The Healthy Base Initiative

Healthy Base Initiative

Executive Summary

Demonstrating How Healthy Eating, Active Living, and Tobacco Cessation Can Improve the Recruitment, Retention, Readiness, and Resilience of the Military Community

OPERATION LIVE WELL

Your Health Is Our Best Defense

Executive Summary

A fit and healthy fighting force is the foundation of a strong national defense. But in the United States, poor health, obesity, lack of physical fitness, and tobacco use pose a growing threat to the Department of Defense (DoD)'s four "Rs": recruitment, retention, readiness, and resilience. A few observations underscore the scale of the challenge:

- **Recruitment** – In 2010, 27 percent of recruits did not qualify for the military due to height/weight standards.[i] By 2030, 64 percent of potential recruits will not qualify due to their weight.[ii]
- **Retention** – Failure to meet weight standards is a leading cause of involuntary separation from the military, and obesity in the civilian community is limiting DoD's ability to recruit qualified personnel.[iii]
- **Readiness and Resilience** – More service members were evacuated from Iraq and Afghanistan for serious sprains and fractures than for combat injuries; "overweight or less-fit young men and women are at a higher risk for these injuries." [iv]
- **Fiscal Impact** – Treating the effects of obesity and tobacco-related illnesses costs DoD over $3 billion annually.[v]

The Healthy Base Initiative (HBI) was a short-term demonstration project designed to inform DoD's long-term strategy — called Operation Live Well (OLW) — to make "healthy living the easy choice and the norm for service members, retirees, DoD civilians, and their families."[vi] Launched in 2014 at fourteen pilot sites, HBI was an innovative, multi-faceted approach to (1) assess the current health and wellness status of the military community and of military environments, (2) test evidence-based initiatives, (3) measure results, and (4) provide lessons and recommendations for OLW. This report documents DoD's

"The Department of Defense's Healthy Base Initiative (HBI) is a terrific complement to the National Prevention Strategy. By identifying evidence-based "promising practices," HBI took a major step toward addressing health and wellness challenges that affect Americans at every stage of life. We encourage other federal departments to learn and share in this achievement."

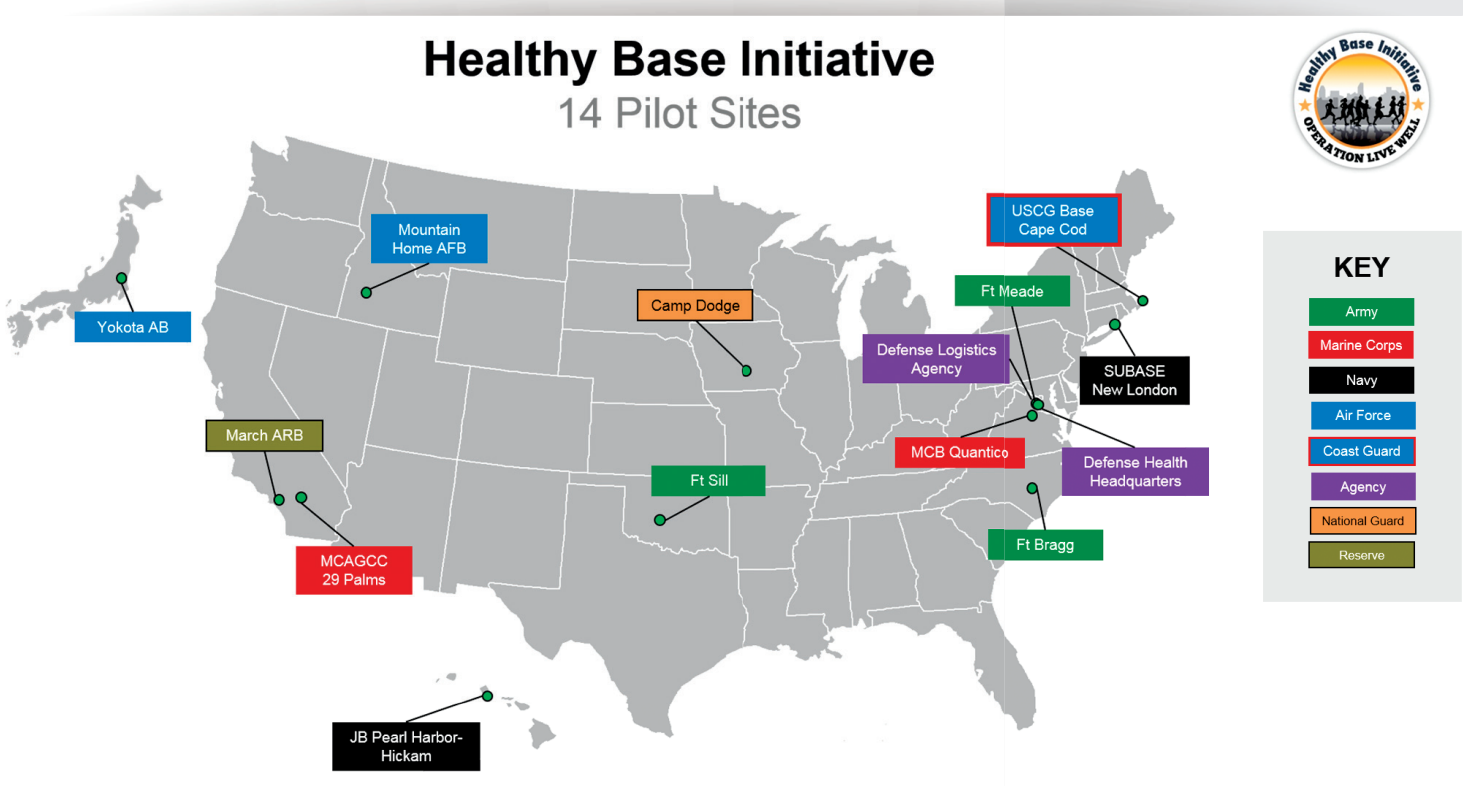
-U.S. Surgeon General
Dr. Vivek Murthy

experience with HBI, describing the different programs and interventions undertaken at HBI pilot sites, the process used to select these interventions, the successes and challenges that emerged during implementation, and the results of baseline assessment and outcome measurement efforts. Consistent with the objective of informing future DoD efforts to promote health and wellness, and OLW in particular, significant portions of the report discuss lessons learned and recommendations – both generally and with respect to specific HBI programs and interventions.

A. HBI Design and Implementation

Figure 1 shows the fourteen installations and agencies selected as HBI pilot sites. The Navy, Marines, and Air Force are each represented by two sites and the Army by three locations. The remaining five pilot sites include locations of the National Guard, the Reserves, the Coast Guard, Defense Health Headquarters, and the Defense Logistics Agency (DLA).

Figure 1. Locations of HBI Pilot Sites



The process for selecting HBI pilot sites was rigorous and involved a list of criteria, with local leadership (e.g. the presence of a commander who was committed to the goals of the initiative) weighing as the most important factor. While each Service was asked to nominate just four installations, many more installations expressed interest in participating.

To align goals, objectives, tactics, and metrics for the Initiative, the HBI team used an approach developed for the private sector by the Balanced Scorecard Institute. The Balanced Scorecard process helped DoD articulate a vision for HBI and identify a set of strategic objectives:

- Reduce overweight and obesity
- Decrease tobacco use
- Improve healthy eating
- Increase active living
- Foster a healthy environment
- Improve access to healthy choices
- Increase health knowledge
- Improve support for healthy living
- Improve incentive system
- Improve experience and engagement
- Increase financial viability
- Optimize resources
- Improve communications and marketing

The HBI team then worked with DoD, the individual Services, other federal agencies, non-profit organizations, and academic institutions to identify evidence-based initiatives that addressed the strategic objectives and could be implemented within the one-year timeframe of the demonstration project. Each HBI pilot site could select from a menu of options to identify the mix of interventions and programs that best suited its unique needs and circumstances. Thus, not every HBI program was implemented at every site.

In addition, the HBI team identified a number of "promising practices" that were already being implemented at individual installations. Many of these practices grew from local efforts to address site-specific circumstances and needs. Examples include Recess Before Lunch, a program for elementary schools that has demonstrated nutrition and behavior benefits; Community Health Promotion Councils, which strive to provide an integrated approach to community health needs; and various youth and adult fitness programs. Altogether, the HBI team identified twenty-one promising practices at the fourteen pilot sites.

Including these "homegrown" initiatives in HBI not only supported the process of innovation and knowledge diffusion, but also established a true subject matter exchange between the HBI team and installation stakeholders and acknowledged the value of local

efforts. Ultimately this expanded the number of effective program options available to participating installations and led to better and more enduring HBI outcomes. In this and other ways — for example, by setting up a web-based Community of Interest to share information about health and wellness and program experience — the HBI team sought an approach that facilitated transparency, accountability, and knowledge-sharing between installations, the Services, and DoD leadership.

B. Specific HBI Interventions and Programs

This section provides a brief description of specific HBI interventions and programs, grouped by focus area or "wedge."

Healthy Eating

- **Assessment** – HBI used the military Nutrition Environment Assessment Tool, or m-NEAT, to assess the environment at food locations.
- **Food preparation** – The HBI team examined the nutritional content of Non-Appropriated Fund (NAF) recipes and hosted healthy cooking seminars for small groups of Appropriated Fund (APF) and NAF food personnel. These efforts, which the team called the Menu Renovation Initiative, were based on a "train the trainer" model.
- **Menu labeling** – Two labeling systems were included in HBI: *Go for Green®*[1], which was primarily used in dining facilities and galleys, and Better For You, which was developed for NAF (Morale, Welfare, and Recreation/Force Support Squadron/ Marine Corps Community Services) operations on installations.[2]
- **Food presentation and placement** – HBI included implementation of the Cornell Food and Brand Lab's Smarter Food Movement program, which is rooted in the behavioral economics concept of choice architecture. The team tested how placement and presentation of food could affect customer behavior and sales of designated items.
- **Increasing fruit and vegetable consumption** – By partnering with the Defense Commissary Agency (DeCA) in a fresh produce initiative and by establishing farmers markets at key locations, HBI explored ways to increase sales of fruits and vegetables to service members and dependents.
- **Nutrition education** – HBI reached out to the non-profit organization Share our Strength to implement its nutrition education program, called *Cooking Matters.*[3] The Cooking Matters program is designed to help individuals and families learn how to purchase and cook healthy food.

"A system and culture that improves readiness while lowering costs by reducing obesity and tobacco use."

-HBI Pillar

[1] More details can be found at : http://hprc-online.org/nutrition/go-for-green
[2] The Marines have a different but similar program called "Fueled to Fight"
[3] More details can be found at: http://cookingmatters.org/

Table 1. Types of Food Outlets at HBI Installations

Type of Food Outlet	Key Organizations Involved	Funding
Appropriated Fund (APF) Outlets • Dining venues (DFACs, galleys and mess halls) • Commissaries (groceries)	• Individual Services • Defense Logistics Agency (DLA) • Prime vendors • Joint Culinary Center of Excellence (JCCoE) • Natick Labs • Defense Commissary Agency (DeCA)	Congress appropriates funding to pay for food provided through these venues and to operate DFACs at a variety of locations. Congress provides appropriated funds to the commissaries each year so that they can offer virtually "no cost added" pricing.
Non-Appropriated Fund (NAF) Outlets • Clubs • Fast food, freestanding restaurants, and food courts • Snack bars • Kiosks • Vending • Concessions • Mobile food	• Army and Air Force Exchange Service (AAFES) • Navy Exchange Service (NEXCOM) • Marine Corps Exchange (MCX) • Morale, Welfare and Recreation (MWR)	These operations function like food service operations in the civilian sector. They need to make enough revenue to cover expenses and maintain solvent operations.
Youth Locations • Schools • Child development centers • Youth centers • Vending in schools and youth centers	• Department of Defense Education Activity (DoDEA) • Public schools on/near military installations • Office of Children and Youth • AAFES	Funding is mixed: USDA reimburses schools in the National School Lunch Program (NSLP) and child development centers in the Child and Adult Care Food Program (CACFP). Vending machines are considered NAF environments.

Implementing healthy eating initiatives had to take into consideration the different types of food outlets and how they are funded, as seen in Table 1.

Active Living

Essential elements of active living include a built environment that supports physical activity and access to facilities and programs that support and promote physical activity. During the HBI demonstration project, the HBI team tested a number of initiatives related to active living. These initiatives can be divided into four focus areas:

- **The built environment** – The military Promoting Active Communities (m-PAC) assessment tool was used to evaluate the built environment at installations; specifically, m-PAC was used to consider aspects of the built environment that encourage or discourage physical activity.
- **Active transport** – The HBI team looked at how existing elements of the built environment could be used to encourage physical activity. For example, one

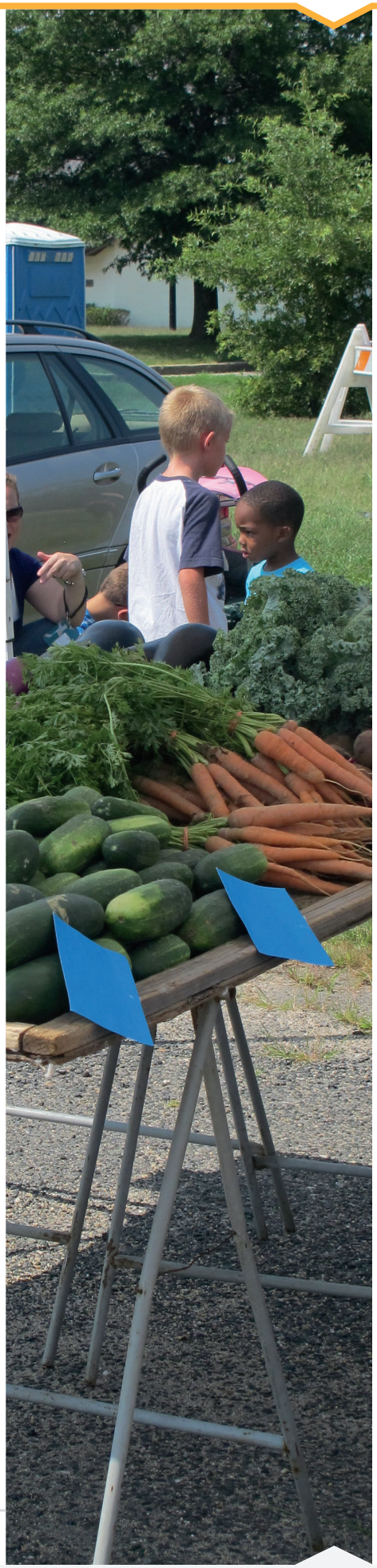
program, called StairWELL to Health, encouraged stair use. Another program, Bike Share, was originally intended to offer an alternative mode of transport for getting around on installations (as opposed to driving) but ended up as a recreational program.

- **Enhanced fitness facilities** – HBI explored whether enhancing fitness opportunities would increase physical activity. One program, 24-hour Fitness, provided individuals round-the-clock access to fitness facilities, like gyms; another program, called Fitness on Request, aimed to increase the number of fitness instructor-led classes on installations.
- **Comprehensive programming with coaches** – HBI also tested a comprehensive program, called Warrior Well, to individuals that encompassed physical activity, nutrition counseling, sleep metrics, and a team coach. The question was whether this kind of direct, multi-faceted intervention would have a greater impact on behavior than leaving individuals to try to get fit on their own.

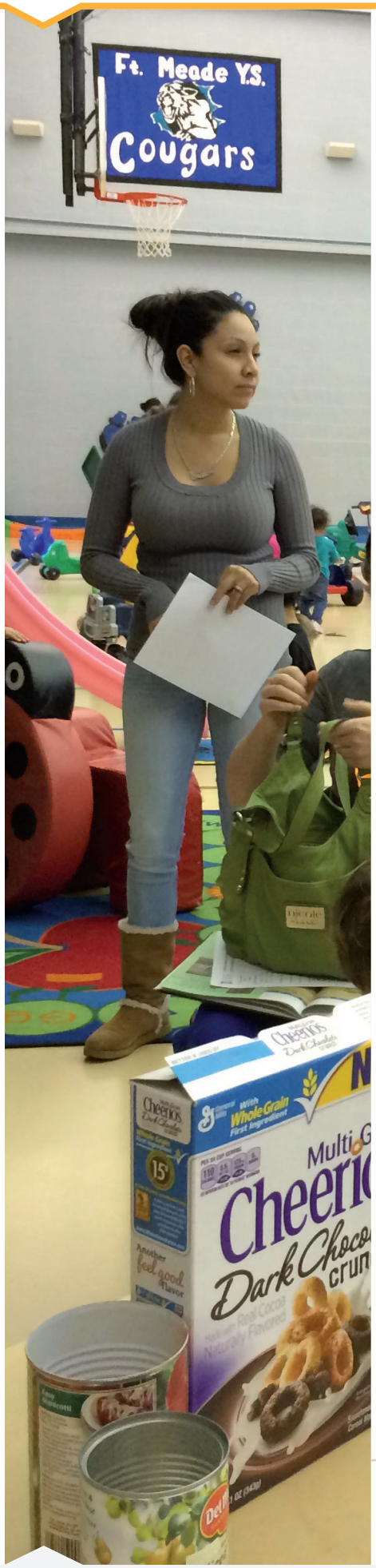
Health and Wellness

Despite its long history of attention to physical health and fitness, the U.S. military is increasingly affected by the same patterns of obesity, poor nutrition, tobacco use, and chronic disease found in the general U.S. population, which in turn imposes large costs to the DoD budget. As a member of the National Prevention Council, DoD is committed to implementing the vision, goal, priorities, and recommendations of the nation's first-ever National Prevention Strategy, which seeks to increase the number of Americans who are healthy at every stage of life. The health and wellness initiatives tested during HBI fall into six categories:

- **Assessment** – HBI tested the tool UltimateMe as a way to help individuals learn more about their "real age" and how to improve it. It also tested whether comprehensive, real-time data on the entire military community would be useful to leadership in enabling more efficient and effective allocation of resources.
- **Leveraging assets** – The HBI team looked for ways to leverage community and installation assets, while also looking for ways to "cross silos" within installations through initiatives such as the Community Resource Guide and the Community Health Promotion Council.
- **Replicating successful programs** – The HBI team tested programs like Group Lifestyle Balance™, which is modeled on the Centers for Disease Control and Prevention's (CDC's) successful *Diabetes Prevention Program*.[4]
- **Using technology to help individuals** – The HBI team tested the technology-based hologram program, Holly-Graham, as a way to deliver messages about health and wellness.



[4] More details can be found at: http://www.cdc.gov/diabetes/prevention/



- **Improving the environment at military hospitals** – Ambassadors for Health, a program that replicates a civilian program called *WorkHealthy America*[SM], [5] was tested at Military Treatment Centers.
- **Addressing children's health and wellness** – The HBI team tested several programs aimed at increasing the health and wellness of children, including Operation KidFit and *5210 Healthy Military Children*.[6]

Schools

Children of military personnel can attend a variety of types of schools, including private schools, public schools off military property, public schools on military property, and DoD Education Activity (DoDEA) schools. In the area of schools, the HBI team identified a single, comprehensive, evidence-based program designed by the Alliance for a Healthier Generation. The Alliance, which has worked with more than 30,000 schools around the country, provided technical advisors to work with schools at HBI sites that were interested in implementing *the Healthy Schools Program (HSP)*. Technical advisors from the Alliance were called Healthy Schools Program Managers.[7] They provided in-person core workshops and ongoing virtual assistance to help participating schools create a culture that promotes healthy eating and physical activity. Following a continual improvement process, participating schools completed a baseline assessment and a follow-up assessment to identify the strengths and weaknesses of their policies and programs.

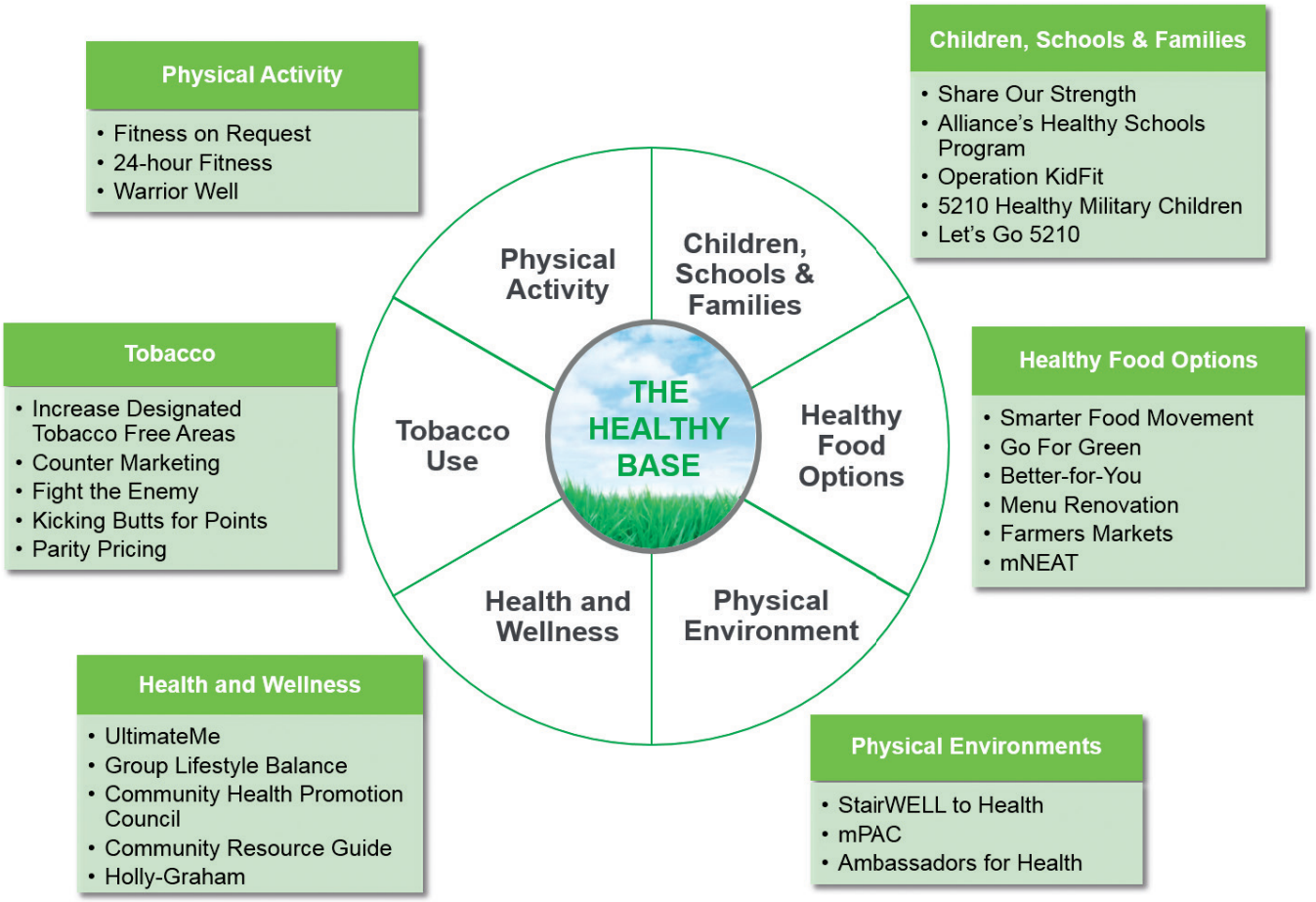
Tobacco

As part of HBI, initiatives to address tobacco use were tested at several pilot sites. These initiatives focused on policy, education, and programming. Policy initiatives included efforts to introduce parity pricing for tobacco products and increase the number of tobacco-free areas. Education and programming initiatives included a counter-marketing campaign, which involved placing anti-tobacco messages where they would be readily visible near the point of sale; Kicking Butts for Points, a unit-based competition to reduce individuals' tobacco use; and Fight the Enemy, which invited high school students to make an anti-smoking video and enter it in a national competition.

Figure 2 shows the different HBI initiatives, organized by wedge.

[5] More details can be found at: http://forprevention.org/p2/solution/workhealthy-america/
[6] More details can be found at: http://5210.healthymilitarychildren.psu.edu
[7] More details can be found at: http://healthiergeneration.org/take_action/schools/

Figure 2. HBI Initiatives by Wedge



C. HBI Measurement and Evaluation

Measurement and evaluation were important components of HBI from the outset.[8] Since a primary purpose of HBI was to generate lessons that could inform future efforts, it was important to track the demonstration project's results – both in terms of how successfully planned interventions and programs had been implemented and in terms of the relative effectiveness of different interventions and programs in bringing about desired changes in behavior and improvements in health.

The HBI measurement and evaluation framework contained three components:

1. **A structural evaluation** to assess policies and support systems for health and wellness and the existing environment at pilot sites prior to HBI implementation.

[8] A research team from John Hopkins University led the measurement and evaluation of HBI; their detailed findings are available in a separate report, which can be found at: http://www.jhsph.edu/research/centers-and-institutes/institute-for-health-and-productivity-studies/projects/archived-projects/. A separate team from Cornell University led the Climate and Resource Assessment discussed later in this section (see also Footnote 6).

This was important to establish a baseline for measuring the impact of HBI programs and to identify needs and gaps that HBI could seek to address.

2. **A process evaluation** to assess (a) the degree to which HBI was implemented as planned (fidelity) and the extent to which interventions were executed with appropriate intensity, frequency, and duration (dose delivered); (b) awareness of, participation in, and satisfaction with HBI programs and HBI overall among the target population (dose received and reach); and (c) intermediate outcomes or outputs (i.e., changes in health behaviors) as a result of HBI implementation.
3. **An outcome evaluation** to assess the impact of HBI on tobacco use and obesity.

Other assessment tools were likewise important in the evaluation and measurement portion of HBI; these tools represent another valuable output from the project because they can be refined and applied in future efforts. For example, m-NEAT and m-PAC were used to assess the environment for nutrition and physical activity, respectively, at specific HBI locations as part of the baseline-setting portion of the structural evaluation. The evaluation team also developed a Program Fidelity Tool (PFT) tailored to assess whether and to what extent each individual HBI program or intervention had been implemented as planned at different pilot sites (including, in some cases, specific facilities within the pilot site).

An important part of the process evaluation component was the Climate and Resource Assessment (CRA), which was conducted by researchers at Cornell University[9] and which was designed to give members of the military community the opportunity to provide feedback about HBI and about the specific food, active living, and tobacco cessation programs implemented at their location. The CRA took the form of an online survey, distributed at thirteen of the fourteen pilot sites at the end of the first year of HBI implementation, via a mass email to an all-hands list. In total, the CRA survey generated 2,057 responses and yielded a number of useful insights about people's interest in adopting healthier behaviors and their perception of HBI's role in supporting the kinds of lifestyle improvements they wanted to make.

Detailed findings from the HBI measurement and evaluation effort, including the results of the Climate and Resource Assessment are described in separate reports and in Chapters 8 and 9 of the main report. Four key points are highlighted here:

1. The structural evaluation identified many gaps and opportunities to improve programs, policies, and environmental support systems for health and wellness at HBI pilot sites. There is evidence that the food environment is improving but

[9] The Climate and Resource Assessment component of the measurement effort was led by the Bronfenbrenner Center for Translational Research at Cornell University. Detailed findings from that assessment are described in their full report, which can be found at: http://www.bctr.cornell.edu/healthy-base-initiative-report/.

progress toward making installations more conducive to increased physical activity has been slow.

2. There was substantial variation in the degree to which initiatives were implemented as planned (fidelity) across initiatives and installations. Overall, HBI fidelity was good — the average fidelity score for HBI initiatives was 2.1 on a 0-to-3 scale — but the score still indicates room for improvement, which could be achieved by increasing the intensity, duration, and frequency of initiatives.
3. There was substantial variation in the level of awareness, participation, and satisfaction with initiatives. In some of the targeted individual-level initiatives, such as Cooking Matters at the Store, participation was relatively strong. Other initiatives, such as Warrior Well and Group Lifestyle Balance™, were intensive and intentionally focused on small groups of individuals. In still other cases, implementation delays made it difficult to build sufficient awareness and engagement before the end of the demonstration period (e.g., Bikeshare and 24-Hour Fitness). Unfortunately, it is extremely difficult to gather robust participation data on broad environmental initiatives that would have had the largest reach (e.g., menu labeling programs like Go for Green® and Better For You and the Commissary Produce Initiative).
4. Consistent with expectations given the short-term nature and limited reach of the HBI demonstration project, the evaluation found limited evidence of a measurable change in overall rates of tobacco use and obesity that can be attributed to HBI at the pilot sites.

Results from the CRA provide further insights into the role and impact of HBI and will be helpful in guiding future DoD efforts to promote health and wellness in all segments of the military community. First, among those who completed the CRA survey, a significant portion not only understood that changing their eating, exercising, and tobacco-use behaviors was an important first step to a healthier lifestyle, but reported meaningful progress in making these changes over the course of the project. Second, while many things contributed to this progress, it is clear from the CRA responses that HBI played a strong supportive role in helping members of the military community make positive behavior changes. It was also clear that an overwhelming majority of survey respondents would like to see many of the HBI initiatives made permanent and expanded, if possible. Thus, while the CRA did not establish a causal link between HBI and changes in eating, exercising, and tobacco-use behaviors, it showed that HBI had an important impact, consistent with the project vision articulated through the Balanced Scorecard process, in advancing "a system and culture that improves readiness while lowering costs by reducing obesity and tobacco use."

"HBI demostrated that the people who needed help the most participated, but that some people also could have benefited from more help - especially if they lacked self-motivation."

D. General Lessons Learned from HBI

Some of the most important lessons to emerge from HBI transcend particular programs, issues, and installations. These lessons — which are based on implementation experience, interviews with points of contact at the agencies and installations, the CRA survey, and the Program Fidelity Tool — are summarized here. They are likely to be relevant for any future DoD initiatives in this area, including Operation Live Well. The lessons are grouped in two broad categories — labeled here as "challenges" and "opportunities"— depending on whether they relate to a particular barrier or difficulty encountered during HBI implementation or (in the case of opportunities) point to the potential for increasing the reach and impact of future DoD health and wellness initiatives. Recommendations to address these findings are found in a later section.

Lessons from Challenges Encountered in HBI Implementation

A one-to-two-year implementation timeframe was too short to produce measurable changes in health outcomes. The consequences of obesity and tobacco use for service members and their families have been widely reported and are clearly recognized by OLW leaders. HBI attempted to address both issues, but as a short-term demonstration project, it was unrealistic to expect that HBI by itself would produce substantial, observable changes in these risk factors over a one-to-two-year timeframe. In fact, the CDC and other experts warned that it would not be possible to "move the needle" in such a short period of time.

Measurement is critical and challenging. Measuring the impact of HBI initiatives was critical in assessing their value. The HBI team, with the assistance of the Johns Hopkins research team, developed a Program Fidelity Tool for each initiative to systematically measure impact. Metrics to track progress and measure impact are extremely important but very difficult to develop and apply on many levels. In the case of HBI, installation leads often lacked the knowledge, skills, and capacity to apply metrics and collect the data needed to measure program results. In addition, it could be difficult for installation leads to determine and/or access data and metrics being collected by other programs or offices at the installation. Lack of standardization was a further problem – many programs applied completely different metrics. There is too little emphasis on measurement in the current culture within military installations, which in turn makes it difficult to evaluate the impact and effectiveness of health, nutrition, and physical fitness-related programs. As a result, success is often determined on the basis of anecdotal evidence rather than empirical data.

Up-front assessment is essential. Identifying baseline conditions or measurements for installations was key to identifying opportunities for improvement. Assessment tools like m-NEAT for healthy eating and m-PAC for active living helped installations understand how "healthy" their environment was at the outset of HBI.

Dose delivered matters. During HBI, initiatives were tested at various locations on installations but they were typically not implemented everywhere at a given pilot site. For example, on installations with multiple food locations, HBI interventions were only tested at a few outlets. The StairWELL to Health initiative was tested and measured at just one location (Yokota AB). This approach reflected the view that initiatives needed to be tested before installations were asked to implement them at every location. The team learned (1) that it was far more effective to package different initiatives together — as a healthy eating package or as an active living package, for example — and (2) that implementing multiple initiatives at more locations is critical to driving behavior change and ensuring that the healthy choice is the easy choice no matter where an individual goes on base.

Lack of a coordinating authority impeded efforts and made it difficult to align the efforts of different departments within DoD. DoD's Offices for Health Affairs (HA) and Military Community and Family Policy (MC&FP) shared responsibility for HBI implementation (at the Assistant Secretary and Deputy Assistant Secretary levels, respectively), but their HBI authority was lateral in the sense that both HA and MC&FP can formulate policy changes and enforce them within their own purview, but lack authority to make and enforce changes in policy across DoD. HBI falls in the category of policy or guidance from the Office of the Secretary of Defense (OSD) — it was not implemented as a DoD directive. Moreover, different DoD offices and agencies, including MC&FP and HA, were restricted in how they could allocate funding and, as such, often managed and implemented programs on their own. But HBI and OLW were not stand-alone programs. And while the current governance structure readily supports programs run by different offices, there is no clear, effective way to create enterprise-wide culture change and work across offices and agencies within DoD.

Department of Defense Issuances are required to implement federal policy. For DoD to create new programs and resource them appropriately, federal policies and guidelines usually need to be translated into Issuances. These instructions help provide clarity about program requirements and authorize the resources the Services need to execute programs. Many federal agencies have issued guidance applicable to obesity and tobacco cessation; however, not all have been adopted or resourced by DoD, and there is not necessarily an Issurance for each one. DoD has an opportunity to ensure that federal policy and guidelines related to food, active living, and tobacco control are

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evaluated by key stakeholders and converted to Issuances that will support needed programs within the Department.

Many of DoD's health-related efforts are siloed even though they have similar objectives. Examples include the Joint Chiefs' Total Force Fitness initiative and several Service-led initiatives such as the Army's Performance Triad, the Navy's Sailor and Marine Initiative, and the Air Force's Comprehensive Airmen Fitness initiative. This lack of coordination and the perception of overlap with HBI and OLW sometimes led to confusion. At some installations, all the health, nutrition, fitness, wellness, and tobacco cessation programs were grouped under one umbrella and there was sometimes a concern that support for HBI meant less support for the Service-led effort. The plethora of programs and initiatives led to the frequent suggestion that DoD's health-related efforts must have complete organizational synergy and support up, down, and across the entire agency.

A singular Service culture can lead to duplicative efforts. Each HBI-participating Service branch (Army, Navy, Air Force, Marine Corps, Coast Guard) has a unique brand and identity. These distinctions help support cohesion and teamwork within units. They can also be essential to achieving each Service's mission. The disadvantage of these singular Service cultures, however, is that each branch sometimes develops and/or funds very similar programs/technologies or services. This in turn tends to give rise to program redundancies and potential cost inefficiencies. There was also caution about using any program that was developed or that appeared to have been developed for a different Service. For instance, UltimateMe was developed for HBI and all the Services. However, it resided on an Army server and that was reflected in the web address. Many individuals asked whether UltimateMe was intended for them.

HBI was handicapped by the inability to use incentives/prizes to increase participation. In the civilian sector, employers and health insurers increasingly offer financial incentives and sometimes prizes for behavior changes like joining a tobacco cessation, diabetes prevention, or weight loss program. The use of incentives within TRICARE®, however, is strictly circumscribed under current federal law. Similarly, government rules about awarding prize money or accepting in-kind donations made it difficult to create an incentive structure for participation in HBI programs. The UltimateMe PALA+ Challenge, presented in coordination with the President's Council on Fitness, Sports & Nutrition, encouraged users to sign up and take part in order to win prizes. This participation incentive was solely sponsored by ShareCare, Inc., which supplied and awarded the prizes.

Lessons that Spotlight Opportunities for Improving Future DoD Efforts to Promote Health and Wellness

Success requires strong leadership and management within and across installations. In the civilian sector, leadership at every level has been identified as a key factor in the success of efforts to improve employee health and wellness at any organization. Two other key factors include cultivating a culture of wellness at the organization and creating feedback mechanisms to support employee wellness programs. DoD is no different. At the start of HBI, installation commanders asked to be part of the Initiative. Not surprisingly, however, this initial, top-down commitment was not enough. HBI relied on active champions at every level, from the officers in charge of dining facilities and fitness centers to the Health Promotion Officers and others.

HBI relied on champions at every level.

Policy changes affect more people than individual behavior changes, but both are needed. Effective strategies to combat problems like obesity and tobacco use require sustained changes in the environment and in individual behavior — there is no "silver bullet" solution. Recognizing the need to address both environmental and behavioral drivers, HBI offered a combination of programs, with some efforts targeting a number of environmental or system changes across multiple installations while other programs were designed to work with a smaller population at the level of individual installations. Policy or system changes can influence more people — an example would be changing the menu options at a food outlet. At the same time, other programs, like the Warrior Well program tested at Camp Dodge, address the fact that some individuals need more support to reach their goals. Similarly, programs to educate individuals and families about the importance of a healthy diet may be of limited value absent efforts to change the food environment so that people have ready access to affordable, nutritious food options. HBI aimed to address the need for both policy and individual changes, but was hampered by its short time frame.

The Office of the Secretary of Defense (OSD) is open to policy changes to improve the accessibility and availability of healthy eating and fitness programs. OSD has made every effort consistent with the spirit and intent of the HBI demonstration to change or clarify policy to improve the accessibility and availability of healthy eating and fitness programs. For example, the Air Force was granted a waiver to leverage technology that allows access to fitness centers 24 hours per day. On the healthy eating side, policy guidance was issued that paved the way for farmers markets to operate on military installations. It is clear from the HBI findings that additional policy changes are likely necessary to assist the Services in establishing healthier communities. OSD MC&FP stands ready to address and implement any changes necessary when requested.

Future efforts need to recognize and adapt to the uniqueness and diversity of the military audience. Important differences exist across the Service branches and across the mix of DoD service members and employees. These differences can affect nutrition and physical activity needs — for example, some service members involved in specialty military operations might have far higher calorie requirements than others. Service members in some positions might face particular challenges — members of a submarine crew, for example, might have very little space for physical activity. Other challenges exist for those working in office settings. In general, HBI demonstrated that the people who needed help the most participated, but that some people also could have benefited from more help – especially if they lacked self-motivation. A further important consideration in program design is that many military individuals and families are highly mobile, moving every few years, and often face different and sometimes greater stresses than individuals and families in the general population.

Providing an integrated, customer-centered approach will lead to greater success. A typical service member and his or her family member(s) wants "one-stop shopping" to address needs for childcare, schooling, shopping, recreation, etc. For example, service members and their families who were interested in joining a fitness program felt more supported when the program was coordinated with a childcare facility. If people have to contact different departments or offices to access some of the services HBI or similar initiatives provide, they are much less likely to participate. The use of technology could be a solution to this challenge.

Everyone has a role to play. All members of the military community contribute to their health and wellness. DoD's health and wellness challenges cannot be addressed only by the medical community or only by a single department within DoD. Rather, future efforts need to engage decision makers in multiple departments (including housing, acquisition, and more) at the enterprise level and the installation level, as well as participants from all parts of the military community, including active duty, civilians, dependents, and retirees.

Installations want more partners "outside the gate" but some installations are more nimble than others in working with outside groups. Installation leaders understand that community and military resources need to be leveraged and that military installations should not compete with local organizations, but rather work with the community. Some suggested that OSD and the Services consider brokering more partnerships with national organizations they could access at their location, while others expressed the view that every installation should conduct a community scan to better understand the resources available outside the gate before making decisions to offer anything on post. Two installations were already working with outside coalitions before HBI, and both

found these coalitions to be effective ways to further HBI and other installation efforts. At Fort Sill, the Fit Kids Coalition, made up of the local school district superintendent, a pediatrician, the MWR director, and other organizations, was formed to address childhood obesity. The Coalition was able to promote Safe Routes to School, build a playground entirely through donations from the community, and increase opportunities for outdoor recreation. Another example of a successful community partnership is the Fort Meade Alliance, a non-profit group that was created to work with 117 government agencies and organizations located on or around Fort Meade. The Alliance, which was originally formed to work on Base Re-Alignment and Closure (BRAC), proactively fosters communication and partnerships between Fort Meade and outside organizations. It was helpful in promoting HBI initiatives and was instrumental in getting the Fort Meade farmers market up and running.

To better market health and wellness programs, health and wellness goals need to be more closely tied to DoD's overall mission. Throughout HBI implementation, installation leaders stressed that the HBI team needed to develop messaging that showed clearly how the health of the military community affected the installation's ability to fulfill its mission, and the mission of the Services and of DoD as a whole. Some individuals voiced frustration about the difficulty of changing mindsets to recognize that human systems are just as important as weapons systems. Others suggested that HBI/OLW messaging should be more clearly connected to readiness, including readiness to deploy, not just health. There was also a suggestion that HBI messaging should make a stronger connection to cost impact. For example, in 2012 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, and the cost to recruit, screen, and train their replacements amounted to nearly half a billion dollars.[vii]

Recognition programs are important to commend installations that worked hard to implement HBI. The value of recognition is demonstrated by the Alliance for a Healthier Generation's Healthy Schools Program, which issued awards to schools that achieved success in creating a healthy school environment.[10]

[10] Three schools, one at Fort Sill and two at Fort Meade achieved silver and bronze status respectively and were honored by a ceremony in Washington with former President Clinton in October 2015.

E. Lessons by HBI Wedge

Similar to the general lessons, the assessment tools, along with the CRA, site visits, and interviews with the installations revealed a number of major themes and findings that are specific to particular HBI "wedges" and that will likewise be relevant for Operation Live Well and other future DoD efforts to promote health and wellness.

Healthy Eating

The DoD food system is complex – thus, any change affects the whole system, not just one element. As each initiative was tested, other issues emerged. For example, if the aim was to make a recipe healthier, it was also necessary to procure ingredients. Issues like procurement, cost, training, production, presentation, and tracking all proved important during HBI implementation.

There is not one universal solution or intervention that is optimal for each food operation. Different food venues in DoD (Appropriated Food and Non-Appropriated Food) operate with different decision makers, regulations, menus, training, delivery, tracking, measurement, and accountability. Any effort to improve all the food delivery systems in the military environment will have to be sensitive to these differences.

APF dining facilities offer some of the healthiest menu options but are limited by operating hours and authorized users. According to the m-NEAT assessment, dining facilities are second to the commissaries in the availability of healthy food; however, dining facilities, mess halls, and galleys have limited hours of operation and are only open to authorized patrons. Budget cutbacks continue to reduce the number of hours that dining facilities are open, hampering the availability and accessibility of the healthy choices they offer. Other organizations, like the Military Compensation and Retirement Modernization Commission, have also identified this issue through their research and found that DoD is not consistently meeting the dining needs of service members (particularly the junior enlisted). While the Commission believes it should not dictate to the Services which model of delivery they use, the Commission feels strongly that DoD needs better data on what is currently available in order to better represent the status quo and then identify the potential for improved dining choices.

Vending and fast food needs improvement. Results from the m-NEAT assessment demonstrated that dining facilities, galleys, and commissaries tended to provide healthy offerings. On the other hand, there was significant room for improvement at most installations with respect to the food available from vending machines and fast food outlets.

All food service outlets need to be part of any effort to create a healthier food environment on base. Foodservice contracts, including vending contracts and any food programs operated by third parties, do not universally mandate minimum nutrition standards consistent with current best practice. Further, even when nutrition standards are included, such as FitPick standards for vending machines, the m-NEAT assessment revealed that enforcement of the standards was inconsistent. Several instances where non-FitPick items were identified as FitPick items in a particular vending machine were observed.

Procurement is perceived as a challenge. Every installation noted that working with prime vendors sometimes presented issues in terms of improving food offerings. One complaint was that even if a location wanted to order healthier ingredients, prime vendors were often unwilling to deliver smaller quantities (especially if this meant breaking cases). Minimum order requirements could make it difficult to test new foods.

Buying power is reduced because of NAF procurement at the installation level. Most NAF food operations procure food individually. When the golf course, the bowling center, and the club all purchase their food independently and in small quantities, the potential for leveraging their buying power diminishes considerably, resulting in less efficient operations.

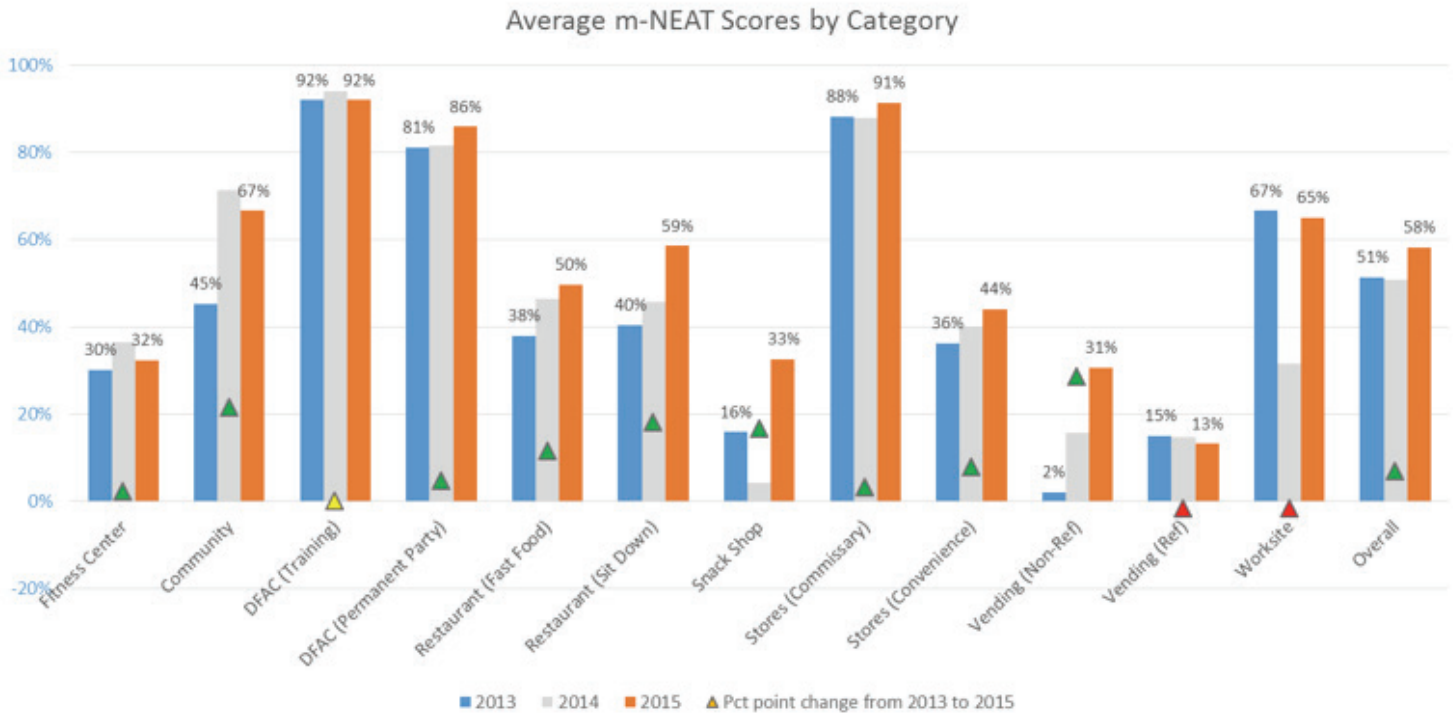
Families want to learn more about healthy eating. The popularity of programs like Cooking Matters demonstrated that there is demand for more hands-on nutrition education in locations where people shop, such as commissaries. This type of education could also be offered at other frequented locations like food outlets, family support centers, child development centers, and schools.

Many children and youth centers on military installations could do more to promote healthy eating. Eating habits form at a young age and are influenced by family habits at home and by the food environment at locations where children learn and play. Vending machines at youth centers on military installations typically carry a large number of products with high calorie, sugar, fat, and sodium content. The U.S. Department of Agriculture (USDA) and national non-profits have worked over a number of years to remove sodas and other unhealthy items from vending machines in schools but these efforts have generally not been replicated at DoD youth centers.

HBI healthy eating initiatives affected behavior. According to the Climate and Resource Assessment, installations that implemented a mix of HBI initiatives, such as menu labeling, food placement, and nutrition education, had a higher number of respondents reporting significant changes in their eating behaviors. Smaller changes were reported in tobacco use and exercise behavior (according to the CRA, exercise behavior showed the least change).

The m-NEAT assessment tool helped HBI locations understand whether they offered healthy food options as can been seen in the figure below.

Figure 3. Overall m-NEAT Scores, by Category, for All HBI Pilot Sites



The largest improvements in m-NEAT scores were in the categories of non-refrigerated vending, community, sit-down restaurants, and snack shops (improving 28 percent, 21 percent, 19 percent, and 17 percent, respectively). Areas showing little or no progress were DFAC (training), vending (refrigerated), and worksite. Given that access to a healthier diet is essential for combatting obesity, the overall conclusion from Figure 3 is that DoD has a very substantial opportunity to advance its health and wellness objectives by improving the nutrition environment at all its food establishments.

Active Living

Installation layouts are designed for the automobile. In the 1950s, communities across America began to be designed around the car. Military installations were no different. As a result, there is now a marked difference between the physical layout of installations that were designed before and after the 1950s. Installation design is also affected by the different missions of the individual Services. For example, Navy installations are more industrial than the installations of other Services. Current concepts in urban design favor walkability and bikeability for reasons of fitness, environmental

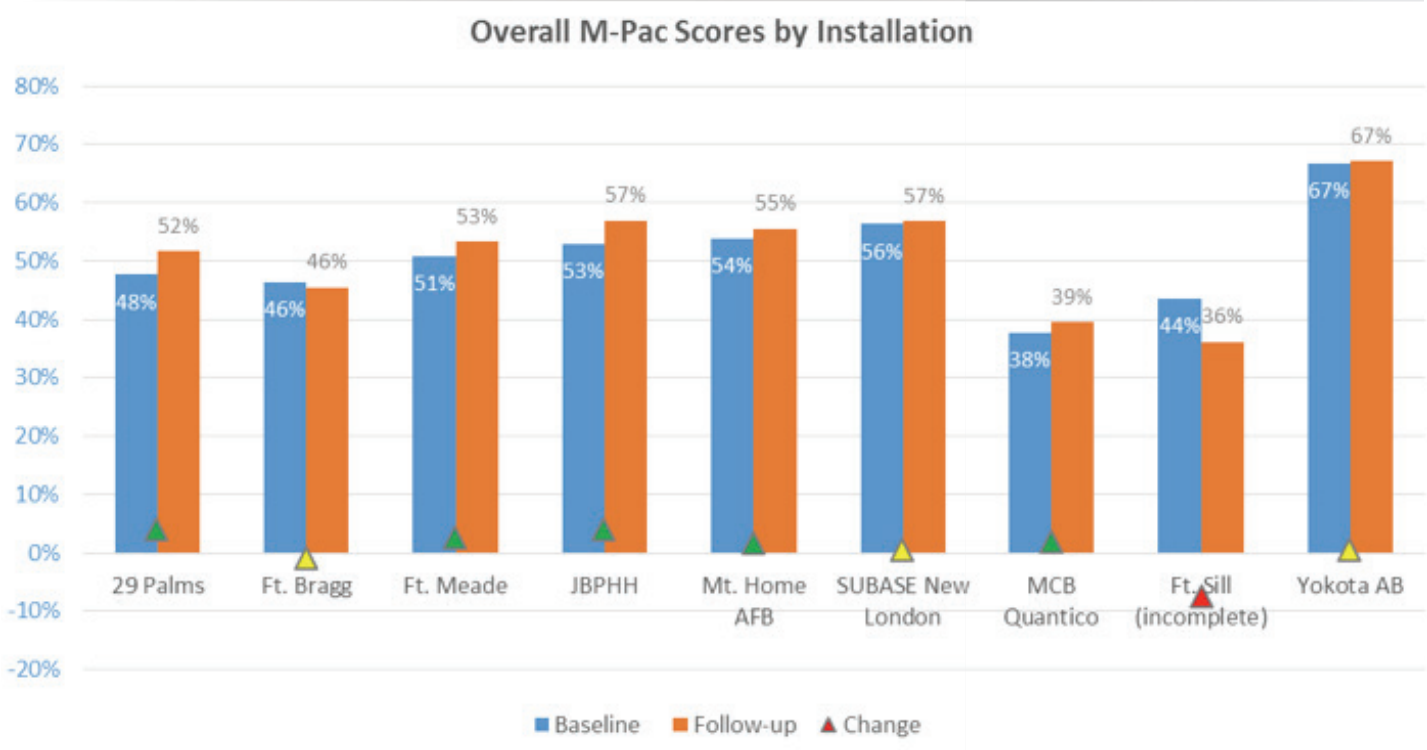
sustainability, and quality of life. The timeframe of the HBI demonstration project made it impractical to target significant changes to the layout and built environment at existing installations. Rather, the question for HBI was how to increase awareness among key stakeholders of how the built environment can impact health and wellness and support (or undermine) DoD's objectives with respect to maintaining a fit and ready force.

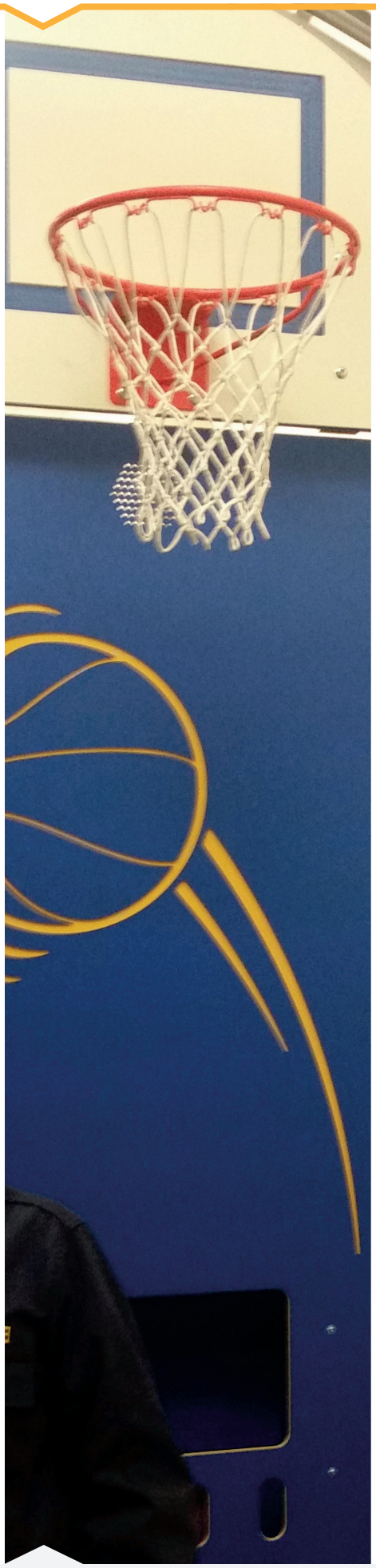
The factors that play a role in active living are complex and many-layered. Thus, simply promoting physical activity will not, by itself, result in needed changes – the built environment needs to be addressed as well. Put another way, the components of active living need to be approached as a system.

Commanders need appropriate resources to implement master plans. There was an opportunity at one installation to develop a more pedestrian- and bike-friendly environment. A planner was hired to develop designs, but the plans have not been implemented due to a lack of funding. At another installation there is interest in creating a long walk/run/bike path on the perimeter of the installation, and a small amount of funding has been allocated to construct the path.

The m-PAC assessment tool helped installations understand how much they promoted active living.

Figure 4. Overall m-PAC Scores, by Installation





Current physical activity programs are geared toward individuals who are already self-motivated. These individuals will benefit from more satellite fitness centers and extended hours. But physical activity programming is also needed to reach individuals who are not self-motivated using tools like coaches, recognition, teams, joint programming with children, etc.

Inadequate access to drop-in childcare is a barrier to exercise for many service members and their families. While some installations have drop-in childcare, slots are often limited and childcare facilities are generally not located close to fitness facilities.

Food, fitness, and active recreation outlets need to be strategically located to serve individuals where they live and work. Increasing walkability and bikeability involves more than just adding sidewalks and bike lanes. A first step is to identify population centers and locate places to eat, work out, shop, get medical services, access childcare, etc. so that the greatest number of people possible can be served within easy walking distances from where they live and work. The placement of existing facilities is sometimes out of sync with the populations they serve. In the Air Force, for example, flight lines can be very far away from food outlets. This can mean that during lunch breaks, personnel have to drive to get food or eat from vending machines if they want to eat at all.

Individualized coaching and teamwork helped individuals reach their goals. Experience with Warrior Well showed that not every service member can reach his or her fitness goals on their own. By enlisting coaches who are veterans or active military and by developing a team structure, individuals who required more guidance and motivation got the support they needed to achieve their goals.

Health and Wellness

Analysis indicates that Health-Related Quality of Life (HRQOL) is a valid measure for evaluating the health of individuals in the DoD community. HRQOL has long been used in the civilian sector by the Centers for Disease Control and Prevention (CDC) and other organizations. In addition, HRQOL was used to define one of the foundational objectives for the Healthy People 2020 initiative and is being applied at the national level to measure progress toward that initiative's established goals. However, despite its acceptance and use in the civilian community, HRQOL has attracted only limited study and application in the military setting. UltimateMe provided a vehicle for testing the utility of HRQOL in the DoD community, where it was found to be a "valuable measure of health status among UltimateMe participants."[viii]

Programs like UltimateMe can be a source of valuable real-time health data. Publically available population-level health data (such as data from the Health Related Behavioral Survey, which is performed every three years) do not provide real-time information to stakeholders and decision makers about the specific needs of a community. To allocate resources efficiently, meaningful, up-to-date information on behavior is needed. This information is helpful for identifying system and local challenges, as well as root causes. UltimateMe showed how valuable this type of fine-resolution information can be. For example, early analysis of nutrition data from participants at Yokota was extremely helpful in identifying barriers to healthier eating. The assessment indicated lower fruit and vegetable consumption and, upon further study, the team was able to identify port closures and higher prices as important causes for this finding.

Existing health and wellness programs are not always utilized. The HBI team found that many participating HBI installations already offered a plethora of health and wellness resources and programs. But many program managers felt their programs were underutilized or not very well known within the community. Efforts to market these programs may have been limited by a lack of funding or resources and program utilization may have been affected by limited hours, limited resources/staff, program location and distance from customers, and limited online/mobile accessibility. Another barrier to utilization could be a lack of personal motivation or awareness about how these programs can help change behavior and support participants' commitments to change.

Because most military families live off base, there needs to be more coordination and leveraging of resources with adjacent communities. Approximately 70 percent of military families live off post, in surrounding communities. When it comes to challenges related to obesity reduction, healthy eating, active living, and tobacco cessation, many communities around the country are facing the same issues. In many cases, military communities can tap into existing efforts at the local, county, and state levels. For example, there may be non-profits in the community working on similar issues that would be interested in working with the installation. And even if a community is not working on these issues, installation leadership may be able to inspire local elected officials, community organizations, and local businesses to reinforce the concepts of healthy eating, active living, and tobacco cessation.

Schools

Many schools embraced the Healthy Schools Program and welcomed the technical assistance the Alliance For a Healthier Generation provided. At Fort Sill, the Geronimo Road Elementary School reached the bronze level in 2014 and was recognized at a national event with former President Clinton. Geronimo school worked hard and in the 2014-2015 school year achieved the silver designation and is working towards gold in the 2015-2016 school year. Fort Sill leaders have challenged seventeen school districts near Fort Sill to follow in Geronimo's footsteps. At Fort Meade, Meade Heights Elementary School and Pershing Hill Elementary achieved bronze level status.

Only half of the HBI DoDEA schools reported that they provide comprehensive health education with respect to physical activity and healthy eating. In addition, none of the HBI DoDEA middle or high schools required health education. On a more positive note, however, it is worth noting that DoDEA schools exceed state and national averages in health education.

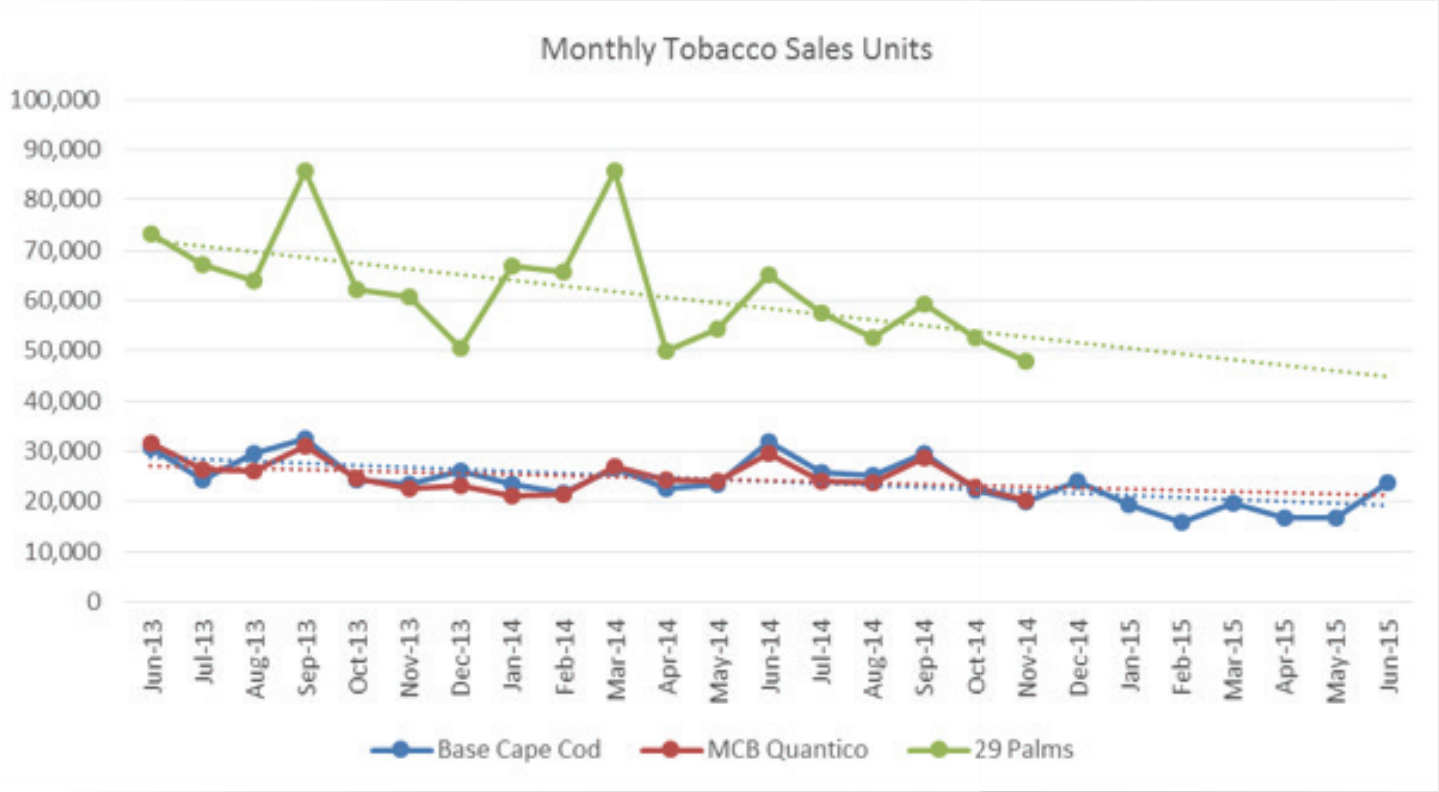
Tobacco

There is broad support for tobacco-free campuses. Installation leaders often felt that changes in tobacco policy, such as enforcing tobacco-free campuses, needed to come from the enterprise level. A number of barriers, such as perceived union opposition and lack of accountability for enforcement of existing policies, hindered the implementation of such policy changes at individual sites.

Enforcement is an issue for restrictions on tobacco use on military installations. While the Services already have policies that restrict tobacco use in many areas on military installations, enforcement of these policies varies by Service and by installation. There seems to be little accountability for enforcement, even though policies do identify individuals or offices responsible for enforcement. Adding a layer of accountability for maintaining and enforcing a partially tobacco-free installation (say, 75 percent tobacco-free) would give leadership some direction and tangible goal to achieve.

Figure 5 presents sales data from Base Cape Cod, Twentynine Palms, and Quantico MCB, the three installations most active in tobacco counter-marketing efforts. It is evident that tobacco sales are declining at all three of these installations.

Figure 5. Tobacco Sales at USCG Base Cape Cod, Marine Corps Base Quantico, and MCAGCC Twentynine Palms (in units)



F. General Recommendations

Based on lessons learned and measurement results from HBI, the HBI team developed a number of recommendations for future DoD efforts, including OLW. The team's most significant recommendations are summarized below – many of them flow directly from the general lessons summarized previously. A full list of recommendations can be found in the HBI Report.

1. **Develop the strong leadership needed at every level to make a difference.**
   Recognizing that strong leadership at all levels was integral to success, the HBI team recruited proactive commanders to help propel the demonstration project forward. For OLW and any HBI-like effort to succeed in the future, leaders must be identified and recruited at every level of decision-making and at every installation, including unit commanders, MWR directors, Youth and Children program directors, DoDEA school principals, child development center directors, public affairsofficers, and health promotion officers, among others. Changing the status quo is difficult and requires commitment from leadership at all levels if it is to succeed.

2. **Listen to the consumer and think like the consumer.** The HBI CRA revealed very interesting information about how DoD service members and personnel feel about healthy eating, active living, and tobacco use. This information points to the need for better integration and coordination of services and programs in ways that are responsive to the needs and preferences of service members and their families. At present, most programs and initiatives are siloed according to their funding sources, which makes it difficult to provide "one-stop" convenience to users of those programs. Creative use of technologies already in the civilian marketplace could help DoD design programs that put the customer at the center and ensure that the customer receives only the information that is relevant to them. At the same time it will be important to tailor programs to the needs of different customers. In the military, for example, some service members and employees are single, some are married, some have kids, some don't, some are just starting to serve, and others are close to retirement. All these customer differences can help DoD curate programs and tools to more effectively help service members and their families get on a path to wellness.

3. **Increase the dose of interventions.** In further iterations of HBI-like interventions, the effort will be more successful if the dose delivered is increased. Limited-dose interventions delivered on large locations, like installations, will have limited impact if they are implemented only at one venue. Interventions need to be broad-based to have an impact. For example, if there is menu labeling, the labeling should be implemented at every food venue.

4. **Share experience and programming with all installations.** While HBI was implemented at only fourteen locations, other installations asked if they could implement some of the programming HBI was offering and other institutions, like DeCA, were interested in implementing initiatives like Cooking Matters at their commissaries. DoD is sharing HBI programming, lessons, and recommendations with additional installations and other agencies through the Commander's Toolkit, which can be found on the secure, non-public HBI Community of Interest.[11]

5. **Convene a meeting on key topics to address challenges uncovered during HBI.** The HBI team identified several areas of opportunity for supporting healthy lifestyles. Many of these opportunities require a comprehensive, holistic approach. For example, if installations want to offer healthier menu items, they also have to address procurement, dietary standards, and recipes.

[11] For those who have a Common Access Card (CAC), the Commander's Toolkit can be accessed at: https://www.milsuite.mil/book/groups/hbi

These issues are complex and warrant further exploration. A potential next step would be to convene key stakeholders and decision makers for a discussion of questions and recommendations. Potential examples are listed below:

a. *Military Food Summit* – Bring together all departments and agencies responsible for NAF and APF food for the military community as a whole to discuss policies and procedures that could be improved to encourage healthy eating.

b. *Building a Healthier Installation* – Bring together all the parties involved in making planning and construction decisions at the installation level.

c. *Combatting Obesity in Schools, Youth Centers, and Child Development Centers* – The civilian sector has been addressing the issue of obesity through a range of efforts and organizations like Let's Move!, the Partnership for a Healthier America, the Robert Wood Johnson Foundation, and more. The Office of Family Readiness Policy (OSD MC&FP) should continue to foster relationships with these civilian organizations to explore how they can join forces more effectively to address child obesity in the military community through policies, programs, implementation, and measurement.

6. **Break down institutional silos within the DoD and create cross-departmental working groups. At the same time, apply consistent best practices across the Services.** In the civilian world, efforts to promote healthy living by government agencies and large foundations are often fragmented and uncoordinated, even though holistic approaches would generally be more effective. The same holds true for DoD, which should consider how to break down department barriers and acknowledge that health and wellness rests not only with Health Affairs, but with every department that touches the lives of people in the military community. A first step might be to identify and categorize all programs and contracts in each Service and look for redundancies[ix] that could be leveraged to save money. Although the HBI demonstration project has ended, DoD still has numerous programs, initiatives, and policies in place that target health and wellness and that could be categorized under Total Force Fitness (TFF) and OLW. But current funding practices, which tend to promote a siloed approach to program implementation, and other institutional factors can result in unnecessary redundancy and substantial missed opportunities to leverage resources more efficiently. To begin identifying these opportunities, DoD should conduct a thorough survey of existing programs and initiatives, while also exploring existing contracts and activities that could be deployed to the other Service branches.

7. **Create a clear governance structure and include all relevant departments:** A clear governance structure encompassing all the relevant departments and agencies that influence an individual's health and performance is critical for the success of an effort like HBI. More specifically, representation is needed from (at a minimum) Acquisition, Technology and Logistics (AT&L); Personnel & Readiness (P&R), including MC&FP; DoDEA; DeCA; DLA; the Exchanges; the Joint Chiefs of Staff; each service (e.g., Army, Navy, Air Force, etc.); the NAF and APF food managers at the Service-level; and Health Affairs. This governance structure should provide the requisite authority to (a) hold departments/offices accountable, (b) direct funding to where it is needed, (c) encourage and reward cross-collaboration, and (d) create and implement enterprise-wide solutions.

8. **Audit existing policies and look for opportunities to implement improvements.** DoD should review all policies that affect food, the built environment, physical activity, and tobacco with two objectives in mind:

    a. To assess whether existing policies need to be updated, adapted, or changed to promote a healthy military community.

    b. To benefit from experience with other, similar efforts. At the same time, DoD should work with other agencies to review broader federal policies that could improve the heath, wellness, and performance of the military community and issue the necessary DoD Issuances to reflect those policies.

9. **Work more closely with sister federal agencies.** DoD should work more closely with other federal agencies, many of which are also tackling obesity and tobacco use. Specific sub-recommendations for achieving closer interagency coordination follow:

    - *Connect installations with regional agency reps:* Almost every federal agency has regional representatives, many of whom would welcome the opportunity to work with the military. DoD should communicate with the national offices of each relevant agency to ask how best to connect installations with their regional representatives. Agencies to consider include USDA for nutrition and food procurement efforts, Health and Human Services (HHS)/CDC for health initiatives, the Department of Transportation and the Environmental Protection Agency for the built environment, the General Services Agency (GSA) for procurement and office space, and the Office of Personnel Management for personnel incentives and rewards.

- *Continue to use the U.S. Surgeon General's National Prevention Council*[12] to request greater collaboration: At present, seventeen federal agencies, departments, and offices meet with the U.S. Surgeon General on a regular basis to update each other on the implementation of the *National Prevention Strategy.*[13] DoD already participates, through Health Affairs, and gives updates. The Council presents an opportunity to ask for help from other participating agencies.
- *Choose locations for future initiatives in locations where other agencies are deploying resources:* Many federal agencies are deploying programs to improve the health of civilian communities through messaging and marketing campaigns, changes to the built environment, improved transportation, and repurposing contaminated sites slated for clean-up, otherwise known as Superfund sites, to host farmers markets and parks and riverways, etc. When DoD decides to embark on any effort, it should consider what other agencies are already doing in certain communities and build on those efforts at nearby installations.

10. Partner with non-military organizations interested in the same issues as a way to leverage national- and community-level resources and expertise.

HBI created some robust relationships with non-profits and academic institutions by using existing programs and measurement tools in the civilian sector and adapting them to the military environment. Examples include Share Our Strength's Cooking Matters, the Alliance for a Healthier Generation, Johns Hopkins' Program Fidelity Tool, Cornell Brand Lab's Smarter Food Movement, the Culinary Institute of America's healthy food training, and Prevention Partner's WorkHealthy America. DoD needs to create more partnerships as it moves forward to better leverage existing expertise and outside resources.

11. Use rigorous assessment and measurement to improve future efforts.

This means ensuring that all programs and initiatives are measured consistently. Standard reporting mechanisms should be developed and measurements should be tied to future funding. As DoD undertakes future health and wellness initiatives and policy changes, it will be important to pay attention to how these efforts can be measured. DoD should determine whether the HBI measurement model is one that can be used for future program assessments and take other specific steps to improve its measurement and assessment capabilities with respect to future health and wellness initiatives:

[12] More details can be found at: http://www.surgeongeneral.gov/priorities/prevention/about/
[13] More details can be found at: http://www.surgeongeneral.gov/priorities/prevention/strategy/

"New research is showing that other areas like sleep and stress also affect health, productivity, and performance."

a. *Require the use of measurement tools* like CACHE, which includes the *m-NEAT*[14] and m-PAC, at all installations and agencies, so that they are all in a position to establish a health baseline.

b. *Require reporting and measurement for all DoD-funded health and wellness initiatives.* This will help ensure that funding is being used effectively.

c. *Create standard forms of measurement.* For example, the Program Fidelity Tool and other measurement tools created during HBI should be used as standard ways to measure all programs and initiatives.

d. *Teach measurement at key points in military life cycle.* Not everyone understands measurement, and there is often disagreement between outputs and outcomes. A class on "Charting the Course to a Healthier Force," which is currently Army-focused, could be adapted to teach service members how to collect data and evaluate programs with measurement mechanisms.

12. **Explore more evidence-based research on healthy lifestyles.** HBI and other ongoing DoD initiatives (e.g. the Army Performance Triad and the Joint Chiefs of Staff Total Force Fitness) have focused on healthy eating, active living and tobacco free living as three areas of particular opportunity for improving force retention and readiness. Meanwhile, new research is showing that other areas like sleep and stress also affect health, productivity, and performance. Going forward, DoD needs to stay abreast of current research and incorporate new findings to develop evidence-based programming that addresses all aspects of healthy living.

13. **Include the entire military community in future efforts.** HBI focused on Service members and the families, but the military community is much broader and includes civilian employees as well as retirees. Many businesses are finding out that health and wellness programs are most effective when they target the entire family. Future DoD efforts should therefore include all members of the military community and families, as well as individuals.

14. **Create incentives or prizes/recognition programs.** Rewards help motivate action. A number of existing federal restrictions make it harder to implement rewards, but DoD should consider developing a policy that allows for incentives and recognition without running afoul of government restrictions. Additional ideas that should be considered under this heading include the following:

[14] More details can be found at: http://www.med.navy.mil/sites/nmcphc/Documents/health-promotion-wellness/healthy-eating/DoD-mNEAT-Fact-Sheet.pdf

a. *Create incentives for implementation.* Tying implementation success to staff evaluations or adding health of forces under command to the evaluation criteria for leadership promotion would also serve to create incentives.

b. *Create a recognition program for successful installations.* Much like the gold, silver, and bronze levels recognized under the *Healthy U.S. Schools Challenge,*[15] DoD should consider developing a recognition program for installations. Such a program could be based on the *Let's Move Cities, Town and Counties*[16] initiative, which requires each participating location to meet certain criteria, such as improved food offerings, bike lanes and sidewalks, schools in the *Healthy Schools program*,[17] child development centers active in *Let's Move Childcare*,[18] etc.

c. *Create rewards/incentives for service members, spouses, and children who become wellness champions.* At present, there is no incentive to be an HBI champion — you get paid the same regardless. DoD should create some reward, recognition, or incentive for initiative champions.

d. *Add modeling healthy behavior to job description/evaluation of all DoD service members.*

15. **Use technology to create a virtual military community.** Given trends in the civilian population, growing numbers of individuals in the military are interested in topics like food and where it originates, sustainability, alternatives to driving, and socially responsible uses of technology. DoD should adjust its outreach strategy as well as its programs to respond to this groundswell of interest, and make use of technology to connect to these individuals. As in the civilian sector, technology and social media can create communities of interest; moreover, technologies tailored to the military could create even more focused communities. Facebook, Twitter, and Instagram are useful tools, but DoD should also consider using technologies that are better suited to fostering social interaction and information-sharing in a more closed community.

"As in the civilian sector, technology and social media can create communities of interest; moreover, technologies tailored to the military could create even more focused communities."

[15] More details can be found at: http://www.fns.usda.gov/hussc/healthierus-school-challenge-criteria-application-criteria
[16] More details can be found at: http://www.healthycommunitieshealthyfuture.org/about-us/lets-move-cities-towns-and-counties/
[17] More details can be found at: https://www.healthiergeneration.org/take_action/schools/
[18] More details can be found at: https://healthykidshealthyfuture.org/

G. Recommendations by HBI Wedge

Healthy Eating

The HBI team developed the recommendations below based on the lessons learned during the demonstration to improve assessment, procurement, preparation, and presentation of healthy food, and at the same time leverage DoD's buying power and increase efficiency. The highlighted recommendations are specific to DoD, but can be translated for use in a civilian enviornment.

1. **Promote m-NEAT at more locations.** Since the assessment helps installations grade their food environment, DoD should consider testing m-NEAT at more locations to gauge its effectiveness and solicit more input for improvement.

2. **Convene a working group of key stakeholders to look for opportunities to promote healthy eating through programs that target military spouses, children, and families.** The working group should include, at a minimum, MC&FP, MC&FP's Office of Family Readiness, each Service's Office of Children and Youth, Health Affairs, DoD dietitian representatives, Service support center representatives, and other key stakeholders.

3. **Work with the Joint Subsistence Policy Board (JSPB), which provides — under the direction of OSD (AT&L) — overall guidance for DoD APF food service programs.** While AT&L establishes DoD policy for APF dining facilities, JSPB develops revisions to food policies and practices and develops uniform DoD menu standards, among other roles. MC&FP should consider coordinating with AT&L to participate in JSPB meetings as a way to share the lessons and recommendations from HBI and resolve issues uncovered during HBI to foster more healthy eating.

4. **Explore centralizing oversight over food service operations.** Although AT&L has policy oversight and the Services have operational oversight over food service operations, DoD should explore whether one office within DoD should be given responsibility for these operations to ensure consistency between APF and NAF funded venues and to use DoD's buying power more effectively.

5. **Leverage DoD's buying power.** Specifically, DoD should look for one or two major, high-impact opportunities to leverage its considerable purchasing power. For example, DoD could look to improve food procurement by assessing existing policies and by developing new procurement protocols aimed at improving food quality and nutritional content. This should encompass efforts to evaluate other systems of food procurement and to include all decision makers in the food procurement process, from DLA to the Joint Centers for Culinary Excellence

and from the individual services to installation-specific dining facilities and MWR locations.

6. **Improve the APF and NAF model for food procurement and delivery.** Opportunities to improve efficiency and collaboration in the procurement, preparation, and sales of food at NAF and APF locations must be identified and pursued. Successful elements of the Air Force's Food Transformation project and the Marine Corps contract with Sodexo might provide useful information for this effort. DoD should also research the college/university food service model, with its mix of retail and dining hall outlets run by the same central management, as a possible adaptation for the military environment. This would encourage dining facilities to operate more like businesses that focus on taste and consumer demand. Service members could "pay" with meal cards (the facility would be reimbursed by the government for each "swipe" of the card); non-service members would pay cash. This would allow for centralized purchasing/procurement; centralized management of all dining facilities (including exchange snack bars, etc.); and make it possible for everyone to use installation dining facilities (not just service members).

7. **Drive shift toward healthier brands when bringing on new franchises, products, etc.** DoD must develop a policy that encourages or incentivizes franchise relationships with brands that have a certain percentage of healthier offerings – e.g., 25 percent/50 percent/75 percent in their current menu.

8. **Review APF and NAF contracts and policy standards with the aim of increasing access to healthy, affordable food.** Specifically, DoD should consider reviewing existing food supply, vending, and fast food processes and contracts to ensure that appropriate menu (and nutrition) standards are in place and enforced.

9. **DoD should conduct a Department-wide assessment of all vending operations to ascertain if nutrition standards are being used, what nutrition standards are being used, and how the vending operations are being monitored for compliance.** Based on the assessment, the Department, in collaboration with the Military Departments, the Department of Education, and the state licensing agencies who oversee the Randolph-Sheppard Act blind vending contracts should work to meet the U.S. Surgeon General's challenge to integrate healthy food service guidelines into appropriate policy(ies), such as the HHS/GSA Health and Sustainability Guidelines for Federal Contracts and Vending Operations, by January 1, 2017.

10. **Support smaller food outlets' ability to buy and serve healthier items.** DoD should consider conducting a survey of installations to identify healthy products that are not being supplied by prime vendors. In addition, contracts should be reviewed to ensure they support efforts to purchase healthier items in smaller quantities. DoD could then work with prime vendors to make these products available for purchase.

11. **Review and update DLA catalogue with key purchasers to purchase healthier, locally sourced products.** Specifically, DoD could work with food specialists and vendors like Sodexo and Aramark to update the DLA catalogue to ensure that offerings are consistent with DoD policy and to promote healthier products. The Joint Subsistence Policy Board should work with DLA to identify product specifications and update all catalogues.

12. **Increase the accessibility and availability of healthy foods at dining halls.** To ensure that menu items are healthy, the Services, DLA and others on the Joint Subsistence Policy Board should work together to agree upon and establish a healthy menu rotations within their 14- and 21-day rotation. This effort would include standard recipes, specifications for product to be used, and cataloguing of required products. Concurrent steps could be taken to review the prime vendor catalogues, ensure there are product specifications and that offered products meet those specifications, and review and revise existing recipes. The Culinary Institute of America could provide assistance and Cornell experts could provide guidance on menu composition, recipes, and specifications, as well as on smart strategies for marketing menu changes.

13. **Market and broaden use of tools developed during HBI to increase the accessibility and availability of healthy food.** Working with outside organizations, the HBI team was able to develop two tools that are available to installations and other organizations. One tool, called the *Recipe Guide,*[19] which was developed with the Culinary Institute of America, provides healthy recipes for different military environments. The other tool is a *Farmers Market Guide,*[20] which was developed with assistance from USDA and Wholesome Wave to help installations and other locations understand the steps needed to create viable farmers markets.

14. **Expand and implement Go for Green® program in all dining environments.** Installations can help educate consumers by fully implementing the Joint Culinary Center of Excellence (JCCoE) *Go for Green®*[21] in all APF dining environments.

[19] More details can be found at: http://www.militaryonesource.mil/health-and-wellness/healthy-base-initiative
[20] More details can be found at: www.ams.usda.gov/USDA-DOD-FarmersMarketGuide
[21] The Marines use a similar program called "Fueled to Fight."

Active Living

The recommendations below concentrate on the principles that the built enviornment, or infrastructure, can promote or hinder active lifestyles, and that any type of physical acivity programming needs to recognize the uniqueness and diversity of individuals. They address the barriers to being active, from needing drop-in childcare to working the coaches to increase motivation and participation.

1. **Consider instituting m-PAC or other assessments at regular intervals (e.g., every two to three years) at all DoD/Service locations and incorporating m-PAC assessments in installation development plans (IDPs).** This would promote leadership understanding of the built environment at their installations within the timeframe of a commander's tenure. Results from these assessments should be used to prompt ideas for long-term and short-term changes and should be coordinated with IDPs, which are conducted every five years, as well as with the master planning effort as a whole. The same protocol should be followed at agencies and regional offices.

2. **Incorporate recommendations for features that help promote active living, healthy eating, and tobacco cessation into installation and facility design guidelines such as the Unified Facilities Criteria** (e.g., reduce the number of tobacco use areas, enhance the connectivity of sidewalks and bike lanes networks, adopt Complete Streets standards or similar, etc.).

    - Community leaders should be provided with non-technical versions of design guidlines to promote broader understanding of the benefits of active design.
    - Planners should consider factors such as walkability and bikeability in their master plans. Models for such criteria include *Active Design Guidelines;*[22] the "*Complete Streets*" policy, which aims to ensure that roadways allow for safe use by pedestrians, bikers, and motorists;[23] and the *National Association of City and County Health Officials Mobilizing for Action through Planning and Partnership (MAPP)*, a community-driven strategic planning process.[24]

3. **Establish a Community Health Promotion Council (CHPC) or similar group at each installation.** On many installations, existing organizations or groups may already be serving this purpose, but they could operate more effectively by leveraging lessons learned and best practices from CHPCs. Installations would be well-served by having these cross-disciplinary groups work to reduce redundancies and improve program outcomes across the installation. Existing groups

[22] More details can be found at: http://centerforactivedesign.org/dl/guidelines.pdf
[23] More details can be found at: http://www.smartgrowthamerica.org/complete-streets/changing-policy/policy-elements
[24] More details can be found at: http://www.naccho.org/topics/infrastructure/Mapp/index.cfm

do not have to be re-labeled as CHPCs – rather, flexibility in name and structure is desirable to ensure that groups meet local needs and reflect local preferences.

4. **Explore options to develop fitness facilities near childcare facilities.** This recommendation addresses the need for more convenient access to childcare to enable more parents to work out. No quick solutions exist, obviously, but as part of master planning for installations, opportunities for clustering childcare facilities, physical fitness areas, and K-12 schools in future development should be considered.

5. **Test different types of fitness support for Service members, dependents, civilians and retirees.** Every individual needs different levels of support to increase his or her physical fitness. HBI tested the idea of expanding access to fitness facilities and programs with 24-Hour Fitness and Fitness on Request, which work well for individuals who are self-motivated. Warrior Well worked for those individuals who needed more hands-on support. DoD should consider providing other levels and forms of support to individual service members, their family members, and employees to boost impact. Given the plethora of fitness options that are available, DoD may want to test other forms of support, such as mobile fitness programs that can be accessed anywhere and that often don't require equipment, online or text coaching support, peer fitness groups, and tools for measuring daily physical activity through wearable devices.

Health and Wellness

Implementing HBI highlighted the need for more behavioral data, as well as the acknowledgement that the civilian sector has a plethora of evidence-based programs that can be translated to the military enviornment. These highlighted recommendations are specific to the needs of DoD, but could also be adapted to other settings.

1. **Gather behavioral data using tools like UltimateMe.** Individual measurement tools like UltimateMe can help DoD measure whether programs are effective and help identify gaps where the military community needs more help in maintaining a healthy lifestyle.

2. **Continue to identify evidence-based programming in the civilian sector as well as at installations or in the Services.** HBI taught the team that there are many existing programs in the civilian sector, like the Diabetes Prevention Program and WorkHealthy America, that could be replicated in a military environment. Similarly, the effort to identify promising practices showed that the Services and installations have initiatives that could be replicated and measured at more locations.

3. **Develop adult/child programming for initiatives.** A consistent theme across all HBI initiatives was the need for childcare to enable full adult participation. Even when children could participate in a program, it was difficult to effectively educate parents at the same time. Planning for future initiatives should aim to include high-quality adult/child programming to effectively reach the whole family. This would include finding activities that will engage children while their parents are learning and developing programs that can be offered to parents while their children are in school or in after-school programs.

Schools

HBI's work in schools demonstrated that DoD can work with both DoDEA and public schools to improve healthy eating and increase physical activity for military children. These highlighted recommendations are specific to DoD, and more can be found in the full report.

1. **Consider offering the Healthy Schools Program to all DoDEA schools.** Since the Healthy Schools Program is available to any school in the U.S. for free, DoDEA could work directly with Alliance for a Healthier Generation regional directors to offer the program to all DoDEA schools. In addition, when funds are available, Alliance for a Healthier Generation technical advisors can be hired to help schools reach their goals.

2. **DoDEA should explore ways to promote the Healthy Schools Program to public schools with large numbers of children from military families.** Every state has different decision makers when it comes to local public schools. DoDEA and other leaders at OSD and in the Services should explore ways to educate and inform leaders in school districts with a large military population about the potential resources and assistance available through the Healthy Schools Program and through other non-profit and federal initiatives, like Let's Move Active Schools, the Healthy U.S. Schools Challenge, etc.

Tobacco

Implementing HBI revealed that to decrease tobacco use there needs to be a mixture of strong tobacco-free area policy and enforcement, as well as the availability of tobacco cessation programs for individuals. These highlighted recommendations are specific to DoD, but also could be translated for use in a civilian environment.

1. **Create governance structure to facilitate tobacco policy changes.** Since many parts of DoD are affected by tobacco policy – the exchanges, the Services, housing, etc – DoD should ensure there is a governance structure and coordinating office to implement policy changes on tobacco.

2. **Increase number of tobacco-free areas.** All departments within DoD and within installations need to enforce existing policy that restricts all smoking to outdoor areas at least 50 feet from building entrances. Enforcement of these areas will create tobacco-free zones where children live, learn, and play. DoD should also explore tobacco-free zones in multi-unit housing, privatized housing, and areas frequented by children.

3. **Promote initiatives that prevent the initiation of tobacco use and promote tobacco cessation.** DoD should increase marketing and education to prevent initiation of tobacco use. DoD should also continue to market evidence-based tobacco cessation programs. Lessons learned form the Marine Corps' successful tobacco counter-marketing campaign suggest that such efforts should be tailored specifically to the target population.

4. **Ensure parity-pricing of tobacco products.** DoD establishments that sell tobacco products should match the average local price of tobacco products in the surrounding community.

H. Conclusion

As noted at the outset, HBI was intended as a short-term demonstration project to inform DoD's longer-term strategy for addressing health and wellness challenges within the military community and Operation Live Well in particular. HBI successfully supported its strategic objectives and goals. Through the implementation of initiatives and the collection of lessons learned from the demonstration, HBI made a number of specific contributions that will improve the effectiveness of future DoD efforts in this area:

- Helped to better define the barriers and opportunities that DoD confronts in fostering a culture of health and wellness in the military community.
- Showed that one year is too short in terms of achieving measurable, broad-based changes in health outcomes.
- Identified and tested evidence-based programs from the civilian and military sectors.
- Identified homegrown "Promising Practices" at the installation level and began to socialize and scale the most effective of these practices, thereby broadening their reach within the DoD community.
- Created a measurement model that can be used by DoD to assess the effectiveness of future health and wellness programming.
- Tested practical tools for assessing the nutritional and physical environment at a wide variety of DoD locations.
- Identified leaders in the field who understand the connection between healthy eating, active living, and tobacco cessation and performance, retention, and readiness.
- Mirrored other federal-level and civilian efforts being undertaken to combat obesity and decrease tobacco use.
- Identified a number of gaps and redundancies that, if addressed, could help DoD become more efficient and potentially save costs, including:
  - Gaps in the food delivery system that point to opportunities for improving efficiency and potentially lowering costs over time.
  - Gaps in the reporting of retention rates at the level of the individual Services, which make it harder to identify needs in terms of improving retention.
  - Redundancies in programming on installations that can lead to customer confusion, resource inefficiencies, and inconsistencies in terms of meeting the diverse needs of the community.
  - A lack of customer focus that results in less effective programming and sometimes contributes to programmatic redundancy.

HBI was only a first step in DoD's long-term effort to address a core challenge to America's military strength and readiness in the years to come. As a demonstration project, it showed that while there is no simple strategy for improving health and wellness in the military community, and while DoD continues to learn about designing and implementing effective programs for healthy eating, active living, and tobacco cessation, the interest and the opportunity exist to make substantial progress in all of these areas. Leveraging that opportunity will require leadership at all levels, increased collaboration within DoD and with outside organizations, and a commitment to applying robust measurement and evaluation tools to continually identify gaps, track outcomes, and refine future efforts.

The full HBI report can be found at http://www.militaryonesource.mil/health-and-wellness/healthy-base-initiative

Endnotes

[i] Mission: Readiness. (2009). Ready, Willing, and Unable to Serve. Retrieved from: http://cdn.missionreadiness.org/MR-Ready-Willing-Unable.pdf

[ii] CNA Analysis and Solutions. (2015). Weight and Army Recruiting and Attrition.

[iii] Ibid.

[iv] Mission: Readiness. (2012). Still Too Fat to Fight. Retrieved from: http://missionreadiness.s3.amazonaws.com/wp-content/uploads/Still-Too-Fat-To-Fight.png

[v] Department of Defense. (2008). Survey of Health Related Behaviors among U.S. Military Personnel.

[vi] Human Performance Resource Center Blog. (2013, June 24). Introducing Operation Live Well – A DoD health campaign. Retrieved from: http://hprc-online.org/blog/introducing-operation-live-well-2013-a-dod-health-campaign.

[vii] Mission: Readiness. (2014, September). Retreat is Not an Option. Retrieved from: http://missionreadiness.s3.amazonaws.com/wp-content/uploads/MR-NAT-Retreat-Not-an-Option2.pdf

[viii] Whittaker KS, Hawkins SA, Perez ALU, Nihil MM. UltimateMe Health-Related Quality of Life Brief Report. Research Facilitation Laboratory, Army Analytics Group. 2015: 1-31.

[ix] DoDI 1010.10, Enclosure 2, para 1f: d. In coordination with the DoD Component heads, periodically reviews the status of non-medical programs initiated in response to References (c) through (f) and the Community Preventive Services Task Force Community Guide (Reference (h)). The review measures management effectiveness and the costs, outcomes, and impacts of these programs.