

Improving “Medical Readiness” of the Japan Ground Self-Defense Force: Drawing on the Lessons from the United States Army*

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Abstract

This paper gives an overview of the issues regarding medical readiness (MR) that the U.S. Army had awareness of and the measures that it has taken to enhance MR from two perspectives—the readiness of individual soldiers and units, and a medical force that is ready to deploy to a variety of missions—while touching on specific measures such as the establishment of an MR data management system and the enhancement of the deployability of the medical force, and considering the current state of MR in our Ground Self-Defense Force and measures taken to enhance its MR in comparison with the U.S. Army’s experience.

Finally, the paper makes the following recommendations as measures that contribute to MR enhancement suitable to the characteristics of the Ground Self-Defense Force.

- (1) Amend the current criteria for health assessment, taking MR into account.
- (2) Construct a system in which individual troop members, the commanders, and the medical support staff are able to grasp the state of MR in real time for its maintenance and enhancement.
- (3) Establish a Ground Self-Defense Force version of “Backpack Surgeons.”
- (4) Establish a virtual health system using monitors and other equipment.
- (5) Reinforce collaboration with private-sector medical institutions, and enhance and utilize the Self-Defense Force Reserve Personnel System for medical skills.

Introduction

General Mark A. Milley, 39th U.S. Army Chief of Staff, repeatedly stated in a speech he gave in 2015, when he assumed the post, that “Readiness for combat is our No.1 priority, and there is no other No.1”¹

The U.S. Forces currently need to be prepared to face various threats including those from North Korea, Russia, China, and Iran, terrorist acts by Islamic radicals and other sources. However,

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¹ Otto Kreisher, “Milley Emphasizes: ‘Readiness for Combat Is Our No. 1 Priority,’” Association of the United States Army,” November 2, 2015, <https://www.ausa.org/articles/milley-emphasizes-%E2%80%98readiness-combat-our-no-1-priority%E2%80%99>.

they have not experienced large-scale military operations since Operation Iraqi Freedom and Operation Enduring Freedom (OIF/OED), making the maintenance of the readiness and morale of the individual service members and units a challenge. Much effort to maintain the readiness of the service members in terms of their health and the establishment of the medical functions necessary to support this is being made by the entire military in view of their growing importance.

Recently, the Army has taken a variety of measures to establish medical readiness (MR) on two fronts: the entire military shall always be ready for all situations from a medical perspective, and a medical force shall be established that is ready for all situations. Lieutenant General Nadja Y. West, 49th Surgeon General and Commanding General of the U.S. Army Medical Command, in her statement before the Senate Committee on Appropriations, Subcommittee on Defense, proudly asserted that “The current measures concerning the enhancement of the Army’s MR, while facing various challenges, contribute to the maintenance of the quality of the service members and units despite the current, and unstable budgetary situation, and have been effective in maintaining the capability of the medical force to engage in combat in all threat scenarios and across all domains as one of the pillars of the operations.”²

Our Self-Defense Forces are confronted by challenges similar to those of the current U.S. Forces. We face many challenges including countermeasures against the ballistic missiles of North Korea, the maritime advancement of China, terrorism during the Tokyo 2020 Olympic and Paralympic Games, and frequent natural disasters at home, while maintaining the capabilities and morale of the troop members and units without actually experiencing military operations. Moreover, the importance of high-quality and initial treatment on the frontline in emergency trauma surgery is growing worldwide. Establishing treatment and evacuation systems, and securing the necessary human resources are also issues common to both the U.S. Forces and the Self-Defense Forces. Given these circumstances, the medical department of the Ground Self-Defense Force is currently proceeding swiftly with the study to strengthen medical functions aimed at grasping the health of the service members and units in real time, and establishing readiness and developing human resources with sophisticated medical capabilities to respond to all situations.

The purpose of this paper is to reveal the issues regarding MR that the U.S. Army has awareness of, how it has taken measures to enhance MR, where the measures have been lagging in Japan, what the newly required measures are, and what the measures are that can be applied to the Ground Self-Defense Force.

Section 1 provides the framework of the MR that the U.S. Army is pursuing. Section 2 gives an overview of the issues regarding the current state of MR that the U.S. Army has awareness of, the measures taken to resolve them, and the challenges that remain from two perspectives—“readiness of the individual soldier and the unit” and “a medical force ready for all missions”—while touching on specific, particularly notable examples. Section 3 considers the current state of MR and the efforts being made to enhance MR of our Ground Self-Defense Force in comparison with the U.S. Army.

Finally, the paper makes recommendations for several measures that contribute to the

² Nadja Y. West, *Statement by Surgeon General and Commanding General, Army Medical Command before the Senate Committee on Appropriations Subcommittee on Defense*, 119th Cong., 2nd Sess., April 26, 2018, p. 1, <https://www.appropriations.senate.gov/imo/media/doc/042418%20-%20FY19%20Army%20Lt.%20Gen.%20West%20Testimony.pdf>.

enhancement of MR as appropriate to the Ground Self-Defense Force referencing the efforts of the U.S. Army.

1. What is Medical Readiness (MR)?

As the aforementioned statement by Army Chief of Staff Milley shows, the U.S. Army attaches great importance to “readiness,” given the worldwide incidence of failed states, terrorist acts, and other unforeseen circumstances, and MR is deemed essential as one of its core elements. MR is defined as a concept that broadly includes two major elements: (1) a medically ready force for all situations, and (2) a ready medical force for all situations.³

Establishing a medically ready force requires the enhancement of individual medical readiness (IMR). Indeed, the Department of Defense required each service to establish a comprehensive plan to achieve IMR and track this status, and exhorted the commanders of all units to strive to this end.⁴ The instruction also states that maintaining IMR is the responsibility not only of the commanders but also of the individual service members who are responsible for maintaining their health (including mental health) and fitness so that they are always ready for deployment, and should use the Military Health System (MHS) and other means to resolve any issues. In 1998, the Joint Chief of Staff issued a memorandum entitled “Deployment Health Surveillance and Readiness,”⁵ based on the view that the mandatory evaluation items, which had previously been established by each individual service, should be standardized across all services. They consist of five basic elements with an emphasis on deployment, although there are some variations depending on the contents of the missions: (1) thoroughgoing Periodic Health Assessment (PHA) implementation, (2) grasping medical conditions that impede deployment, (3) thoroughgoing vaccination, (4) thoroughgoing laboratory testing (including human immunodeficiency virus (HIV) antibody levels), and (5) supplying and maintaining personal medical equipment (gas masks, etc.).

To establish a ready medical force, a medical force must provide comprehensive healthcare in a wide range of areas from healthcare in peacetime to the treatment for trauma and diseases of combat casualties in wartime or during disasters. In other words, a medical force contributes to enhancing MR in peacetime by performing a wide range of roles including treatment in MHS, guidance through PHA, education on preventing lifestyle diseases, and mental health, and engages in combat casualty care and evacuation operations in wartime. The combat casualty care in particular has rapidly improved in recent years. The professional expertise that a medical force must acquire, including damage control surgery (DCS)⁶—the emergency surgery conducted during the “golden hour,” the critical one-hour time period for trauma—has been prevalent. More recently, technological progress in many areas including progress in virtual health systems, which

³ West, *Statement before the Senate Committee on Appropriations*, p. 9.

⁴ U.S. Department of Defense, *Individual Medical Readiness*, Department of Defense Instruction 6025. 19 (Washington, DC: US Department of Defense, January 3, 2006).

⁵ Joint Chiefs of Staff, “Deployment Health Surveillance and Readiness,” Memorandum for Undersecretary of Defense for Personnel and Readiness, Washington, DC: December 4, 1998.

⁶ MF Rotondo et al., “Damage Control: An Approach for Improved Survival in Exsanguinating Penetrating Abdominal Injury,” *Journal of Trauma and Acute Care Surgery*, vol. 35, no. 3 (September 1993), pp. 375-382; discussion pp. 382-383.

Damage control surgery (DCS) is a technique of surgery for serious trauma. The initial surgery prioritizes the treatment of damage related to respiration and circulation in order to minimize invasion of the body. Other damage is subject to secondary surgery after the overall physical condition has improved.

enable a medical force to perform at a high level anywhere, is considered an essential prerequisite to establishing the readiness of a medical force.

2. The Current State of MR in the U.S. Army and the Challenges

(1) Readiness of the individual service members and units

The U.S. Army has promoted a variety of measures to enhance MR for the entire Army, focusing on the establishment of a system to grasp the state of the soldiers and units in real time, and the improvement of the health of the individual soldier.

(a) MR data management

Every soldier is currently assigned one of four medical readiness classifications (MRC). MRC 1 means fully medically ready and deployable, MRC 2 means partially medically ready and deployable although immunization, laboratory, or other requirements have yet to be met, while MRC 3 and 4 mean not medically ready and deployable. Of the classifications not medically ready and deployable, MRC 3 means not medically ready and deployable because of pregnancy or other health reasons, while MRC 4 means not medically ready and deployable because a medical or dental exam has not been conducted (Table 1).⁷ It is notable that according to 2016 statistics, 144,000 soldiers were classified as MRC 3 or MRC 4, of whom 55,000 were classified MRC 4, merely having yet to receive PHA or other evaluations.⁸ This was seen as a problem within the Army itself, and in the “Medical Readiness Transformation” launched in 2015, improvements were made to the MR data management system in order to reduce the number of soldiers classified as MRC 4 and accurately grasp the MRC 3 group.⁹ This system is designed so that the comprehensive state of the individual soldier can be confirmed from physical and psychological profiles to relationship

Table 1. Criteria for Health Assessment in the U.S. Army

Classification	Explanation
Fully medically ready and deployable (MRC 1)	A soldier who has completed the latest Periodic Health Assessment (PHA), has no deployment-limiting conditions including a dental condition, and has fulfilled immunization, laboratory study and individual medical equipment requirements.
Partially medically ready and deployable (MRC2)	A soldier who has not fulfilled one or more immunization, laboratory study, or individual medical equipment requirements.
Not medically ready and deployable (MRC 3)	A soldier who has a chronic illness or other longstanding “condition” that limits deployment. Such “conditions” include hospitalization, recovery, or rehabilitation from serious illness, injury or a dental condition that make deployment impossible.
Not medically ready and deployable until the health status is determined (MRC 4)	A soldier whose current health status cannot be determined due to missing treatment records and/or expired PHA results including the dental exam.

Source: Created by the author referencing the U.S. Department of Defense, Individual Medical Readiness, Department of Defense Instruction 6025. 19 (Washington DC: U.S. Department of Defense, June 9, 2014).

⁷ U.S. Department of Defense, *Individual Medical Readiness*, Department of Defense Instruction 6025. 19 (Washington, DC: US Department of Defense, June 9, 2014).

⁸ U. S. Army MEDCOM, “Ensuring Medical Readiness Keeps Army Strong,” *Fort Campbell Courier*, December 15, 2016, <https://armedservices.house.gov/legislation/hearings/ensuring-medical-readiness-future>.

⁹ U. S. Army Public Health Center, *2017 Health of the Force Report* (Aberdeen, MD: U.S. Army Public Health Center, 2017), pp. 10-11, <https://phc.amedd.army.mil/topics/campaigns/hof/Pages/default.aspx>.

issues and financial issues and also that the state of the entire unit can be confirmed at a glance. This made it possible for the commander to grasp the state of his/her entire unit and also evaluate trends over the preceding 12 months, thereby making the creation of policies for the ex post facto maintenance and enhancement easier. This system can also be viewed by the medical personnel of the competent medical force, making it easier for the commander to create specific plans such as the introduction of lifestyle improvement programs in collaboration with the medical force in order to reduce the number of soldiers with the determination of MRC 3 or 4. The measures to enhance MRC through collaboration between individual soldiers, the commander, and the medical force have been very effective. Dental Readiness in particular reached 97.6%.¹⁰

(b) Health issues of the individual soldier

The increasing number of cases with obesity and other lifestyle diseases, and the incidence of cardiovascular diseases, cerebrovascular diseases, cancer, and other life-threatening diseases that they cause have become a serious problem in the United States, and the military is no exception to this situation. In fact, 36% of all adults in the United States are obese (defined as body mass index > 30) according to one statistical survey.¹¹ Taking the assessment and treatment of obesity-related diseases into consideration, the United States bears a massive burden of productivity loss and greater medical expenses. In the military, a survey conducted in 2011 showed that approximately 13% of soldiers on active duty matched the definition of obesity, which was lower than that of the general population, but that there had been a significant 61% increase in obesity since 2002.¹² Statistics from 2012 showed that the Army dismissed 3,000 soldiers and the Navy and Air Force each dismissed 1,300 service members for being overweight or out of shape. The cost for recruiting and training their replacements was estimated to be as high as \$500 million.¹³ Notably, it was discovered that service members in Afghanistan with obesity were 40 percent more likely to experience an injury than those with a healthy weight,¹⁴ indicating a correlation between obesity and combat trauma casualties. The causes of obesity generally include high-calorie diets, lack of exercise, and other lifestyle habits. On this point, many stores on military bases are overflowing with high-calorie food products. And the bases are not designed for movement on foot or by bicycle, but for movement by automobile—another factor that is believed to contribute to obesity. Moreover, even though the Army requires a significant amount of physical activity, one in seven new recruits had not experienced any exercise before enrolling according to one report,¹⁵ indicating that the roots of increasing obesity run deep.

The situation of smoking is different from that of obesity. The percentage of smokers for

¹⁰ West, *Statement before the Senate Committee on Appropriations*, p. 3.

¹¹ Bipartisan Policy Center, “Health, Health Care, and a High-Performance Force,” *Bipartisanpolicy.org*, March 2017, p. 8, <https://bipartisanpolicy.org/wp-content/uploads/2017/03/BPC-Defense-Health-Care.pdf>.

¹² U.S. Department of Defense, *Executive Summary of ‘2011 Health Related Behaviors Survey of Active Duty Military Personnel’* (Washington, DC: U.S. Department of Defense, February 2013), p. 3.

¹³ Bipartisan Policy Center, “Health, Health Care, and a High-Performance Force,” p. 10.

¹⁴ M. K. Anderson et al., “Occupation and Other Risk Factors for Injury among Enlisted U. S. Army Soldiers,” *Public Health* 129, no. 5 (May 2015): pp. 531-538.

¹⁵ Swedler DI et al., “Risk Factors for Medical Discharge from United States Army Basic Combat Training,” *Military Medicine*, vol. 176, no. 10 (October 2011): 1104-1110.

active service members (24.5%) is higher than that of the general population (20.6%).¹⁶ This has a considerable impact on MR. It is generally considered that long-term smoking is a risk factor for cardiovascular and pulmonary diseases, cancer, dental illness, and deterioration of respiratory function. It has also been confirmed that service members who smoke experience deterioration of physical performance and endurance, and are more likely to go on sick leave.¹⁷ It is believed that they are also more likely to drop out during Initial Entry Training. The possibility that stressful environments such as barrack life and assignment to battlegrounds contribute to smoking is given as one cause for the high incidence of smoking. One study shows that roughly half of the service members returning from OIF/OEF smoke, indicating that the incidence of smoking is significantly higher than service members who were not dispatched.¹⁸ The circumstances of everyday life is also important. Cigarettes can be purchased much more cheaply on base than in civilian surroundings. This is also considered to be a cause for the higher incidence of smoking.

This state of affairs goes beyond the health of the individual soldier; it poses a significant challenge to the military regarding medical expenses and other budget items. Thus, the Army is currently undertaking aggressive measures against obesity and smoking under the banner of enhancing MR. The Army is utilizing the aforementioned data management system to create appropriate health improvement programs by collecting accurate data on the current status through such efforts as acquiring accurate data on weight, height, and other measurements that had previously been on a self-declaration basis. It is also known that more than two-thirds of the health of the individual is generally dependent on lifestyle and environment.¹⁹ In order to reduce injuries on the battlefield, the Army is shifting exercise from abdominal exercises and long-distance running to yoga and training that increases flexibility in light of actual movement on the battlefield, and is going forward rapidly with measures to combat obesity through lifestyle improvement including thoroughgoing dietary guidance at the camp level.²⁰ As for smoking, in 2016, then-Secretary of Defense Ash Carter announced that smoking would be reduced in the military, and it was decided that on-base cigarette prices would be raised to civilian levels.

In this manner, the Department of Defense and the Army are currently promoting the improvement of lifestyles and the everyday environment in order to improve and enhance the health of soldiers. They are also beginning to establish a data management system to acquire objective data that contribute to policymaking and to conduct studies using the system, raising hopes that new guidelines will be developed on the foundation of reliable evidence based on accurate data.

(2) A medical force ready for all missions

The Army and the joint forces have had high expectations of late for the medical force for IMR maintenance and successful operations. The medical force is currently moving forward with

¹⁶ Department of Defense, *Executive Summary to the 2011 Health Related Behaviors Survey of Active Duty Military Personnel*, February 2013, p. 4.

¹⁷ Bipartisan Policy Center, "Health, Health Care, and a High-Performance Force," p. 9.

¹⁸ Institute of Medicine, *Combatting Tobacco in Military and Veteran Populations* (Washington, DC: National Academies Press, 2009), <https://www.ncbi.nlm.nih.gov/books/NBK215329/>.

¹⁹ New England Healthcare Institute, *Boston Paradox: Lots of Health Care, Not Enough Health* (Boston: The Boston Foundation, 2007), p. 17.

²⁰ Bipartisan Policy Center, "Health, Health Care, and a High-Performance Force," p. 9.

measures such as the enhancement of their deployability, the development of virtual health systems using monitors, and the enhancement of mental health.²¹

(a) Enhancing the deployability of the medical force

In military operations, strategic and tactical validity for completing missions is prioritized over medical validity; medical treatment must be given under many threats and constraints. Thus, it is difficult to conduct sophisticated surgery or radical therapy near the scene of the trauma. Step-by-step treatment is required such as the evacuation of the patient after conducting lifesaving DCS, followed by elective curative treatment.²² In fact, an analysis of fatalities among U.S. Forces members in OIF/OEF from 2001 to 2011 showed that 87.3% of the fatalities occurred before being accommodated at medical treatment facilities and that 24.3% of the lethal cases may have been survivable if appropriate measures had been taken against hemorrhage, airway obstruction, tension pneumothorax, etc.²³ This led to the adoption of Tactical Combat Casualty Care (TCCC) as standard procedure by U.S. Army units, with medics on the frontlines conducting transfusions, surgically securing the airway, executing thoracocentesis, etc., which resulted in confirmed and significant reduction of the mortality rate on the battlefield.²⁴ In 2009, in order to reduce the percentage killed in action, the Golden Hour Policy was adopted by order of the defense secretary mandating prehospital helicopter transport of critically injured combat casualties to treatment facilities in 60 minutes or less from the time of the request.²⁵ The effect of the introduction of this policy was to significantly reduce the average time required for prehospital transport compared to operations before the policy’s introduction (from 90 minutes to 43 minutes) and to significantly reduce the percentage killed in action (from 16.0% to 9.9%).²⁶

Based on these results of intervention studies concerning treatment and evacuation during actual operations, the U.S. Army is currently establishing highly deployable teams of experts lightly equipped only with lifesaving medical equipment that provide relief closer to the frontlines, which are entitled Expeditionary Resuscitation Surgical Teams (ERST), thereby ensuring that DCS is provided to injured soldiers within an hour. In addition, the Army is constructing a system in which the soldiers are swiftly evacuated under sophisticated damage control resuscitation (DCR) (Figure). An ERST is a team with eight members divided into two four-member teams, a DCS team consisting of a general surgeon, a nurse anesthetist, an orthopedic surgeon, and an emergency medical physician and a transport critical-care team that includes a critical-care physician, two critical-care nurses, and an emergency-trauma nurse. The team receives intensive training, conducted at the Army Medical Department Center and School (AMEDDC&S), in San

²¹ West, *Statement before the Senate Committee on Appropriations*, pp. 7-9.

²² Surgery and other curative treatment for a disorder after the overall physical state of the patient is stabilized and optimal conditions are achieved for surgery, in contrast to emergency surgery.

²³ BJ Eastridge et al., “Death on the Battlefield (2001-2011),” *Journal of Trauma and Acute Care Surgery*, vol. 73, no. 6 (December 2012), pp. 431-437.

²⁴ RS Kotwal et al., “Eliminating Preventable Death on the Battlefield,” *Archives of Surgery*, vol. 146, no. 12 (December 2011), pp. 1350-1358.

²⁵ Thom Shanker, “Gates Seeks to Improve Battlefield Trauma Care in Afghanistan,” *New York Times*, January 27, 2009, <https://www.nytimes.com/2009/01/28/washington/28military.html>.

²⁶ Russ S. Kotwal et al., “The Effect of a Golden Hour Policy on the Morbidity and Mortality of Combat Casualties,” *JAMA Surgery*, vol. 151, no. 1 (January 2016), pp. 15-24.

Antonio, Texas in professional expertise for MR maintenance and in medical activities on the frontlines of conflict areas where equipment and operation space are limited.²⁷ After five months of intensive training, the first ERST deployed in May 2016 on a four-month rotation in support of U.S. Africa Command. The team successfully executed its mission in an austere environment where the nearest trauma care facility, in Germany, is a nine-hour flight away.²⁸ Named “Backpack Surgeons” by Surgeon General and Commanding General West, the ERST is undergoing further development to equip it with the ability to execute even more demanding missions.²⁹

However, securing human resources and maintaining medical technology are challenges for these measures. A U.S. General Accounting Office report states that due to a variety of factors including the compensation gap between the U.S. military and the private sector, experts including reserves in critical care/trauma, general surgery, plastic surgery, family medicine, and other fields essential to MR maintenance are below 80% of authorized levels.³⁰ Maintaining the technical expertise of medical experts is also a challenge since the number of trauma and other relevant cases are limited during normal times. There is also an insufficient number of cases during actual missions currently since U.S. Forces have not participated in large-scale combat after OIF/OEF. Given these circumstances, the Army is working to strengthen the recruitment and development of medical specialists by enhancing a variety of scholarship systems and education programs, and improving compensation, and is building a medical system that matches current missions by reviewing the authorizations for each specialty.³¹ The Army also actively collaborates with civilian medical institutions in education and training. For example, the Anderson Simulation Center, a Department of Defense medical facility and top-level simulation center accredited by the American College of Surgeons and other civilian associations, actively provides education and training not only for the military but also for civilian physicians to enhance trauma treatment capability, pooling knowhow through cooperation among instructor physicians, training for certification, and other means.³² In addition, the education offered at AMEDDC&S is highly regarded by civilian medical institutions. It educates civilian doctors and nurses alongside military personnel. This is one of many examples of military-civilian collaboration aiming for synergy that are underway. Going forward, further progress is expected toward specific outcomes such as the fulfillment of medical specialist authorizations and the promotion of new measures through their analysis.

²⁷ Gina Cavallaro, “Four Top Priorities for Fast-Evolving Health Care,” Association of the United States Army, July 17, 2017, <https://www.ousa.org/articles/four-top-priorities-fast-evolving-health-care>.

²⁸ Ibid.

²⁹ Kirk Frady, “Expeditionary Resuscitation Surgical Team (ERST) Training/Support Team,” United States Army, December 22, 2017, https://www.army.mil/article/198549/expeditionary_resuscitation_surgical_team_erst_trainingsupport_team.

³⁰ Government Accountability Office, *Military Personnel: Additional Actions Needed to Address Gaps in Military Physician Specialties*, GAO-18-77, February 2018, p. 16.

³¹ Ibid., pp. 41-43.

³² West, *Statement before the Senate Committee on Appropriations*, p. 7.

(b) Virtual health system

Virtual health (VH) in the Army using monitors is an efficient and cost-effective technology that provides sophisticated medical care regardless of location by connecting core army hospitals to a wide variety of locations including distant medical institutions lacking medical experts and conflict zones. The Army first used a portable VH system in operations in Somalia in 1992, but the system at the time left much to be desired in terms of image quality and distance. Progress in development followed, and 25 years later, in 2017, in response to Hurricane Maria, the Army medical force deployed to Puerto Rico used a VH system to cooperate with Brooke Army Medical Center in Texas and Eisenhower Army Medical Center in Georgia to successfully provide significant treatment.³³ Currently, the Army has established its first VH center in Brooke Army Medical Center, where more than 30 experts provide constant support at all times including management through telemonitoring, counseling, and treatment guidance from over 30 countries and territories scattered across 18 time zones. More recently, VH systems are being used to provide sophisticated treatment such as burn treatment, decompressive craniectomy for head injuries, hemostasis for gunshot wounds, and relief from dismemberment, and technological progress such as treatment that connects army hospitals and soldiers’ homes with highly secure communication lines and the development of remote-control medical instrumentation³⁴ has taken down the walls of distance and location from the medical perspective.

(c) Mental health

Mental health is also important to MR maintenance. The Army has developed its own Behavioral Health (BH) program. Experts, mainly clinical psychologists, who have completed the program are embedded in operational units, where they provide treatment. This enables soldiers to receive the same outpatient care from BH practitioners on the operational frontlines, and are also able to receive intervention before serious symptoms emerge. In fact, overall use of BH care in the Army increased from approximately 900,000 encounters in FY 2007 to over two million in FY 2017 while hospitalization for BH therapy decreased by 41%.³⁵ The Army has also established the BH Data Portal (BHDP) to manage outcomes for soldiers that have been treated and to use the data to improve the quality of the treatment and other matters. The Surgeon General and Commanding General West is also questioning the conversion from shared rooms to private rooms, ushered in the early 2000s to secure privacy, because of its tendency to intensify loneliness, and she intends to expedite the establishment of a system where soldiers can keep an eye on each other and prevent cases requiring BH care from being too late.³⁶ In this manner, the Army is promoting comprehensive mental health care measures from early detection and prevention to treatment including the establishment of an appropriate environment.

³³ *Ibid.*, p. 9.

³⁴ Cavallaro, “Four Top Priorities,” July 17, 2017.

³⁵ West, *Statement before the Senate Committee on Appropriations*, p. 4.

³⁶ Cavallaro, “Four Top Priorities,” July 17, 2017.

3. Current State of MR of the Ground Self-Defense Force

Next, I shall provide an overview of the current state of MR in our Ground Self-Defense Force and set forth the challenges it faces through comparison with the U.S. Army.

(1) Readiness of individual troop members and units

(a) Health assessment

The Ground Self-Defense Force grasps the state of health through regular health assessments after enrollment. A regular health assessment is conducted for all service members once a year. Occasional health assessments are conducted for members assigned to disasters, overseas, long-term training, or matriculation before they are dispatched. Special health assessments are conducted for pilots and other members engaged in special operations. Timing of examinations for cancer, cardiovascular disease, liver disease, and sexually transmitted disease are determined by age.³⁷

Post-assessment classification according to regimen is the following: A. normal, B. caution required, C. limited to light work, and D. rest required; and according to treatment, the following: a. treatment required, and b. observation required, treatment unnecessary. A member classified as “caution required” (determination B) in the initial examination shall receive a secondary examination and be classified as “treatment required” (Ba) or “observation required” (Bb) (Table 2). Everyone receives the primary examination with a few exceptions if any, but some do not receive the secondary examination even though it is required. Cases are also detected where a member is classified as “treatment required” in the secondary examination but does not receive treatment at a medical institution or fails to complete the treatment.

Table 2. Criteria for Health Assessment in the Self-Defense Forces

Instruction		Contents
Regimen	Normal (A)	Normal work appropriate (no hindrance to troop activities)
	Caution required (B)	May work more or less normally (mild illness confirmed but broadly no hindrance to troop activities)
	Limited to light work (C)	Restriction on troop duties required (troop duties reduction required due to illness)
	Rest required (D)	Rest from troop duties required (1. unable to perform troop duties due to illness, and rest and treatment required) (2. rest required for recuperation or until assessment is finalized)
Treatment	Treatment required (a)	Direct medical treatment by physician or dentist required
	Observation required (b)	Regular observation and counseling by physician or dentist required
	Treatment unnecessary	Medical treatment, direct or indirect, by physician or dentist not required

Source: Created by the author based on instruction concerning the Management of the Health of the Ministry of Defense Personnel (Defense Agency Instruction No. 31, December 15, 1954).

³⁷ Ground Self-Defense Force Health Assessment Implementation Rules (Ground Self-Defense Force Circular Notice No. 36-6, January 30, 1969).

In the FY 2017 regular health assessment, approximately 40% of all troop members of the Ground Self-Defense Force received determination B, C, or D, which means that they had some illness (including dental), indicating that it was problematic with regard to MR. According to data from one regional army where follow-up surveys were conducted, of the 22.1% of troop members who received a medical or dental Ba determination, one in nine and one in four of medical and dental determination respectively, or approximately 10% of all the troop members of the regional army had failed to receive treatment at a medical institution and remained untreated despite the necessity.³⁸ This suggests that there is a serious problem with MR maintenance.

In an occasional health assessment preceding deployment for disasters, etc., a medical interview and inspection are first conducted. If the physician detects an abnormality or otherwise deems necessary, the necessary examinations are conducted to make a comprehensive determination, in which those receiving an A (no hindrance to troop activities) or B (mild illness confirmed but broadly no hindrance to troop activities) determination are qualified personnel. Troop members who are controlling symptoms by medication or other means and have their illness under control shall be given a B determination and shall be deemed to be eligible for deployment. However, this may lead to a situation where a deployed troop member has a medical history including a serious illness or requires regular medication that, if forgotten, may lead to fatal results. These issues have the potential to cause an illness to take a turn for the worse or even lead to death due to a variety of reasons including work in severe circumstances of deployment, extended deployment, and difficulties in detailed support due to the expansion of the medical support territory. Indeed, during the deployment for the Great East Japan Earthquake and other subsequent disasters, there were such cases as the case of a troop member who failed to take along a sufficient amount of medication that he had to take regularly for a chronic illness, decided on his own to suspend medication, and wound up becoming ill and having to return to his regular unit; a troop member with a medical history of moderate to severe hypertension that had been relatively under control through oral treatment died due to stress during deployment and other factors; and approximately 10% of troop members who had been qualified personnel prior to deployment were disqualified when subjected to another health assessment during deployment and had to return to their regular units. It has also been reported that in some cases, the units had too little time between the disaster and deployment to receive a health assessment.³⁹

As we have seen, health assessment in the Self-Defense Forces is not sufficient in terms of readiness for deployment in all situations, i.e. MR. Specifically, the variety of unfortunate examples that I have given show that some troop members may have illnesses that are “stabilized” during normal times and receive a B determination but would not be fit for deployment when severe conditions of deployment were taken into consideration. The current method of the confirmation of health assessment results by paper documents also appears to have problems. It is difficult to grasp a troop member’s state of health and MR in real time through paper documents; grasping the MR of an entire unit is even more difficult. Moreover, it would be difficult to collect and analyze data even though the commander and the health practitioners wanted to make the ex post facto improvement through paper documents, causing problems for enhancing MR.

³⁸ Interview with the officer in charge at Ground Staff Office, January 15, 2019.

³⁹ Research Department, Ground Self-Defense Force Medical School, “Medical History of the Great East Japan Earthquake Disaster,” April 2013, pp. 209-212.

Therefore, the Ground Self-Defense Force should also develop a system to grasp in real time the determination of troop members' state of health that takes MR into consideration, to provide continuous guidance to troop members who have problems, and to create measures to enhance MR through the analysis of the collected data, referencing the efforts being made by the U.S. Army.

(b) Health issues of individual troop members

Lifestyle diseases such as obesity and smoking are issues for the Ground Self-Defense Force, just like they are for the U.S. Army. The results of the FY 2017 regular health assessment show that more than 10,000 Ground Self-Defense Force troop members have one of more lifestyle diseases. Statistics from one regional army⁴⁰ show that the incidence of obesity among troop members (10%) was lower than that of the general population (20-30%) but approximately similar to the U.S. Army. The incidence of smoking (about 40%) was higher not only than that of those in their late 20s of the general population but also than the U.S. Army as well. Moreover, there is higher incidence of hypertension, dyslipidemia, diabetes, and other chronic diseases among obese and/or smoking troop members, according to the same source.⁴¹ This requires attention since these troop members are patients at high risk of myocardial infarction and cerebrovascular disease.⁴² To be sure, these results are from a single regional army and cannot be casually applied to the entire Ground Self-Defense Force. That being said, the information cannot be dismissed, particularly in light of the aforementioned unfortunate cases during deployment to disasters.

Unlike the U.S. Forces, it is difficult to point to low mobility within camps, retail shops, and other surroundings as aggravating factors for the high incidence of obesity and smoking. On the other hand, factors such as stress from training, disaster deployment, and the like, and lifestyle transmission through community living are also as relevant to the Self-Defense Forces as they are to the U.S. Forces. Going forward, it is necessary for the Ministry of Defense to take the lead in acquiring an accurate view of the current situation in the entire Ground Self-Defense Force. Following this, the dietary situation in the camps, exercise habits of the troop members, relationship between stress and obesity, the incidence of smoking, and other matters should be surveyed and specific initiatives aimed at resolving the problems should be developed.

(2) A medical force ready for all missions

(a) Enhancing the deployability of the medical force

The importance of swift and sophisticated treatment and evacuation focused on DCS, as the U.S. Army is doing, is becoming increasingly important in the field of trauma treatment. The Ground Self-Defense Force studied the matter in the Medical Research and Development Committee comprised of medical and other institutions and created the Lifesaving Doctrine as a new strategy in 2015, which incorporated temporal indicators and sophisticated frontline treatment into the

⁴⁰ Interview with the officer in charge at Ground Staff Office, January 15, 2019.

⁴¹ Ibid.

⁴² Japan Atherosclerosis Society, "Comprehensive Risk Evaluation and Management," *Atherosclerotic Disease Prevention Guidelines 2017*, June 30, 2017, pp. 13-17.

existing treatment and evacuation system.⁴³ Simultaneously, the Ministry of Defense set up the Study Group concerning Appropriate Lifesaving Measures in Frontline Medic Rescue Capacity of the Ministry of Defense and the Self-Defense Forces, including outside experts as members, with the objective of enhancing rescue capability of frontline medics. In 2016, the group issued a report concerning the expansion of procedures that frontline medics⁴⁴ can conduct and training for them, etc.⁴⁵ Based on these studies, the Ministry of Defense has now launched new initiatives such as basic DCS simulation training and training for the treatment and evacuation.

In contrast to the U.S. Army, which has rolled out ERST for actual missions, the Ground Self-Defense Force has yet to determine the specifics such as the composition of the teams to undertake DCS and DCR and the protocols to be performed. In order to implement the Lifesaving Doctrine in actual missions, it is also necessary to engage the Ministry of Health, Labour and Welfare and others in inter-ministerial/inter-agency consultations on the accreditation of qualifications of frontline medics limited to emergencies and other matters regarding the expansion of the scope of medical procedures that the frontline medics and other medical care professionals can conduct. Moreover, Japan faces the same problem as the United States in that the medical specialty education system currently in progress and overweighting staffing towards specialized departments have led to human resource deficiencies in personnel capable of conducting trauma treatment procedures and intensive care management. Going forward, I believe that it is necessary to secure human resources by “enhancing the attractiveness” of the medical field in the Ground Self-Defense Force in addition to establishing the specifics of the system.

(b) Telemedicine system

Telemedicine in Japan has mainly developed in the civilian field through the growing prevalence of home medical care as the result of creeping depopulation and an aging population. In the past, Article 20 of the Medical Practitioners Act stipulated that medical care had to be conducted with the physician and patient meeting directly (face-to-face medical care) in principle. However, in 1997, then-Ministry of Health and Welfare issued a circular notice stating that “telemedicine does not violate Article 20 of the Medical Practitioners Act,”⁴⁶ opening the door to telemedicine. Telemedicine currently being conducted in Japan includes (1) teleconference, where physicians, nurses, and other medical staff receive advice from distant medical experts using a teleconferencing system, (2) teleradiology, where a hospital that does not have a radiologist to conduct radiographic inspections receives a diagnosis from a distant medical expert, (3) telepathology, where a distant pathologist diagnoses a tissue sample, and (4) homecare, where blood pressure, electrocardiogram, and other instrumentation and a videophone installed in the patient’s home are used to send data

⁴³ MORI Tomohisa, “Chapter 1 General Remarks, Section 2. The Lifesaving Doctrine,” *Treatment and Evacuation Handbook for Self-Defense Forces Medical Officers*, Boeiigakushinkokai, March 2017, pp. 16-19.

⁴⁴ Medical self-defense force personnel licensed as practical nurses and paramedics, duly educated and certified to conduct emergency lifesaving.

⁴⁵ “Outline of Results of Considerations, Sixth Session of the Committee for Consideration of Appropriate Lifesaving during Frontline Relief by the Ministry of Defense and the Self-Defense Forces,” June 8, 2016. <http://www.mod.go.jp/j/approach/agenda/meeting/kyumei/sonota/pdf/06/001.pdf>.

⁴⁶ “Treatment Using Information Technology Equipment (so-called ‘telemedicine’)” Notice from the Director-General, Health Policy Bureau, Ministry of Health and Welfare No. 1075, December 24, 1997.

to the physician and the medical staff for advice.⁴⁷ The scope is expected to grow further with technological progress. Meanwhile, some regional hospitals of the Ground Self-Defense Force do not even have electronic medical records yet, and a system for sharing medical information between hospitals and units or between hospitals has yet to be established. While teleradiology has been introduced in limited form as radiologic interpretation of X-ray examination results and is being requested by some of the hospitals and the Self-Defense Forces Central Hospital, full-fledged medical care systems using monitors that enable teleconferences, homecare, and the like have not arrived.

Going forward, it is desirable to first make steady progress in the establishment of a medical care system that connects hospital to hospital and hospital to camp dispensary. It is desired that this will be followed by the development of a telemedicine system in which frontline medics will be able to take sophisticated lifesaving measures smoothly according to the Lifesaving Doctrine, referencing the U.S. Forces' VH system.

(c) Mental health

Similar to the U.S. Forces, the Self-Defense Forces have also had concerns about mental health and have studied the matter. Suicides had gradually increased among Self-Defense Forces personnel since 1965, and the growing attention from the general public led the Ministry of Defense and the Self-Defense Forces to set up the Panel on the Mental Health of Self-Defense Forces Personnel, which issued "Recommendations concerning the Mental Health of Self-Defense Forces Personnel" in 2000.⁴⁸ Since then, various measures have been taken including fulfillment of the needs of military discipline that takes account of mental health, the establishment of counseling systems at camps, and the establishment of mental health centers in each region. The Ground Self-Defense Force also focuses on "debriefing"⁴⁹ to prevent post-traumatic stress disorder (PTSD) caused by deployment to disasters or UN Peacekeeping Operations (PKO) and "aftercare" to investigate the cause of a suicide from medical and psychological perspectives and provide psychological care to prevent knock-on effects on the unit, its members, etc., as special skills. It inaugurated a program (Joint Training for Handling Critical Incident Stress)⁵⁰ in 2003 to develop personnel that have this professional expertise in addition to general knowledge on mental health. Those who have completed this program are active all over Japan. In addition, taking into account the fact that 29 troop members (21 Ground Self-Defense Force members, 8 Air Self-Defense Force members) of the Self-Defense Forces personnel (approximately 5,600 Ground Self-Defense Force members, approximately 3,600 Air Self-Defense Force members) deployed to Iraq for reconstruction

⁴⁷ Definition of Telemedicine," Japanese Telemedicine and Telecare Association website, http://jtta.umin.jp/pdf/telemedicine/telemedicine_in_japan_20131015-2_jp.pdf.

⁴⁸ Ministry of Defense, "Summary of Recommendations concerning Mental Health in the Self-Defense Forces," October 6, 2000. <http://www.mod.go.jp/j/approach/agenda/meeting/mental/houkoku/hokoku01.html>.

⁴⁹ Group technique used a few days (no later than a week) after the disaster, etc., that provides psychological education over two to three hours, reconstructing events, releasing emotions, and responding to trauma.

⁵⁰ CHIBA Koji, "Chapter 2 Mental Health in Overseas Activities, (2) Joint Training for Handling Critical Incident Stress," *Mental Health Manual for Self-Defense Forces Medicine*, December 31, 2007, pp. 91-93.

activities between 2003 and 2009 committed suicide⁵¹ and the lesson learned from the frequent display of PTSD symptoms by Self-Defense Forces personnel who undertook searches for the remains of the victims of the Great East Japan Earthquake Disaster⁵², comprehensive support systems including frontline, circuit-type, mental health counseling, similar to what the U.S Army does, are being established early in the process of recent deployments to disasters and PKO. As for current issues, the Ground Self-Defense Force does not conduct data management of mental health treatment like the BHDP of the U.S. Army does. The system is deficient in terms of trend analysis and quality control based on past medical examination data and ultimate outcomes of the Self-Defense Forces personnel, etc. Going forward, the enhancement of the data management system is desired.

4. Recommendations for the Improvement of MR of the Ground Self-Defense Force

So far, we have taken an overview of the current state of MR in the U.S. Army and its efforts aimed at its enhancement, followed by a confirmation of the current state in our Ground Self-Defense Force and the challenges it faces through comparison with the U.S. Army. I shall take these considerations as the basis to make the following recommendations regarding several measures to promote MR enhancement in the Self-Defense Forces, the Ground Self-Defense Force in particular.

(1) Revisiting the health assessment criteria

The Self-Defense Forces should review the criteria for health assessment, particularly the judgment criteria, from the MR perspective, i.e. whether the individual troop member is ready for all situations from a medical perspective.

Determinations are made in current health assessments solely from the perspective of regimen during normal times and any need for medical intervention. The determinations do not take into consideration the circumstances of deployment, domestic or abroad, that deployment takes place in physically and mentally demanding environments that are completely different from normal times, that long-term deployment precludes treatment at medical institutions, that some units are given very little time to prepare when disasters occur, and so on. For example, preexisting illnesses that are relatively mild, such as dyslipidemia and hyperuricemia, and preexisting illnesses that may become severe, such as cardiovascular diseases and cerebrovascular diseases, may be given the same Ba determination and more or less normal work will be allowed when the conditions are stabilized by oral treatment during normal times. Moreover, the number of people that can perform occasional health assessments before deployment to disasters, etc., will be limited, given the pre-deployment circumstances, and they often end up undergoing simple examinations consisting only of a medical interview and inspection. There are reports that the occasional health assessment had to be skipped due to the lack of time for some deployments

⁵¹ Written answer to question concerning suicides, deaths in the line of duty, etc., of Self-Defense Forces personnel from House of Representatives Member Abe Tomoko, June 5, 2015, [http://www.shugiin.go.jp/Internet/itdb_shitsumon_pdf_t.nsf/html/shitsumon/pdfT/b189246.pdf/\\$File/b189246.pdf](http://www.shugiin.go.jp/Internet/itdb_shitsumon_pdf_t.nsf/html/shitsumon/pdfT/b189246.pdf/$File/b189246.pdf).

⁵² Research Department, Ground Self-Defense Force Medical School, “Medical History of the Great East Japan Earthquake Disaster,” April 2013, pp. 217-219.

in the past. Thus, the results of the regular health assessments that are conducted routinely turn out to be important indicators for deployment.

From this perspective, the criteria for the regular health assessment should be amended to take MR into consideration to determine whether or not deployment is possible. Specifically, the current Ba determination should be subdivided into two determinations, Ba1 and Ba2. Ba1 shall be the deployable group of Self-Defense Forces personnel with chronic illnesses that are relatively mild, such as dyslipidemia and hyperuricemia, and stabilized by oral treatment, while Self-Defense Forces personnel with medical histories of serious illnesses, such as cardiovascular diseases and cerebrovascular diseases, should be judged Ba2 even if they are stabilized by oral treatment and should not be allowed to be deployed without permission from a medical officer (Table 3). Through this amendment, commanders are expected to be able to confirm the state of MR of their units during normal times based on health assessment results and grasp the members who are actually deployable, making it possible for Self-Defense Forces personnel to avoid encountering unfortunate accidents while deployed. In addition, if the criteria for regular health assessment takes deployability into consideration, the assessment focused on Self-Defense Forces personnel with Ba determinations will become possible, which would be beneficial in terms of both efficiency and accuracy.

Table 3. Proposal for Amended Criteria for Health Assessment

Current (Table 2)			Proposal		
Instruction		Content	Instruction		Content
Regimen	Normal (A)	Normal work appropriate (no hindrance to troop activities)	Regimen	Normal (A)	Normal work appropriate (no hindrance to troop activities <u>including deployment for contingencies</u>)
	Caution required (B)	May work more or less normally (mild illness confirmed but broadly no hindrance to troop activities)		Caution required (B)	May work more or less normally (mild illness confirmed but broadly no hindrance to troop activities <u>during normal times</u>) <u>Those with Ba determination shall be classified as follows based on their appropriateness for all deployments.</u> <u>Ba1: appropriate for deployment in principle if ongoing treatment is continued</u> <u>Ba2: Caution required; medical officer's permission required for deployment</u>
	Limited to light work (C)	Restriction on troop duties required (troop duties reduction required due to illness)			
	Rest required (D)	Rest from troop duties required (1. unable to perform troop duties due to illness and rest and treatment required) (2. rest required for recuperation or until assessment is finalized)			
Treatment	Treatment required (a)	Direct medical treatment by physician or dentist required	Limited to light work (C)	Restriction on troop duties required (troop duties reduction required <u>during normal times</u> due to illness)	
	Observation required (b)	Regular observation and counseling by physician or dentist required	Rest required (D)	Rest from troop duties required (1. unable to perform troop duties due to illness and rest and treatment required) (2. rest required for recuperation or until assessment is finalized)	
	Treatment unnecessary	Medical treatment, direct or indirect, by physician or dentist not required			

(2) Building an MR data management system

In order to maintain and enhance MR, it is essential to build a system in which the individual troop member, the commander, and the medical support team are able to grasp the situation in real time; no time should be wasted in constructing a data management system concerning MR.

Currently, the medical history is recorded on paper, which is transported between the unit and the camp dispensary whenever an examination, vaccination, or other event takes place. Because photocopying is discouraged due to personal information concerns, it is difficult for the commander or the supporting medical force to simultaneously share the results of a health assessment in real time. Moreover, there is no formal management system that covers the entire Ground Self-Defense Force because grasping whether self-defense force personnel who was judged in need of medical treatment by the medical department (mental health included) or dental department received treatment or, having received treatment, what treatment was received, what the effects on work are, etc., is considered part of military discipline, which is to be conducted within the respective units. Given this situation, it would be difficult for the commander to actually determine who is “ready to go” at any point in time even if the health assessment criteria were amended from an MR perspective as proposed above.

For these reasons, I believe that it is necessary to construct a comprehensive medical support system whose purpose is to maintain and enhance MR as an organization by introducing an MR data management system like the one that has been introduced by the U.S. Army, by enabling troop members, commanders, and those in charge of medicine to grasp the state of health, vaccination history, physical fitness test results, etc., in real time, and by enhancing connectivity with the electronic medical records at regional hospitals, etc. Of course, given the nature of the data, the protection of personal information is a very important perspective. It is necessary to carefully explain the protection of the data to the individual troop member while making sure that the data is managed thoroughly. To add, I believe that the data accumulated by this system not only enables the grasping of the current state but also contributes to the understanding of the issues regarding MR from obesity and other lifestyle diseases to mental health, and the development of measures for their resolution through comparative studies using past data. Moreover, due to an aging population, there is relatively limited statistical information for clinical medicine on the younger generation in Japan. The large-scale data on the young and middle-aged Self-Defense Forces personnel should be valuable material in plotting out national medical policy as well.

(3) The Ground Self-Defense Force Version of Backpack Surgeons

The National Defense Program Guidelines⁵³ and the Mid-Term Defense Program⁵⁴ enacted by cabinet decision on December 18, 2019, emphasize strengthening medical functions of the Self-Defense Forces in Japan’s southwestern region and set forth as a priority area the enhancement of the capacity to conduct DCS to manage patients being sent back, thereby establishing a system that seamlessly covers the entire stretch between the frontline and final medical evacuation destinations. This policy is quite similar to the concept of the “Backpack Surgeons” of the U.S. Army. When the

⁵³ The National Defense Program Guidelines for FY 2019 and beyond, National Security Council Decision and Cabinet Decision, December 18, 2018, p. 27.

⁵⁴ Medium Term Defense Program (FY 2019 - FY 2023), National Security Council Decision and Cabinet Decision, December 18, 2018, p. 26.

increasingly diversified missions of the Self-Defense Forces today are taken into consideration, I believe that the establishment of a Ground Self-Defense Force version of “Backpack Surgeons” as a manifestation of the Lifesaving Doctrine is essential. More to the point, while the police, Coast Guard, and the Self-Defense Forces serve as the organizations to respond to the territorial challenges that Japan faces in Takeshima, the Senkaku Islands, and the like, Self-Defense Forces medicine is the only one that is able to fulfill the medical function on an institutional basis under the variety of contingencies that should be assumed. On top of that, considering the probability and risk of recent issues such as missile problems of North Korea, the development of Self-Defense Forces medicine should be considered an urgent matter.

Specifically, the Ground Self-Defense Force should reference the aforementioned U.S. Army system consisting of personnel, equipment and the Japanese civilian system of emergency medical services using helicopters and ambulances with physicians on board, and start up its own “Backpack Surgeons” as three-member DCS teams consisting of an emergency medical physician, a general surgeon, and an emergency nurse, and two-member DCR teams consisting of a critical-care physician and a critical-care nurse. For swift evacuation, it is necessary to consider collaboration with the Aero Medical Evacuation Squadron of the Air Self-Defense Force and Maritime Self-Defense Force vessels as well as collaboration with Japan Coast Guard vessels.

The effect of this measure is not limited to the enhancement of the medical and deployment capabilities of Ground Self-Defense Force medicine. Ideally equipped with the technology and equipment for disaster medicine and combat casualty care, whose enhancement is an important topic of discussion in the medical field, this can be expected to lead to “enhancing the attractiveness” of Self-Defense Force medicine and, ultimately, securing human resources.

(4) Establishing a Virtual Health System that Utilizes Monitors, etc.

The consolidation and functional upgrade of the regional hospitals that the Ground Self-Defense Force is currently undertaking are creating problems such as the absence of a nearby Self-Defense Forces hospital even at large-scale camps and the limited availability not only of Self-Defense Forces medical facilities but civilian facilities at Camp Yonaguni, opened in March 2016, and camps in Amami Oshima and Miyako Island to be opened in March 2019. Moreover, even when there is a medical officer stationed at a camp, the treatment that can be received is limited by the officer’s specialty. Given this situation, the introduction of a telemedicine system like the VH system in actual use by the U.S. Army should be a major step forward towards resolving the problem.

In fact, the introduction of this medical system makes it possible by using monitors and other equipment to conduct outpatient treatment at hospitals where some departments have been closed due to unbalanced assignment of medical experts. By taking advantage of the functional upgrade accompanying the consolidation of regional hospitals and collaborating with core regional hospitals via the VH system, it will be also possible to receive treatment from medical experts in real time even in camps, like Camp Yonaguni, that only have one medical officer. Moreover, in operations during contingencies or deployment to disasters, connecting the frontline or disaster site and the regiment or division campsite with the VH system will help overcome the limitations imposed by medical officers’ specialties and variations in the skill levels of the paramedics, making it possible to conduct sophisticated and stable combat casualty treatment and disaster medicine.

In other words, the establishment of the VH system means the establishment of a Self-Defense Forces version of a Medical Control system⁵⁵ and is the backbone of the “posture for [seamless] medical care and evacuation” called for by the National Defense Program Guidelines and the Mid-Term Defense Program set forth in 2019.

(5) Strengthening collaboration with civilian medical institutions, and enhancing and utilizing Self-Defense Force Reserve Personnel System

Given the progress in medicine towards greater diversification and sophistication, it is difficult to execute everything from education and training to actual missions solely with the capabilities and resources of Self-Defense Forces medicine. There is a growing necessity to emulate the U.S. Army in collaborating with civilian medical institutions and the like in education and training and in technology development.

Indeed, there has been rapidly growing sentiment in recent years among civilian medical institutions in Japan to enhance their professional capabilities in handling trauma during disasters, terrorist acts, and other emergencies and in treating people injured by special weapons. Learning a lesson from the medical activities during the Great Hanshin-Awaji Earthquake, Japan set up its own disaster medical assistance teams (DMAT) in 2005 to avoid “preventable deaths.”⁵⁶ The Japanese DMATs undergo regular education and training to acquire professional expertise in comprehensive management on the skillful performance of initial emergency relief activities and coordinating multiple professional categories during major earthquakes, aircraft/train accidents, and other disasters.⁵⁷ In addition, civilian academic societies and medical associations have formed an academic consortium⁵⁸ in anticipation of the Tokyo 2020 Olympic and Paralympic Games and have begun drafting the guidelines for treatment in case of large-scale injury or illness caused by explosives, firearms, knives, or chemical substances in the course of terrorist acts. The Ministry of Health, Labour and Welfare has also been looking to 2020 as it moves forward with a program to produce surgeons and nurses to handle special disasters.⁵⁹ The medical system for the Tokyo 2020 Olympic and Paralympic Games is being established through public-private collaboration.

The professional medical expertise that these initiatives aim at has much in common with the very professional expertise that Self-Defense Forces medicine requires. Active personnel exchanges such as the participation of medical officers and nursing officers of the Self-Defense Forces in the education and training conducted by civilian medical institutions and the like, as well as the establishment of sophisticated simulation centers and education programs through collaboration between the Self-Defense Forces and civilian medical institutions in the manner

⁵⁵ A system that secures the quality of the medical activities conducted by paramedics, etc., in situ in general from the place of emergency until the patient is accommodated at a medical institution by having medical experts provide instructions, guidance, advice and verification.

⁵⁶ A phenomenon of major earthquakes and the like in which many people are sick or wounded, increasing demand for medical treatment, but hospitals have also taken hits, so that people die due to insufficient treatment in the disaster areas caused by blocked lifelines, difficulties in securing physicians, etc.

⁵⁷ Japan DMT secretariat website, <http://www.dmat.jp/>.

⁵⁸ The Academic Consortium on Emergency Medical Service and Disaster Medical Response Plan during the Tokyo Olympic and Paralympic Games in 2020 website, <http://2020ac.com/>.

⁵⁹ Ministry of Health, Labour and Welfare, “FY 2018 Trauma Surgeons Development and Training Program,” <https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000212322.html>.

of the U.S. Army are a useful and cost-effective way to enhance capabilities not only for the Self-Defense Forces but also for Japanese medicine. For civilian medical institutions, sharing the experience gained by Self-Defense Forces medicine through its experience in PKO and the Japan Disaster Relief Team and the professional expertise gained in training and other cooperation with the U.S. Forces, etc., should be very beneficial in considering the medical system for disaster response and the Tokyo 2020 Olympic and Paralympic Games.

The second measure is the enhancement and utilization of the Self-Defense Force Reserve Personnel System with special skills in medicine. In the case of civilians in general who aim to become Self-Defense Force Reserve Personnel hoping to work in medicine with a medical practitioner's license, a nurse license, or other national qualification, they are enlisted as Reserve Candidates (skilled labor) under the technical classification of "medicine." They will be commissioned as Self-Defense Force Reserve after taking a mandatory, 10-day education and training course within two years of enlistment.⁶⁰ During the Great East Japan Earthquake Disaster, Self-Defense Force Reserve Personnel (Technical) ordered by an issuance of a disaster call-up were summoned for the first time since the inauguration of the system in March 2003. Three Self-Defense Force Reserve Personnel (two medical officers and one nursing officer) took part in medical care at camp medical offices and circuit-type disaster deployment activities at shelters and victims' homes.⁶¹ These activities were very useful in supplementing medical care at camps where the resident medical and nursing officers were absent due to deployment and in making up the shortage in psychiatry officers caused by the increased demand for mental healthcare needs during the emergency.

On the other hand, deficiencies in the expert knowledge of Self-Defense Force Reserve Personnel (Technical) concerning disaster medicine and combat casualty care have also been exposed. Going forward, in addition to the general education for Self-Defense Force Reserve Personnel who are responsible for medical care that consists of moral education, basic training, and other minimum necessities as Self-Defense Force members, it is necessary to build a framework for developing the human resources capable of performing missions expeditiously during emergency situations and disasters by reorganizing education and training, taking advantage of Self-Defense Forces hospitals and medical service school to have them take courses highly relevant to combat casualty care and disaster medicine.

Combining these two measures also enhances the quality of Self-Defense Forces medicine during normal times and can be expected to be effective through "enhancing the attractiveness" in securing the personnel required for emergency situations and disasters, thereby contributing to the maintenance and enhancement of MR.

Conclusion

This paper took up the measures the U.S. Army is currently promoting for the maintenance and enhancement of MR and considered what the issues it has in mind, how it is implementing the measures, and what the challenges and new measures required are, and considered the measures

⁶⁰ Ministry of Defense, "FY 2018 Reserve Self-Defense Officials Solicitation Items (Technical Public Solicitation). <http://www.mod.go.jp/gsdf/jieikanbosyu/pdf/y/30yobihoginouy.pdf>.

⁶¹ Research Department, Ground Self-Defense Force Medical School, "Medical History of the Great East Japan Earthquake Disaster," April 2013, pp. 182-184.

required by the Self-Defense Forces, the Ground Self-Defense Force in particular, compared to the U.S. Army’s experience.

Based on its experience from actual missions in many conflicts, the U.S. Army has placed MR as the foundation of readiness and worked to maintain a medically ready force by constructing a system to grasp the state of health of its soldiers and units in peacetime with a view to deployment and actively intervening in problematic areas such as lifestyle diseases and smoking. As for the medical force, the other pillar of MR, it has undertaken the establishment of a ready medical force by measures such as the establishment of ERST, lightly equipped but capable of conducting sophisticated treatment on the frontlines, the development of virtual health systems, and enhancement in the mental health field. These measures by the U.S. Army have great potential to be utilized from the perspective of maintaining and enhancing the readiness of our Self-Defense Forces, which must respond swiftly to the many destabilizing elements in East Asia.

The Self-Defense Forces have also undertaken many efforts towards improving the health of our troop members and strengthening medical functions. Nevertheless, the efforts to date of the Self-Defense Forces are insufficient to respond to the domestic discussions on constitutional amendment and the amendment of the Self-Defense Forces Act as well as the rapidly changing international environment and changes in the state of health of troop members caused by the rapid spread of the Western food culture and other factors. It is necessary to promote the maintenance and enhancement of MR that match Japanese characteristics while taking the measures in the U.S. Forces with a view to swifter deployment for actual missions.

In light of the increasingly unstable international environment, the new National Defense Program Guidelines call for a “posture for [seamless] medical care and evacuation” with Japan’s southwestern region in mind and there is growing discussion in civil society of medical activities during emergencies such as acts of terrorism as we near the Tokyo 2020 Olympic and Paralympic Games. This is the appropriate time for the Self-Defense Forces, the Ground Self-Defense Force in particular, to proceed to the next step in readiness for all contingencies to meet expectations from the nation state.

