knew that he was $50,000 in debt due to a gambling problem, and he had seen a psychiatrist, and he had seen the substance abuse counselor. Every support resource on the entire base might know that a particular service member is struggling, but we lack the integrating function and forum in which to have those conversations.

We need an approach that identifies the confluence of risk factors in advance.

In partnership with the Military Services, over the past several years the Department of Defense has built an infrastructure to begin addressing this problem through the Integrated Primary Prevention Workforce (Department of Defense, 2022b). Members of this workforce are specifically selected for their specialized expertise in data analytics, public health surveillance, social sciences, and strategic planning to inform commanders about risk factors and mitigation strategies. This workforce will be equipped with the tools to advise command on how to respond to underlying problems such as unit leadership climate, problematic behavior, and community factors that may be increasing risk of negative outcomes.

This prevention workforce is a fundamentally different value proposition than what we have done for the past several decades. Whereas we will still have dedicated response personnel in place to react and support victims when they experience a sexual assault, domestic violence, or a suicide crisis, this recently fielded workforce will be employed to prevent those experiences of harm before they even happen. The target audience for this intervention is not just those who have experienced harm, but everyone who may have a contributing role, and any groups that might be at risk of experiencing harm. The prevention workforce is not just about building community awareness and advocacy, but adding to this outreach through empirically supported communication strategies, identification of contributing factors, and comprehensively addressing all parts of the socioecological model that can influence an individual's experience in the military. This integrative approach will break down the silos between the different support services at the tactical level, enabling these resources to talk to each other and find common cause. In a potentially resource-constrained environment, this degree of integration will be crucial in providing the scope of services needed to address risk factors simultaneously at the individual, unit, and community level. While doing this, the prevention workforce will also enable commands to systematically evaluate whether or not their current programs are working, facilitating better alignment between current capabilities and the needs of service members and their families.

Instead of costly interventions in hospitals and clinics, the prevention workforce similarly can facilitate the involvement of command at numerous levels, more effectively alleviating the burden of problematic behavior. For example, one element of integrated prevention is "skill development." If we take a broader approach to addressing risk factors at the unit level, the chain of command can work with the integrated primary prevention workforce to broadly promote healthy relationships and a workplace culture that is respectful and professional. Unit leaders set the tone for whether personal "preventive maintenance" is emphasized in a unit, and these attitudes can be shaped through working alongside the prevention workforce professionals. The chain of command also can work with pre-

vention personnel to demonstrate effective communication and conflict management. Rather than simply saying that "young recruits don't have any real-life experience," front-line NCOs can work with prevention personnel to demonstrate problem-solving skills for service members that are new to a unit. Front-line leaders can also take a more active role in encouraging and modeling financial literacy. Rather than relying on personal financial counselors when a service member's debt has become untenable, the basic principles of living within a budget, saving for a time of need, and avoiding unnecessary debt should be the hallmarks of unit culture, avoiding any concerns regarding a lack of financial readiness among service members or their families. This broad focus on "skill development" can overcome many of the concerns related to problematic behavior, because those at risk will have more options for how to enact better behavior rather then simply falling into problematic patterns.

In closing, real change in improving the available warfighter "time" as a metric of readiness will require the entire community—leaders, clinicians, prevention personnel, and innovators. This change means implementing what works by shaping unit culture and assisting service members in building healthy habits and life skills. This change must be grounded in data, and will take commitment. Ultimately, the time invested in these prevention activities will reap dividends in individual and unit readiness, mitigating the threats, harmful behavior, and risk factors that have plagued us for decades.

Author note. The views expressed herein are the private views of the author and do not necessarily reflect the official policy or position of the United States Government or the Department of Defense. Correspondence regarding this article should be directed to the author at tim-hoytpsych@gmail.com.

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