

An Asset-Based Community Assessment of Physical Activity at Fort Riley  
Installation

Fort Riley Military Base, Fort Riley, Kansas

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# **Chapter 1-Department of Public Health, Fort Riley, Kansas**

## **Introduction**

Fort Riley is a United States (US) Army installation located in Northeast Kansas. It was established in 1853, and named after Major General Bennet C. Riley, who led the first military escort along the Santa Fe Trail. Fort Riley was created as a military post to protect the movement of people and trade over the Oregon-California and Santa Fe trails (MilitaryINSTALLATION, 2013). Fort Riley is also known for its historical events and figures such as “Bleeding Kansas,” “General Custer,” and the “Buffalo Soldiers.”

Fort Riley is home to the 1st Infantry Division, the oldest division in the U.S. Army. Nicknamed the “Big Red One,” it is symbolized in the design of the shoulder patch worn by soldiers on post. Historically, the 1st Infantry Division fought in eight major conflicts, including World Wars I and II, Vietnam, the Gulf War, Bosnia, Kosovo, Iraq, and Afghanistan. The 1st Infantry Division at Fort Riley is comprised of four brigades and multiple support units. These brigades include the 1st Heavy Brigade Combat Team, the 2nd Heavy Brigade Combat Team, 3rd Infantry Brigade Combat Team (Fort Knox, KY), 4th Infantry Brigade Combat Team, and the Combat Aviation Brigade (U.S. Army, 2013a).

Today, the base covers 100,656 acres, and crosses both Geary and Riley counties. Fort Riley serves approximately 18,553 active duty service members, over 24,678 family members, over 3,389 retirees and over 8,337 civilian employees (including independent contract workers). These numbers do not include members of the Army National Guard

and Reserves that join in for training. There are roughly 9,000 soldiers and 12,000 family members that reside on base (MilitaryINSTALLATION, 2013). The population at Fort Riley varies each year due to rotations, deployments, and budget cuts.

Fort Riley has about 3,000 sets of family quarters that accommodate approximately 53% of eligible families. There are 395 officer family units, and 2,227 enlisted family units. Also, Fort Riley has seven Child Development Centers (CDCs) that offer full day childcare (MilitaryINSTALLATION, 2013). There are five elementary schools and one secondary school on post. The base also has multiple food venues, pools, health facilities, and a commissary (grocery store). The Fort Riley community provides the same amenities that one would expect to find within a small civilian town.

Fort Riley's population has a high turnover rate each year; and as a result, there are many issues that must be addressed in order to secure the health and safety of the community. Many soldiers may be returning after deployment from another country, or may be reassigned to Fort Riley from other army installations. In addition, Fort Riley is sustainable, which means it has a variety of departments that take care of all the needs of the base as well as the community under one leadership umbrella.

Because of the structure of command, returning of deployed soldiers, and rotation of soldiers, Fort Riley policies and procedures in governing health are much different than that of a civilian community. For example, at 3 to 6 months upon return all soldiers must complete a Post-Deployment Health Reassessment Program, which consist of screening and a health test designed to identify and facilitate access to care for deployment-related needs. The program also evaluates any mental and re-adjustment concerns that have emerged since deployment (Department of Defense, 2006). The

process is mandatory for all personnel and falls under the Department of Defense policy DoD 6490.03. In addition, all soldiers must comply with annual checkups, which include checking for sexually transmitted diseases (STD), hearing evaluations, and physicals. The Army implemented the Periodic Health Assessment program, which requires an annual physical exam to ensure Army readiness (Joint Task Force National Capital Region Medical, 2011). All medical visits and tests results, whether mandatory or personal, are entered in the Army medical records system for tracking. It is policy that all soldiers must attend scheduled checkups.

Fort Riley has always been committed to providing a variety of health services to its soldiers and their families. Since its establishment in 1853, Fort Riley has experienced growth and expansion of a variety of health facilities, including hospitals. Irwin Army Community Hospital (IACH) was opened in 1958, and was dedicated to Brigadier General Bernard John Dowling Irwin, known as “The Fighting Doctor.” Today, construction is currently underway on a new \$404 million dollar facility, known as the IACH at Fort Riley. A ceremony to break ground was held in late 2009 and construction is expected to be completed in 2013 (U.S. Army OneSource, 2012).

Fort Riley Department of Public Health at IACH offers a variety of healthcare services to active duty personnel, retired military personnel (Veterans), family members of armed forces, and civilian employees. Fort Riley Department of Public Health is a section of the United States Army Public Health Command (USAPHC). Any United States Army Installation must have a Public Health Command (PHC) that is responsible for all facets of public health on base. Responsibilities of the PHC at Fort Riley include the control and management of infectious diseases, evaluation of working conditions,

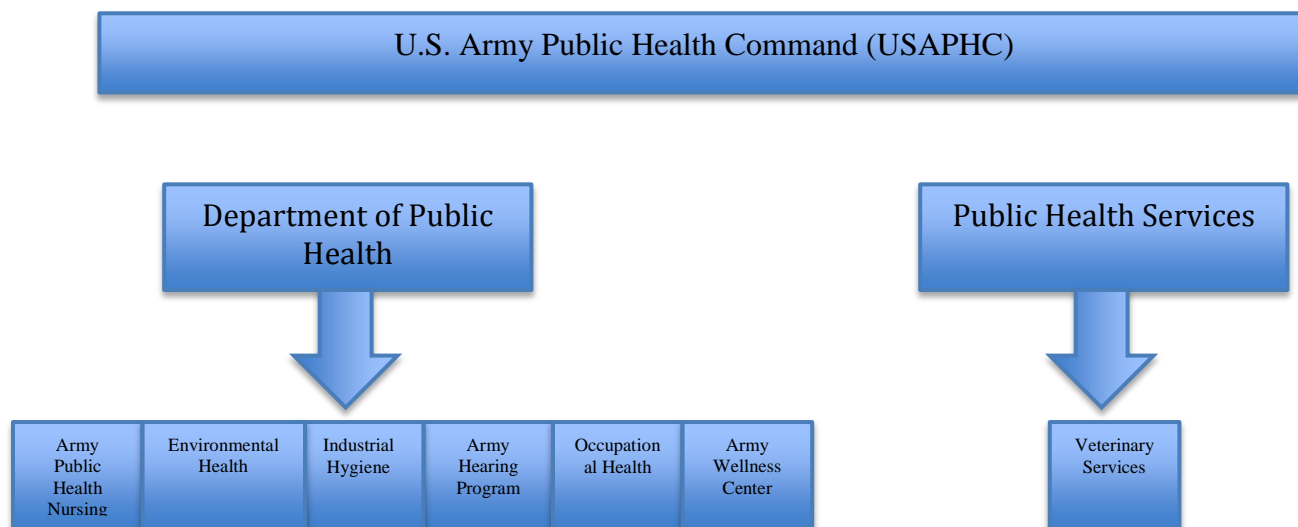


food and sanitary inspections, assessment of potential environmental toxins, injury prevention/mitigation, and implementation of a variety of health promotions to the community by means of education and support.

The Department of Public Health at Fort Riley Army Installation is composed of six sections or sub-units: Army Public Health Nursing, Environmental Health, Industrial Hygiene, Army Hearing, Occupational Health, and the Army Wellness Center. The staff members of the Health Department are governed under the leadership of the Chief of Public Health, Colonel Paul Benne. Veterinary Services are part of the USAPHC, but are external from the Department of Public Health branches, and fall solely under Public Health Service (Figure 1). However, both the Department of Public Health and Veterinary Services collaborate closely in order to ensure health and safety.

### **Public Health Rotations**

The first section of this report focuses on my Fort Riley Department of Public Health Field Experience. As mentioned prior, the Department of Public Health at Fort Riley is broken down into several sections or sub-units: Army Public Health Nursing, Environmental Health, Industrial Hygiene, Army Hearing, Occupational Health, and the Army Wellness Center, which work interdependently in order to mitigate or prevent public health issues from affecting the community. In addition, Veterinary Services, which is external to the Department of Public Health, works with other departments in order to manage food-borne illness and zoonotic diseases (Figure 1).



**Figure 1. U.S. Army Public Health Command Infrastructure at Fort Riley Army Installation (Image provided by Joey Lightner MPH)**

### **Public Health Field Experience**

During the summer semester of 2013, I followed and observed both the Health Department and Veterinary Services. This experience was in partial fulfillment of the requirements of the Master of Public Health Program at Kansas State University. The other partial fulfillment of the requirements was to execute a field experience project, which will be reviewed in the second section of this report. Both fulfillments amounted to 240 hours of hands-on experience and data collection and analysis.

One objective of my internship was to observe the daily operations that took place within Department of Public Health and Public Health Services. Another objective was to assist in a variety of duties while applying the skills and education I obtained as a graduate student in public health. Below in “Goals and Objectives” I have provided details regarding my rotations through the Health Department and Veterinary Services at Fort Riley. Later sections of this report will focus on topics specific to physical activity on base, as well as methods and results observed during my field experience project.

## Goals and Objectives

As described previously, the main objectives of my practicum were to conduct scheduled rotations with public health specialists while observing and assisting in daily operations that occurred on base. All public health sections at Fort Riley based their guidelines and practice on the 10 essential services of public health (Figure 2).

Throughout this report you will see multiple emphases on health monitoring, diagnosing and investigating health issues/hazards, health education, development of community and department partnerships, development of policies, enforcing health laws, providing access to care, assuring a competent workforce, and evaluating health programs.

Following that, I have included a list of goals and objectives that were completed during each rotation.



Figure 2. Ten Essential Services of Public Health. (Centers for Disease Control and Prevention, 2010)

## Army Public Health Nursing

The main objective of the Army Public Health Nursing (APHN) was to promote health and safety to all personnel on base. Providing education and prevention strategies

are key tools used to help achieve that objective. My goal while rotating through the nursing section was to understand the procedures, tools, and methods used to promote health and safety to all personnel. APHN consisted of multiple staff members including Registered Nurses (RN), a Nurse Practitioner (NP), an Epidemiologist, and a receptionist. Public health nurses had many duties and responsibilities including Child Development Center (CDC) health inspections, disease surveillance and prevention, health education, and immunization.

One area of focus for APHN was to educate army personnel on health topics. Most topics covered by the nursing staff included prevention of sexually transmitted disease (STD), smoking prevention, and biological indicators of poor health (e.g. high blood pressure and cholesterol levels). Most information provided to personnel emphasized preventive tactics. The nursing section also focused on health promotion campaigns as well as the evaluation of current programs on base.

During my time with the nursing staff, I was allowed to observe three STD consultations, where soldiers who had tested positive for STDs (e.g., Chlamydia) were provided support and information on methods to avoid contracting similar types of STDs. All individuals that may have had contact with the soldiers during their time of infection also had to be contacted in order to reduce any further spread of disease. All STDs found through testing were entered into the Disease Reporting System internet (DRSi) as well as the State of Kansas EpiTrak system. All data entered into these two systems were reviewed by the state and Army Epidemiologist in order to run risk assessments on all soldiers as well as monitor disease prevalence on base. In addition, both the state and Army installation used the data to track disease movement.

Another duty was to accompany a registered nurse (RN) during a CDC inspection. There were seven CDCs on post that offered care for children ages six weeks to five years. All CDCs were inspected monthly in order to ensure the highest quality of health and safety. All CDCs were accredited by the National Association for the Education of Young Children (NAEYC) which was certified by the Department of the Army (AR 608-1).

Some children that frequented these facilities had allergies or medical conditions that required special attention. For children with allergies, there was a notebook present at all times that included a page for each child with allergies. This was Army policy for all CDC facilities. To further emphasize safety for children with allergies, a reference board was located on the wall in each classroom reminding staff members which children had what types of allergies. Our goal during inspections was to make sure the notebook and reference board included a picture of the children, the children's names, and a list of the children's allergies. We also checked to confirm that all medications for children were contained in a locked cabinet. In addition, we checked each bottle of medication to ensure the child's name was labeled on it to prevent other children from being given the wrong medication. Backpacks were also checked in order to safeguard any medication forgotten in a child's bag, which could accidentally be used by other classmates.

While inspecting the CDC, we observed hand-washing areas to ensure that all stations had soap and paper towels. We also checked to see if all changing stations were clean with the proper cleaning solution at recommended dilution levels. Furthermore, we checked to confirm that all food was properly stored at required temperatures. All food products required a label with a discard date. All staff members were questioned during

our inspection in order to evaluate their knowledge on new and current health law practices.

One of the last duties performed during the CDC inspection was to review all children's vaccination records on file to ensure that they were up-to-date on vaccines. We only found a few that were due. These files were given to the CDC head nurse so they could notify the parents that a vaccine update was needed for their child.

### **Environmental Health**

Environmental Health's (EH) main focus was to ensure a safe environment for everyone that worked and lived at Fort Riley by preventing the spread of disease and providing safety standards for all community facilities to follow. My goal was to increase knowledge of Public Health policy, conduct routine assessments, as well as gain exposure to the inspection process.

The EH personnel were trained and certified individuals from a variety of backgrounds including environmental science, foods service, and sanitation. The primary focus of EH was to conduct a variety of health inspections throughout the base. All staff members in EH were also cross-trained in different fields such as water safety and mosquito surveillance to help manage the vast array of inspections that needed to be conducted monthly. The inspection rotation consisted of food and sanitation practices, CDC sanitation inspections, water quality and surveillance, hospital waste management, and vector surveillance. Army policy required monthly inspections in these areas.

On base, all food establishments were inspected monthly, rather than biannually as the county health department required off-base. At Fort Riley, EH staff members inspected all seven CDCs and over two dozen dining facilities (DFACs) each month.

The criterion during food inspections was to ensure that all food was stored at proper temperatures and in proper locations within the kitchen. All food was required to be labeled with the date of when it was opened. Prepared food required a label with both the preparation and discard dates. In addition, all food tools and equipment were to be cleaned and stored in the proper areas, and all food staff responsible for handling food must have the proper documentation and certification to work in the kitchen. All DFACs and CDCs were assigned a letter grade after each monthly inspection in order for the public to know how clean each establishment was.

Another responsibility of the EH staff was the monitoring of mosquito types and levels on base and to mitigate exposure to the community. At the beginning of the rotation, I was provided literature by the staff on various types of mosquitos and how to identify them by gender and species. This literature was very useful later on in the rotation because we would have to identify a few species in order to determine if they posed a threat to the public. I would later find out that some species of mosquitos are specific in carrying the parasite that causes malaria.

Surveillance of the mosquito population was primarily conducted by two members of the EH staff. Part of my job duties included working with staff members to setup and monitor mosquito traps throughout the post. All traps were setup on one day and collected 24 to 48 hours later. Traps contained dry ice and a light bulb, which helped to attract mosquitos. A motorized fan was attached to the head of each trap in order to prevent mosquitos from flying out. After collecting traps, we examined the majority of the mosquitos under a microscope to determine their species. In addition to identifying the species, we determined their sex, since only female mosquitos bite humans. I learned

that *Anopheles* mosquitoes were native to the United States. In this species, the females were carriers of the parasite which causes malaria. I also learned that the species, *Culex* mosquitoes, was not a carrier of malaria, however, they did carry encephalitis and the West Nile virus. I observed at least two *Anopheles* out of the hundreds of mosquitos collected; I did not observe any *Culex* mosquitoes.

One of the last inspections that I performed during my rotation at EH involved collecting and sampling selected water sources on base. This section of my rotation consisted of shadowing an EH staff member for two days. During my time in the water lab, I was introduced to various types of equipment used to test water. I was also taught how to calibrate each type of instrument before use. Throughout our inspections we collected multiple pool samples and a variety of well samples. We also collected water from multiple faucets from designated buildings. The water quality of all buildings on post was routinely checked. In our inspections, we primarily tested for chlorine, pH, and specific types of coliform bacteria (e.g., *Escherichia coli*). We found the pH to be slightly out of range at a community pool on one inspection. The policy and procedure to correct the situation was to contact the water treatment plant on base and to notify them of the situation and location. The rest of the samples and tests throughout our inspection were within standards and did not show positive results for any type of hazardous coliform bacteria.

### **Industrial Hygiene**

Industrial Hygiene's (IH) main objective was to reduce potential hazards that may have occurred in any work environment. My goal during this rotation was to increase my knowledge of potential hazards in the workplace, assess what types of inspections were



performed, how inspections were executed, and what level of standards the Army upheld for safety. All inspections for IH were routine, however, additional inspections were conducted by request. Personnel on base could call IH if they believed there were health concerns at their facilities (e.g., mold).

The IH consisted of multiple individuals who were experts in various areas, with responsibilities ranging from mitigating potential work related hazards such as ventilation flow within buildings, ensuring air quality for workers, reducing risk of radiation exposure, testing for Asbestos, measuring noise exposure, evaluating dipping and coating operations, and providing ergonomic assessments to assessing exposure and medical records, evaluating the usage of products containing Hexavalent Chromium, and upholding policies in hazard communication standards.

Two of the most common inspections I conducted with IH staff members included testing indoor air quality and checking for mold. Many of these inspections were performed because of complaints filed by personnel. There were many older buildings utilized on base and the potential for mold was always a concern. Testing indoor air quality consisted of measuring carbon dioxide levels, nitrogen levels, oxygen levels, mold sampling, assessing the number of air vents within a building, and the flow rate of air within each room. There were many equations used by IH personnel in order to assess if a building's ventilation system was designed to meet the volume of the room. If a ventilation system was under-sized and did not allow air flow to move efficiently, individuals may have experienced many symptoms such as headaches or allergies that might be misinterpreted as exposure to mold.

In testing for mold, two samples were obtained in order to assess potential mold

exposure. One sample was taken outside and another sample was taken inside. The results consistently showed that the indoor mold levels were far lower than that of outdoor levels. When comparing indoor versus outdoor samples, it was recommended that action be taken if the indoor sample was equivalent to 30% or more of the outdoors samples. I was amazed to see how many spores personnel were exposed to daily by outside air.

Another inspection that I observed was measuring Laminar Hood Vents. This routine inspection was documented for hospital records. All labs that mixed and used chemicals under hooded ventilation systems had to be inspected and calibrated if necessary. In order to inspect the equipment, measurements of the flow path were taken along with 12 points of flow rates using a Velocicalc Ventilation Meter. All 12 points were calculated to produce the average flow across the vent's open area. By obtaining 12 points of airflow, we could also see what areas of the hood vent were weakest and what areas were strongest. In our inspecting we found no issues with airflow.

### **Army Hearing**

The Army Hearing Program's (AHP) main objective was to ensure hearing safety among Army personnel. Staff members in this department consisted of Army personnel and civilian workers. There was one staff member who had a degree in Audiology. My goal during this rotation was to understand Army hearing policies, become familiar with hearing testing procedures and equipment, and gain knowledge about hearing loss prevention. Staff members executed the program's objectives by means of education, providing hearing safety equipment, and ensuring safety standards recommended by Army policies.

The AHP was designed to help specific populations that were exposed to high levels of noise exposure such as ballistics testing, gun ranges, and machine shops. Personnel in these areas were potentially exposed to high levels of noise for extended periods of time. All personnel entering the Army must undergo hearing screenings in order to assess baseline-hearing levels. Then, all soldiers must have their hearing checked annually. This information was used to track all soldiers' hearing levels while in the Army. All policies were in accordance with the Hearing Conservation Program Occupational Noise Exposure 29-CFR-1910.95.

Soldiers tested for hearing were provided information on how the organs of the ears functioned and why using protective earplugs was important. Soldiers were fitted and provided earplugs according to their job duties. There were a variety of ear protections recommended by AHP staff, which were based on the level and duration of noise exposure that was encountered during work or duty. AHP staff members also conduct on-site inspections to ensure that facilities were promoting hearing safety (e.g., posted signs requiring hearing protection). In addition to site inspections, I reviewed Army regulations for the Hearing Program and discussed one-on-one prevention strategies with the Audiologist.

### **Occupational Health**

The focus of Occupational Health (OH) was to protect workers from any possible risks from their jobs. OH's main objective was to provide annual medical surveillance and screenings to Army personnel as well as identifying any known health risks associated with specific jobs, processes, and exposures. My goal during this rotation was to observe how surveillance was conducted and recorded, what health topics were of

concern, and how education and prevention strategies were implemented.

OH worked closely with IH and AR to ensure that all soldiers and civilians were receiving the screenings and education needed in a variety of health areas to promote and ensure safety on base. Available screenings included hearing, vision, and respiratory (pulmonary) tests. All information was recorded in the Army computer system and was tracked to evaluate individuals' results over time. Soldiers who were pregnant were referred to OH, which helped assist them throughout their pregnancies by providing recommendations for decreased workload or switching job details.

Other responsibilities governed by OH were to conduct work-site evaluations regarding ergonomics, ensure immunizations were up-to-date according to job duties, and ensure that personnel were wearing ear and eye equipment for protection at all facilities where they were required. The OH staff included a RN and specialist who were familiar with the Occupational Safety and Health Administration (OSHA) requirements and Army policy.

### **Army Wellness Center**

The Army Wellness Center (AWC) was a new addition to the Department of Public Health at Fort Riley. The program had been implemented at many other bases and proved to be a success. The AWC opened their doors in August of 2013. Their mission was to provide a standardized primary prevention program designed to promote and sustain healthy lifestyles and improve the overall well-being of soldiers, family members, retirees, and civilian employees (U.S. Army Medical Department, 2013). The main objectives for the AWC were to provide health assessment reviews, physical fitness testing, nutrition metabolic testing, stress testing, tobacco prevention, and promote

healthy behavioral change. My goals during this rotation were to understand the mission of the AWC and to see how they were working to improve the health of all clients who were referred to the facility. More importantly, because of my public health education emphasis in physical activity, I was interested in seeing what types of equipment were being used and what social-behavioral models were in place to support behavioral changes.

The AWC staff was composed of individuals with backgrounds in public health, health administration, nursing, and personal training. All individuals that used the AWC facilities were either directed by superiors or were recommended by past clientele. Individuals that I observed during examinations at the AWC were primarily soldiers in their mid-twenties. The main concern for soldiers was being able to meet their physical training (PT) requirements.

Soldiers were required to take an Army physical fitness test (APFT) at least twice per year. Some units conducted PT tests more frequently than others. There were three events measured by the APFT: push-ups, sit-ups, and a timed two-mile run. There were different requirements for PT standards based on age and gender, but on average, soldiers were required to score a minimum of 60 points on each event. In addition, body fat is also measured and must meet Army standards. For females, Army Regulation 600-9, allows the following body fat standards: ages 17-20 (30%), ages 21-27, (32%), ages 28-39 (34%), and ages > 40 (36%) (U.S. Army, 2013b). For males, Army Regulation 600-9, allows the following body fat standards: ages 17-20 (20%), ages 21-27, (22%), ages 28-39 (24%), and ages > 40 (26%) (U.S. Army, 2013b). However, all personnel are encouraged to achieve the more stringent DOD goals, which were 18 % body fat for

males and 26 % body fat for females. The only authorized method of estimating body fat was the circumference-based tape method (U.S. Army, 2013b).

All clients that used the AWC had a series of tests conducted in order to evaluate their current health status. The tests consisted of measured height and weight used to calculate body mass index (BMI), calculated resting metabolic rate (RMR), biofeedback during a stress test (e.g., maximal oxygen uptake/  $\text{VO}_2$ ), and a questionnaire to determine their stage of change/motivation for weight loss. A variety of tools were used at the AWC to assess health and body composition such as a BOD-POD and Fitmate Pro  $\text{VO}_{2\text{max}}$  Machine. The Fitmate Pro device was able to measure  $\text{VO}_{2\text{max}}$ , sub-max  $\text{VO}_2$ , RMR, and heart rate training zones. After testing, individuals were counseled to understand what their goals and needs were, and to evaluate their stage of change/motivation for weight loss using the Transtheoretical Model. All clients were provided tips and techniques, by staff members, for changing health behaviors and were provided nutritional guidance to help reach their body composition goals. Individuals also received information on the eight primary risk factors that cause cardiovascular disease (CVD) via pamphlets. Soldiers struggling to meet APFT standards were also offered advice on different exercise methods and techniques provided by a Certified Strength and Conditioning Specialist (CSCS) on staff.

The AWC also focused on tobacco mitigation and prevention for clients and provided stress management seminars. The main focus of tobacco prevention was to educate individuals on the acute, long-term risk of smoking and environmental risks of tobacco use. Staff members also explained the financial burden of tobacco use and the benefits of remaining tobacco free. Stress management courses provided tools that could

be used to reduce stress levels (e.g., exercise) as well as other techniques used to reduce anxiety (e.g., meditation). Individuals seem to be receptive to the program. However, since the AWC had just opened, we only evaluated three soldiers. Future plans included promoting the AWC facility through the Army website as well as the base newsletter.

### **Veterinary Services**

The main objective of Veterinary Services (VT) at Fort Riley was to provide a variety of health inspections to the public, promote community health awareness, and provide safety through zoonotic disease prevention. Veterinary services primarily focused on food and sanitation inspections as well as animal preventative medicine. My goals during the veterinary rotation were to increase my knowledge of the department's functions and services as well as to understand how this section collaborated with the other health departments.

Veterinarian services originally started on all Army installations by providing care to Army working animals (e.g., horses). Today, this service has extended to Army personnel, retirees, civilian employees, and family members' pets. In order to prevent the spread of disease within the community at Fort Riley, veterinarians emphasized the importance of disease prevention through testing and vaccinations. The only services I experienced while in this rotation were pet vaccinations.

Veterinary Services was also responsible for the food and sanitation inspections of establishments found on post. During my rotation we inspected the commissary (grocery store), one DFAC, and two CDCs. Food inspections were limited in some ways as compared to EH. Veterinary services were primarily concerned with dry food storage, handling flow of delivered food, discard dates on packages, and temperature logs. On

one CDC food inspection, we discovered that a small freezer had broken and the food had been out of temperature for 1 hour, violating regulation. All products were documented and discarded. Primarily, the Army followed the same guidelines and laws for food handling as the state of Kansas. This was consistent among all health sections on base.

### **Overall Experience**

My overall experience at Fort Riley Army installation exceeded my expectations. The diversity and education levels of staff members at the Fort Riley Department of Public Health were impressive. The magnitude of responsibility that was carried out on a monthly basis was incredible. All individuals that worked for the Department of Public Health at Fort Riley treated me as if I were a new staff member and allowed me to express my opinions on all health topics. Prior to my rotations at Fort Riley, my exposure to public health primarily consisted of food service and sanitation. I was excited to gain hands on experience and knowledge outside of the classroom. Because of my background in culinary and my degree emphasis in physical activity, I found myself feeling more focused and competent during my rotations in EH and AWC. However, I felt that the comprehensive public health rotations at Fort Riley exposed me to the multiple dimensions upheld by all health departments. This experience shed light on the multi-disciplinary nature of having a Master in Public Health (MPH) and what it meant to be a public health advocate. Needless to say, this experience provided me with the opportunity to further understand health policy and practices, as well as apply the knowledge and skills I learned as a graduate student in the MPH Program at Kansas State University. The only recommendation I could possibly make during my rotation would be for the Army to invest in new technology that would allow staff members to



communicate using a single system as well as implement the use of tablets in order to capture real time data, essentially reducing paperwork and saving time.

The emphasis area for my degree, physical activity, has gained momentum in the past few years on base. I was extremely excited to see that Fort Riley had opened the AWC in order to help educate soldiers, veterans, and service family members to lead healthier lives. I was extremely pleased to see that the AWC was using different social theories and models to target individuals' motivation and to devise a new course of action to advance personal health outcomes. The social ecological model and transtheoretical model were the primary tools used at AWC. I feel it is important to understand the relationships between behavior and health outcomes, because many of these issues are directly correlated with one another. I was impressed to see a well-balanced staff of nurses, trainers, and public health personnel assisting individuals in all facets of health promotion using their personal expertise. The emphasis within this section was to modify existing negative behaviors and to promote positive behaviors rather than to substitute negative behaviors with positive behaviors. I can see that many health departments have come to realize that providing nutritional support and management is not enough to reduce the burdens of obesity that society is now facing. Many individuals who are obese, have poor health, and do not get enough physical activity, are in danger of developing cardiovascular disease, hypertension, diabetes mellitus, chronic heart disease, and congestive heart failure. Fort Riley and other Army installations are now realizing they are not the exception.

I dearly valued my time at Fort Riley and was honored to meet the staff that comprised the Public Health Command. I am very grateful that they allowed me to learn

and gain experience from them. I also gained insight on the amount of work and collaboration that must take place in order to have an effective organization. I feel that this internship greatly enhanced my education in all areas of public health. I would recommend an internship at Fort Riley to any graduate student in the MPH Program at Kansas State University.

## **Chapter 2-Field Experience Project**

### **Introduction**

Obesity may be viewed as excess body fat that conveys increased risk for adverse health outcomes. Historically, obesity was rarely seen in children and adults (Haslam, 2007). It was not until the 20<sup>th</sup> century that obesity became a common issue among Americans. Today, more than one-third of U.S. adults (35.7%) are obese (Centers for Disease Control and Prevention, 2013b). Furthermore, obesity has more than doubled in children (ages 6–11) and has tripled among adolescents (ages 12–19) in the past 30 years (Centers for Disease Control and Prevention, 2013a). Numbers are even concerning when overweight (e.g., BMI ranging 25–29.9) and obese (e.g., BMI of 30 or greater) statistics are combined.

According to the 2008 Physical Activity Guidelines for Americans, as a minimum, all adult Americans should engage in moderate-intensity aerobic physical activity (e.g., brisk walking) for at least 150 minutes per week or engage in vigorous intensity aerobic physical activity (e.g. running) for at least 75 minutes per week or a combination of the two (U.S. Department of Health and Human Services [USDHHS], 2008). All moderate and vigorous intensity aerobic physical activity should be

performed for at least ten minutes in duration. Furthermore, all adults should incorporate muscle strengthening exercises (e.g. lifting weights, pushups, yoga) at least twice a week. These recommendations have been established to prevent further weight gain and to maintain health. In order to increase health benefits, The USDHHS recommends performing twice as much of each type of aerobic physical activity per week (i.e., 300 minutes of moderate intensity or 150 minutes of vigorous intensity) (USDHHS, 2008).

Furthermore, children and adolescents should receive 60 minutes (1 hour) of physical activity per day. Physical activity should be at either moderate or vigorous intensity and should include vigorous intensity physical activity at least 3 days a week (USDHHS, 2008). In addition to their 60 minutes of physical activity, children and adolescents should perform muscle strengthening physical activity (e.g., climbing trees, tug-of-war) on at least 3 days per week (USDHHS, 2008). Furthermore, bone strengthening activity should be performed on at least 3 days per week (e.g., jump rope, basketball).

Obesity has been linked to specific socioeconomic status (SES) such as race/ethnicity, income, education, and gender (Sobal & Stunkard, 1989; McLaren, 2007). Today, there is no question that the rates of obesity in the U.S. follow a socioeconomic gradient (Drewnowski & Specter, 2004). This has become ever so evident in the U.S. Armed Forces, where obesity is a matter of national security. The military views obesity as a significant military medical concern because it is associated with decreased military operational effectiveness (e.g., physical fitness) and may increase the chances of becoming injured (Armed Forces Health Surveillance Center, 2011a). Thus, soldiers who are classified as being obese may become a liability to the Army and are discharged if

they cannot meet APFT requirements or weight standards. In 2012, the Army kicked out 1,625 soldiers for not meeting their APFT requirements as well APFT weight standards, which was 15 times greater than the number discharged for the same reason in 2007 (Armed Forces Health Surveillance Center, 2011b). The current rate of obesity for the Army is 16.1% (Barlas, Higgins, & Pflieger, 2013).

Obesity has also become an increasing concern among U.S. Military families. The current estimated cost of obesity to the Military Health System (MHS) is approximately \$2 billion per year (The Military Health System Must Deal with Obesity, 2009), which is a significant burden for the US Department of Defense. Even though there are a number of resources available for military families to maintain a healthy lifestyle, obesity has still increased. There are unique barriers that contribute to military life, which may affect health behaviors. For example, deployment of military members significantly affects the emotional and physical wellbeing of military families (Pincus, House, Christennson, & Adler, 2001). Many military families are also constantly relocating (on average every two years) due to the high rotation cycles, which may cause a lack of stability in their lives because they never have time to fully adjust to their new environment. In addition, family members may not have enough time to build a social network within their new community, which also contributes to feeling a lack of stability.

In 2010, a government article was release by a group of military leaders titled, “Too Fat to Fight.” The primary focus of the article was a call to Congress to pass laws that would remove junk food from schools and military installations in order to decrease obesity in Americans (Mission: Readiness Military Leaders for Kids, 2010). In 2012, another article was released titled, “Still Too Fat to Fight,” which was written by the

same group. This article was a plea to Congress to take strong actions in preventing obesity. Again, the article had the same request to eliminate junk food from schools and military installations (Mission: Readiness Military Leaders for Kids, 2012). There is a continual failure to prevent increases in obesity of Americans.

On all military installation there is a strong focus on healthy nutrition in order to combat obesity. However, little emphasis is placed on promoting physical activity for both soldiers and family members within the community. For soldiers, performing physical activity may not be a concern, because they are required to perform one hour of PT three days per week, up to five days per week (depending on their commanding officer's preferences). A report by Barlas and associates (2013) surveyed health related behaviors of active duty personnel, and found that 35.8% of Army personnel reported 150 minutes or more per week of moderate activity, and 46.3% reporting 150 minutes or more of vigorous physical activity per week; meeting and exceeding current physical activity recommendations (Figure 3; Barlas et al., 2013). In addition, 33.0% of Army personnel reported 300 minutes or more of moderate physical activity per week on average. However, their physical activity levels may not be meeting their caloric intake, which may help explain the increase in overweight and obese soldiers. As well, over 1/3 of soldiers are not meeting weekly recommended levels of moderate (36.8%) and/or vigorous (46.3%) physical activity.

To my knowledge, there has been no research conducted which looks at the physical activity levels of military families. There has been some recent research on physical activity levels of veterans with disabilities and health conditions (e.g., type 2 diabetes; Bouldin & Reiber, 2012). As well, little to no research has been conducted on

community assets building on an Army installation. Needless to say, in order to reduce obesity rates among active duty soldiers and their families we must look beyond nutritional interventions and start assessing the need for greater physical activity levels.

- Physical Activity, Strength Training, and Exercise Interference, Past Month, by Service<sup>1</sup>

Exercise	Army	Navy	Marine Corps	Air Force	Coast Guard	All Services
<b>Moderate Physical Activity<sup>2</sup></b>						
Less than 150 minutes per week	31.3 (0.7) <sup>bcde</sup>	42.0 (0.7) <sup>ac</sup>	34.8 (0.7) <sup>abde</sup>	40.7 (0.5) <sup>acde</sup>	43.7 (0.7) <sup>abcd</sup>	36.8 (0.4)
150 minutes or more per week	35.8 (0.7) <sup>d</sup>	37.0 (0.7) <sup>d</sup>	35.5 (0.7) <sup>d</sup>	41.0 (0.5) <sup>abce</sup>	35.3 (0.7) <sup>d</sup>	37.2 (0.4)
300 minutes or more per week	33.0 (0.7) <sup>bcde</sup>	21.0 (0.6) <sup>bcde</sup>	29.7 (0.7) <sup>abde</sup>	18.3 (0.4) <sup>bcde</sup>	21.0 (0.6) <sup>bcde</sup>	25.9 (0.3)
<b>Vigorous Physical Activity<sup>3</sup></b>						
Less than 75 minutes per week	42.9 (0.8) <sup>abc</sup>	53.4 (0.7) <sup>bcde</sup>	42.9 (0.7) <sup>bcde</sup>	45.4 (0.5) <sup>bcde</sup>	54.9 (0.7) <sup>bcde</sup>	46.3 (0.4)
75 minutes or more per week	10.7 (0.5) <sup>d</sup>	10.2 (0.5) <sup>d</sup>	10.9 (0.5) <sup>d</sup>	12.9 (0.3) <sup>abce</sup>	10.2 (0.5) <sup>d</sup>	11.1 (0.2)
150 minutes or more per week	46.3 (0.8) <sup>bcde</sup>	36.4 (0.7) <sup>acde</sup>	46.3 (0.7) <sup>bcde</sup>	41.6 (0.5) <sup>abce</sup>	34.9 (0.7) <sup>acde</sup>	42.6 (0.4)
<b>Strength Training<sup>4</sup></b>						
Less than one day per week	24.9 (0.7) <sup>abc</sup>	33.7 (0.7) <sup>bcde</sup>	25.2 (0.6) <sup>abc</sup>	24.4 (0.4) <sup>abc</sup>	32.0 (0.7) <sup>bcde</sup>	27.0 (0.3)
1 to 2 days per week	28.1 (0.7) <sup>c</sup>	25.9 (0.7) <sup>d</sup>	23.9 (0.6) <sup>abcde</sup>	30.2 (0.5) <sup>bcde</sup>	27.5 (0.7) <sup>cd</sup>	27.5 (0.3)
3 or more days per week	47.0 (0.8) <sup>bcde</sup>	40.4 (0.7) <sup>acde</sup>	51.0 (0.7) <sup>abde</sup>	45.5 (0.5) <sup>bcde</sup>	40.6 (0.7) <sup>acde</sup>	45.5 (0.4)
<b>Exercise Interference</b>						
Not enough time	26.5 (0.7) <sup>bcde</sup>	35.5 (0.7) <sup>ad</sup>	33.5 (0.7) <sup>abc</sup>	33.0 (0.5) <sup>abce</sup>	37.2 (0.7) <sup>abcd</sup>	31.4 (0.3)
Absence/Inconvenience of exercise facilities	6.0 (0.4) <sup>ce</sup>	5.3 (0.3) <sup>e</sup>	4.4 (0.3) <sup>abc</sup>	5.3 (0.2) <sup>e</sup>	9.2 (0.4) <sup>abcde</sup>	5.6 (0.2)
The mission I've been assigned	23.8 (0.7) <sup>bcde</sup>	15.4 (0.5) <sup>acde</sup>	20.5 (0.6) <sup>abde</sup>	22.6 (0.4) <sup>bc</sup>	20.7 (0.6) <sup>abc</sup>	21.1 (0.3)
Policy/Command took precedence	1.20 (0.5) <sup>bcde</sup>	18.0 (0.6) <sup>acde</sup>	15.0 (0.5) <sup>abde</sup>	8.6 (0.3) <sup>abce</sup>	13.1 (0.5) <sup>bcd</sup>	13.0 (0.2)
I had an injury	27.2 (0.7) <sup>bcde</sup>	14.8 (0.5) <sup>acde</sup>	21.2 (0.6) <sup>abde</sup>	18.6 (0.4) <sup>abce</sup>	12.3 (0.5) <sup>abcde</sup>	21.0 (0.3)
I don't like to exercise	6.1 (0.4) <sup>e</sup>	6.9 (0.4) <sup>e</sup>	6.5 (0.4) <sup>e</sup>	6.3 (0.2) <sup>e</sup>	8.9 (0.4) <sup>abcde</sup>	6.5 (0.2)
I haven't had anyone to work out with at times I could	7.4 (0.4) <sup>cd</sup>	8.4 (0.4) <sup>de</sup>	9.0 (0.4) <sup>abcde</sup>	6.1 (0.2) <sup>abc</sup>	6.0 (0.4) <sup>bc</sup>	7.5 (0.2)
The demands of my personal/family life	22.2 (0.6) <sup>bcde</sup>	26.9 (0.7) <sup>abc</sup>	24.8 (0.6) <sup>abc</sup>	26.8 (0.4) <sup>abc</sup>	33.0 (0.7) <sup>abcde</sup>	25.1 (0.3)
Another reason	11.9 (0.5) <sup>d</sup>	11.1 (0.5)	10.6 (0.4)	10.1 (0.3) <sup>e</sup>	10.3 (0.4)	11.1 (0.2)
I exercise as much as I would like	25.5 (0.7) <sup>d</sup>	27.6 (0.7)	26.4 (0.6) <sup>d</sup>	28.8 (0.5) <sup>bcde</sup>	25.7 (0.6) <sup>d</sup>	26.9 (0.3)

Figure 3. Physical Activity, Strength Training and Exercise Interference. Barlas, Higgs, & Pfieger (2013) Department of Defense Health Related Behaviors Survey of Active Duty Military Personnel

## **Literature Review**

Being physically active is an important component of a healthy lifestyle. Research has shown that there are significant health benefits in obtaining daily physical activity, such as reduced morbidity, cardiovascular disease, hypertension, diabetes mellitus, chronic heart disease, congestive heart failure, stroke, depression, anxiety, and some cancers (Centers for Disease Control and Prevention, 2013b). The evidence suggests that engaging in regular physical activity reduces the risk of premature death. It is estimated that roughly 200,000 to 300,000 premature deaths occur each year in the U.S. due to physical inactivity (Heath et al., 2006). Despite the benefits of achieving regular physical activity and maintaining a healthy BMI, 12% of all service members were classified as obese, most often in the Army (Barlas et al., 2013). Over 6% of females were classified as obese, where as 13.5% of males were classified as obese. Furthermore, 51.2% of all service members were classified as overweight (Barlas et al., 2013). For males, over half (54.2%) were classified by BMI as overweight and 34.4% of females were classified by BMI as being overweight (Barlas et al., 2013). Among all, 3.2% of service members were currently enrolled in a mandatory weight control program in 2013 (Barlas et al., 2013).

## **Asset Mapping**

To support and promote physical activity for military personnel and their families on base, there are multiple variables that need to be assessed. The conventional method for community development is based on a needs assessment, which is data driven and does not require leadership and community engagement. The conventional method focuses on a community's needs and problems. It uses problems to develop service



interventions, which provide resources to service providers rather than the community. In addition, the way a problem is defined typically frames or limits the range of solutions to the need (Glanz, Rimer, & Viswanath, 2008). For example, if low physical activity is due to a lack of will power, intervention strategies may focus on increasing motivation and persuasive communication in order to promote physical activity. Therefore, a needs assessment can be effective, but is not sustainable nor does it allow the community to build from the inside out.

Asset mapping is less conventional methodological approach to community development. It was developed by John L. McKnight and John P. Kretzmann, founders of the Asset-Based Community Development Institute (ABCD). Asset mapping builds social capital that can catalyze change by focusing on what a community has (strengths) as opposed to what a community needs (lacks). Originally, asset mapping was used as a capacity-focused intervention to revitalize communities facing hardships. Today, government agencies, non-profit organization, community planners, and health organizations use asset mapping to target specific issues or problems. The Public Health Accreditation Board (PHAB) standards and measurement guidelines require all organization seeking accreditation to use asset mapping as an assessment tool. Asset mapping has been used to reduce social inequities in health programs and has been used mitigate obesity within communities (Semenza & Krishnasamy, 2007). To my knowledge, asset mapping has never been used to evaluate physical activity on an Army Installation.

Today, asset mapping is primarily used for community-based interventions. A study by Semenza & Krishnasasmy (2007) used asset mapping to promote healthy

neighborhoods. The researchers objective was to promote community participation and neighborhood stewardship in the interest of public health by initiating a neighborhood revitalization project. The goal in this project was to connect neighborhood residents by involving them in the design and implementation of creative and attractive urban setting (e.g., parks or community garden). The project included the building of vibrant and aesthetic environments throughout multiple neighborhoods that would decrease crime levels and increase a sense of overall well-being for community members (N = 364). The results showed a significant decrease in community crime ( $p < .001$ ) when compared to two unimproved locations. The results are also indicated an increase in social networking, which has been shown to increase well-being and physical and mental health (Hawe & Shiell, 2000; Kawachi, 1999).

In addition, asset mapping was used as an intervention strategy to reduce television viewing time in New York State. The objective of this intervention was to establish asset-based community partnership to support efforts in reducing television viewing time by developing and providing alternative programs to children. The results showed that newly developed partnership planned and initiated a variety of afterschool programs using existing resources (e.g., schools, YMCA, etc.). Furthermore the researchers developed weekend community activities for preschool-aged children and their families during the weeks preceding, during, and following a designated ‘TV Turn-off’ week in April, 2004 and March, 2005 (Baker et al., 2007).

Asset mapping is derived from an “asset-based” approach to community development. Its methodology is based on the idea that a community can be built only by focusing on the strengths and capacities of the citizens and establishments that makeup

that community. There are three levels of assets that are considered when creating an Asset Map. The first level, “individuals” assesses the gifts, skills and capacities of people living and working in the community. Gifts can be described as knowledge that an individual possesses (e.g., knowledge of health or physical activity). The second level includes “citizen associations” through which local residents come together to pursue common goals. The third level of asset mapping is comprised of the institutions that are present in community, such as local government, hospitals, education, and human service agencies (U.S. Department of Housing and Urban Development, 2009).

Collecting information using asset mapping primarily consist of four phases. The first phase is to establish the boundaries of the community that you wish to address. The second phase consist of identifying the strengths of the community (e.g., people, doctors, groups, partnerships). The third phase is called an “asset audit,” which involves identifying and cataloging resources that accommodate the strengths of the community (e.g., businesses, churches, non-profits organizations). The fourth phase includes creating connections between old and new resources, establishing new partnerships within the community, and providing community members with the tools and resources needed in order to sustain their new agenda.

### **Purpose**

The purpose of this project was to use asset mapping in order to identify the strengths, gifts, skills and capacities needed to increase physical activity for active duty soldiers and family members at Fort Riley.

### **Objectives**

The objectives for the practicum project were to:

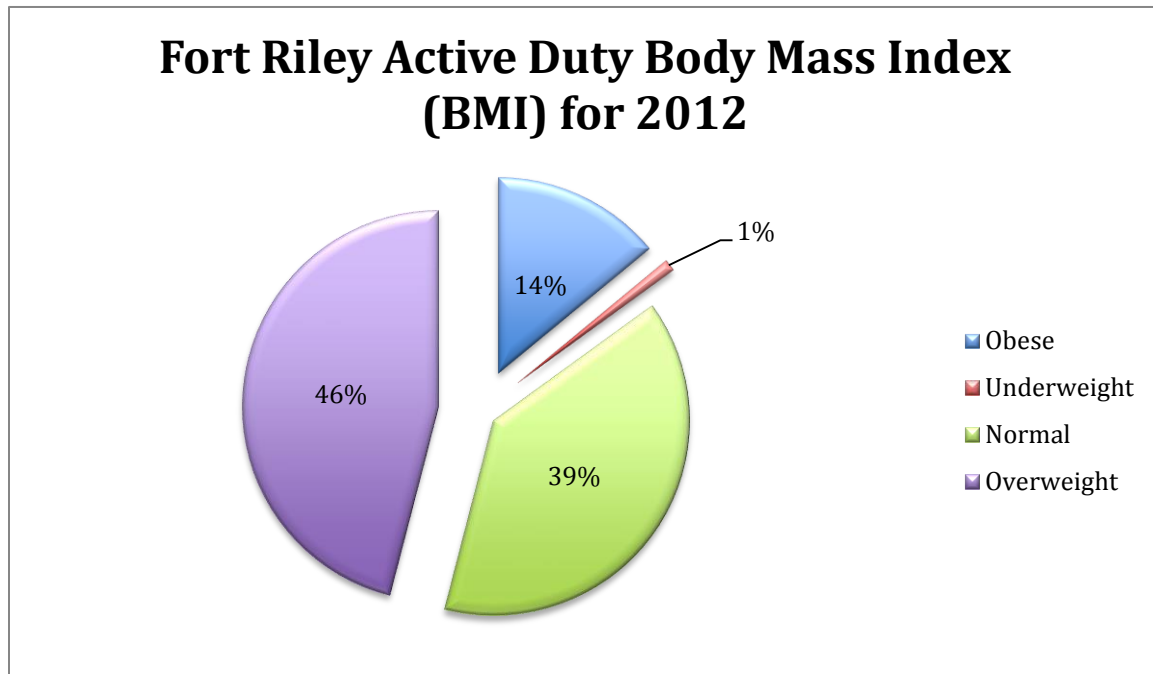
1. Catalog and map all strength, gifts, skills and capacities on Fort Riley that may potentially initiate new physical activity programs and increase physical activity adherence.
2. Establish new relationships and networks within Fort Riley Army installation that could potential increase support for physical activity adherence.
3. Make recommendations to personnel and staff for increasing physical activity based on results of the asset map.

## **Methods**

The population for this project consisted of non-deployed active duty service members (n=12,228) and military families members on base (n= 24,678). The active duty Army personal at Fort Riley had the potential to reach a population of 18,553 soldiers if all brigades and multiple support units were not deployed. According to the 2010 census, the land area in square miles was 5.04 with a density of 1,541 persons per square mile. Fort Riley included personnel who were predominately white (72.56%), Black/African American (15.9%), Hispanic (12.3%) and Asian (2.4%) (U.S. Census Bureau, 2010). Over 50% of the population consisted of young adults ages 20-24 (29.02%) and ages 25-34 (25.63%). For children and adolescents (n=2,495) the age range varied within the population. Roughly 13.52% of children were < 4 years of age and 18.63 % were ages 5-17 (U.S. Census Bureau, 2010). The median household income was well below the state average of \$50,594, at \$34,350. Of the population living on Fort Riley, 24.1% lived below the poverty line (U.S. Census Bureau, 2012).

According to the Department of Public Health, Army Wellness Center, a report on active duty personnel in Fort Riley indicated that many active duty soldiers were either overweight or obese according to BMI. A report on active duty weight status collected by

Army Nursing at Fort Riley, reviewed the status of physical readiness training. The data collected showed that 46.0% of military members were overweight, while 14.0% were considered obese. In addition, 39.0% of active duty soldiers were considered to be at normal weight, while only 1% were considered underweight (Figure 4) (C., Lindsey, Army Nursing, September 25, 2013).



**Figure 4. Fort Riley Active Duty Body Mass Index Report (2012).** Provided by C, Lindsey, Army Nursing, July 18, 2013

### Measurements

The central community of Fort Riley was evaluated to determine main points of strength on base that promoted physical activity. These points (assets) were cataloged and placed on a map to indicate their location in the community. In addition, the internal structure and layout of the community was assessed. The locations of schools (CDCs), health services, community leaders, recreation facilities, and trails (walking, jogging,

biking), were cataloged and mapped.

### **Procedures**

The focus of this field report was to use asset mapping to identify any potential influences that would support an increase in physical activity for active duty soldiers and their family members at Fort Riley Army installation. This approach was sustainable because it allowed the community to function off its existing strengths rather than look for external support.

The initial phase of the project was to establish the boundaries of the community in which asset mapping would be used. The process of asset mapping was utilized to compile an inventory of working personnel and community strengths from which partnerships could be established to enable supportive community participation. The focus was to increase physical activity levels of active duty military and their family members on base. As mentioned previously, the process was initiated by identifying assets (social and environmental) that were beneficial to physical activity within the community. These assets included knowledge of physical activity at the local level, as well as at the health department; knowledge of the risks associated with physical inactivity; and knowledge of the links between physical inactivity and negative health outcomes (e.g., obesity). Assets also included innovators and potential leaders within the community, and resources such as time and money. The community asset inventory can be seen in figure 5.

Problem Being Addressed	Geographic Area of the Community	Assets (resources) Needed?	Individual (with talent, skill, or gift)	Organization Associations in the "Community"	Institutions in the Community
Currently no reduction of obesity through increased physical activity among active duty soldiers and family members on Fort Riley Army Installation	Fort Riley Army Installation, which consisted of 3 outposts: Custer Hill, Camp Whiteside, Camp Forsythe	Support of health care professionals, CDCs & educators, money, training for individuals and group collaboration, time and community leaders.	Colonel Benne-Medical Corps Chief, Department of Public Health  Major Lindsey-Department of Public Health Army Nursing  Kendra Seat-Director of Army Wellness Center  Judy Woodward-Director of Community Health Promotion	American Red Cross  Family Services  Recreational Services	Irwin Army Community Hospital  Department of Public Health: Fort Riley  Childcare Development Centers  Health Promotion  Army Wellness Center

**Figure 5. Community Asset Inventory: Fort Riley Army Installation.**

The next phase was to catalog (identify) individuals who had physical activity knowledge as well as to identify community assets. This inventory included individuals such as health care providers, nurses, public staff, and community leaders. The community assets consisted of community parks, walkable paths and trails, recreational services (e.g., gyms and pools), health centers, counseling services, venues and establishments that were suitable for physical activity promotion.

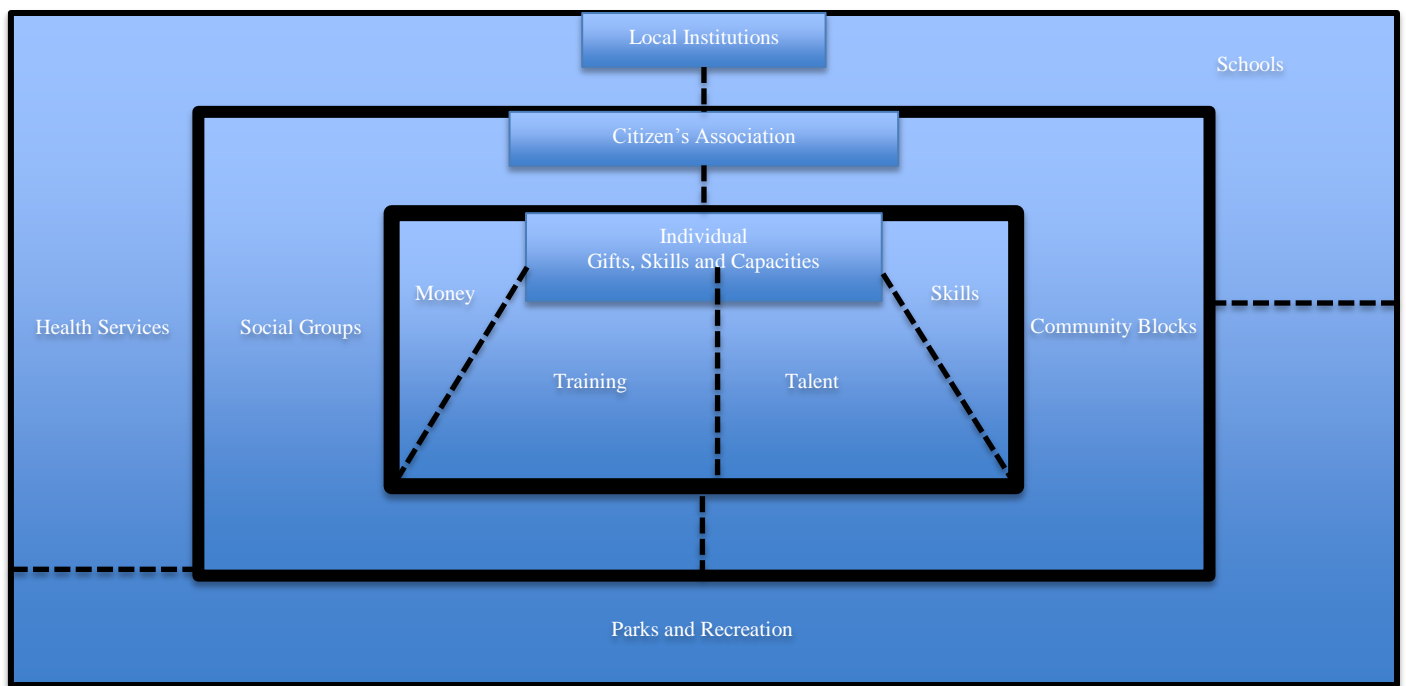
After cataloging all assets, I consulted CDC educators, healthcare providers (doctors/nurses), and public health staff members in order to gather their knowledge and

thoughts of the installation as well as to receive feedback on possible community strengths. The objective in this was to support partnerships and ideas for activities that were being conceptualized, planned, and initiated. As part of my consultation, negative effects of obesity were reviewed to encourage community involvement and partnerships with other departments on base. In addition to physical activity, the staff and I also discussed other factors that lead to obesity such as poor dietary habits, health risk behaviors, and lack of community support.

The final task was to take all the assets that were cataloged and put them into three social levels of society. The three levels that were used in this report consisted of individuals, citizens association, and local institutions. These three levels are commonly used in asset mapping to organize visually, what assets are contributed by a community. The existence of these levels helped me identify the relationship and interaction between the individual level all the way to the institutional level. By placing the cataloged assets into these three levels, I could identify what levels contributed most to physical activity on base as well as what type of assets come from each level. It also helped me identify which level contributes least and how new assets could be used to increase physical activity on base. Figure 6 (below) is a template used to conceptualize the cataloging process for all asset variables that increase physical activity at Fort Riley.

By having these assets mapped, visual gaps or voids (regarding physical activity) in the community could be seen. The use of this information obtained by asset mapping allowed staff members to see what areas of the base needed support and encouragement to initiate physical activity programs and encourage physical activity adherence.





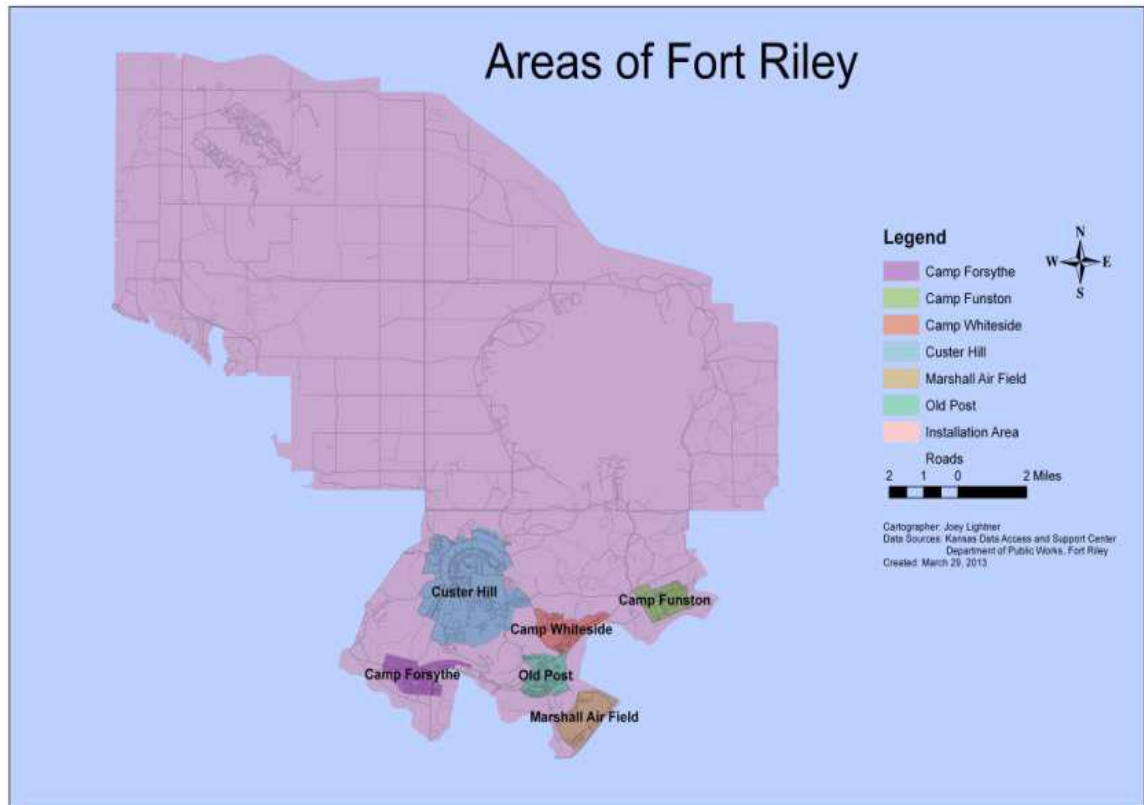
**Figure 6. Conceptual Community Asset Map Fort Riley**

## Analysis

The asset map developed for this report specifically focused on identifying community areas on base that were supportive for physical activity. Three separate and specific areas of Fort Riley were identified: Custer Hill, Camp Whiteside, and Camp Forsythe (Figure 7). The areas were selected because most of the families and soldiers were housed in these areas. In addition, the areas had multiple schools, trails, health services, and recreational facilities. I observed that there was no walking or biking (i.e., active transportation) access between the three areas. It should also be noted that the elevation of Fort Riley greatly varied throughout the communities, which added another barrier for active transportation between areas.

Other areas of Fort Riley were considered for asset mapping, however, they did

not have establish communities within them, rather they were used to store machinery and equipment or had a historic significance. They also did not provide enough assets to encourage increased physical activity. The areas not selected were Camp Funston, Old Post and Marshall Air Field (Figure 7).



**Figure 7. Areas of Fort Riley (Image provided by Joey Lightner MPH)**

### **Strengths of Fort Riley**

One of Fort Riley's strengths was that it did not have to abide by the same policies and processes of civilian towns and communities. However, I found their hierarchy structure to be very similar to a civilian community's council government system. I also recognized that the differences between the two were that Army personnel

were appointed to governing status by factors such as time served, rank, and experience, whereas civilian community members elect their representatives based on ideas, political party, and beliefs. In addition, I observed that the Base Commander role at Fort Riley was like a governor whose primary function was to direct planning and construction for all projects. One of the strengths in the Base Commander's position was that he/she did not need approval or votes to make changes. In addition, whatever personal agenda the Base Commander had would most likely be implemented on base. For example, if the Base Commander wanted to implement a program or develop a new facility for physical activity, the only thing that may hold him/her back was money. However, the strength of Fort Riley's governing structure could also be its weakness. If the Base Commander did not support increasing the health and wellbeing of soldiers and family members, then the community would go without.

Another strength that Fort Riley had was the amount of programs that were offered to the soldiers and their families at no cost. Almost every program on base allowed for family members and soldiers to receive assistance in multiple areas of health. For example, if a soldier was not meeting PT requirements they could go to the Army Wellness Center to learn about diet and exercise in order to lose weight.

## **Chapter 3- Findings**

### **Results**

#### **Cataloging Assets**

To analyze the asset mapping data, assets that may influence physical activity were cataloged and mapped at three different levels. The categories for each level were

selected due to the fact that they existed in location, could be counted, and could be analyzed within the community of Fort Riley. This format was described in the methods section of the report under procedures.

### **Level One Assets**

Level one consisted of assessing the gifts, skills, and capacity at the individual level. The assets that were assessed had to have the potential to increase physical activity behaviors on base. For example, if someone's talent was communication, he or she would be considered a good advocate for encouraging physical activity to soldiers or family members during a community event. In cataloging the assets, I primarily focused on money, talent and skills, and training. Those assets were selected because they were most relevant to physical activity.

In level one, the results showed that Fort Riley's internal structure was primarily departmentalized, which meant that each department was allocated a specific amount of money each year. Most department or facility budgets were undisclosed; however, many budgets were based on the level of need for that department or facility. For example, if a gym on base were to consistently receive high participation then it was most likely to receive funding for the upcoming year. Conversely, if a gym received low participation it could be shutdown and the budget is reassessed for the following year. Some departments were required to stay functional regardless of use and were continuously funded (e.g., public health). However, during my time at Fort Riley there was a government shutdown, which many departments and facilities were temporarily closed. This had a dramatic effect on the community since the primary source of funds came from the federal government. In the case of my assessment, I observed that the health

facilities, separate from the hospital were temporarily closed (e.g., Health Promotion).

A clear strength of Fort Riley was the amount of talent and skills available to increase physical activity on base. Fort Riley had many doctors, nurses, volunteers, personal trainers, and students that could advocate for increasing physical activity. Many of these talents came from staff members at Fort Riley, but some were held by military spouses living in the community. All of these individuals had the potential to educate soldiers and family members on the benefits of physical activity.

Fort Riley's website as well as newsletters (e.g., 1<sup>st</sup> Infantry Division Post) also provided a great medium to communicate the benefits of physical activity to the community. In addition, Fort Riley had a variety of recreational services and intramural programs that employed individuals with specific skills and training (e.g., personal trainer and coaches) who could help soldiers and families members acquire the information needed to perform physical activity.

In looking at training as an asset, many staff members had significant training to identify health risks. The Army Nursing section routinely checked patients' blood pressures as well as assessed their heights and weight. The nurses training (education) and skills helped them identify early signs of health risks. If a patient's results were of concern, the nurse would address the issue by offering solutions to decrease the problem. Advising and educating patients on the benefits of physical activity may have spurred a patient's interest in becoming more physically active.

## **Level Two Assets**

Level two focused on the citizen associations of Fort Riley that may have potentially affected physical activity adherence. In cataloging these assets, I primarily

focused on social groups, neighborhoods, and barracks. For the purpose of this section, I will often refer to citizens living in any neighborhood at Fort Riley that were able and willing to represent the cause for increased physical activity on base as “Community Leaders.”

One of the strongest elements in asset mapping that could be found during cataloging the community’s asset, would be finding a commonality of beliefs about physical activity among community members. The results in level two showed that one asset that all three targeted communities had in common was that all of the residents living on base were soldiers/veterans or were spouses of soldiers/veterans. In addition, most individuals that worked at Fort Riley were soldiers or had previously been soldiers in the Armed Forces. This brought a unique camaraderie to the communities’ social settings at Fort Riley, which would not have existed in a civilian community. Because of this, there was great potential to delegate community leaders that could influence physical activity. Since the majority of soldiers were unmarried and lived in barracks (i.e., Camp Whiteside and Custer Hill), social networking among roommates and other barracks offered a great opportunity to identify leaders that could help promote more physical activity. I observed that the soldiers from the Warrior Transition Battalion complex would meet with soldiers from other barracks to walk or ride bikes. This showed support for wounded soldiers as well as for soldiers staying healthy and active overall.

The three community areas (Custer Hill, Camp Whiteside, Camp Forsythe) were unique in that they were separated by status and relationships. Camp Whiteside and Custer Hill were designated to house unmarried soldiers. For these two areas, the

community consisted of barracks. Camp Forsythe was where a majority of family military family lived. In addition, since the military had deployment and rotations consistently occurring, a solid community foundation could never be established because soldiers did not have the proper time get to know one another. Many soldiers and families may have moved 7-10 times before they became established. For example, one military wife said that her family had moved over twenty times in her husband's career. One factor that most military families had in common was that their children went to the same CDC closest to their community.

### **Level Three Assets**

Level three assets included the local institutions at Fort Riley that might contribute to increased physical activity. In cataloging these assets, I primarily focused on health services, parks and recreation, and schools because they were very prominent within the community and had the greatest influence on physical activity.

The results for level three showed that there were four main departments that are designated to promote and encourage healthy activities and behaviors. These departments networked with each other through a variety of health services offered on base. One department was called "Health Promotion," which focused on increasing physical, emotional, social, family, and spiritual fitness by means of community activity, support groups, and education. The second department was called the "Army Wellness Center," which was a new facility that also provided support and health education to soldiers and staff members. The Army Wellness Center's primary goal was to help soldiers and military family members reach health goals, whether they wanted to quit smoking or lose weight. The third department was the Department of Public Health;

which primarily focused on ensuring the safety of the community by disease prevention. However, there were sub-departments within public health (e.g., Army Nursing, Occupational Health, IAUC) that identified health concerns (e.g., obesity) and offered support in dealing with those issues. All of these facilities worked independently, and occasionally collaborated and networked with one another on specific topics. In addition, IACH provided healthcare to soldiers, military families, and retirees. The focus of IACH was to ensure Army readiness, which at times included identifying soldiers and family members with health issues related to obesity.

There were a number of opportunities (e.g, parks and recreational services) for soldiers and families to achieve physical activity at Fort Riley. Fort Riley had an abundance of gyms, trails, recreational facilities, and intramurals for children and adults. There were over 6 established trails that accommodated leisure time activities such as walking, jogging and biking. However, they did not facilitate active transportation because they did not connect to Commissaries, Post Exchange, or schools. The Fort Riley housing community was growing, for which developers had been mindful in implementing new designs to increase walkability. However, according to WalkScore.com, Fort Riley received a walkability rating of 8, which meant that residents needed to drive everywhere. Walk scores were based on a 0-100 scale, where zero was defined as least walkable. The score factored in how walkable a community was as well as how easy it was for community members to gain access to stores, restaurants, bars, parks, and other amenities by foot within their community. The civil engineering design of Fort Riley did not encourage active transportation to common destinations: Commissary (grocery store), Post Exchange (shopping centers), and schools.



Fort Riley also had 4 main swimming pools available to the public. There were over a dozen playground facilities for children to use, which included the CDCs.

Recreational services offered a variety of intramurals for both adults and children. The services included sports clubs and group activities (e.g., baseball, baseball, soccer, volleyball, golf, racquetball, et cetera). There were 12 gyms and fitness centers that had equipment to allow patrons to focus on specific exercises, disciplines, and training techniques (e.g., dynamic stretching, weightlifting, powerlifting, agility training, plyometric training, total body resistance exercise (TRX) training, and other alternative methods (e.g. tires, ropes, sandbags, chains, slosh pipes, et cetera).

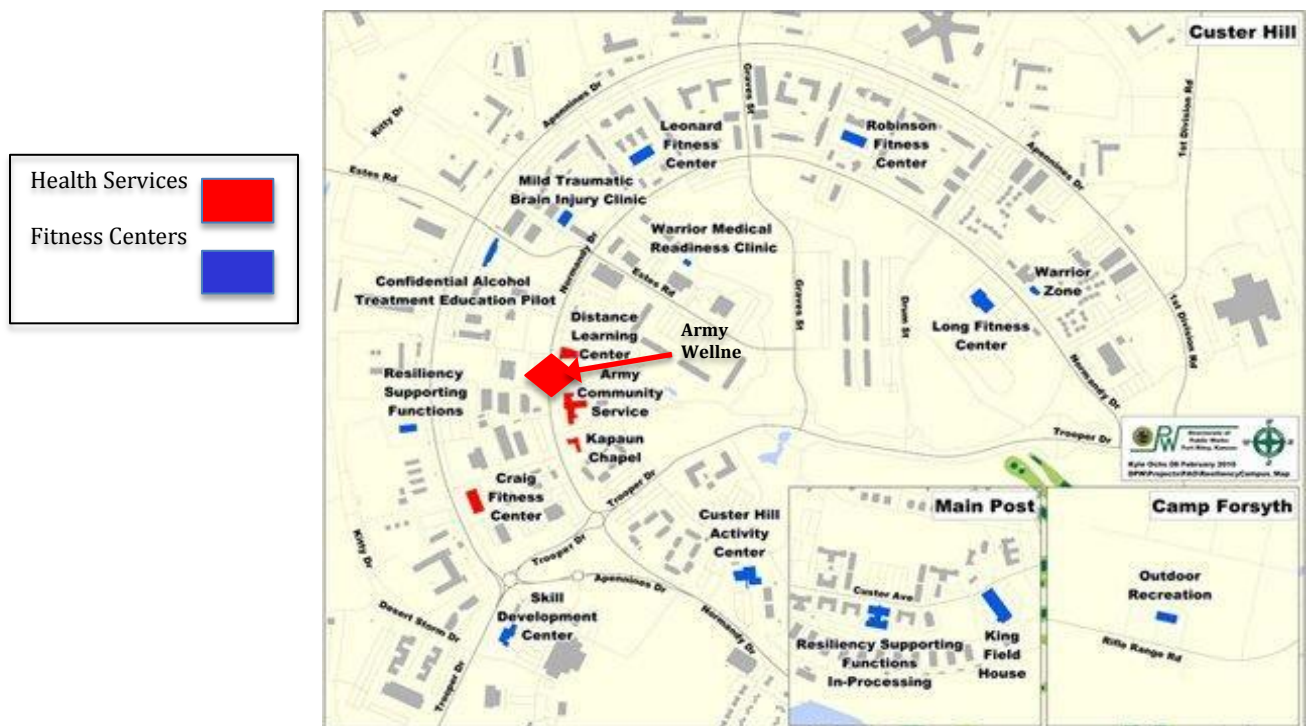
There were seven CDCs on base that offered a variety of physical activity to children. All CDCs had playgrounds, and children who frequented these facilities had allotted times to be physically active. The parents that brought their kids to CDCs were able to drop their kids off for only a few hours or up to an entire workday. CDC caregivers provided a number of in-class events that promoted physical activity (e.g., games that involved standing up and down as well as moving around). All CDCs followed the same guidelines for recess, which was from 30 minutes up to 60 minutes per day. Some children attended CDCs five days a week while others only attended one to two days, depending on their parent's work schedule. CDC's were also important to map because the teachers offered educational materials (e.g., lessons) that had the potential to condition the behaviors of the children to be more physically active. Some education materials talked about healthy food choices and why moving around made bones stronger.

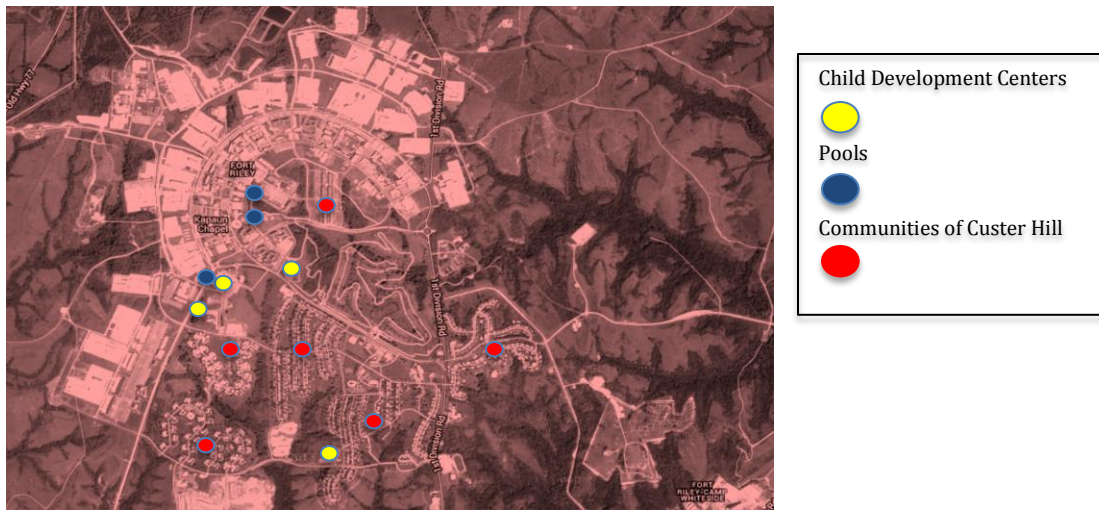
## **Assets by Community at Fort Riley**

### **Custer Hill**

Custer Hill was where a majority of single soldiers lived and worked. However, on the outskirts of town was where you would find family housing. Custer Hill was where most of the assets were located (e.g., gyms, fitness, recreational services, Army Wellness Center, Warrior zone, and trails). Figure 8 maps all of the fitness centers and health services of Custer Hill as well as those for Camp Forsythe and Camp Whiteside (located on Main Post). The Army Wellness Center was located near the heart of Custer Hill and can be seen in Figure 8 also. The Army Wellness Center provided additional knowledge and talent that could be used to increase physical activity adherence.

Custer Hill also provided the most options to jog, walk or bike out of the three main areas that were assessed. Figure 9 shows a map of popular jogging and biking trails. It was also the most walkable area on base and seemed to be designed for high levels of walking and biking. Figure 10 provides the locations of housing communities as well as the three pools located on Custer Hill. Custer Hill had great potential to facilitate increased physical activity because it was rich in environmental assets (e.g., trails, health services, pools, and recreation). In addition, five of the nine CDCs were located on Custer Hill (Figure 10).





**Figure 10. Child Development Center (CDC), Public pools, and communities located on Custer Hill. Map provided by Google Maps.**

## **Camp Whiteside**

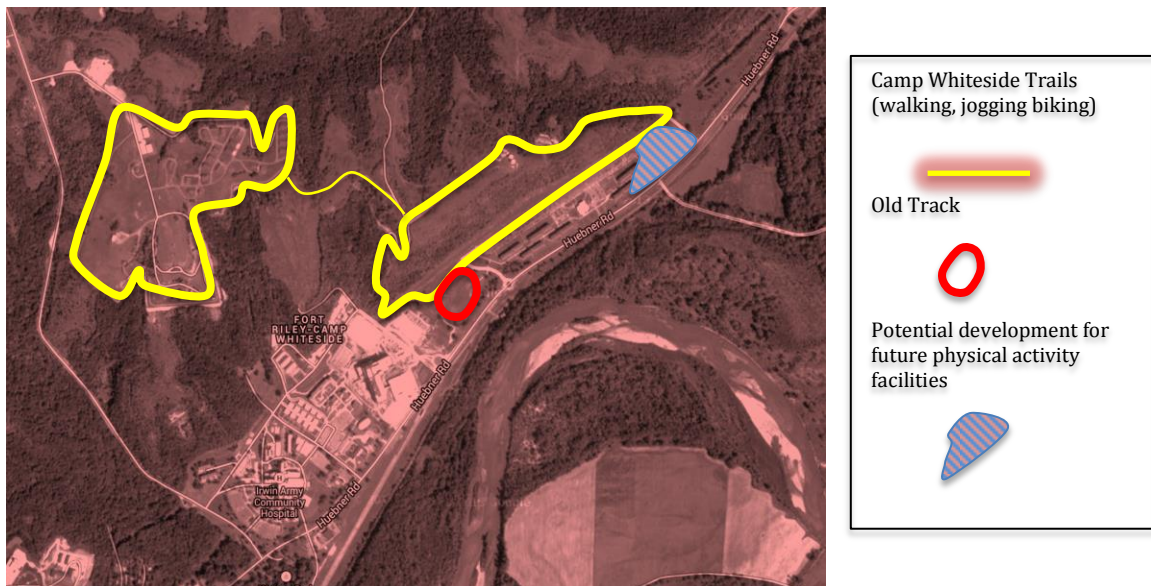
Camp Whiteside was where the hospital, aircrew, and Wounded Warrior housing were located. It had two primary trails and an old track that was used for walking and biking (Figure 11). These trails were also connected by manmade footpaths, which were created by the soldiers. The Wounded Warriors primarily used the trails to walk or bike. IACH provided the most assets, as far as talent, on base. There was underutilized land near Camp Whiteside, which had great potential to provide facilities and services that could facilitate increased physical activity among community members (Figure 11).

The Public Health command, Army Nursing, Occupational Health as well as two communities consisting of barracks, were located in the same area (Figure 12). There were no freestanding restaurants, Post Exchange, or Commissaries in this location. There was only one gas station located across a major road, which did not have a crosswalk to access it. The only option for food in this area was either the hospital cafeteria or gas station. Most of the restaurants at Fort Riley were located at Custer Hill. Figure 12 also

displays the locations of the two CDCs located on Camp Whiteside.

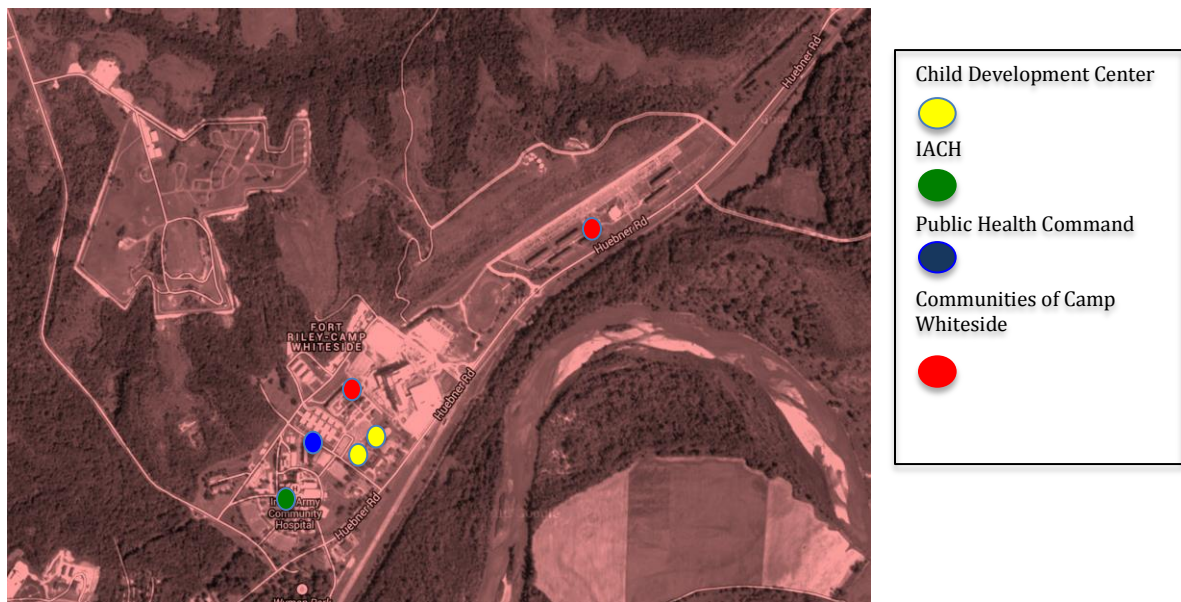
Camp Whiteside had two fitness facilities, which can be viewed back in Figure 8 in the displayed title “Main Post.” In addition, all recreation facilities for sports and activities were located at Custer Hill. Therefore, many soldiers who lived at Camp Whiteside had to drive to Custer Hill in order to gain access to resources for physical activity. Furthermore, there were no pools located in Camp Whiteside.

Due to the fact that Camp Whiteside did not have a Commissary located in the general areas, community members would have to drive to Camp Forsythe in order to obtain groceries. It was also observed that there were no bike routes or sidewalks that lead to the Commissar, only major roads.



**Figure 11. Primary trails as well as old track used at Camp Whiteside (walk, jog, bike). Map provided by Google Maps.**





**Figure 12. Child Development Centers (CDC), IACH, Public Health Command, and communities located on Camp Whiteside. Map provided by Google Maps.**

## Camp Forsythe

Camp Forsythe was one of the major housing areas for families on Fort Riley (Figure 13). This area was located furthest away from Custer Hill and roughly two miles away from Camp Whiteside. There was a Commissary and Post Exchange located within the community. Both the Commissary and Post Exchange were accessible by foot or bike. Camp Forsythe also had two CDCs, which were also located near the Commissary (Figure 13). There were many available streets and sidewalks located in this area due to the neighborhood design.

There were three main areas that provided paths for jogging, walking, and biking. However, there were two specific paths that had been established for walking and biking, which were located near Camp Forsythe (Figure 14). One of the paths was called “Lake Moon Trail,” which was furthest way from Camp Forsythe. The other path served as a

perimeter to a recreational field. In addition, many community members resorted to walking within the community, because in order to access Lake Moon Trail and the recreational field, an individual would have to cross multiple major road, which did not have a cross walks. There was a large portion of land that was not being used within the neighborhood and it offered great potential for future development of physical activity facilities (Figure 14).

Camp Forsythe had one established outdoor recreation facility located in this area. The outdoor recreational facility can be referenced back in Figure 8. There were no public pools located in Camp Forsythe as well. If a soldier or family member wanted addition resources to be physically active (e.g., sports, swimming, or gym), they would have to travel to Custer Hill. There were only major roads that connect Camp Forsythe and Custer Hill.



**Figure 13. Child Development Center (CDC) located on Camp Forsythe.**  
Map provided by Google Maps.



**Figure 14. Primary trails used at Camp Forsythe (walk, jog, and bike). Map provided by Google Maps.**

## **Chapter 4- Reviewing the Results**

### **Discussion**

This report had two objectives. My first objective was to outline and describe my field experience rotations at the Departments of Public Health at Fort Riley Army Installation. My rotations consisted of moving through several departments, which allowed me to experience all facets of public health. My second objective was to create a report by evaluating all probable assets (strength, gifts and capacities) of the community that may potentially increase physical activity behaviors on base, in order to address



obesity. I encouraged personnel to establish new relationships and networks within Fort Riley Army installation that could potentially increase support for physical activity. My overall goal was to make recommendation to personnel and staff members based on my results.

It should be pointed out that asset mapping is a methodology and generally does not use quantitative measurements to support a hypothesis. Asset mapping is not a tool used for scientific data collection. Rather, asset mapping is another way to collect and display data. It provides investigators with the framework to navigate their projects. It is a means to assess a particular subject or topics, and with its results make suggestions for change. To my knowledge asset mapping has never been used to assess or promote physical activity within any type of community (e.g., Army base or civilian community).

The results in this report provide evidence that multiple gifts, skills, and capacities regarding physical activity could be identified at Fort Riley. By identifying these assets, visual gaps of areas where physical activity could be supported becomes apparent. To increase physical activity adherence at Fort Riley, Army personnel (e.g., department of Public Health and Health Promotions) needs to make stronger connections with community members and advocate the importance and benefits of physical activity. By involving community members directly with physical activity campaigns, social networking would increase as well as individual well-being. Similar results were found in a health promotion intervention conducted by Semenza & Krishnasasmy (2007). Their results showed that by having community members work with city developers to create multiple vibrant and aesthetic environments throughout different sections of the neighborhood, social networking increased; which has been shown to increase well-being

and physical and mental health (Hawe & Shiell, 2000; Kawachi, 1999).

To further strengthen relationships between community members and Fort Riley's health department, leadership within the communities needs to be established. This method has been proven effective in past interventions. An intervention conducted by Baker et al. (2007) aimed to reduce television viewing time in adolescents living in New York State. In this intervention, the researchers established an asset-based community partnership between community members and organizations that had the same passion for health and who felt reducing television viewing time would decrease childhood obesity. The research also established community leaders to help advocate reduction on television viewing times. The partnership came together and established after school activities for kids as well as a television "Turn-off" during designated times of the week (Baker et al., 2007).

Fort Riley is unique in its own regards and brings many challenges to asset mapping. Fort Riley receives its funding from the federal government; there is no tax money generated to continually stimulate the community. All businesses that are on Fort Riley are under contract. There are no private enterprises which provide variety based on demand (e.g., the base decided Burger King was going to be there without considering the needs of the people), and there seems to be a lack of community leadership in this regard. When money is allocated to IACH, Army Wellness Center, and Health Promotion, leaders of those departments decide how that money is going to be spent on the community members. Needless to say, the community members are subjected to the ideas and programs created by the departments. In order for leadership to emerge and grow, the base would have to find individuals within each community that are interested

in physical activity. Those individuals could then help promote physical activity and other community events in collaboration with the departments.

The results showed that there was an abundance of assets that could be used to increase physical activity at Fort Riley. The assets evaluated at Fort Riley consisted of the existing parks and recreational services, doctors and nurses on base, public health personnel, educators located at CDCs, Army Wellness Center, Health Promotion, Army Resilience, and local trails. All of these assets were found within a five-mile diameter circle if centered on IACH. However, they are not being used to their full potential to address physical activity adherence, nor are they being used to promote physical activity. In addition, the methodology behind asset mapping is to create community leadership by asking organizations to step back and allow the community members to step forward. Building social networks and leadership within a community is essential for future success of increased physical activity at Fort Riley.

Although there were a variety of assets and resources for soldier and families to be physically active, there were many issues that may have hindered their physical activity ambitions. For example, the built environment created a barrier for individuals that may have wanted to achieve their full potential in obtaining more active transportation. Many assets were unequally located throughout the base, causing unbalanced access to physical activity resources between the communities. Because the communities of Fort Riley were divided into three sections (Custer Hill, Camp Whiteside, Camp Forsythe) created by community planning, the residents were separated from a variety of assets that encouraged physical activity. For example, residents living in barracks at Camp Whiteside had to travel up to Custer Hill in order to be a part of a

recreational sports league. In addition, most of the fields for recreation sports were located on Custer Hill. Camp Whiteside has an old abandon field that was not used for any events. Rotating sporting events or community health promotion throughout all three neighborhoods would significantly increase social networking. Furthermore, the individuals who lived on Camp Forsythe had to travel to two different locations in order to increase their chances of asset exposure.

By having the three departments (IACH, Army Wellness Center, and Health Promotion) work with community leaders, there would be a great potential to increase physical activity levels within all communities. Health Promotion had the best chance of achieving this goal because they already work closely with the community. It would be easier for them to establish community leaders and offer institutional support (e.g., marketing and funding). Figure 15 shows a current asset map of IACH, Army Wellness Center, and Health Promotion without community leaders, in relation to the surrounding community areas. Figure 16 is an asset map that shows IACH, Army Wellness Center, and Health Promotion with the potential of having one established leader in each residential community willing to promote physical activity to other individuals in their area. It is clear how promoting community leadership enhances the reach of assets toward physical activity. In addition, volunteers who wish to be community leaders are free, and can advocate more physical activity within neighborhoods, which leads to sustainability. In return, this would allow the community to achieve higher levels of physical activity without demanding more from the department on base.

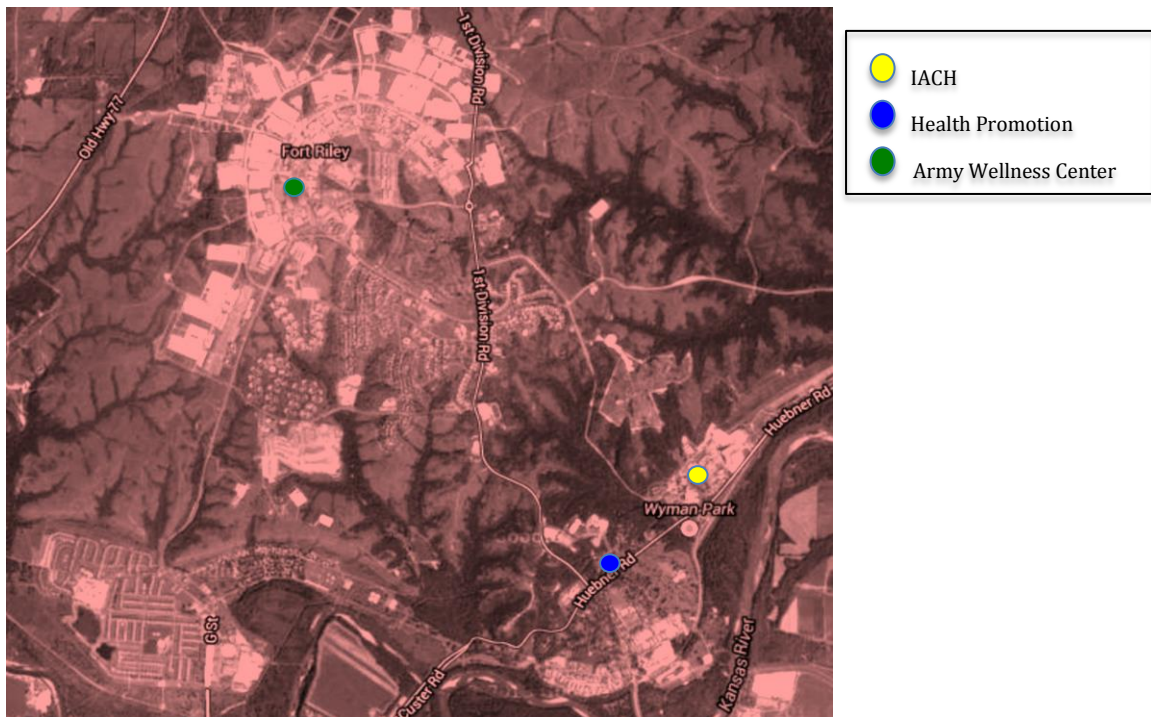


Figure 15. Map of departments that promote physical activity on Fort Riley.

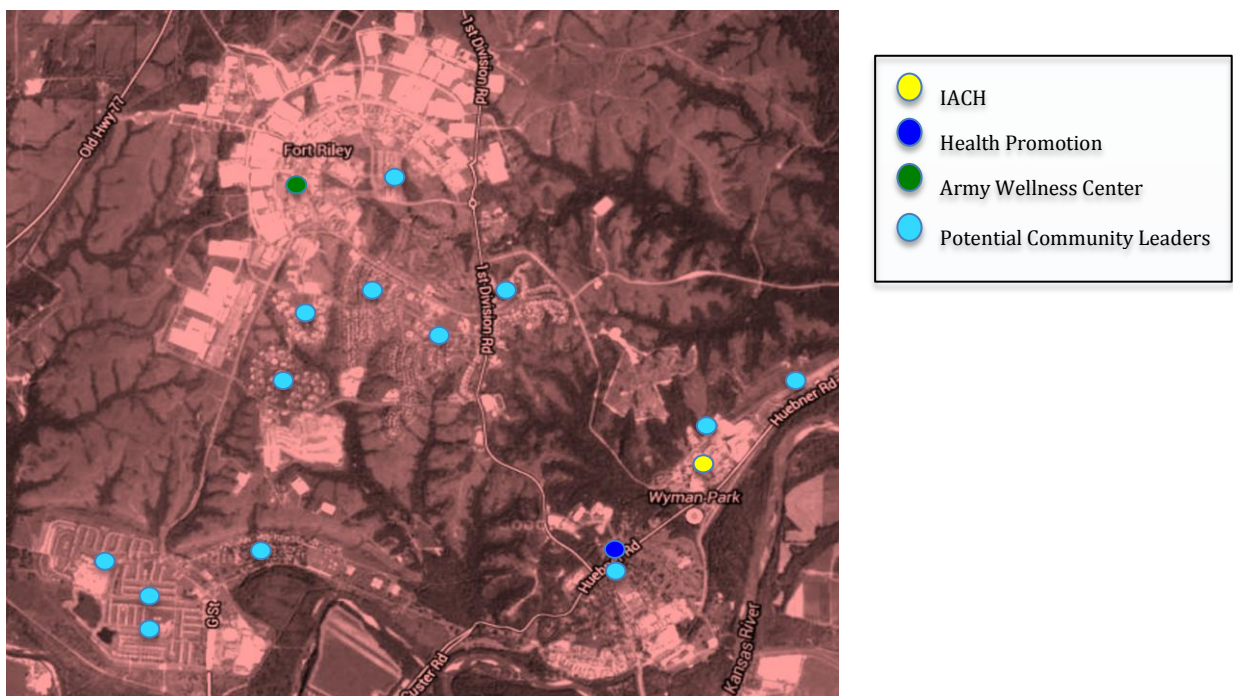


Figure 16. Map of departments and potential community leaders that promote physical activity on Fort Riley

## **Limitations**

The staff members that were interviewed provided a great deal of insight to all the assets that could be found on base. However, during my time at Fort Riley the base was subjected to a furlough (five weeks in duration) and a complete government shutdown, which lasted seventeen days. Questionnaires could not be administered to staff members because they were not allowed to work during the shutdown. The questions could have provided tremendous insight to additional assets on base as well as possible views on encouraging social networking throughout the community.

Furthermore, because of the government shutdown, it was not until after my internship and asset assessment that I was able to establish communication with key personnel whose primary roles were promoting health programs on base. At the end of my report, I had begun communication with the Army Resilience Program, which focused on mental, physical, emotional, and behavioral abilities to face and cope with adversity, maintain health, adapt to change, recover, learn and grow from setbacks. Their main target populations were soldiers, veterans, and family members on base. I did not get a chance to advocate the need of encouraging leadership within the communities of Fort Riley. This in turn spoiled the opportunity for Army personnel to share the commitments and responsibility with community members to encourage physical activity on base. Thus, making new connections to help encourage new social networks and groups, whose primary concerns were to initiate physical activity programs and to increase physical activity adherence, could not be shared or reviewed.

## **Conclusion and Recommendations**

In all, Fort Riley has an abundance of assets that can be used to encourage physical activity on base. The end result for identifying and compiling assets on base was to help Army personnel make connections with residents of Fort Riley in order to develop community leaders who can help advocate and promote physical activity. The key concept in using asset mapping was to gather all assets pertaining to physical activity, as well as facilitate future connections between the community and organizations to share each other's gifts. The assets that were mapped should be utilized to create social networks on base as well as review how staff members encourage physical activity to the soldiers and family members at Fort Riley.

Additionally, this report does not ignore the fact that some soldiers obtain more than the recommended amount of physical activity required for adults. However, the report does provide evidence that overweight and obesity has steadily been on the rise within the military. Soldiers may need to increase either the duration or intensity of their physical activity in order to offset their caloric intake.

Fort Riley has many programs and departments that encourage physical activity on base (e.g., recreational service and Army Wellness Center). I would highly recommend that these programs and departments conduct annual evaluations in order to see how effective they are in encouraging and promoting physical activity. The information used in the evaluation can help these facilities generate new concepts and ideas for future physical activity programs. In addition, departments and current policies should be assessed and evaluated for effectiveness in promoting physical activity. The results can be used to guide future policies that govern physical activity levels on base.

Assets are gifts, skills and resources within a community that have a potential to increase physical activity; however, if policies and programs are weak the true potential of these assets will never be realized. These recommendations and thoughts were discussed with public health personnel at Fort Riley Army Installation.



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