ARMED FORCES EPIDEMIOLOGICAL BOARD

MEETING

Gerald F. Fletcher, M.D., President

COL Vicky L. Fogelman, USAF, BSC, AFEB Executive Secretary

U.S. Naval Hospital

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I N D E X

P R O C E E D I N G S

COL FOGELMAN: Good morning, I think we'll begin.

I just have a few quick announcements and then we'll carry on from there.

First of all, welcome to everyone, to all the Board members. I hope you had a good flight in and your rooms were satisfactory. Welcome to Parris Island. Actually, you're at the Navy Hospital -- and we'll hear more about that in a few minutes -- which is collocated or close to Parris Island Marine Corps Recruit Depot, which you'll see this afternoon.

I want to thank all the people, the Marines and Navy personnel who helped us in making this meeting possible. It was a tremendous effort on their part, and I think you'll see that it's going to be worthwhile for you.

I'd also like to welcome any members of the press who may be here and to request that before you submit any report, that you please validate your reports with the speakers for accuracy -- we would just request that. This is a public meeting so press members are welcome.

We'll be on a very tight schedule both today and

tomorrow. I would like to recognize my -- you may feel like you're being herded a little bit and I'd like to recognize my chief herders. MAJ Fisher, will you stand up? CDR Sharp.

CDR SHARP: I didn't know I was a chief herder, but --

(Laughter.)

COL FOGELMAN: And we have two drill instructors who I think you've already met.

Please help them help you. When they say go, please do so. We want to make sure that we get to see everything. We have a very aggressive schedule today, so please try to help them out. We're not trying to push you around, but if you want to see all the things we'll need to move quickly.

Dr. Fletcher.

DR. FLETCHER: To begin this morning, I've asked all the speakers today to try to hold to their time and then we'll have ten minutes for discussion, if you really have important questions to ask.

We're very happy to begin this morning with CAPT Clint Adams who is Commanding Officer of the Naval Hospital Beaufort. CAPT Adams, we thank you for being with us.

Welcome Aboard and Introduction

CAPT ADAMS: Well, thank you, Dr. Fletcher and members of the AFEB. We are really honored to have you and we truly wish you a warm southern welcome to beautiful Beaufort by the sea.

You know, we here at the Beaufort military health care network share your concern, commitment and caring about our beneficiaries.

As you are, we are focused on continuous performance improvement and truly hope to learn, teach and grow from your visit here at Parris Island.

Just a brief note about the facility, which was commissioned in 1949 in the shape of an anchor, with a sister facility in Lima, Peru -- and I have met the first person, Ken Hayashi -- Ken, where are you?

MR. HAYASHI: Here.

CAPT ADAMS: -- who has actually been to the sister facility and tell me, yes, it is a twin.

On the grounds of an historic fort, Fort Frederick, circa 1750s, on which the first reading of the Emancipation Proclamation south of the Mason-Dixon line was read, right here under an oak tree just down from us.

And the first regiment, the first colored regiment, was sworn into the Union Army.

The age of the facility represents our maturity as a health care delivery organization. The anchor, I would like to think, represents our steadfast commitment and our passion to customer delight.

(Laughter.)

CAPT ADAMS: The international nature of our sister facility truly represents our role in the support of worldwide deployment and operations which you have so heavily been involved with through your history as a Board.

So roll up your sleeves, I've seen your schedule, it is ambitious, and any way we can support you or provide any more of that southern hospitality, please, please don't be afraid to ask.

Welcome aboard.

COL FOGELMAN: Thank you.

(Applause.)

COL FOGELMAN: Our next speaker is LTCOL Becker, who is the Assistant Chief of Staff for Officer Training, Marine Corps Recruit Training Depot, Parris Island, who will give us the Command Brief.

COL Becker.

Command Brief

LTCOL BECKER: Dr. Fletcher, members of the Board, I'm delighted to be here on behalf of the Commanding General of the Eastern Recruiting Region and the Marine Corps Recruit Depot, Parris Island. Welcome.

This morning, I'd like to take a few moments to discuss our organization history, mission of the Marine Corps Recruit Depot, Parris Island and the Eastern Recruiting Region.

Parris Island encompasses over 8000 acres, half of which is saltwater marshes, ancillary islands. Recent archeological digs have uncovered evidence that Parris Island was originally settled by American Indians over 4000 years ago. More recently, Parris Island was settled by peoples of the various European nations. In fact, for the past 400 years Parris Island has been the site of several military outposts.

Most significantly, it was the capital of Spanish Florida during the Spanish Conquest. At the turn of the century, the Navy operated a drydock and repair facility here. Parris Island served the vessels of the Atlantic Fleet until it was turned over to the Marine

Corps in 1908.

In 1915, the Marine Corps established a recruit depot, which has been a continuous operation ever since.

Here at Parris Island, we are involved in the entire process of seeking out and recruiting worthy young men and women and transforming them into highly disciplined American Marines. We are involved in the entire process from hometown USA until graduation.

Our mission here is simple. We recruit young Americans and we make them into Marines.

To accomplish this, there are two separate commands, but one mission. Brigadier General Humble is the Commanding General of both the Eastern Recruiting Region and the Marine Corps Recruit Depot here at Parris Island. And I'll discuss both of those.

Both headquarters are located here at Parris Island. First, I'll discuss recruiting and then I'll talk about recruit training. My brief takes about 25 minutes, but if at any time you would like to ask any questions, please don't hesitate to ask me. I have CAPT Janet Keech over here if you have some female-specific questions. She is a member of the Recruit Training Regiment and is acknowledged to be the finest Captain that we have here at Parris Island, but we can either

wait until the end or if you would like to ask questions during the brief, please ask.

The Eastern Recruiting Region consists of the 21 eastern United States. The northeastern United States are the 1st Marine Corps District, the commanding officer is located in Garden City, New York. This District is commanded by a Colonel. The 4th Marine Corps District is basically the eastern midwest, although geographically the command post is located inside the 4th Marine Corps District -- inside the 1st Marine Corps District boundaries, it's located at the Army Base in New Cumberland, Pennsylvania. It is also commanded by a Colonel. And the 6th Marine Corps District is the southeastern United States, its headquarters is located at Parris Island.

The young men from the eastern half of the United States enlist and come to boot camp here at Parris Island. Young men from the western half of the United States, Samoa and Hawaii enlist here and go to boot camp at San Diego. All the young women in the United States come here to Parris Island. We have the only female recruit training facility for the Marine Corps.

The entire region consists of 23 stations, all commanded by Majors and about 2000 marines, sailors and

civilians are involved directly in the recruiting effort of which over 1400 are canvassing recruiters.

Here you can see the average recruiter is quite experienced. Additionally, there's over 200 career recruiters. The majority of these are gunnery sergeants with an average time in service of 16 years.

Recruiters have a very difficult task, facing stiff competition from the civilian workforce, other services and the lure of higher education. This is how we recruit -- we talk to people, lots of people. It generally takes us to talk to about 300 young men or young women before we can enlist one. And this is the process that we go through.

How do we do against the competition? Well, an applicant must meet the mental, moral and physical requirements of the Marine Corps. Mentally, they must be a high school graduate, score in the top 70 percent of the Armed Services Vocational Aptitude Battery test. Morally, they must have no serious drug or police involvement. And physically, they must pass a medical examination and an initial strength test. An initial strength test for the men consists of two pullups, 35 situps in two minutes and a mile and half run in 13 minutes and 30 seconds. For women, it consists of a mile

run in 10 minutes and 30 seconds, the same 35 situps in two minutes and a 12 second flex arm hang.

These are what our quality efforts have resulted in, in the Eastern Recruiting Region. And our concept is to recruit for the whole person, not just to meet one or two physical standards.

How do we train these young men and women that the parents of America send to us? Well, it starts at recruit training where our focus of effort is to provide the transition from civilian to Marine and begin training those recruits in combat skills necessary to perform as members of Marine rifle squads.

To accomplish these tasks, these are our primary objectives. The first four are learned through observation and emulation of all that is done here at the Recruit Depot, with the drill instructor serving as the catalyst and role model throughout the entire training cycle. The bottom two objectives are accomplished through classroom instruction, tests, practical application.

I want to briefly review the entry level training pipeline before I go on to recruit training. Both males and females spend 84 days here in recruit training. Then all men and women go back to hometown USA

as Marines, after they graduate. All Marines, male and female, report to the School of Infantry from Parris Island at Camp Geiger/Camp Lejeuene. The men from San Diego report to the School of Infantry at Camp Pendleton.

If the men are going to be infantrymen, they report to the Infantry Training Battalion for 44 days. They receive follow-on extensive training as Marine infantrymen and receive their occupational specialties, either machine gunners, mortarmen, riflemen, et cetera.

All other non-infantry Marines, male and female, report to Marine combat training for 19 days, 17 consecutive days of which are in the field in what we call Operation Leatherneck. Then all those non-infantry Marines will then report to their follow-on occupational school, which will go anywhere from three weeks for a cook to 13 months. Many of those are Army, Air Force and Navy schools. And then those Marines will report to their follow-on duty assignment.

The training cycle for both males and females consists of 12 training weeks. The first week for males and females consists of an in processing that we call processing and receiving. It consists of haircuts, initial issue and the basic acclimatization to the military regime. And then males and females will go

through 12 training weeks.

This is the male training continuum. It consists of a gradual ramp up of academics, physical training and core values training throughout the entire 12 weeks. During week five, we call that team week. Our analysis of recruit training indicates that it's during this week that the recruits first begin to bond together as a team. It used to be known as what we refer to as mess duty or maintenance duty and it used to be in about week seven or eight. But our analysis indicates that this was the first time that the recruits worked together as a team and not under the constant observation of their drill instructor, when they were working for Marines. They had a mission to accomplish, which was either to feed their fellow recruits or clean the chow hall. So we moved that up a couple of weeks in training.

Week six consists of our swim qualification week. Week seven continues our academics, physical training. Week eight is a traditional marksmanship instruction. Week nine consists of our rifle qualification. We're the only service to qualify in the world with open sights at 500 meters.

It is immediately followed by week 10 which consists of field firing and field training. Week 11 is

our transformation week where our new exercise, the 54-hour exercise, call the crucible, takes place. You will see some of that this afternoon. And then week 12 is the transition week in which we help transition that young woman or young man from being a recruit into being a Marine, so that they're better able to be assimilated into the Marine combat training and the School of Infantry.

The females go through the same training that the males do, we have one program of instruction. However, their sequence is a little bit different. We have found that the females do not qualify with the rifle at the same rate as the males, so we shoot them a little bit earlier in training so that we have the team week right after qualification week. For those recruits that fail to qualify with the rifle the first time that they attempt it, we have the opportunity to remediate them during the team week.

We end up -- both males and female end up with about a 99.9 percent qualification rate, but we find that we need that extra week to bring the women up to the 99 percent.

They go through the same field training and the same crucible transformation as the males. Again, we

have one program of instruction, one standard.

These are our academic hours of instruction. SDI is senior drill instructor time. Academic remediation which is remediation of academics classes that they've received or values reinforcement, reinforcing the core value classes that they've received. Basic warrior training is their field training. A-line is merely the name of the range that they shoot the rifles at. General military subjects, and physical training, of course.

The Semper Fit Health Promotion Program is a Marine Corps order, our health promotion program through education and training. This program provides both Marines and recruits with the tools, with the incentives, to reach optimum fitness and well-being as a way of life. Semper Fit helps teach Marines proper care and preventive maintenance for themselves. The program is a comprehensive health promotion program that combines previously existing programs that we had in the Corps under one umbrella. It includes these areas. Tobacco cessation; no Marines that are involved in recruit training are allowed to use tobacco products in front of recruits. Physical fitness, of course. Back injury and muscle strain prevention classes. We do not teach this

to recruits, but we do teach it to Marines. Nutrition education. Stress management is taught to both recruits and the drill instructors. Suicide awareness, a big class to recruits. Alcohol and substance abuse prevention taught to recruits as well as Marines. Hypertension education is not taught to recruits, but it is taught to Marines. And of course STD/HIV prevention.

These are the six graduation requirements for both males and females. Recruits are -- we do not teach young men and women to swim, we teach them combat survival swimming techniques so that they can survive in the water. We don't teach them to swim.

Both males and females must pass the physical fitness test. They must qualify on the rifle range, achieve 80 percent mastery on the academics portion of their instruction. They must pass a battalion commander's inspection in their service uniform and they must complete the crucible.

However, about one in every six male recruits and about one in every four female recruits fail to graduate. We don't give up on a recruit though, even after they've given up on themselves and many of them do.

We have several recruit retention programs for

those with the potential to become Marines. For instance, the RAMP initiative. Early on, we identify, about training day seven, those recruits that are having difficulty adapting to the training. These recruits receive positive talks and motivating discussions from the members of their chain of command. They observe a recruit graduation, talk to some of the recruits right before they march off onto the parade decked to graduate, are taken to the rifle range, field training, taken to a BEQ to see that there is life after the barracks. We give them another perspective so they don't get bogged down and discouraged in their new environment.

CAPT Dunne, later on today, will not only discuss with you the physical conditioning platoon and the medical rehabilitation platoon, but you'll visit those sites.

The physical conditioning and medical rehabilitation units are organized to provide extra time to rehabilitate recruits with medical or physical problems, to increase and improve their physical strength or stamina.

Now that I've described the training process, I'd like to talk about how we're organized to conduct the training, after I talk about attrition.

We train about 20,000 recruits a year. These are our separation categories. You have these in your books. We have about 5000 to 6000 recruits on board at any one time. There are over 4700 Marines, sailors and civilians aboard the depot to execute or support this transformation from civilian to Marine.

These are the definitions that you again have in your handouts. And Dr. Long, who will follow me, will discuss these at greater length.

These are just examples of -- the Center for Naval Analysis did a recruit training attrition study for us for these five years. These were the results of some of their analysis. For the males, you can see that the preponderance of our separations is entry level performance and conduct, followed by fraudulent enlistment. Females, just about the same thing, a little bit greater entry level performance and conduct discharge rate and a little less fraudulent enlistment rate.

Male recruit separation reasons; about 75 percent of our attrition is due to non-physical attrition and about 25 percent is due to some physical attrition, some physical injury.

For females, a little bit less; about 71 percent is due to non-physical attrition. You can see again

about a third of the discharges are due to failure to adapt to the military regime. And a little higher incidence of injury. Dr. Long will go through it in greater detail and discuss injuries.

Data shows that the recruit training inventory strength test failures separate at a higher rate than other recruits. Many separations, including those for physical injuries, occur in the first few weeks of training. Furthermore, those recruits who pass the initial strength test with low scores are significantly more likely to separate than those who score well. You can see that those recruits that fail the situp portion attrit at a much higher rate than those that score better. Those that score in the two lowest groups attrit very high. That's just for the situps.

For the pullups, you can see that those recruits that do three or less -- you have to do three pullups to pass the Marine Corps physical fitness test. You can see that more than half of our attrition comes from these recruits here.

And this is the run. Thirteen minutes is failing. Over a quarter of the attrition comes from those recruits that do poorly on the run. The recruits are required to pass the physical fitness -- the initial

strength test before they ship to recruit training.

Let me talk a little bit about how we're organized to conduct recruit training. We have three commands here, the Recruit Training Regiment, which is the one preponderantly involved in recruit training; Weapons and Field Training Battalion and then Headquarters and Field Services Battalion. Headquarters and Services Battalion provides the general administrative services and support to the base. All these commands are commanded by Colonels.

There is a regiment of Marines involved in making Marines, about 2000 in the Eastern Recruiting Region. These are the folks involved here at the Recruit Depot. The Navy folks of course are our corpsmen, doctors and dentists and religious personnel. The preponderance of these are drill instructors, about 1100 of those are drill instructors, and 120 of the officers are involved in recruit training.

Recruit Training Regiment is commanded by a Colonel, four recruit training battalions and a support battalion, 1st, 2nd and 3rd Battalions train men, 4th Battalion trains women. Support Battalion consists of drill instructors from the 1st, 2nd, 3rd and 4th Battalion. They serve about six to 12 months in Support

Battalion as either a close combat instructor, a swim instructor or first aid instructor or a history instructor. Of their three year tour, they spend about a year of it here in Support Battalion. All these battalions are commanded by Lieutenant Colonels. I commanded the 3rd Battalion before I became the Assistant Chief of Staff, G-3.

The male battalions consist of four recruit training companies commanded by Captains with about five years experience in the Marine Corps. Two series in each company, each series is commanded by a First Lieutenant or a Captain with between three and five years experience in the Marine Corps. Each series has three to four platoons, depending upon the time of the year, each commanded by a Sergeant or a Staff Sergeant, with between nine and eleven years experience in the Marine Corps. Of those 20,000 young men and women that we get each year, 46 percent of those come right after they high school graduate, June, July, August and September. So June to December is our busy time here. Twenty six percent come in each of the two remaining thirds of the year.

The platoon sizes vary depending upon the time of the year and the size of our squad base and you'll see our squad base. We generally have three to four drill

instructors in each platoon.

The female battalion is a little bit smaller. We train about 1800 young women each year. It consists of three recruit training companies commanded by female Captains. This is a segregated battalion. The Captains have between three and five years experience in the Marine Corps. The series are commanded by female First Lieutenants or Captains with three to five years experience in the Marine Corps. And they have two platoons in each series. The senior drill instructor in those platoons are generally Staff Sergeants or Gunnery Sergeants with about 11 to 15 years experience in the Marine Corps.

Their platoons are a little bit smaller because we train less women and they have about three to four drill instructors per platoon. You'll see their squad base and a little bit of their training area a little bit later on today also.

We train about 1800 young women a year today. That is going to go up to about 3000 by the end of the century.

Weapons and Field Training Battalion is also commanded by a Colonel. They are primarily responsible for our marksmanship training, our field training and

exercise and also the conduct of the crucible.

We also have on board Parris Island, our drill instructor school that we're very proud of. We consider it the premier leadership school in the Marine Corps. Four classes a year, we average about 120 students there, and again, this is the age of the students.

The academic hours of instruction almost parallel what the recruits receive, because the drill instructors are going to be teaching it to the recruits. But underlying all of this, although there are 56 hours, classroom hours of leadership experience, there is leadership training and core values reinforcement in every period of instruction.

Every period of instruction that the recruits will receive, the drill instructor takes the last ten minutes and basically explains the why, as to why they did those things, and what they should have gotten out of it. For instance, after a close combat class, they should have received the understanding that it takes a little bit of discipline to step into the ring there with an opponent and follow your instruction. If you have the discipline to do what you're taught and to carry it through and the courage to step into the ring, then you're probably going to be able to give as well as get.

That's just an example, but every period of instruction, the drill instructor takes about the last 10 minutes and discusses those things.

This is the pledge taken by drill instructors. It is administered by the series officer before they receive their new platoon of recruits. It was written by drill instructors for drill instructors in 1957 after the Ribbon Creek incident. It's the only place in the Marine Corps where the welfare of the troops comes before the mission.

This is what we do here; we make Marines. What we do for the country is make Marines and win our country's battles. The Army and the Navy and the Air Force win wars for this country, the Marines don't win wars, we win battles.

Do I have any questions?

(Applause.)

DR. FLETCHER: Thank you very much. I spent two years with the Marines in Saudi, and I thank you for a job well done.

LTCOL BECKER: Well, you'll have to tell us how we're doing.

DR. FLETCHER: I can't remember.

(Laughter.)

DR. FLETCHER: Are there questions? And please identify yourselves for the reporter. Are there questions?

LTCOL BECKER: Yes, ma'am.

MS. BAKER: Sue Baker. Is there some conflict between the extreme difficulty, I gather, in recruiting anyone and the attrition rate? In other words, if the recruits really knew how tough it was going to be or how much -- if they knew how physically fit they ought to be and how many pushups and all those things, would it be even harder to recruit them? It seems to me that there might be some of the dropouts that could be screened out ahead of time but that there might be some conflict between that and the goals that the recruiters have to set for bringing people in.

LTCOL BECKER: Ma'am, if I understand your question, the question is are we accurate in depicting the physical demands that are going to be placed upon recruits, before he or she ships to recruit training and whether that might affect our attrition rate here at boot camp.

MS. BAKER: Yeah, or whether there's any way of screening out ahead of time some of the potential dropouts.

LTCOL BECKER: Yes, ma'am. I commanded a recruiting station in Houston, Texas for three years, so I can speak from both sides of it.

To enlist a young man or a young woman into the Marine Corps, there is no physical strength requirement that they have to go through. They have to pass a physical at the MEPS, at the Military Entrance Processing Station. Before they are allowed to ship to recruit training, they must pass the initial strength test, which is administered by their recruiter in hometown USA.

We have films that we believe accurately depict some of the demands that are going to be placed upon them. The young men and young women, when they go home on their ten days of boot camp leave spend a great deal of time interacting with those young men and women that are about to ship to recruit training. So I think we do a pretty fair job of preparing them emotionally and mentally for the physical regimes that they're about to undergo. I don't think that they believe how tough it's going to be.

(Laughter.)

LTCOL BECKER: We have found over the last 40 years that your attrition hovers between 12 and 14 percent at recruit training over the last 40 years. And

when we artificially hold it down here at recruit training, it later manifests itself during that first enlistment.

I think we do a pretty good job of depicting how difficult it'll be in hometown USA, but I don't think they really believe us until they get here. And much of that is -- the physically going through the obstacle course or the running early in the morning is not that difficult. What's difficult for them is being on their feet from 5:00 in the morning until 9:00 at night with no television and no radio and no -- it's the culture shock of being taken out of that environment that is the more difficult part of it.

What do you think?

CAPT KEECH: Oh, I agree, sir. I think the films that they're making now, they're really trying to be as accurate as they can, to show the recruits what they're going to be going through and every recruiting station is required to show those films to the recruits some time before they ship. But the recruits still -- they don't believe it and a lot of them -- it is a conflict, I mean it is hard for the recruiter to not want to push that recruit to go to recruit training, even if the recruit is borderline, because they think well, we've

got a better chance of them making it through, but the Commanding General is really emphasizing that they need to be mentally and physically prepared when they come here because if they aren't, then we spend the money to get them here and then they end up going home.

So that's definitely the emphasis and I think we're going in that direction pretty well.

LTCOL BECKER: In 1976, the Marine Corps was reorganized so that the Commanding General here was also responsible for the recruiters. So that if young men and women did report in and they -- and you had a recruiter or a recruiting station that consistently sent people that were not physically prepared or would consistently send people that had errors in their records, the same Commanding General is responsible for both of those. So my recruiters did not get credit for a successful enlistment until the young man or woman graduated from recruit training. So we have that -- and the Marine Corps is the only service that has the Commanding General responsible for this. So we have that check and balance in the system.

So there is no benefit to the recruiter to sending someone that is less than prepared at their very best ability, because they don't get the credit, so to

speak, for that enlistment until the young man or woman completes.

Yes, ma'am.

DR. LAROSA: LaRosa. A couple of things. Following on from that, I see that the major difference in attrition is failure to adapt. There is a big male/female difference there in lack of reasonable effort. The other question following on that, you mentioned something about the rifle range and the male/female differences there. Could you address both of those, please?

LTCOL BECKER: Yes, ma'am. Your first question talked about failure to adapt and lack of reasonable effort, specifically for the females.

DR. LAROSA: Well the difference.

LTCOL BECKER: What we found in our analysis was because -- we send about 40,000 young men each year to recruit training and about 1700 young women. Because of the disparity, the recruiters actively seek out, for lack of a better term, a quality young man, that young man who is a leader in his high school, who is the quarterback on the football team, the president of the Key Club, the president of the Science Club. We intentionally seek that young man so that he can serve as a role model in

the high school for other young men to say well, if John Jones is going, the Marine Corps must be a good thing.

What we found in our analysis is that because we recruited so few young women, that we did not actively seek out a quality young woman. We allowed the recruiters to accept anyone really that walked in the door. And what we found was that young woman who was walking in the door and wanted to go to Marine recruit training tomorrow was probably running away from something. And she ran out of one less than positive environment into another culture shock and she said, you know, I just left an abusive environment and now I'm down here in this environment. I don't like this one too.

But we found that the preponderance of our young women that come down here suffer from a lack of self-esteem and self-confidence, and we are trying to -- we have altered the training regime to put more self-confidence building type exercises before they go to the rifle range. We force them -- we don't force them -- we offer them the opportunity to repel --

(Laughter.)

LTCOL BECKER; They repel off the repelling tower, they go to the gas chamber, they go on the confidence course twice before they go to the rifle

range, to boost their self-esteem and self-confidence.

But we found that we were not recruiting -- we were not actively recruiting a quality young woman. Nor were we organized well to recruit a quality young woman. Nor did we provide her a role model before she ever came into the Marine Corps. So we reorganized some of our recruiting force so that every young woman in hometown USA is interviewed and screened by another young woman, a young woman Marine, a Sergeant, Staff Sergeant, before she ever comes here, who tells her woman-to-woman the straight scoop on those things.

I can tell you from personal experience that my recruiters did not like to recruit young women. I didn't like them to recruit young women, because of the things that boys and girls do. And I didn't -- I was always nervous when my recruiters had young women hanging around the office -- that's a fact. Now I will be very candid with you about that.

But we have now -- we are forcing the recruiters to go after good, positive role model type young women, the same type young man we were seeking in hometown USA is the same type of young woman that we are seeking.

We made that decision in August of last year and it's really too soon for us to tell whether we're making

a difference in that. I want to tell you that yeah, we've got the answer, but I think it's -- I would not be fair if I told you that. But we do recognize that that is a severe problem.

If you look beyond this, about 40 percent of your young women fail to complete their first enlistment. So the problem manifested itself later on. And we recognize that problem as a Corps and we're trying to address that.

The problems at the rifle range are generally the results of lack of self-confidence and self-esteem, ma'am.

DR. FLETCHER: COL Gardner.

COL GARDNER: You mentioned you do the IST out in the field before they come here. The other services don't do that and I understand there are some concerns about liability, and what if they have a medical problem or such during that IST done by the recruiter. How do you deal with that?

LTCOL BECKER: Everybody has to pass the physical at the MEPS before they are administered any kind of initial strength test. They're already members of the delayed entry program, before they're administered the IST.

COL GARDNER: They're already eligible for military medical care at that point?

LTCOL BECKER: No. Members of the delayed entry program, to the best of my knowledge, are not eligible for military medical care.

COL GARDNER: So what do you do when someone is injured during that IST?

LTCOL BECKER: We hope to God that nobody gets injured. I mean, I'm not a lawyer, I can't answer that question, but I know that that was a concern that I had when I was a recruiter.

MR. WARNER: A subcommittee of our group is going to be looking at alcohol use in the military tomorrow morning. We received some data on this and it indicates that, particularly in the Marine Corps, there's a fair amount of alcohol abuse. I'm curious as to -- on your one slide you showed -- I'm trying to remember the wording, it was very intriguing wording about either excessive substance abuse problems or something like that. How do you define that when you are looking at your recruits, what constitutes enough substance or alcohol abuse to disqualify them?

LTCOL BECKER: Was it the discharge slide?

MR. WARNER: No, I thought it was intake, wasn't

it? Severe or serious.

LTCOL BECKER: Those recruits during recruit training that claim they had a previous alcohol problem are sent to the substance abuse counselor and they're screened over there, both by medical personnel and the substance abuse counselor, who screens not just recruits but I mean Marines that go over there. And if they're determined to have a problem that's too big for us to overcome, they'll be discharged during their first 90 days of service. I can't -- I don't know how to answer it more than that. I mean it's the same -- the drug use is very easy, they come up positive on a urinalysis when they come here and they go home. But those recruits that claim they had previous alcohol problems that they had previously disclosed, they're disclosed to medical personnel first, during that screening. Then they go to the substance abuse counselor, who then determines whether there's a possibility of saving them and keeping them in the service, but usually those are sent home.

MR. WARNER: Do you see that your role in training is a crucial one for what subsequently occurs among the Marines? Because as I say, it seems like there is a real problem there and you were outlining the health promotion program that you have.

LTCOL BECKER: We discuss alcohol use and abuse twice during their time in recruit training. They receive an hour class on substance abuse and then they also -- it's discussed during their liberty conduct class on alternative things to do when you're on liberty, besides drinking. So it's constantly -- it's reinforced twice to recruits in those specific classes.

CAPT KEECH: Sir, there's also one core values class that is strictly devoted to alcohol abuse where the drill instructor is talking candidly with the recruits for an entire hour period simply about that topic. It's separated out even from the substance abuse class.

LTCOL BECKER: During the crucible which is the final exercise that recruits go through, we have a 30 minute period which we call our ISMs class in which we discuss how racism, sexism, individualism, alcoholism, child abuse, spouse abuse -- how that tears apart a team. So it's a concern, it's a constant concern of ours.

DR. FLETCHER: I think we'll move on and we'll have time for questions at break time.

LTCOL BECKER: Certainly.

COL FOGELMAN: If you wouldn't mind staying through the break, there may be some additional questions.

LTCOL BECKER: I have another brief at 10:00. I can stay until about 9:30.

COL FOGELMAN: Okay. Thank you very much.

Our next speaker is CAPT Ken Long, who is the Senior Medical Officer at Parris Island Branch Medical Clinic. He's a graduate of Ohio State Medical School and has 21 years of active duty, if you can believe that, six years as a flight surgeon and 11 years in family practice. In 1993 he completed a medical fellowship. He's spent the last three years in Parris Island.

And he's going to be talking about some of the medical issues with regard to recruit training.

Recruit Training Medical Issues

CAPT LONG: Thank you, COL Fogelman. Dr. Fletcher, it's an honor to talk to this Board. I'm going to cover briefly five different sections.

First, I'm going to give you a brief overview of the Branch Medical Clinic. Tomorrow morning at 6:45, you will all receive a guided tour, so you can see that facility. Next, I'm going to talk about recruit attrition, mostly the medical aspects. Then we'll talk about immunizations. I want to show you what

immunizations the recruits at Parris Island receive and some new directions that we're going. Male injuries, I'm going to briefly touch on male injuries, mostly so you have some information to compare to female injuries, which will be further presented and further detailed by LCDR Shaffer later this morning. And finally, I'm going to talk about some new women's health issues that we'll be starting later this year.

First, staffing. We have 24 full time officers at the Branch Medical Clinic at Parris Island. This is a list. The five physicians are four general medical officers and myself. The physician assistants are all general practice physician assistants. We also have a civilian staff. This helps with our continuity. Our physician assistant and nurse practitioner are both retired military. The physician assistant is also our discharge specialist. And having a civilian in that role helps make sure that our discharge categories stay fairly the same, they don't keep changing.

Enlisted personnel, we have 93 enlisted personnel, we have six IDCs. An IDC is an independent duty corpsman. It's usually someone who's been in the service eight to ten years, he's a first class petty officer or chief. He's received one full year, full

time, training. He's able to practice independently of a physician, they often use these corpsman at small duty stations, on submarines and on small ships. Our independent duty corpsmen, we use to run our battalion aid stations, which I'll talk to you more about later.

Next are our corpsmen screeners. Corpsmen screeners are corpsmen who work at the recruit training centers because we see so many patients, so many recruits, with minor illnesses -- if a recruit wakes up in the morning and he doesn't feel good, he can't just say okay, I'm going to take it easy today. He's got to go out and run the four miles or he has to go out and run the obstacle course. So if he is not 100 percent, he will come in and see us. So we train our recruit screeners, our corpsmen screeners to help this. They get a three week didactic program, then they are on a four to six month practical training where they are supervised by an independent duty corpsman, a physician assistant and a physician. After four to six months, we decide if they have adequate knowledge and then we make them qualified screeners. A screener also works with the independent duty corpsmen at the battalion aid station.

We see about 132,000 visits yearly at our clinic. This does not include the 60,000 visits at the

recruit medical readiness section. All of our recruit immunizations are given in the recruit medical readiness section. As you can see, each time they visit that section, they get about three immunizations, so it's not a fun place to visit.

The battalion aid stations, that's the BAS. All recruits first go to the battalion aid station. That's our deck plate medicine. They're taken care of there by usually one independent duty corpsman and one screener. If they meet certain criteria of severe illness -- high temperature, low pulse or high pulse, blood pressure is too high, they're referred automatically to the clinic. Also, if they show up for their second visit and they haven't improved, they're also referred automatically to the clinic. About ten percent of first visits come to our clinic.

As you can see, all recruits go through optometry and audiology at least once. Sports medicine and podiatry sees mostly musculoskeletal injuries, that's 90 percent recruits and about 10 percent active duty.

Recruit sick call sees only recruits. That's mostly dermatology problems, GI problems, respiratory problems.

Our permanent party section sees only active

duty and our acute care section and mental health section sees both recruits and active duty, but mostly recruits.

I want to talk about the recruit attrition, mostly the medical aspects, who gets a medical discharge and how do we decide what discharge they get.

I'm going to review that criteria because the discharges sometimes overlap. The first thing I'll talk about is convenience of the government. This is a physical condition that's not a disability and that's the key. It's a physical condition but it's not a disability. If they have a disability, they need a medical board. This condition is apparently beyond the individual's control. These are some examples. PFB stands for pseudofallicularis barbae. The Marines are required to shave; sometimes, especially some of the black Marines, cannot shave without continuing to have this problem and they get discharged. This also contains a catchall, any other condition that interferes with their ability to perform their duties, but is not a disability.

Next is EPTE or erroneous enlistment. You're going to see this EPTE term quite a few times. EPTE stands for existed prior to enlistment. This is a disqualifying medical condition that existed prior to

enlistment and it's discovered during in-processing. That means it's discovered before graduation and before 180 days. It's not aggravated by their period of active duty and they do not meet the minimum standards.

An example of this might be some scoliosis that wasn't picked up and now causes symptomatic back pain; severe flat feet that wasn't picked up and now causes severe pain; maybe biomechanical problems like a short leg, et cetera.

If there's any question in the patient's mind or the doctor's mind whether this existed prior to enlistment, instead of giving them an erroneous enlistment, we do an EPTE medical board, an existed prior to enlistment board. We also do this if they received a Marine Corps waiver. There are certain problems that are disqualifying but frequently get a Marine Corps waiver. One might be, for example, an ACL repair, someone tears an anterior cruciate ligament and it gets repaired. They go see the physician, they say yeah, I'm doing great. They always get an orthopedic consultant, they say I'm doing fantastic, I'm doing everything I can, I'm playing basketball, I'm playing football, I feel great. They come to recruit training, it turns out that wasn't really true, they weren't very physically active even before

their injury. Once they get into Marine Corps training, they find out that their knee will not handle training. So they will get an EPTE board and it will go to the CMC just to make sure they understand what things are you qualifying that are supposed to be disqualifying and what percent of those make it through. So that gives them a quality control.

Next is a PEB, this happens for anyone who develops a physical disability during training. We cannot send recruits home injured. If we do, we have to do a board. It also happens if they have a board that the patient disagrees with. So if we do an EPTE board and the patient says this wasn't there before I came in, then we do a PEB. And finally, if they have an EPTE condition that wasn't disqualifying but it's made worse, they get a PEB.

Next is medical fraudulent enlistment. Now there are other types of fraudulent enlistment, but this is medical. This is when they do not meet the minimum standards. If this would have been found at MEPS, they would have been disqualified, and the patient concealed this history or gave an inaccurate report of how he did with his injury.

Examples that we see sometimes are maybe like

someone who has patella femoral syndrome. They have problems running, they have knee problems, they go to a surgeon and they get a lateral release to help that problem. After the lateral release, they aren't very active, they go to the orthopod, they say I'm doing great. They come into the military and they start having again patella femoral syndrome. Then we might -- and they didn't tell them about -- they never run the sets. They said well, really, you know, I had to drop out of band because I couldn't march. So they go home for fraudulent enlistment because they didn't give an accurate report of their injury.

So to show you kind of an algorithm. Someone gets injured, if they have a COG diagnosis, those specific diagnoses, they go home, it takes five to seven days, it's a very quick discharge.

If someone has an injury that existed prior to coming in and they had a CMC waiver, then they need a board and that takes four to six weeks. That goes to you men.

If they had an EPTE condition that got aggravated, they again need a board and that board takes a little bit longer.

If they have an EPTE condition that's not

aggravated, then they usually go home by erroneous enlistment, takes about two weeks. But if there's any question about it, then we do an EPTE board and that takes about four weeks.

If they had an injury that did not exist prior to entry, they get a PEB, that again goes before you men. Rare cases, refusal of surgery, that also gets a PEB.

Now you've seen these numbers of attrition from LTCOL Becker already. This is the base attrition rate for males and females. The medical attrition part of that is almost two thirds for males and two thirds for females.

The next slide shows you though, a lot of this isn't really injuries, it's other things. For example, failure to adapt for women is 6.6 percent of that 16 percent. These recruits aren't doing well, they can't tolerate the Marine Corps training, ,they go to see the mental health advisor and he just says there's no way they're going to be able to handle this type of an atmosphere and they go home for failure to adapt.

Med fraud is second. All the female diagnoses are about twice as high as the male diagnoses. But what really strikes me in this slide is that PEB for males is less than one percent, so less than one percent of

recruits are actually injured and go home because of that injury. All the rest is existed prior to enlistment, fraud, failure to adapt. So even though we call it medical charges and people say yeah, medical is responsible for two thirds of the discharges, actual injury type discharges is less than one percent for men and one and a half percent for women.

Of the boards that we do, in fiscal year '96 -- and all this data is fiscal year '96 -- of the boards we do, 86 percent are ortho, so ortho is our biggest injury problem.

The next slide just shows this in a graph form. Again, for the men, this is med fraud and this is failure to adapt. For the women, this is failure to adapt and men -- and women, this is med fraud. But PEB is way down here, small percentage.

If someone gets an injury and we can rehab them in less than 60 days, we put them in the medical rehab platoon, and you'll hear more about that later. Or if someone needs surgery and we think they can recover in less than 60 days, we again put them in the medical rehab platoon and put them back into training.

This lists, of those 187 discharges, what the most frequent ones were. And as you can see, for men,

it's shoulder dislocation. And although this seems like a high number, we actually put back into training about three-fourths of our shoulder dislocations. They go through a six to eight week rehab program and go back into training. It's only those --

COL FOGELMAN: Is there a primary reason for shoulder dislocation, is it some activity?

CAPT LONG: We see most of our shoulder dislocations in hitting skills and pugil sticks. We also see some in the confidence course and in the obstacle course, but hitting skills and pugil sticks is the majority.

Many of these, there's been a previous shoulder dislocation that they came in with, they didn't tell anybody. They're not supposed to go through pugil sticks if they've had one within the last six months.

But anyway, three quarters of these though get rehabbed. And the literature would try to tell you that they wouldn't make it through training, but we have not had a failure through training after the eight week rehab, in a full year. So they do make it through training and don't seem to be dislocating that second time.

Tibial stress fractures is also high, and the

remainder are mostly stress fractures or acute fractures or knee injuries.

Females is a little different. You can see the females, six were pelvic stress fractures and four were femoral neck stress fractures. Females have a lot higher incidence of proximal leg fractures and CDR Shaffer will be talking about that more later.

There's one area in this slide, the medial meniscus tear should be two.

I would say the women recently began pugil sticks and boxing. We have not seen many shoulder dislocations. They do have less upper body strength, they seem to hit with less force and we've had two shoulder dislocations in about five months. So I think we are going to see some, but they're going to be less common.

This slide just shows that in graph form. Again, there's one error, if you want to correct it. All this information is in your handouts -- if you want to correct that medial meniscus tear should be two.

This shows all of our primary care visits. These are only those primary care visits that are at the clinic. This does not include our battalion aid stations. This is over a year and it's 40,000 visits.

The next slide in your manual and the next slide here shows what those diagnoses are. The top one, the highest one, 21,000, was musculoskeletal. So you can see musculoskeletal is exactly half of all our primary care visits. Second is skin problems, blisters, skin infections, cellulitis, fungal infections, rashes. Third is respiratory. Down from there is injuries, ENT, GI and male genitalia.

I have all the numbers, if anyone cares about a specific category. This is the way we used to collect data. We are starting a new system called the ADS system. That will give us many more diagnoses. Each department, -- for example, working in the sports medicine, we will now have instead of one diagnosis, we will have 60 diagnoses. So it'll be a lot more diagnoses so you can split it up a lot.

Next, I'm going to talk about immunizations. At Parris Island, we have shots, we call them 0-1 day, 0-2 and 0-3. When a male comes in, on his processing day one, he gets these immunizations. The adeno virus used to be given year-round. Adeno virus is -- we're running out of adeno virus. The company that makes it doesn't know if they're going to continue to make it. We're now giving this just during the winter and we expect to run

out before next winter.

Bicillin, we give only during the winter months. We've had a lot of problems with strep and they have a program that gives bicillin for winter months unless there's a strep outbreak. Then we would give it also during the summer.

Day three shots are these.

The females, we do it a little different because the females get a pregnancy test on processing day one. And after the pregnancy test, on day two, they receive the toxoids and the viruses. And their third shots are listed here.

By switching shots around, you can often save a lot of money, and recently we moved the MMR because we thought the risk of MMR in recruit training was very minimal. We moved MMR from the first shot to the third shot, and because of attrition, we were able to save over $22,000 just by moving that shot.

There's a new initiative out by the Navy and Marine Corps. And that is, they're going to require all the new accessions to bring their shot records to recruit training. And 90 percent, as you saw earlier -- actually 96 percent of our recruits are graduates. They should have a shot record. This should save us money and time

and some pain for the recruits, so that won't be too bad.

You can see our immunization bill is not small, $1.6 million a year for our recruits. Now if they bring in their shot records, we'll be able to significantly decrease oral polio, a lot of them won't need this. We'll decrease MMR and also decrease tetanus/diphtheria, although this is a cheap shot -- cheap shot.

We won't be able to decrease one of the more recent shots, which is very expensive, and that's hepatitis A. Hepatitis A lasts they think a lifetime. When our Marines need to go someplace quickly, it's a lot of extra work to try to give them gammaglobulin shots. So they've decided for the Marine Corps, that this is beneficial for their mission.

Male injuries. Parris Island entered all male injuries into the Naval Health Research Center-San Diego's Smart Tracking System from about April of '95 until June, August of '96. At that time, funding changed, manpower changed, and also recruit training changed a lot 1 October when they increased it by a week and added the crucible. So we decided to stop following male injuries, but kept up following female injuries.

I'm going to just briefly explain some of that information. The first thing I think is important to

realize is that there's two major types of injuries at boot camp. One is acute, that's injuries caused by a specific event. And the second is chronic, over-use injuries caused by a lack of balance between training and recovery. I tell the DIs it's too much, too fast, too soon.

The most common cause is just those recruits enter training in poor shape and most of the studies we see and the new one we'll see today about females, I suspect that'll show again if they enter in poor shape, the risk of injury is much, much higher.

Eighty percent of our injuries are over-use, mostly lower leg, and 20 percent is acute. And this is true not only in the Marine Corps, but in the Army, the Navy, the Air Force and foreign countries. All recruit training, most of your injuries are over-use.

Twenty five to thirty percent of the males develop an injury during training -- 25 to 30 percent. In females, it's generally around 50 percent.

We followed 54 injuries and we looked at which injuries were most common. So this will equal 100 percent. And the most common injuries are IT band, that's pain to the lateral side of the knee where the iliotibial band runs down the leg, from over-use,

marching, drilling, running, and PFS. Both again over-use injuries. Our most common acute injury is ankle sprain, pretty high.

The remaining injuries, most of these are over-use. The key thing about this slide is that even though stress fracture is down here at 4.4 percent, it's one of the most important injuries because it takes longer to heal, generally six to eight weeks. They get dropped to the medical rehab platoon. Any time you take a recruit from his platoon and drop him out, his chance of now graduating are much less, simply because he lost that peer pressure, that team spirit. It's really difficult to drop them out of training and then get them back into training. So even though this injury is at 4.4 percent, it is probably the most important injury there.

Similar is true again with multiple injuries, but stress fractures take a lot longer to heal. So that's a very important monetarily-wise and attrition-wise injury.

Now if we look at acute injuries, remember I said this is about 20,000 Marines over about a year, about 5000 total injuries and again, you see 1000 acute injuries, or 20 percent -- 20 percent. These are the specific events that caused those injuries -- running,

still high, they do a lot of running. Ankle sprains, knee twists, hamstring pulls, Achilles tendon tears. But close behind that is pugil sticks, hitting skills and squad bay injuries. They do a lot of things in the squad bay and they do a lot of things fast. When they get out of bed, they do it fast. When they go up the stairs, they do it fast. So there's a lot of injuries just bumping into each other, hitting the wall, falling out of bed, et cetera.

When they get out of bed, they count and they have to be on line in so many seconds. And if you're not there, then you do it again. So they're taught to do things regimented and fast.

What's key about these injuries is with the Naval Health Research Center Tracking System, we send them the data, they help us with analyzing it. We can take any one of these injuries, and we've done this for both pugil sticks and hitting skills, and say okay, what injuries were they and what percent were they. And, for example, in pugil sticks, shoulder dislocations is common. What was more common we found out was hand, wrist, finger injuries, gamekeeper thumbs. So we're looking at ways to decrease those -- change the pugil stick, give them gloves, make better padding, something

to make that better. So by looking at these events, breaking out the injuries we can see how can we make them better.

But I think one of the key things to remember is this is only 20 percent of your injuries, and 80 percent is strictly over-use. They say well what's causing the injury, what can we change. Well, it's marching, it's drilling, it's standing at attention, it's running, it's running in boots. It's all of it added up together.

Finally, I'm going to cover women's health. Currently, routine Pap smears are not done at Parris Island. The current plan is after the female Marine gets to her first permanent duty station, she gets her Pap smear there. We do do self-breast exam education, AIDS education, hydration, climatization and blister education for both women and men. Men also get education on testicular exams.

The Department of the Navy has mandated, however, that comprehensive health care for females at Marine Corps, Parris Island, will start some time later this year. They've decided basically we must do the Pap smear here. I want to give you a little history on that.

Two years ago, the Department of the Navy

mandated that all female recruits in both the Navy and the Marine Corps would have Pap smears within 60 days of entrance into the service. They've also decided that MEPS, where they do the initial exam to let them come into the service, will continue to do the pelvic exam, but they will not do the Pap smear. And finally, they will waive the Pap smear if it's done within the previous six months.

Great Lakes has been performing the Pap smear since this came out, for the last couple of years. The Pap smear issue affects the Marine Corps much differently than it affects any other service. The reason is physical training is an integral part and can't be waived for the Marine Corps. If you need to be at light duty for two weeks in the Army or the Navy, then you simply tag along with your platoon, regiment probably they would call it, you'd tag along with your regiment, as long as you can finish the final physical fitness test, then they'll graduate you from the Army or the Navy. But in the Marine Corps, if you're going to miss more than three days of physical training, because that's so important to their mission, they need to drop you out of training until you're ready to continue and go back in full physical training. And you'll see later why that

required -- the Marine Corps/Navy team worked on this for about the last two years to try to find an alternative to doing Pap smears during recruit training because of the disruption it might cause.

We tried to give expected routes, expected costs to the Marine Corps so they can be ready for this. This is expected route, and this data comes from Great Lakes, who for two years now have been doing the Pap smears at recruit training. During about the second week, they'll get a Pap smear. About a quarter of the platoon will not be able to because they'll be menstruating or for some other reason they can't get the Pap smear. They will get it a week later. About three to five percent of those will have technical errors and need a re-Pap -- retest Pap during recruit training. Seventy percent will be normal, they will just need a re-Pap in a year. Ten percent are going to need a colpo, and again, this is from Great Lakes data, so we think ours will be very similar. Ten percent will have infections that will need some sort of treatment and ten percent will be mildly abnormal and will need just a repeat Pap in three months.

After the colpo, about three percent will be either resolved or mildly abnormal and they'll strictly need a retest Pap in about three months. But seven

percent are going to require cryo or LEEP therapy. This will require 24 hours SIQ and 14 days of light duty, so this group is going to be dropped to the medical rehab platoon.

Estimated costs, hardware costs for startup is about $35,000.

Software cost, Pap exams, STD tests, infection treatment, cryo surgery, software, about $55,000. And we have two years because as you heard, female recruiting is going up each year, so we've estimated two years.

The projected workload -- as you'll see tomorrow, the clinic is not perfectly designed for this type of exam. A lot of our recruit sick call, the walls don't go clear up to the ceiling, so privacy is not what you'd like for this type of exam or this type of a history. So the plan is to basically close the clinic on Tuesday afternoon, so the females feel that they have confidentiality. We will close permanent party and we will do these Pap smears on Tuesday afternoon. It's going to require about 3000 Pap smears a year, 300 treatments for infection, about 300 colposcopies. These colposcopies will be done at the hospital. And about 100 each of cryosurgery and LEEP. For about 4000 appointments.

To try to help the Marines project how this is going to affect them, we've put together this slide showing that it's going to take about four hours for the Pap and the education that we're going to provide. About three recruits are going to need another two hours for the repeat Pap. About six recruits will lose one or two hours for their infection treatment, about six recruits will lose four hours for colposcopy, SIQ for 24 hours, 48 hours light duty. But the key about this is those recruits, female recruits, can stay in training, will not be dropped.

But about four recruits from each platoon will need cryo or LEEP. They will get SIQ for 24 hours and will have 14 days of light duty and they'll be dropped to MRP until they're ready to restart training. They'll usually go through a few days just to make sure they're in good enough shape to go back and then they'll go back to training. And they'll start at the same training that they dropped from.

The largest cost for this whole program is really going to be to the Marine Corps. Cost Factors Manual 1990 says about $185.00 a day for a recruit at Parris Island. Cost to keep a recruit in rehab is about $2600 just based on this. This does not include any of

the medical costs, visits, et cetera. So four recruits each platoon, that's each week, will require two weeks of rehab, the cost to the Marine Corps is going to be about half a million dollars or $166.00 per recruit. So it's a very expensive proposition.

True though, this will be a comprehensive health care program for the females, it will ensure a deployable force, but there is a significant cost that's going to be felt by both the Navy and the Marine Corps.

I'll be glad to take any questions, Dr. Fletcher.

(Applause.)

COL FOGELMAN: Questions?

Please state your name for the court reporter.

LTCOL KELLEY: That was very interesting, sir. My name is LTCOL Pat Kelley from the Walter Reed Army Institute of Research. I had a question about waivers for people who access here at Parris Island.

I know thousands of people come into the Navy and Marines with waivers. In fact, I was told at one point in time that if you were unable to grant waivers for physical conditions, you'd need 80 more recruiters in the Navy.

Do you have any perspective on how individuals

who come in with waivers do compared to those who don't need waivers? Is the attrition better or worse? I understand the Air Force feels that people who come in with waivers attrit less because going through the waiver process is a sign of motivation.

CAPT LONG: Well, there are really two types of waivers. One is an unofficial waiver and that is simply you go to MEPS and you say I have a knee problem. They send you to an orthopedic doctor and he says oh, the knee is fine to go. They go back to MEPS and they say okay, you're good to come. And we don't really have much tracking on that at all.

The other question is they have another group that something has disqualified. They send him to the orthopod, he says I recommend -- he's fit for the military. Then they send that to BUMED. BUMED says okay, we're going to grant the waiver for this, and they come into the military.

They've recently set up a computer system to try to track this, but they have not given us any information on it yet. My personal perception is that there are some waivers that don't do well; specifically waivers for the knee. The Marine Corps training is very tough on the knee and I suspect that waivers for the Marine Corps and

waivers for the Air Force and Army could probably not even be compared.

LTCOL KELLEY: Right. I'm in charge of that computer system.

(Laughter.)

CAPT LONG: So you set me up.

LTCOL KELLEY: I had one other question.

CAPT LONG: You probably know the answer then. Would you like to give the answer?

LTCOL KELLEY: Well, I don't know it yet. Our first task is asthma and our second one is ADHD, so we haven't gotten to the orthopedic questions yet.

I liked the breakdown you showed of how attritted people fall into different categories. It's a very logical breakdown and it's very attractive to an epidemiologist, but I'm personally somewhat skeptical I guess as to the accuracy of the categorizations. I'm not saying I'm skeptical particularly about the Marines, but in general, I hear things like that failure to adapt is considered a failure of leadership. And that there's certain pressure put on medical authorities to come up with any kind of medical problem so that a person is not discharged as a failure of leadership. I wondered if you might have any general comment you might be able to make

on that.

CAPT LONG: I think being skeptical is accurate. That's one reason why I mentioned very clearly that we have a civilian in that role. So if we keep the same, then our figures we can compare.

But I would tell you that a lot of these discharges overlap and sometimes certain ways of discharge get closed down. You know, you close one faucet, the other ones have to open up further. An example would be fraudulent enlistment. About a year and a half ago, we were not allowed to use the 88, the 93 or any medical information for fraudulent enlistment.

So I would talk to someone, I'd say obviously fraudulent enlistment, I'd send him over to the line and they make this determination. I'd say I recommend fraudulent enlistment. They'd say, you know, is this true, did you dislocate your shoulder before you came in. Oh, no, sir, no, I didn't dislocate my shoulder, never did. And they couldn't go back and use my history to discharge him. They'd say well, he denies that and so we can't do fraudulent enlistment. So then he'd come back and we'd have to discharge him by another method.

About a year and a half ago, someone said that's ridiculous. I said I've been saying that for a year and

a half. And so now we're doing a lot more fraudulent enlistments. So if you looked at our tracking system, you'd see that fraudulent enlistment all of a sudden jumped up.

Similarly, it is true about erroneous enlistment. Erroneous enlistment is differently interpreted by different bases. We do a lot of erroneous enlistments here. Some of those discharges could be done as COGs. Obviously if someone comes in and they've got PFS, patella femoral syndrome, and they can't do the training and he tells me, yeah, I had that before. I could discharge him by erroneous enlistment. But if I decided I couldn't do that, then I could say well, he obviously can't perform his duties and it's not a disability, so I could discharge him as a COG.

So some of them overlap and I do think we need better definitions. And they need to stay consistent. So I agree with you.

DR. FLETCHER: Dr. Barrett-Connor, who feels that women are superior to men in certain cardiovascular respects.

(Laughter.)

DR. BARRETT-CONNOR: That's true. But I was talking about a situation where there's not a gender gap

problem that we can fix.

I just wondered -- you said, I think, that women have a pelvic exam without a Pap smear before they are admitted to the official process. And it seems to me that it would be cheaper and more efficient to get -- to obtain material for a Pap smear and to have those tested for the ones who are going to otherwise be shipped over or wherever they're going. Has somebody costed that out?

CAPT LONG: I think that's very accurate. That might be something good for this Board to look at. I think that right now the thought is that not all people who go through MEPS come in. In fact, I think the quote would be somewhere around 25 to 35 percent of people who get their physical, actually come into the military. So the MEPS stations have argued that we don't want to do Paps on all these women and then 65 percent of them don't come in.

The next argument they gave was well, what about when we have an abnormal Pap, how are we going to follow that. Well, just like you do on the outside, I think you send the patient to get follow up.

Finally, they say that it would be hard to make sure that they have good quality control at the MEPS station. The physicians that they hire sometimes aren't

familiar with Pap smears.

DR. BARRETT-CONNOR: But you're allowing these people to use their own physician's Pap smears, you have no quality control over that.

CAPT LONG: Absolutely true.

DR. BARRETT-CONNOR: So it seems to me there's a lot of internal inconsistency.

CAPT LONG: And that is being looked at by the Department of Defense, do they want to do Pap smears. I think it's fairly shocking that they do pelvic exam without a Pap smear.

DR. BARRETT-CONNOR: I'm actually surprised you can get anybody to do it. I mean I can't get nurse-midwives to do pelvic exams without Pap smears in post-menopausal women who we're really mainly interested in something entirely different.

CAPT LONG: I think maybe this got started long ago when women were a very much smaller portion of the total force. But that's what is current. That was one of our recommendations, that they start adding the Pap smear. Actually we tried to get them to add it at least for the Marine Corps recruits or potential recruits.

LTCOL KELLEY: I think the Accession Medical Standards Steering Committee, which is a flag level

committee composed of medical and personnel people of all services, has bought off on the idea of dropping the pelvic exam from the MEPS exam with the idea that a pelvic and a Pap will be given in basic training.

And there are a variety of motivations behind that, some of which were that it was felt that it was not a proper place to do a pelvic exam on a women in MEPS. Many of these women have not had pelvic exams before and MEPS is such a tremendous production line facility that to provide the education to these women and the sensitivity that you would want to have in a first pelvic exam, they really couldn't do it in that high volume type of environment.

They're also dropping it because women in general were getting pelvics with Pap a couple of weeks after they've gone on active duty and they thought it was ridiculous and abusive to have two pelvic exams within, you know, just a few months of each other. And this was a pretty strongly felt position of the women's health people at the Pentagon.

I think another philosophical issue was that they felt they rarely disqualified a woman based on an abnormal Pap smear. Most of these are treatable and the MEPS exam is not a health care exam, it's a screening

exam to decide whether you should be qualified or disqualified for entry. And it was the general feeling that they didn't want to get into health care.

DR. FLETCHER: One last question, Dr. Jackson.

DR. JACKSON: It looked like the highest rate of acute removals was related to running injuries, and a lot of running injuries relate to either poor warmup, bad shoes or being -- running through your pain and not really paying attention. I was just curious about your comments on that.

CAPT LONG: I agree with that, except these were acute running injuries. We have in the last six to eight months changed a lot of pre-warmup and that's something that I think Mr. Bockelman will be talking about later, probably. They now have kind of a five-part physical fitness. First they warm up, then they stretch. It used to be stretch to start with. So we warmup first, then we stretch, then we PT, then we stretch, then we cool down. So that's their new philosophy.

Since I've been here, we've increased the amount of stretching immensely. I think most of these injuries though, these are acute injuries. I think most of these are related to not being able to see the ground because you're running in tight formation, running in boots, and

most of these are not related to that as much.

Now if you looked at all injuries, all 5000 injuries and when they occurred and what caused them, running would be way up high on the list. But I think we have decreased that with the stretching program that's in effect now.

DR. FLETCHER: Thank you very much. We need to take a break here and we'll return at 9:15, no later.

(A short recess was taken.)

DR. FLETCHER: Let me introduce Dr. Neil Weinstein, if you would just raise your hand. We're happy to have you with us. He's a consultant for the AFEB.

(Applause.)

DR. FLETCHER: Let's identify and justify the head table. These are our subcommittee chairs. Dr. Judie LaRosa, Health Maintenance; Dr. Dennis Perrotta, Long-Term Environmental; Dr. Greg Poland, Disease Control; and COL Fogelman.

COL FOGELMAN: I would also just quickly -- we have some fairly new people who haven't been here in awhile and some new people, as far as our medicine representatives.

I'd like to introduce COL Jim Wright, United

States Air Force. CDR Wayne McBride, Navy -- is he here? COL Frank O'Donnell, Army; and CDR Barbara Braden, Coast Guard. We also have CDR Leo Cropper here from the Air Force, who is Chief of Public Health for the Air Force.

We also have a number of guests from various services, and if you would, please kind of introduce yourself as we go on break, let people know who you are and what you do.

If we haven't handed it to you already, we will, a list of administrative issues. If you have not received it yet, make sure you get it. It talks about money, phone calls, messages and things like that. I don't want to go over it right now, but we'll make sure this is a handout for you and then if you have any questions, you can let me know.

Our next two speakers, we're going to have sort of a tag team here from the Naval Health Research Center. We have CAPT Stephanie Brodine, who is Chief of the Clinical Epidemiology, Naval Health Research Center and is also on the staff of Infectious Diseases at the U.S. Naval Hospital. We also have LCDR Rick Shaffer, who's spoken to us before. He is Assistant Chief of Clinical Epidemiology at the Naval Health Research Center. They're going to talk to us about several issues this

morning. One is stress fractures among military recruits; also female outpatient morbidity in the Navy and Marine Corps. And then HIV/STD prevention.

Stephanie.

CAPT BRODINE: Well, it's certainly a pleasure to be here. Dr. Fletcher, members of the AFEB Board, and also invited members.

Over the next hour or so, Dr. Shaffer and myself will be presenting some work from our division at Naval Health Research Center. Just as a brief point of introduction, we're extremely fortunate at Naval Health Research Center to be number one in San Diego, and secondly, to be able to justify being in San Diego. We are collocated with 150,000 active duty troops and a variety of different kinds of populations and commands, such as the Seals, Marine recruits, operational Marine forces and operational Naval forces. So it is an incredible opportunity to be an epidemiology research group surrounded by these kinds of populations. And we try to take as much advantage of that as we can.

I just wanted to put up one slide before Dr. Shaffer follows me, and just say that over the last three to four years, the two of us and also CDR Greg Gray have formulated a clinical epidemiology division. CDR Gray is

predominantly heading up the Defense -- DOD Gulf War research program, which Dr. Barrett-Connor on your Board, is a prominent co-investigator of. We chose not to do that, but are involved in other issues.

What we're going to be discussing today, what we were asked to discuss, is work in the area of injury that relates to the recruit populations and particularly a program that we're doing here at Parris Island. And also Dr. Shaffer will be presenting work on morbidity data that we've collected in three different recruit camps and then I'll be following up with an initiative that we're beginning in the Marine Corps for HIV/STD prevention.

I want to say that this is not a complete list of the programs that we're involved in. One of the things that we've tried to do as a conscious decision, is to try to have research that is requirement driven in terms of research that the operational forces are interested in or requesting us to do. Also, we try to do intervention-based research, trying to take things beyond the descriptive epidemiology phase. And the other thing is that we have tried in most or perhaps all of our programs to have members from the academic community. In fact, today we have Dr. Tom Beck in the audience, who has been a prominent co-investigator in the work that you'll

be hearing about on stress fractures, and Dr. Beck is from Johns Hopkins.

So we are glad to be here to present to you and get your thoughts and ideas about what we're doing -- as long as they're positive ones. No.

And I will let Dr. Shaffer continue.

Stress Fractures Among Military Recruits

LCDR SHAFFER: Thanks and good morning. Dr. Fletcher, members of the Board, we appreciate this opportunity to give you a little bit of insight as to some of the projects that we're doing. Since this Board is meeting at Parris Island and since we have a number of studies going on in recruit camps, one of the -- two of the bits of information we want to show you are of two studies going on specifically here at Parris Island and in women in general at the Navy/Marine Corps recruit camps. There's only two, one in Great Lakes and one here at Parris Island.

And also we also looked at a female population of trainees of Marine Corps officer candidates. You'll see that data in just a second.

Before I start, of course, I want to make sure

that it's very clear that we are kind of what we like to look at as coordinators of these overall projects. The projects are mainly due to the efforts of -- in the stress fracture, the study that you're going to see first -- specifically the 4th Battalion, which is the female training battalion here at MCRD. The clinic, the folks, CAPT Long, LCDR Laube, the folks here at the clinic at MCRD at Parris Island. We have a number of academic collaborators, which CAPT Brodine mentioned. And then the researchers and Marines that are interested in trying to make this problem a little bit more solvable and do something about it.

As an epidemiology group, we like to take the additional step of not only determining things such as injury rates -- and this is some similar information, the first couple of slides I'm going to show you is information we've presented to the Board in the past. And then we're going to move on to information that's been done since the last time we presented this data a little over a year ago.

But we like to move on past the standard determining of the rates of injury or disease, whichever you may be looking at and go on to develop some predictive profiles of these outcomes. In this case,

we're going to talk about injury. And then actually the step that we're most excited about and we feel like we do make a lot of progress is to develop and evaluate then something -- intervention to do something about these problems based on the risk factor profiles that we begin to determine.

So, in that light, we've had programs now at a number of sites across Navy/Marine Corps training populations. This data we presented last year, the numbers on that are relatively constant, but basically we've been looking at injuries in a number of training populations that range from BUDS training, which is where Navy personnel go to become trained to be Seals, both Marine Corps boot camps, female boot camp training which is here at Parris Island only, the Navy boot camp which is at Great Lakes currently males and females, and we've also been looking at some injury information at the Officer Candidate School up at Quantico specifically in women.

We've made a number of interventions in these different areas. These rates are just simply the number of trainees in those populations that come in with at least one injury. These are, remember, the reported injuries. We've got some information that male and

female reporting of illnesses and injuries does differ. Men tend to not report their injuries as often as women. BUDS trainees in that first yellow block probably don't report but about a third of the injuries that they actually have during training, because they're a little bit more motivated to move through the training program. So just recall that this is reported injuries and those that have reported at least once. So you can kind of see the proportion of changes.

We've made some interventions at MCRD San Diego, made some injury reductions there, made some injury reductions at NTC Great Lakes. They're currently in the process of doing some injury reductions at the Officer Candidate School, and we're right at the point where we'd like to think we're going to get started into some injury reductions here at Parris Island, specifically in women.

An example of just some data we've presented here before are most -- the intervention that we are most proud of is intervention with stress fractures and overall injuries at MCRD San Diego, where we showed a 50 percent reduction in stress fractures and a 50 percent reduction in overall injuries during boot camp, after making some modifications to the training program. This resulted in approximately 400 less stress fractures in

one year, prevented about 15,000 lost training days and saved MCRD San Diego per year about $4.5 million in re-recruitment costs and medical visits, and housing of recruits for how ever long they're not progressing in training.

And the way we did this was looking at developing risk factor profiles. This data we have also presented, but I think it's important because we're doing the same thing now here in women at Parris Island. We were able to develop a number of profiles as to how -- what risk factors were likely to be associated with the subsequent stress fracture in this case, or injury during boot camp. And based on these profiles, we went at addressing that excess risk in the high risk group, we call it. And this high risk was specifically about previous physical activity before the recruits walked in the door. And so what we were able to do is take some of these predictive profiles and move into interventions based specifically on these.

And the intervention at MCRD, the first two left bars are those on the slide I just showed you. We then tested two programs head-to-head and then compared it to the historical cohort and were able to show that the intervention that we did reduced that excess risk such

that the second program had no excess risk in what we call high risk category, which translates to low physical activity and poor fitness upon arrival at boot camp. We were able to show that you can adjust the training curriculum such that you can reduce the excess risk due to physical activity down to no different than the active recruit coming in.

So we think we can take a number of these high risk profiles, do some relatively -- depending on your point of view -- simple things to curriculum. There's also some equipment things that can be done. There's also some work that could be done in the early screening of recruits before they walked in. There was a question about that earlier, and that's also another avenue to look at because we're seeing that there are a number of risk factors, intrinsic risk factors as recruits walk in the door.

So this was just an example of some of the previous work that we've been doing in men. The final take-home message which was very important to the Marines, was that after making these modifications to boot camp training, they felt like what this was going to be was simply just a degrading of what type of physically fit recruit walks out the door. And basically we showed

them that even in these new programs now there was no difference in the physical fitness as measured by their final scores as they walked out the door. So we basically altered how they did their training, reduced their injuries by 50 percent and at the same time maintained their high fitness standards that the Marines definitely require and is part of their mission.

A similar example was at Great Lakes. This is just a quick example of a revised and existing training program that we put into place with the tremendous support of the trainers up there at Great Lakes, as well as the medical facility at Great Lakes and the NTC clinic working the same kind of program. We looked at what the risk factors were for injury and provided them a new training program. And once again, this was some simple changes to the curriculum. And it showed that basically -- and this is overall injuries, different than what I showed you in the previous slide -- in this training program for women at Great Lakes, actually we're able to significantly reduce overall injuries, not just the more impact laden stress fracture injuries.

So we made a number of interventions, put them into place, evaluated them for different training programs and shown them in the area of injuries during

boot camp. There are a number of things that you can do to prevent and reduce these somewhat rather costly, as you heard from CAPT Long earlier, one of the larger impact medical problems during boot camp.

A Defense Women's Health Initiative, as many of you know, was established a number of years ago, and one of the programs that we proposed and then Johns Hopkins basically followed on, was a program to look at using both non-invasive and questionnaire measures to predict stress fractures during women training here, specifically at MCRD Parris Island. This program was funded through the Naval Health Research Center the first year, and was funded the second and remaining two years with Johns Hopkins, which Dr. Tom Beck is here as the principal investigator. We're presenting more detailed information to the 4th Battalion this afternoon on what the program has seen.

But basically this program started in March of 1995 and we have enrolled a cohort of just over 3000 female recruits. As you heard, they typically come in about 2000 a year, so this is about a year and a half's worth of data. We were able to do quite a large, extensive battery of anthropometric measurements. We've been doing some Dexascan data which Dr. Beck has been

able to turn into some bone geometry measurements in men, has been able to show a very nice predictive profile for bone geometry, is predicting stress fractures and we're seeing some similar information in women. We have more detailed information we're presenting to the 4th Battalion this afternoon.

Just an idea, we see about a 23 to 28 percent attrition rate among this group, which is pretty standard for boot camp. So what we have is a cohort of about 3000 women in which 2300 graduate, that we've been following now through their time in boot camp, after doing some baseline measures and looking for predictive profiles.

As an idea of what's going on with the recruits that we've enrolled, basically what you see is that among the female recruits -- and this is the first 1498 recruits that were in that 3000 population. The 300 population graduated sometime about -- the last group of them graduated this past December, but we see that about 51 percent of all the female recruits coming through boot camp get at least one musculoskeletal injury that they report to the clinic. Of that same population, about five percent of them get a stress fracture. Referral to the clinic in the case of stress fracture, 73 percent of all stress fractures get referred to MRP, which is the

medical rehab platoon, which you'll hear about or see this afternoon, where in the case of overall injuries, about 17 percent of overall injuries get referred to MRP. Total days in MRP for these types injuries, we've got presented for this 1498 female recruits, about 3000 days to get MRP results from in this case 78 women who got stress fractures. So that's quite a large burden on loss to training.

Graduation rate, an interesting group there, the overall group graduated at 76 percent rate. Those women reporting with one injury at least graduated basically at the same rate, slightly higher. So there's really no -- as you heard from CAPT Long -- injuries do not really result that much in a big attrition problem on the women with the exception of a few of the injuries. As you can see in stress fractures, women that get at least one stress fracture during boot camp only graduate at about a 52 percent rate. That's a significantly lower rate than the overall recruit population. So as CAPT Long mentioned, some of these more severe injuries have a very large impact on the training program.

Fiscal costs -- and actually I saw a new number from CAPT Long this morning on some of the dollar costs that go into musculoskeletal injuries, specifically

stress fractures. For these 78 women that have a stress fracture, in order to re-recruit the recruit, to do the medical visits, to do the housing of the recruit while they're not progressing in training, using $100 a day, which CAPT Long has $185 a day -- using $100 a day, that costs the 4th Battalion for those 1498 women, about -- just under $1.5 million for those 78 women that got stress fractures. So it's a very costly injury from the point of medical rehab, readiness, training and fiscal concerns.

The types of injuries that you see, as CAPT Long showed you some of the male data. Female data is not overly different. The most common injury that you see in the female training population is an ankle sprain, which is an acute injury, but the remainder of these injuries are over-use in nature.

As you can see, another important issue is the stress fractures here, which is the third most common outpatient diagnosis among the female trainees. Then you have some of the more common over-use knee problems and some foot problems.

So you see a pretty similar distribution of injuries across the female population compared to men.

One thing I did mention, which I want to just

once again touch on, is that we do have very good information. We have an active surveillance phase for a period of time in both men and women where we then brought back all the recruits that were enrolled in our study, at the end of training, and actually did an active exam on all these recruits. We found that women tend to report all of their injuries. We didn't find any additional injuries in the population of women; whereas in men, we found about half again as many injuries in men than they were reporting. So there's a lot of -- we talk about a lot of the higher risk of injury to women during basic training, a lot of that may be due to reporting differences between men and women.

Just as an idea of what kind of injuries we see, another important part is that stress fracture distribution. In men, the majority of the injuries are below the knee. In most of our male data, 90 percent of all the stress fractures are below the knee. That's fibula stress fractures and the foot stress factors.

Interestingly enough, in women, that's not the case at all. Half of the stress fractures in women occur above the knee. You can see pelvic and femur about a quarter each. And the pelvic and the femoral stress fractures are a different type of entity going on. We're

seeing some risk fracture data that is different between whether it's a pelvic stress or a femoral stress fracture. I don't think that's news to anybody necessarily. The pelvic stress fractures have a different etiology and we also think a different risk factor group, and likely also have some different activities that are going on underlying some of these pelvic and femoral stress fractures.

Interestingly enough, the pelvic stress fractures graduate at a higher rate than the overall stress fracture rate, if that makes sense. You'd think the pelvic stress fractures would be a more high attrition injury, but actually the MRP and the rehab program here at Parris Island and also in the few stress fractures you see in men in San Diego, do a very good job at rehabbing these stress fractures.

Now in the pelvic stress fracture case, I have to say that most of the pelvic stress fractures that do get rehabbed are in MRP for quite awhile, but they do get back there at a relatively good rate.

So they're a very different type of distribution of the stress fractures, and that's very important for us when we're looking at the type of -- yes?

CAPT LONG: I might just comment, Rick, that's

very encouraging to me because we used to send them all home, all the pelvic stress fractures were sent home.

LCDR SHAFFER: Right, exactly right. Pelvic stress fracture was an automatic attrition basically a number of years ago. And that's no longer the case, and as I said, pelvic stress fracture graduation rate is higher than below-the-knee graduation rate for a stress fracture.

Some early preliminary information, and this is based on questionnaire data. The questionnaire that we've used to look at baseline data in men has shown that basically, and for all intents and purposes, the majority of the variance in stress fractures, the stress fracture risk, is due to prior inactivity before arrival at boot camp. And this is in the two months before coming to boot camp.

We put together models where we can actually ask in one case five very simple questions in looking at the first IST run time and we can predict with very good success who's likely to get a stress fracture and who's not. Now what we're starting to see is in the women that's not quite as nice of a model. We think a lot of that is because a lot of the stress fractures are femoral and there may not be as much of a physical activity risk

factor for femoral stress fractures as there is for lower -- below-the-knee stress fractures, but this model is starting to pan out and we're starting to see some significant differences. Although whether the impact is important to boot camp or not, we're still trying to look into and see where we can make some attrition differences.

Yes, ma'am?

DR. LAROSA: What are pelvic stress fractures related to?

LCDR SHAFFER: Well, there's a question. That's a very good question, yes, ma'am. And actually what we're trying to look at now is whether there are specific activities. We're talking to the 4th Battalion this afternoon and CAPT Long, I'm sure, can chime in at any point on these, but basically what we're seeing is it's not as related to their inability to be ready for the overall activity such as the lower extremity stress fractures are. Whether there's specific activities that are causing these, we have our gut feelings and the boss has told me that maybe sometimes I shouldn't say exactly what I think it is without the data to back it up. But we do think -- and in watching the overall --

(Laughter.)

LCDR SHAFFER: Basically we've taken a relatively good stab at watching what they're doing through this 13 weeks. And in men, that's what we had to do, to make this intervention. We sat down for two solid days and went over every movement and every exercise that they did. In women, there are a number of things that they're doing which we have our hunches may in the big picture contribute. But what we certainly have found is there really isn't one thing that you can change that's going to make a difference on any of these injuries. And there is a number of things that need to come together, they probably are going to have to revamp the exercise and the activities that are doing it. I think there's probably some activities that the women are doing such as maybe the way they do pushups and dropping to the ground to do pushups. They also do some different types of activities in some of their combat skills.

We're starting to look at all that right now and see exactly whether there is some specific activity. We're starting to get enough data where maybe we can do that. In this group of 3000 women, we have about 80 or 90 pelvic stress fractures, which is one of the largest cohorts of pelvic stress fractures that we've seen anywhere. So that's a large group that we hope that we

can start to get some ideas on. But I really don't have the data congealed yet, but we're hoping to do that very soon.

And basically what we're seeing is that there is some physical fitness and a physical activity component to over-use injuries. What this slide shows is if you classify a recruit as high risk versus low risk based on their physical activity, high risk being low physical activity before coming to boot camp, they do have a significantly higher risk of getting an injury. And this is overall injuries during boot camp. The difference, the magnitude is not all that great, but there is a statistically significant difference.

In stress fractures though, we see a similar thing to what we're seeing in men. And what we're doing now is breaking this out as to type of stress fractures. But basically a physically active woman is significantly less likely to get a stress fracture during boot camp than a physically inactive, in the two months prior to coming to Great Lakes -- to Parris Island.

These slides we just made up actually this week, we're just now putting that data together. So we're starting to see similar patterns to men in women, but we're also seeing some pretty significant differences

that we've got to look into a little bit more, to make our specific recommendations to the 4th Battalion on what they probably can do that will be most fruitful at reducing these types of injuries.

COL GARDNER: Rick, is that just one time or is that questionnaire used extensively?

LCDR SHAFFER: Yes, sir. This questionnaire, we asked them five questions -- we actually started out asking quite a few more questions, but our model basically has resulted in five questions about prior physical activity; three of them being some of the Paffenberger type questions, which is intensity of exercise. We asked questions about self-perceived fitness, how many times you exercised per week in the two months before coming to boot camp. We ask how long, if you have been running, you've been running before you showed up to boot camp. And then we ask a question about injury and its recovery. And an interesting thing is that in men and also now in this model, but not univariantly in women, we see that a recruit who has had a prior injury -- these are 18-year-old recruits coming in -- a recruit that has had a prior injury and has recovered from that injury, is significantly less likely to be injured during boot camp, which is a little bit

backwards from what some of the civilian runner studies show, which is a prior injury is high risk factor for subsequent injury.

In our case, it's actually a prior injury with recovery is a protective issue, and we think it's because of physical activity. An 18-year-old kid that has not had an injury, may not have been the most active 18-year-old kid through high school. And then a kid that has had an injury and recovered, has likely been active enough right before coming to boot camp to recover from that injury, whereas a recruit that has been injured but never recovered has probably had an activity change before they show up.

So we ask those five questions, combine it in an algorithm with run time and this is where these high and low risks come from.

The next step which we're going to be talking about in more detail -- as I said, it's very important that we do this in collaboration with the 4th Battalion, the trainers, the Marines know these programs much better than we do, and really with providing them some information, they're very good about making the changes that clearly need to be done in order to reduce the risk of these injuries and make this a more safe and effective

physical training program. There's the standard data that we've all seen and know that shows that there is a point at which physical activity, physical fitness gains no longer increase and injury gains do continue to increase. And so what we want to do is try to find that point in Marine Corps boot camp where you can actually see that there's not going to be further fitness games in three months, but they're going to continue to injure these recruits and probably need to change some of those things so that doesn't occur.

So the summary of the stress fracture type work at this point is that the over-use injuries and specifically
stress fractures are a significant cause of injury and fiscal cost in recruit populations, specifically women, as I mentioned. The primary so far in terms of risk factor definitely in men and most likely now so far in women has been prior fitness level on arrival. Now the difference between physical fitness and physical activity is very important to keep in mind here and it's really probably more related to the physical activity before coming, not necessarily physical fitness. So those people with a genetically high fitness level are not necessarily going to be protected.

Primary extrinsic risk factors are rigorous training, poor techniques and also we've done some work with Marines, new Marine Corps boots are going to be coming out the first of November based on data from boot camps on how to predict -- how to prevent injuries. A new mill spec has been let, the contract has been put out. The boot is going to look very different, it's going to look a lot like a store bought type boot. It's got a lot of biomechanical properties in it, that are going to make it, we think, both an injury preventive asset -- it won't be certainly the solution. But it also is going to do better and wear comfortability, those types of things.

So we're looking at many primary extrinsic risk factors. And then the key of all this, as I mentioned -- all these risk factors that we're talking about are modifiable. And that's the important part, that's where we want to try to move on to, is trying to do something with these risk factors as we find them.

At that point then, that's basically the information in women, specifically in stress factors, knowing that that's the biggest problem in women as far as the injury point of view, but it's not the overall problem with medical morbidity in boot camp in women.

The next study that we looked at was a second Defense Women's Health Research Program which was to look at the overall morbidity and epidemiology of outpatient encounters, all encounters, among women going to boot camp, both Navy, Marine Corps, and then Officer Candidates for the Marines.

The objective of this study was to simply determine the impact of outpatient morbidity among female Navy and Marine Corps training populations. And what I'd like to just do in the next ten minutes is just show you just the overall idea. We think we now have some very sturdy, sustained and robust rates now for women, all outpatient encounters for women at boot camps. And I think it's important to see this kind of information. It supports what CAPT Long has said, it's likely to support what Dr. Ryan is going to say if she's talking about outpatient morbidity in the Navy. And so what we've kind of done is we've put in an overall system to try to look at the overall impact of all outpatient morbidity for women at boot camp.

The method basically was that in 1993, we developed an outpatient tracking system which we presented information on to this Board before. We put this as a PC-based system in place at the boot camps

where we basically gathered and entered every outpatient encounter, every person that walked in the door to the boot camp, we collected that. We had a standardized form that was used, we had data entry people that were for the program such that we got standard data entry. And basically what we did is we just automated their logbooks for the last almost two years in most cases.

The tracking system includes a number of fields. It's very nice for epidemiology in that your outpatient data, your outcome data, is all in one place. It's an ICD-9 code-based system, with the exception of in the injuries where we had to expand the ortho codes quite extensively because at this point the ICD-9 list is about 14 injury codes for the 300 and some outpatient musculoskeletal injuries that we see. So we expanded that list. And we gather this type of information on them and then basically in a number of cases, this is kind of like ready-made epidemiology studies, for whatever you want to look at. It's right now being used as a platform for a number of studies at boot camps. If people want to take and do baselines or follow up studies with any outpatient encounter as an outcome, the data then is in these systems.

The funding for this system stopped, as CAPT

Long mentioned, so it's kind of not being that way right now and we're hoping that maybe some of these new data systems such as the ADS may fill in some of the blanks in this, but it was a very useful system to have for a number of studies. And what we were able to get out of this system is in very large populations of female trainees, a very good snapshot during that window of the types of encounters that we're seeing. And as an idea of one group of the overall encounters, the denominator in this group was relatively high in both populations. The dates that we collected data are up there for MCRD Parris Island, the women, NTC Great Lakes, the women. Great Lakes trains about 8000 women a year, around that range, whereas MCRD Parris Island trains around 2000 women a year. OCS Quantico trains about 140 women a year, 140 females go through the 10 week, they call it bulldog, at Officer Candidate School Quantico. So that's two years worth of data.

And just to start off with, you can see that out of having at least one outpatient encounter in this entire group of women is exceedingly high in these populations, 72 percent, 83, 85 percent of all women come to the clinic at least once during their boot camp training. MCRD Parris Island is 13 weeks, NTC Great

Lakes is nine weeks, OCS Quantico is 10 weeks. So just during that period of time, three quarters of the women have at least one musculoskeletal encounter. And so that's a big impact on both the medical costs, on the recruit themselves and on training.

The types of encounters you see, and obviously we would have scads more detailed data on every single outpatient encounter you can think of that has an ICD-9 code, which I'm not going to present, but just some of the general categories that we see, and I also wanted to put this up here for a second reason, is now what we're able to do is start to look at comparisons between a surveillance system and cohort studies that we have now in both populations. And what we're starting to see is that the cohort study data, that data where you actually take a population and follow them through, which is a very difficult thing to ascertain because it's a lot of work, it's hard to get rates on if you don't have a denominator, and what we've had to do up to this point is take cohorts and follow them through training.

Well we now, using this numerator data, we've been able to establish that if you use as a denominator the recruits coming in the door during your time window and the incoming and the outgoing recruits are relatively

constant, you don't have to necessarily go and use the person time rates or a cohort study to get what we feel are very stable outpatient rates. And so what we did in this case is this 27 and 66 women came in the door during boot camp. So as you imagine, some of those arriving or having outpatient encounters and being in our time window in the numerator, had already been at boot camp prior to this, but as long as recruits are coming in and out during -- at the same rate and you have a long enough period of time, you can see very comparable rates between this type of numerator, denominator and doing a cohort type study.

So basically what we see though is a large impact, as CAPT Long and everybody has mentioned, the most common injury or most common outpatient encounter is musculoskeletal injuries, 44 percent, 37 percent and 61 percent of all women have at least one musculoskeletal encounter during boot camp, according to this tracking system. Respiratory, you can see the percentages, URI, CAPT Gray is very interested in seeing the URI rates on this and is pushing us along to get this data out. The URI rates are relatively high for this population. They also have a higher portion of sinusitis type, more severe complications of URIs that we're seeing. Dermatological

rates, there's a difference in the actual derm rates. We don't see as many dermatological, mainly blisters, at Parris Island because they are treated out in the platoons by what they call blister recruits. So in the other two sites the encounters get to the clinic for a lot of the derm things and in Parris Island, they don't, which is why the lower rate there for derm type stuff. Genito-urinary type disorders, GI disorders and cardiovascular disorders, dehydration we put down there, mainly heat, down at the bottom.

So we were able to start to put together some rates of these outpatient encounters and we have a detailed rate on every type of ICD-9 code there is.

And then very quickly, as an idea of the kind -- the overall distribution among these -- and the reason this will differ a little bit from what CAPT Long has told you up to this point is these are only among the first encounters. I believe CAPT Long's data is about all encounters to the clinic, whether they're followups or not. So half of the encounters would be to medical or musculoskeletal injury, if you're looking at all encounters, because musculoskeletal typically have more followups.

But as a proportion of all first visits, new

encounters, incidents, this is the distribution of the types of injuries you see in the general categories. And by far, the most common or the most frequent injury is musculoskeletal injuries. This is the Great Lakes data. We see very similar information at the Parris Island data where you see the same proportion of musculoskeletal injuries, respiratory being next, and then the various different types of other encounters. The others are relatively large, but there's such a wide variety of the types of encounters. And finally in the Quantico data, a little bit higher portion of injuries, also higher incidence rate. The training for Marine Officer Candidates is a more injury-laden program. It's a more individual program, the trainees are allowed to progress at their own speed, which may allow some people to do a little bit more of a training error than if it's all structured for them.

So this is the type of outpatient encounters we have and we have a very large data set now as you see, in the recruit population. So morbidity is a very high problem in the training populations and I finish up with this slide. This is my favorite slide of all time, because if you'll notice on this guy's glove is an "R", and I'll let you guess why that glove's got an "R" on his

right hand.

(Laughter.)

LCDR SHAFFER: But the thing -- this is one of the things that in Marine Corps training is very important, to look at all of the things that affect what this recruit's life is like. And medical morbidity has a very big effect on this recruit's life, and it's very important to start to take a look at every one of these little tiny aspects. Some of these rates are very small, but they can make a big impact on both the recruit's situation and the overall training program.

So what we've been trying to do in these two programs specifically for women, is try to look at all these different pieces to this puzzle and start to make those interventions that we've had quite a bit of success in the men with, and move on to making in the women.

So if there are any further question?

(Applause.)

DR. FLETCHER: You said this was lack of physical condition, does this parallel body weight of these people before they come into these programs?

LCDR SHAFFER: If you mean --

DR. FLETCHER: Are they overweight?

LCDR SHAFFER: So far, weight does not play a

role at all in injury risk factors. We have not looked at -- and Dan, pipe up at this point -- we've not looked at whether physical activity is correlated with just magnitude of weight. We have asked in a number of our questions whether the recruit is comfortable with their weight and whether there has been a decrease or increase recently prior to coming in. That also showed no relationship to injury. And it really does boil down to more of a function physical activity and we haven't really found too much else.

DR. FLETCHER: Questions?

DR. SOKAS: I just wanted to ask for an example of a training change that was made from the first study.

LCDR SHAFFER: A very easy one was in the first week a recruit was on board, they walked or ran 25 miles. They didn't have all that much running, but they weren't taking into account that in order just to go to chow and just go to class and everything else -- and this is not a saunter when they do this move from formation, this is what a lot of people would call a training walk. Basically they weren't taking into account the fact that in that first week, in 30 percent of recruits who could not run a mile and a half in something close to 12 minutes, who were not physically active at least two to

three times a week in the two months coming, doing 25 miles in that first week was not necessarily the best idea. We talked -- well, we all came to the agreement that taking into account the fact that they're moving, they're walking that time, and actually we have some Great Lakes data that shows that running amounts during nine weeks is not related to outcome fitness when you look at overall movement miles, simply walking fast during that nine weeks.

We're starting to see some of the Steve Blair kinds of information, where if you just be active, you get improvement to fitness and to health.

So basically what we did is help them decide how to ramp up their running miles so that they didn't start running their first run. They also did the same thing in hikes, the first hike they did at San Diego was 12 miles long. They did a five mile one a couple of weeks later. So you say why don't you do that five mile one first and kind of do it that way.

So those are some of the examples, help them with some exercises to change.

CAPT BRODINE: We actually quantified every day how much weight, how many miles, formation, et cetera and laid it out in overlay with injuries and then had a whole

panel put together.

DR. SOKAS: And how long did it take to make the changes actually in the training program.

CAPT BRODINE: Overnight.

LCDR SHAFFER: One day. The DIs, you know, once the DIs were on board, it was a very quick change, and it was within one week, from then on it was a new program.

CAPT BRODINE: We had training films to give them guidance, it was a real compliant effort.

DR. FLETCHER: Question in the rear.

DR. STALDO: I'm Dr. Staldo, Beaufort Navy Hospital. I've reviewed the data for these costs for lost days, and the way it's done here in Beaufort is they add up all the cost of recruiting and training and then they divide by the numbers that are sent down here. All the overhead is in there and that really, a great deal of mistakes, you know, what the real losses are since the real losses are the marginal costs. And I wanted to know, you know, how you compute your costs.

LCDR SHAFFER: Basically as I said, the costs of a stress fracture are that we counted up how many days they were in MRP, which is in our view not progressing in training, and we got the figure on how many -- how much it cost to keep a recruit on board on a given day, so

those 3000 lost training days basically was times 100 in our case.

That didn't include -- the numbers we got did not include re-recruitment costs. $17,000 to recruit a recruit. So re-recruitment costs for those recruits that are attritted due to stress fractures, that was times the $17,000. We also looked at the percentage of those that were PEBs and the disability costs, and we also counted in the cost of medical visits, to include bone scans, x-rays and that type of information for the stress fractures, and all that came up with our costs.

DR. BAKER: How much of the training program are they carrying the packs and what do the packs weigh and are they different for women and men?

LCDR SHAFFER: At this point, I actually can't tell you in here. The next step for us is to quantify that. And at this point, the percentage of time they carry packs, but basically I think they do it during the humps only. And I actually am probably not the best one to answer that at this point.

CAPT LONG: They only carry packs during the humps and for the men, it's a five mile, 7-1/2 and 6 mile night hump and a 10 mile hump.

CAPT KEECH: Actually, sir, they got rid of the

7.5 mile hike and they do a three mile hike initially and they don't take their packs on that or generally they're very light packs. Then they do a five mile hike with a pack and generally that weighs approximately 15 pounds.

LCDR SHAFFER: Same for men and women?

CAPT KEECH: Yes, sir. I know it's 15 for the men. And then they do a six mile night hike and a 10 mile hike before the crucible, and then when they go out for the crucible, there's several hikes associated with that as well.

LCDR SHAFFER: Now we didn't find that the load-bearing issue was as big a deal in men, but like I say, I can't speak to that in women yet. It was mainly the distances and the organization of those distances during the time.

DR. FLETCHER: Thank you very much.

HIV/STD Prevention Initiative

CAPT BRODINE: Moving on, I did want to point out Dr. Thomas is here from Hopkins and has done some very innovative things with dexascanning to create rather than just bone density, bone geometry, and he's had a very predictive model in men for stress fractures with

bone geometry and is in the process or has some preliminary data. So any of you that have special interests in that, and we are still looking for ideas and answers with women. We have not gotten to the intervention step yet.

We're going to be switching gears here. It's sometimes hard to explain how we're doing injury and HIV/STD in the same group with the same principal investigators, but somehow it seems to work.

What I was going to briefly go over, and this is at the request of COL Fogelman, to let you know about some of the initiatives that are taking place in the area of HIV and STD prevention. Actually we're moving on into other risk behaviors. And the HIV/STD program, I'll spend a little more time on that, I'm going to try to go quickly, I know we're behind schedule.

This is our most developed program and it is followed on -- we are following that on now with a new program, trying to intervene with unplanned pregnancy and STDs in women. And interestingly enough, I guess some people would say this would be a no-brainer, but as we were developing the program for STD/HIV intervention, one of the themes that emerged that we learned we really needed to address was the issue of substance abuse, and

in particular, alcohol.

So that a large component of our STD/HIV program is actually directed at alcohol use and abuse and we are finding in our elicitation research for women and unplanned pregnancies, that drinking until you pass out, that drinking is a risk factor in our military women, as it is in our civilian women, for this behavior. And we just recently were asked by the Marine Corps to take on alcohol prevention as a program that we are launching and we'll be talking about a little bit more tomorrow.

I wanted to mention that again with our most developed program, HIV/STD intervention, this has been a multi-disciplinary team. This was actually funded by NIH AID and our collaborators who provided the behavioral expertise and also the biologic expertise were from UCSF, Dr. Sheree Boyer in behavior, Dr. Mary Ann Shaffer and Dr. Julie Schachter in chlamydia and STDs, on the biology side. And then we've had a number of collaborators, some of which are in the room, such as Dr. Rich Thomas, part of the preventive medicine community. And this really became a large cross community/Navy effort.

Just to sort of give you the summary first and then a little bit of the data to support that because of the lack of time here, first of all, our basic premise

was that you need to -- attacking these behaviorally established risks that one needs to get beyond information, these individuals know the information, it's out there, however, they need to have the skills in order to change these established behaviors. And so that's one of our tenets, is a skills building. Also multi-component programs and multi-level. We were able to -- and this was a big question when we started this program out, could we do it, could we take a program that was more than 30 or 45 minutes, that incorporated skills and could we actually go on a ship underway in the Pacific and train, you know, hundreds of Marines in these small groups, and do that before the first port. And we were actually able to do it. And then also, you know, could we actually impact behavior, which is the bottom line question.

In terms of our basic intervention approach, some of the key points here, again skills building is a tenet that we are trying to -- we incorporate and are trying to improve on. And the other part is the elicitation research, but this is not a civilian program that is tried to be tailored to the Marine Corps, this is actually developed within that community through elicitation research, drawing from these junior enlisted

Marine Corps what their issues are, what their problems are, what's driving these behaviors. And so this was key, and this is truly a tailored program in that sense.

Also, it's model-based, so this was all constructed within a theoretical model. The model that was selected by Dr. Boyer and Dr. Shaffer was a model that has been shown to be successful in other situations, and it's called the IMB model in which you have information which is important, and again the kinds of information we elicitated in our elicitation research, and then looking at the motivators, what can motivate this group or these individuals to change their behavior. And finally, again trying to focus on some key skills to allow them to move forward. The idea here is that all of these things interact and you ultimately end up with preventive behavior.

Again, a very key part of this was the elicitation research and this was done through focus groups with the target group, the junior enlisted Marines. It was also done through the leadership for the Marines, the NCOs and the senior leadership, as well as importantly the community that normally takes care of these individuals, the preventive medicine community, to try to really come up with what the Marines would be

interested in hearing, what spoke to their issues and what might be able to start to make a difference.

For example, these are the kinds of things that came through as areas that we needed to focus on in our intervention. We needed -- it became obvious that a Marine thought that they could tell when a woman was infected as they pulled into port, and so we really had to focus on the concept of transmission and asymptomatic STDs. We needed to discuss some of the outcomes of STDs. Important, looking at peer influences and how that impacted their behavior, and again, alcohol, less so drugs, but alcohol was really a key factor when you're out at sea for X number of weeks and days and it's certainly also a key factor stateside. But that if we didn't address that and drinking responsibly, that it was likely that any effect we may have had would be lost.

What we came up with was small sessions with 15 to 20 Marines in a session. This was multi-hour, actually as you can see here it was four hours in the first -- between San Diego and Singapore, the first port, and then we also had a booster session. There was a lot of interactive stuff, so rather than standing up in front of the room with slides or with demonstrations, getting them involved, getting them to think about the issues and

where they stood on these things. And also we did create two videos specific for this program; one of which had active duty individuals, because one of the things Marines said is you know, you show us someone who is wasted or someone with Kaposi's and it doesn't really speak to me, that's not a Marine. So we do have a video of active duty people in uniform that are very healthy, with HIV, talking about the risk of HIV for active duty and also what it's like to live with HIV.

We evaluated this, not only developed the intervention, but evaluation was a very important component of that and continued evaluation as we transition this is also, we recognize, an important thing. We evaluated this with a questionnaire, looking at different portions of that IMB model. We also began using some of the newer techniques. We wanted to look at hard biologic outcomes of sexually transmitted diseases and were able to bring into the military -- they are now licensed but still not widely available, or not available actually in the military yet -- but the urine-based screening which is more sensitive, more specific, for chlamydia and gonorrhea. And so this was part of what we were looking at.

I will say at this point that we were able to

implement this on a WESTPAC deployment of six months on the Pacific in a Marine amphibious group, and we had the flagship was the intervention group that had the STD/HIV program. The control group was in the other support ships and they had basic life support and first aid as their small group, multi-hour intense session.

The sad part was -- and I'm sure all of you as researchers have been through this -- is that the ship changed where it was going and needed doxycycline and so we did lose our biologic outcomes. We did have one of the Marines on the control group that did sero-convert for HIV, but we were not able to assess for either chlamydia or gonorrhea.

But we looked at the behavioral side in a multiplicity of fashions and again, for the purposes of this presentation, I'm just going to give you a little bit of our data. What we tried to do in terms of not only looking at the risk of sex in port, which was about half in the intervention group as the control group, but also looking at the kinds of sex that was going on, and safe sex versus no sex in terms of the use of condoms and multiple partners. And we were able to show that in our intervention group, that they were less likely to have sex, and they were also less likely to be in the high

risk sex group with multiple partners and less use of condoms.

We also evaluated the -- looked at the alcohol use and once again, trying to assess alcohol -- and I want to say looking at this in a model controlling for factors which can contribute to sexual risk behavior, the intervention remained significant.

We also looked at alcohol use and once again, trying to look at multiple port calls and trying to differentiate between those individuals who did not drink at all -- believe me, there really are some of those individuals out there as well as light and moderate and heavier drinkers -- and showed that those people that were -- those Marines that were in the intervention were slightly more likely to be in the non-drinkers, but there was a difference, significant difference in the heavy drinking between the intervention and the control.

So we don't pretend to have answers or come up with a magic bullet or answered the question, but I think what we did feel that we were able to do with this was come up with a program that begins to get at that next step of going again beyond information, trying to come up with programs that address military specific and Marine specific, or military specific issues. And the big thing

is that actually our program was over, the funding was gone and it has really been -- the only reason we're still in business is because of interest on the line side and on the medical side to carry this forward.

And so as part of the CINCPAC strategic plan, when all of the individuals who are doing medical planning and are participating in medical operations for the Marine Corps and the Navy, actually it's a tri-service operation in the Pacific, got together and put their strategic plan of what do we want to see happen over the next five years, our program -- our team was brought in to brief them and our program was put together as part of what should happen over the next few years, realizing that this is going to be somewhat of a transitional step.

And what they were wanting us to do was to try to -- not everyone in the Marine Corps or the Navy or the other services for that matter can go through an intensive multi-hour program, we're not suggesting that, but to begin to identify which populations are at higher risk and if there are commands or commanders or COs that really want a more intensive program to come in, to have that available. And so that's what we're working on now.

They also said we really need to get better at

that alcohol thing, that alcohol part or component, which we incorporated into our program, but they wanted us to really address that in a more significant way, realizing that alcohol has an impact in lots of types of outcomes.

And so on that line, what has happened is we have actually begun training at the Navy PMT School, that's where all the preventive medicine technicians go through school. We started in December, just a few months ago and we're going to be training again, it's now incorporated into the curriculum and we'll be doing the next class in April. And we are taking it to specific populations.

One of the tools that we're going to be using to try to identify who are those high risk populations out there is HIV-1 subtyping. We were the first group to report the non-B HIV subtypes by active duty servicemen into the United States. These are all individuals, and we were doing this -- the real focus behind this project was a preventive medicine focus in terms of -- there was an attitude about on short ports of call, there was not -- HIV transmission does not occur and we wanted to determine if that was the case or not. And these are five individuals who acquired non-B HIV while overseas. Four of them were on very brief port calls into Thailand,

into other places. One individual was a Marine guard, a security guard in Uganda.

This was a pilot study, exploratory, does it happen -- the answer is yes, it does. We are now in the process of standing up -- it potentially will be a tri-service program, but we've already started at San Diego with all new HIV sero-converters, looking at -- within the last three years, looking at subtypes, looking at bio-resistance patterns to determine whether our active duty people are picking up more resistant strains at the get-go, or not. And also epidemiologic risk factors, where are they getting infected and what's contributing to infection. This is going to be coming up at Bethesda and Portsmouth in the next few months, and actually the Air Force is starting to put it through their program. So we'll likely have a DOD picture of being able to pinpoint the epidemiology of HIV in our service members, which we think will help really better direct our prevention efforts.

And the other thing that we're carrying forward is using this technology, using the urine-based screening, to apply to different populations to get a better idea of how common asymptomatic sexually transmitted diseases are in our populations. And I can

just say that this represents four populations and the chlamydia, we have a battalion, informed consent of course, or Navy women who consented and we had 600 male Marines here, for example, 183 female enlisted Navy here, and what you can see in terms of chlamydia prevalence, using these urine-based screens, it ranges on the low side to close to three percent, up to close to seven percent and we have another group in the 7th Fleet of women that were about nine to ten percent infected asymptomatic with chlamydia. And this is a concern, not only in -- particularly in women because of the complications of upper tract infections with PID and potential ectopic pregnancy. I think it's potentially more of a problem in the military just because of these remote assignments and being located on a ship when this happens. So this is a problem that we have similar to the civilian sector and again, I think this technique may offer a real tool for us to identify these asymptomatic infections and with a single dose, cure them.

And I want to finish with a single slide that basically describes what we plan to do with our unplanned pregnancy intervention for women, where we will be in a somewhat similar program. We're also doing this for the UCSF, where we'll be enrolling women and after

elicitation research, putting together a program that we will then compare head-to-head to a control program.

I also want to say that the last few days I've been in Washington, the CDC is putting together new guidelines, new reproductive guidelines that is going to incorporate STD guidelines, and we've been asked in the military to participate in that guidelines development. And I think that it will certainly -- the group hopes to offer better guidance for the practitioners in terms of evidence-based procedures and counseling and what should be offered. And certainly in the military, we have our own special problems in terms of some of the minimal care settings that we put our people in on ships or in tents, et cetera. And so that these guidelines hopefully will provide some help for us when we're trying to grapple with these issues.

Thank you.

(Applause.)

DR. FLETCHER: Questions. Dr. Waldman.

DR. WALDMAN: Ron Waldman. I was just wondering if you could say a word about the screening schedule that you have for HIV, for example, and other STDs. When -- at what frequency and when in time will people be screened?

CAPT BRODINE: Are you talking about the military policy?

DR. WALDMAN: Yes.

CAPT BRODINE: Our military policy for HIV?

DR. WALDMAN: Yeah, or these studies that you just described, did they follow a different --

CAPT BRODINE: No, actually we have one of the most aggressive screening policy I think of any group, probably the most aggressive in the United States. And most active duty are screened sometimes less than a year and I would say probably the most would be two to three year intervals. So we have a very aggressive screening program and take out people sometimes months after they were infected, because there's all kinds of things that we've targeted it to. Any time anyone goes to deploy, they have to be screened prior to deployment and when they come back, that's another requirement. And then physical exams. And so there's a whole list of things that will initiate an HIV screen.

So I would say that although this is not true internationally in some of these other countries, the military is actually one of the core transmitters for HIV. In the United States, we are probably one of the smallest groups in terms of prevalence of HIV.

And you know, if you're referring tangentially to the subtype issue, we are probably in the best situation to try to look for these subtypes because of this type of a surveillance system that we have. CDC has identified some individuals in Bronx that also have these non-subtypes and the suspicion is that they are somewhat widespread and it is sort of changing the technologies in terms of vaccines and diagnostic methods. But the subtyping is not widely available at this point in time.

DR. FLETCHER: Dr. Stevens over here.

DR. STEVENS: Just to make a comment. The behavioral intervention on the ship is really quite a dramatic -- or it was quite a dramatic change in the reported behavior. One of the things that just made me feel -- it's sort of frustrating I guess to have lost the biologic --

CAPT BRODINE: I couldn't get out of bed for weeks.

(Laughter.)

DR. STEVENS: That's one of the things that's been missing in a lot of the behavioral interventions and you end up with just the self-reported risk behavior.

CAPT BRODINE: Right.

DR. STEVENS: And I wondered in terms of your

plans to try to implement some of these programs more widespread. I know it's difficult, but are there plans to monitor some of the more biologic outcomes as well or try to get an attempt to look at that.

CAPT BRODINE: What we are planning to do is as we transition this out there, is to again, once again evaluate it and we agree, I mean biology outcomes are essential and that's why it was a real cornerstone of our program. So that it's likely that we will be doing a cruise, getting the baseline information this summer and then evaluating that next summer. We have a number of different groups, the Marine Security Guard School, so we totally agree with you and we feel that it's part of our responsibility not only to get that program out there, we are getting requests, we do want to get it out there, but we feel that ongoing evaluation is essential. And certainly with the women's program, unplanned pregnancy, we are going to be looking at sexually transmitted diseases and pregnancy as hard outcomes, as well as the self-report behavior. So we're in agreement.

DR. FLETCHER: Dr. Allen.

DR. ALLEN: One comment and two questions. I'm delighted to see the intervention program, I think that's extremely important. I'm not expert in alcohol use and

the definitions and all, except I think you are right on target in focusing on that, and I know that that is going to be discussed tomorrow.

The comment is that I think for people who use even five or more drinks on a few days, that's getting into some people's definition of binge drinking.

CAPT BRODINE: Uh-huh.

DR. ALLEN: And I don't know -- that was all lumped into the category of light/moderate. That seems pretty excessive to me, but I'll let the experts deal with that one.

The two questions. I know when I was working at the CDC on HIV prevention, we got an awful lot of political pressure to focus primarily on abstinence and not on safer risk behaviors. I wondered whether you're getting political pressure and how you deal with that.

And secondly, obviously it's difficult, if not impossible, for you to recognize openly the component risk of homosexual behavior and yet that obviously doesn't disappear just because you can't talk about it. How do you deal with that.

CAPT BRODINE: Well, let's see -- remember that slide where I had multi-disciplinary team and different expertise, so I represent, you know, one member of that

team. So I will give you my perspective.

On the first issue, I would say that we think that abstinence is certainly the ideal way to go, particularly for these individuals that are on deployment, they're married -- and part of the military push is for core values and we do incorporate that in what we do.

On the other hand, we also feel compelled to look at options; if one is going to have a risk behavior, how to best protect one's self. We have total support from the line all the way up from the junior leadership all the way up to the two-star, three-star level. Just two days ago, I was briefing a two-star admiral who is in charge of all the abuse programs and we had this same or similar discussion there. They are very much aware of the realities and we think it would be a mistake not to discuss the consequences of risky behavior and not to make them think about the position of abstinence and to push that. But on the other hand, we have to offer safe alternatives.

So we struggle with that, but we are not being -- not yet -- we've gotten total support and it's been very helpful to get the line input on that.

In terms of --

DR. ALLEN: Homosexual --

CAPT BRODINE: Homosexuality, that's right. I was trying to forget that second part.

What we -- to date, what we have opted to do is we have focused on the risk behavior itself in terms of where one meets one partners, in terms of casual sex, anonymous and the types of sexual behaviors, rather than on the types of partners. And I think that that is a defensible position. We, however, admit that we do not have a lot of very good solid epi-risk behavior information from which to work from. And that is the intent behind the program that we have just stood up in which we are getting confidential information regarding risk behaviors. And we plan to use that to fine-tune and to improve, you know, what we put out there. However, again, I think that the approach will -- although that may make us smarter and hopefully make whatever we do more likely to be effective, that we will continue to address the issues of multiple partners and the actual behaviors themselves, which certainly play a large role in degree of risk.

DR. WARNER: On a couple of the slides in the handout --

CAPT BRODINE: Oh, you got the handout.

DR. WARNER: Yes, we did, but I don't think you showed them up here. You gave the preliminary results --

CAPT BRODINE: I was on travel. Which one?

DR. WARNER: One of them was -- they were preliminary results or findings from the intervention on alcohol use on liberty and the other was I think sexual behavior. I can't find it right now.

CAPT BRODINE: Okay.

DR. WARNER: In both of them, the tables are just presented as chi-squares and p values, and I'm curious whether you can give us some sense of the magnitude of the interventions. I again assume this is based on self-report, but seeing statistical significance at, you know, p less than .05 doesn't tell us a whole lot about whether these are really meaningful interventions. What was your sense of your experience with that?

CAPT BRODINE: Do you want to answer that one?

LCDR SHAFFER: Part of the idea was -- the main way to look at those magnitudes, the model I think you referred to in there is just a statistical regression model. We just confirmed the same magnitude that we saw ... (inaudible). So basically you can get some idea of the magnitude from the graph. (Inaudible.) She said she was on travel, she was. I sent that.

(Laughter.)

LCDR SHAFFER: Basically the graphs ... (inaudible). There was about a 30 percent reduction in the high risk group -- in the high risk for intervention group. ... (inaudible) -- about a 30 percent reduction in that group and that's the magnitude that showed out in that regression model. Unfortunately the model is in there simply to show you that after controlling for a number of factors you consider such as pay grade, previous employment history, the association still does show true with the intervention group.

COL FOGELMAN: Could you provide copies of those graphs for the subcommittee meeting tomorrow?

LCDR SHAFFER: Yes.

DR. WARNER: This again was only self-report? I mean one would assume that you'll see a reduction in the high risk behavior without any actual reduction in high risk behavior.

DR. SOKAS: Would you have access to indirect hard outcomes like disciplinary actions or time lost from duty stations or something like that?

CAPT BRODINE: Yes, and that actually -- we will be discussing very briefly tomorrow our plans to begin an alcohol primary prevention program for the Marine Corps.

And we will be using many of those kinds of outcomes as outcomes. The disciplinary, the DWIs, the fights and that sort of thing.

You know, that's actually a great idea and we should have thought of it and we didn't. But that is something that we have since thought of in terms of evaluation. So certainly for our alcohol program, that'll be extremely important in looking at the different consequences of alcohol abuse or heavy use. It would have been a very logical thing to have put into this intervention evaluation and we didn't. But again, it's not a total missed opportunity for our -- as we transition this. That's a very good thought.

DR. FLETCHER: Let's take a break now for about ten minutes. Let's be back in ten minutes.

(A short recess was taken.)

COL FOGELMAN: We have several speakers now to finish off the morning. First of all, we have LCDR Meg Ryan, who's the Chief of Preventive Medicine at the Great Lakes Naval Hospital and she will give us an update on recruit immunizations.

Recruit Immunization Issues

LCDR RYAN: This is a very brief brief, and I know that CAPT Long talked about this already from Parris Island's perspective. So I'll give you a little bit of an overview of all the services and what we're currently doing with recruit immunizations. I know that the subcommittee is going to talk about this some more.

This is my own chart, in talking to the various boot camps of what's actually being given right now in boot camps. And you can see what's interesting is there are differences of course in the services.

Adeno virus, which Dr. Long already talked about, is no longer being manufactured and we have enough supply that will last one more winter. We stopped giving it in the summer time as of last summer, we are not giving it this summer and we'll give it this coming winter and then the supply runs dry. So we're actively doing some surveillance to see how adeno virus vaccine may be remanufactured, when we can get it remanufactured, to be the most effective vaccine. CAPT Gray is working on that in San Diego with his tri-service surveillance. So right now it is a seasonal issue.

Flu shots are also seasonal, a little bit of difference. In general, they're given until the supply runs out for the season and actually in both the Marine

MCRDs, they claim that they order enough supply that they'll actually end up giving it year-round, and they'll only begin giving the new vaccine in the fall when the new vaccine comes on board, but that nobody ever misses getting a flu shot. We at Great Lakes actually stop in the spring time and restart again in the fall.

Some interesting things -- I'm just giving you the overview here -- measles, mumps, rubella, you can see there are differences. And what's especially interesting to me is that in the Air Force, they do measles and rubella and they do it as a titer-directed immunization. That is, they titer, do a sero-titer on all their recruits as they come in and only give MR vaccines to the ones who are sero negative. And they'll give a total of -- about 20 percent or less will require an MR vaccine by that criteria.

Now in the other services, we give MMR to all of our recruits as they come in. We've tried to do some looks at what titer-directed vaccination would mean to us. The most recent, prior to this year, was done back in 1989 and it showed that there was -- prevalence of sero-negativity for measles was in the 20-25 percent range and there was some talk about whether it was cost-effective to do titer-directed vaccines. Essentially

that didn't happen at that point for the Army, the Marines and the Navy, but we relooked at sero prevalence just this past winter at Great Lakes and we titered about 6000 recruits and found, interestingly enough, really high prevalence of sero negativity to measles, mumps and rubella, especially measles. We had 37 percent of those recruits who were sero negative to measles. We're still try to validate this data, but as best we can validate, that looks like that's going to be close to real for that group of recruits. The select time period, just the winter time recruits, which are sometimes different than the year-round recruits, but just much higher than anybody would have expected for being a prevalence of sero negativity.

Yes, sir.

(Inaudible question from the audience.)

LCDR RYAN: It's a rapid alyzer assay, I'm going to say Bio Whitaker, but actually Bio Whitaker --

(Inaudible comment from the audience.)

LCDR RYAN: Thank you. But that's the manufacturer and it's a rapid alyzer titer. And we get the results very quickly. We need to do that if we're going to do something like this. It's similar to what the Air Force uses and actually what CAPT Gray and I are

going to do is try to better validate what we got by redoing it on some Navy recruits and having sera from the same recruits also sent to the Air Force down at Lackland, and see if we're getting things that look the same, to try to better validate that, to see if that was real.

But if the sero negativity prevalence is that high, it essentially would not likely be cost-effective and might even be a little dangerous for us to try to do sero directed, titer directed MMRs, and so we would end up -- as we are now -- continuing to do MMR in all new recruits.

Varicella we just started at Great Lakes, so I don't know what the other services plans are, but actually it has been great for us to do titer-directed varicella vaccines among recruits. We see chicken pox in recruits, that's not an infrequent thing. In fact, historically, we've seen as many as 100 cases at a time at big Great Lakes in the winter time, getting admitted to the hospital for chicken pox. And usually a benign illness, but of course it can be complicated in adults. We don't like to see it, of course. So we began doing titer-directed varicella vaccine in this past fall, October-November of this year -- of '96. And that has

worked out very well. We vaccinated eight percent, had to vaccinate by the titer eight percent of all recruits and we've seen very few cases of chicken pox this year. Most of them looked like they were actually exposed prior to enlistment, just prior, because their presentation was within days of their varicella vaccine and not actually looking like varicella vaccine reaction because of the nature of the illness. So it looks like we've had no primary vaccine failures that we've seen so far, and a lot less chicken pox, which is great.

Everybody gets meningococcal vaccine since the early '70s, of course.

Everybody gets oral polio. You can see that in the Parris Island data, Dr. Long talked about the timing of when that's given is somewhat different in the services, but everybody is getting it.

Everybody gets a diphtheria-tetanus.

Yellow fever is a Navy/Marine issue that we decided was cost-effective to do. Obviously not a recruit issue. You can sort of separate vaccines into whether they're issues at boot camp or issues just for being in uniform and needing to deploy. This is obviously a deployability issue and the Navy and Marines have decided it was better for us to try to give this long-lasting

vaccine right at boot camp when they're captured, as opposed to try to save this hard-to-save -- you need to freeze it, need to reconstitute an expensive vaccine, -- in bits and pieces after boot camp. So that's a difference in the services.

Hepatitis A is being given to Air Force, Navy and Marines right now. I can't speak for the Army, but the way things are moving, likely to come on board soon in boot camps. That's new for us this year, very new. And although right now -- what's not on this graph is the sequencing of vaccines, when they're given. Giving hepatitis A vaccine actually is something that makes it cost-effective for us at Great Lakes to get a late shot day much like Parris Island has a late vaccination day, where we give these deployability related vaccines like hepatitis A and yellow fever and oral polio, which you just need for deployment later in training. So we haven't gotten from the line yet a late shot day where we can intrude on the training to get a late shot day, but it will be cost-effective for us to do that in the near future since we added hepatitis A.

Hepatitis B I throw up there because it's been talked about, but nobody is giving it across the board at boot camp yet. We give it for people we see for

different STDs.

Pneumo vac is interesting because it's given at MCRD San Diego, given as a seasonal vaccine. The other boot camps have not chosen to do that.

And typhoid I put up there as another deployability one that's been discussed but is not yet given across the board at boot camps.

I've sort of given you some of the intriguing questions. And this is maybe my Great Lakes bias, what I think are two of the interesting questions that the subcommittee may want to talk about. They may not be burning issues for the other services but I think they're interesting. And that's what I led you to before, which is why does giving MR vaccine by titer direction in the Air Force work when our Navy data suggests that it would be real concerning to do that? Why are we so different in terms of sero prevalence?

And as I say, CAPT Gray and I are going to look at that closely and work with the Air Force to try to validate our titers. We've also got lots of data on the 6000 recruits that we titered this past winter and we'll do some multi-variant analysis to see what made them so special, if they truly have 37 percent of them sero negative to measles.

And then another interesting issue separate from the MMR issue, is hepatitis A. I know that this Board has addressed the issue of Vaccine Havricks (ph) and I know that the Smith, Kline representative is here and we've talked about the interchangeability of Vaccine Havricks for hep A -- an important issue for the military.

I also wonder if the Board would care to address the question of the pediatric dosing of hepatitis A. It's a way you can save money, to give pediatric dosing to people who are 18 and under for one of the products, 19 and under for the -- I'm sorry, 17 and under for one of the products and 18 and under for the other product. A hard logistic issue. I know my colleagues who are actually out there giving shots agree that it's very hard to divvy up recruits by age when they're getting their shots. The question is, is it worth doing that to save the money? Other questions might be since one of the manufacturers suggests that giving the adult dose of vaccine actually induces a quicker short-term immunity, that first six months immunity, that maybe it would be optimal to give the adult dose to our recruits. But just an interesting issue that I'd like to sort of put up there and see if you'd like to talk about that more in

our working group.

DR. BARRETT-CONNOR: Is that a body size -- what is the age there?

LCDR RYAN: Good question. And actually I might even look to the Smith, Kline representative I see in the audience. When the trials are done, when Merck and Smith, Kline do their trials, they set the pediatric/adult cutoffs for where they're going to try their dosing. And they can set them -- actually they can set them wherever they want arbitrarily and then they'll get FDA approval for that range.

Now the folks at Merck would say, you know, the real difference is body weight, that the bigger difference is really body weight in terms of vaccines, but they're not tried that way, they're tried in age groups. And so they get FDA approval for a particular dosing for a particular age group, not for a body weight.

The same issue comes up with Varivax (ph), you know, 13 years old is the cutoff for Varivax pediatric/adult dosage and it's actually a little frustrating for us out there in the field, especially when the cutoff is at 17 to 19 year olds, to figure out how that really applies to us.

DR. GARDNER: Could I ask another question?

Going back to the measles, do you know what reporting of your recruits have had two doses of the vaccine, adolescent doses?

LCDR RYAN: Great question. We are trying to look at shot records when recruits come in. We get very few recruits who actually bring us their shot records, and they've only been doing that for a few months. Of those who bring us the shot records, probably a third of them have good evidence of two measles dose, two MMRs after 12 months of age. But the ones who bring us shot records tend to be the good ones, who have shot records.

So it's hard for me to answer for across the board how many got good -- both MMRs after 12 months of age. You would suspect that it's lower than we anticipate. One of the univariant analysis I did of this analysis was state-by-state home of record in terms of where the sero negativities were, and we found that there were differences in home of record. For instance, Texas as a home of record had a much higher percent of sero negatives. It might imply that their school program maybe wasn't as adequate or at least the recruits coming from Texas had more of a problem. Whereas, New York was better. If your home of record was from New York, it was better. So it implies that there probably is some

difference in the coverage of children getting those two shots after 12 months.

DR. GARDNER: It would be interesting to do a tabulation of those for whom you've got documentation of having received two doses.

LCDR RYAN: What their titers look like.

DR. GARDNER: Yeah, whether there are differences.

LCDR RYAN: We have so few right now who brought us records and got titered. We may look to the Air Force to combine some of our data, but I agree, we absolutely want to see that.

Yes, sir.

UNIDENTIFIED SPEAKER: You've prompted so many ideas in my mind, I guess I'll just try to address two questions. For one, I think you really need to look at the assay that you're using for measles. I strongly doubt 37 percent of the people coming in are susceptible to measles, because I think we'd be having rip roaring outbreaks in the United States if 37 percent were actually susceptible. We'd probably be having them if 10 percent were susceptible.

One way you could address that, and I even addressed this several years ago that way, is run it up

against the black neutralization assay and Dr. Bealer at the FDA has done that for me. The black neutralization assay is quite well correlated with the actual risk of developing disease upon exposure, based on some work Bob Shanenburg and Markowitz (ph) did at the CDC looking at blood donors who got exposed to measles shortly after they donated blood. They were able to take the pigtail specimens from the blood donation and look at exactly which people got measles and how that correlated with what was in their blood shortly before they were exposed.

So I'd look at the black neut, that may help a lot. I'd also talk to the manufacturer, I can tell you some war stories. But right in the middle of my dissertation I had a leading national manufacturer who makes rubella, the rubella assay, they did $10,000 of rubella work for me and then six months later, while I was analyzing the data, they called me up and say whoops, we're recalling that whole lot because it was insufficiently sensitive and we ended up letting a lot of the people get classified as immune when in fact they were susceptible.

So you may want -- and this was the manufacturer's quality assurance lab that was telling me this after they had approved the assay for commercial

use.

The second question you had about the pediatric dose, it may be worth doing a study on that. Some of the older members of the Board may remember, but I think a Board question about six or seven years ago had to do with hepatitis B immunization and using pediatric doses in the military, and if I recall the package insert basically says you can use the pediatric dose up until about 18 or something. And the question was put, can we use the pediatric dose up to 29 and after the Board reviewed the data, I think they felt comfortable and Dr. Stevens can correct me if I'm wrong, but I think they felt comfortable that a better cut point between sort of being less responsive versus more responsive was 29, and I guess the manufacturer went with 18 just because that's sort of a logical way of dividing up adults from children. But apparently childlike immuno-responsiveness may go well through the 20s.

DR. STEVENS: (Inaudible comment.)

(Laughter.)

LCDR RYAN: Actually, just to add to that, I had the same concerns about our assay method, you know, our titering, whether or not we could believe it. And we want to do that, to validate what's really out there

among our recruits. My concern is in doing any titer-directed immunization if we can't believe the assay either being over-sensitive or under-sensitive, it would make me scared to use it.

UNIDENTIFIED SPEAKER: You may be able to use different cut points on the assay. The manufacturer -- the issues that the manufacturer faces in setting that cut point may not be the same ones that are relevant for what you're doing. They want to be highly specific, for example, with rubella. They don't want a woman to be told that she's immune when in fact she's susceptible. So they set the cut point to err very, very conservatively. And we may not need to be that conservative.

For example, when I looked at black neuts for measles, I'd say at least half of the people who were negative by Whitaker had what were considered protective titers by black neutralization assay.

DR. POLAND: Actually we're in the middle of a five-year study using the Bio Whitaker assay. As you know, Bio Whitaker was acquired by Carter Wambol (ph). This winter we had problems with that assay with our sero negativity rate going to 20 percent. They subsequently changed the assay. These were done soon after Carter acquired Bio Whitaker.

I'm positive you do not have a 37 percent true sero negativity rate.

DR. FLETCHER: Let's move on and have questions at the end.

LCDR RYAN: Thank you. That's it.

(Applause.)

COL FOGELMAN: Okay, moving right along, we have two more speakers and as soon as we're finished, we'll need to go out to the front and you need to take everything out with you and load on the bus. We will drop back by the Naval Hospital on our way back so those of you who have cars can get your cars.

The next two speakers, CAPT Chuck Dunne, who is the Commanding Officer of the Special Training Company and Mr. Tim Bockelman, who is the physical fitness advisor for the Special Training Company.

CAPT Dunne.

Special Training Company Briefing

CAPT DUNNE: Ladies and gentlemen, good morning. My name is CAPT Dunne, I'm the Commanding Officer of the Special Training Company.

Today, I'd like to tell you how the Special

Training Company serves the recruit training regiment, Eastern Recruiting Region and the entire United States Marine Corps by salvaging recruits who are injured or poorly conditioned, and returning them on to the training battalions, whereas they would otherwise have to go home.

Today, I'd like to talk to you specifically about the Special Training Company mission, how we're organized and our company structure, what the medical rehabilitation platoon is, a little bit about our relationship with the branch medical clinic, what type of recruits are in the physical conditioning platoon, our company philosophy, what our physical training program is composed of, and then finally our training schedule.

Now the Special Training Company mission is to rehabilitate and condition those who aspire to become Marines, so that we can better support the four training battalions with recruits that are healthy and physically ready to meet the rigors of recruit training. In other words, we help the injured recruits heal and we help strengthen the weak recruits.

Now our unit goal isn't just to help those recruits get back to training. We also try to build a well-rounded foundation so when they do go out to training, they can succeed.

The company is comprised of three platoons -- the physical conditioning platoon, the medical rehabilitation platoon and the female physical conditioning and medical rehabilitation platoon. This platoon is combined because of the smaller number of female recruits aboard Parris Island.

The company varies in size from about 200 to 300 recruits, depending on the time of year. There are 22 to 24 drill instructors, 13 out of the 15 line or letter companies aboard Parris Island are represented with drill instructors in the Special Training Company. They are assigned to us for a six to nine month support billet during their two to three year tour. So they're not permanent personnel throughout their whole tour here with us.

The company staff is comprised of myself, an executive officer, the company first sergeant, an operations section and then a very important part of our staff is Mr. Bockelman, who will be talking after me today. He is a kinesitherapist, a GS-12, our physical fitness advisor and the advisor to the recruit training regiment on physical fitness. He serves not only the regiment, but the entire depot, and he adds continuity for us and after I leave. He's been on staff now for

seven and a half years.

Finally, we have a recruits awaiting disposition section, or RAD, and there's one of these in every battalion. However, in support battalion, it falls under the Special Training Company. We're not able to heal all the recruits and not all of them are able to condition themselves enough to go out to training, so at times they need to be separated. These recruits go to the RAD and then move on to casual and then are later discharged.

What type of recruits are assigned to the medical rehabilitation platoon and why are they assigned?

Well, first of all they need a medical officer's referral from the branch medical clinic. About two-thirds of the platoon suffer from over-use injuries, as you heard earlier, stress fractures to the tibia and fibula, metatarsals, shin splints, iliotibial band syndrome, patella femoral syndrome. We do have traumatic injuries, shoulder dislocations, fractures and sprains and then a small amount have pneumonia, cases of cellulitis and then there are some recruits who come to us who may be pending hernia surgery.

These recruits come from all throughout training, from training day zero up to about training day 56 before the crucible. About 90 percent of all the

injuries will probably heal in the medical rehabilitation platoon, however our biggest challenge for myself and the drill instructors, is that motivation will wane and the recruits will either no longer desire to be there or they will become a discipline problem.

I mentioned the drill instructors come from the training battalion, so do they have any specific training? No, not other than what we give them within the company and what the branch medical clinic gives us. In addition to that, we have some programs that really help us ensure that our recruits are cared for properly. Each recruit has his or her own day where they go see their provider in their specific section. So that ensures consistency of care. Once a week we have a tiger team meeting in which myself, Mr. Bockelman, the senior drill instructors for the male and female medical rehabilitation platoons meet with those representatives from sport medicine, podiatry and physical therapy to discuss each recruit on a case-by-case basis, where they are in their rehabilitation, do we need to slow them down, speed them up, most of all, their attitude. And if we find out -- a lot of times, the recruits may be telling the doctor something totally different than they're telling myself and the drill instructors.

We also have our in-house physical therapy room, which you will see later on when you come by our company area. We're very fortunate, this relieves us of a logistical burden. The physical therapist and his technicians come and work on our recruits in our own spaces. We have ice, cybecs, hydroculator, electronic muscle stimulation and whirlpools, all adjacent to our weight training facility where we have Nautilus, Universal and Free Weight equipment. And this helps out because the recruits don't have to leave. The ones that are on crutches can move a very short distance to get the attention they need.

I mentioned Mr. Bockelman and the liaison he helps us with for both the Beaufort Naval Hospital and the branch medical clinic. He gives orientations to all incoming medical personnel approximately about once every two months, takes them around the depot, tells them a little bit about recruit training, what type of injuries they'll see, the recruits will come to them with, some of the attitudes the recruits may have and how they will act, and then some advice as to how they should conduct themselves with these recruits.

Now why would a recruit be assigned to the physical conditioning platoon? About 80 percent of this

platoon, both male and female, are comprised of initial strength test failures. In other words, recruits who arrive on those yellow footprints at receiving, about two days later they take their initial strength test prior to going off to training. Now for the male recruits, the biggest trouble or the most difficulty is with the two dead hang pullup minimum. For the female recruits, they have their most difficulty with the one mile run in under 10:30.

Recruits can also be assigned to the physical conditioning platoon for failing fitness evaluations on training day 10, 20 and 30. They increase in intensity of what the criteria is. As well as a failure of the physical fitness test on training day 40.

We receive some recruits for not making their weight standards or personal appearance, usually around training day 48, and then some MRP recruits or medical rehabilitation platoon recruits, who have healed and they're underneath training day 30, in other words training day zero to training day 30, would go ahead up to the physical conditioning platoon just to make sure they were ready to go back onto training.

The philosophy behind what we do, being injured and poorly conditioned is temporary. However, for our

recruits, they're young, they've been invincible or so they thought for a long time, and now they have this giant hurdle. They're taken away from their platoon and the recruits that they were going on towards graduation with, so they feel this is pretty significant.

As I mentioned before, motivation and how our drill instructors try to positively reinforce them is a key element in our rehabilitation and conditioning.

We try to give them a tangible goal for them to strive to heal or improve their physical fitness so that we can return them to training and then hopefully they can go on to become United States Marines.

Our program focuses on a gradual, more progressive training cycle to prevent further major injuries and to prevent the weak from getting injured.

We place a specific emphasis on preparing our recruits not just physically but also militarily and academically. And as I talk about our training schedule later, you'll see how we try to have a well-rounded schedule.

We believe by giving these recruits the skills, we'll give them a better foundation as they go off to training and hopefully they'll have a higher chance of success.

Of course in what we do, the physical training program is a very important part. We have about nine workouts per week. Monday, Wednesday, Friday are our high intensity days. During the morning workouts on these days, very similar to what the other lettered companies do aboard Parris Island, we have workouts such as the walk/run rehabilitation program, a mile and a half and three mile individual effort runs, some formation runs and interval training on our track, as well as calisthenics, obstacle course and rope climbs. We try to build up aerobic capacity gradually and progressively. We're fortunate to have our own weight room so we can work on that muscular endurance and strength in the afternoons. Each recruit can work on their specific weakness, they always have drill instructor supervision to ensure that they're executing their program accordingly.

We have mats, wrestling mats, in the back of our weight room which allow us to do our abdominal workout and flexibility program, which Mr. Bockelman designed, working on speed and endurance drills for the situps which is what we're trying to train these recruits for, as well as other abdominal exercises and flexibility. He devised a long stretching program, both for the regiment

and for the company, which we have in place.

One of the pillars of our rehabilitation program is our water exercise training. We have a deep end workout and a shallow end workout. The deep end workout is a no impact workout where the recruits from the medical rehabilitation platoon wear survival vests and engage in deep water running, some calisthenics, some survival stroke remediation, focused on building up their cardiovascular fitness and their full range of motion as well as some muscular endurance.

The shallow end has a little different focus. It's partial weight bearing, it's predominantly for those recruits in the physical conditioning platoon that have trouble running. They'll work on running form through intervals, retro-running or backwards running, sideways running, some swimming intermittently as well as calisthenics.

Our recruits don't just sit around and heal or just work out all day. Instead, we have constant classes interwoven in between that. Core values is a big thing that is done throughout the depot and we push that the same. The honor codes commitment classes along with their scenarios. The benefit of being in support battalion is that we have a sister company, instructional

training company that is comprised of an academics instruction section, a close combat section and water survival. So we get our recruits taught by actually the academic instructors who teach the recruits aboard the depot. They come to our squad base and teach the recruits right there. For someone who has already had those classes, they're getting remediated. For those recruits that are brand new, on training day zero, IST failures, they are able to familiarize themselves.

If the recruit is in a duty status that allows him to go to close combat, once a week we go out to leatherneck square, which you'll see later on today, and engage in combat hitting skills, simulated boxing, pugil sticks which is simulated bayonet fighting, or line training, which is grappling techniques.

As I mention, the water exercise training, we're at the pool quite a bit, every day during the week. We also screen these recruits and get them water survival qualified.

We teach them some basic close order drill movements, some conditioning marches are applied, but only for familiarization and confidence. They're at a lower intensity than what the recruits will actually do out in training.

We have our own professional military education library so these recruits who are injured are not just sitting around. I don't mind if it's a devil's workplace, we try to have them constantly reading, assigned current events projects, something to keep their mind focused on the game.

We have tactical decision games either in our sand table or on a computer. We'll bring a computer into the squad bay. And then finally, throughout we reinforce customs and courtesies with these recruits.

These are some statistics that show a little bit about our population of recruits. AT the top left you can see the percentage of the recruit training regiment population that are assigned to the Special Training Company by each of the platoons. Below that, our success rate or the percentage of recruits that exit the Special Training Company, who actually return to training.

And finally, we have a very high turnover rate of recruits and below that is the average length of stay that each recruit spends in any one of our platoons.

Ladies and gentlemen, this afternoon, you'll be visiting our company area and be able to see our facilities. If you have any questions about facilities or apparatus, you could ask them then. My company

executive officer, CAPT Myers and company first sergeant will tour you through our physical therapy room and weight room and Mr Bockelman will be there also for any questions.

Are there any questions right now?

DR. FLETCHER: I think we'll move on.

CAPT DUNNE: I'd like to introduce Mr. Bockelman, our physical fitness advisor.

(Applause.)

MR. BOCKELMAN: Good morning, ladies and gentlemen.

I am the physical fitness advisor for recruit training at Parris Island. I've been in that billet for seven and a half years. I truly enjoy working with the Marines and I'm not just saying that because there's a couple of drill instructors in the door blocking me from exiting. They are a dynamic group, they're always trying to do the best for their Marine Corps and that starts off right in recruit training and even before that at the recruiting level.

My background is in kinesitherapy, which provides a medical rehabilitation background and that ties in well with the fitness requirements for this billet.

This morning, I will be briefing you on the physical training of recruits and some of our efforts to minimize injury.

Our philosophy goes well beyond just getting future Marines in shape. We want the recruits to understand the healthy behavior of being a Marine includes a lifetime fitness. The links between activity and illness and death are well documented. Therefore, we have tried to eliminate the concept of getting them in shape just to pass the Marine Corps physical fitness test.

The purpose of the Marine Corps physical fitness test is to instill a healthy behavior. How we have tried to get them away from training just to pass the PFT is we've replaced the training schedule with an appropriate conditioning program, of which a byproduct is the ability to pass the physical fitness test.

To help that along, we've also taken the PFT and moved it earlier in the training schedule. Traditionally it's always at the end of a school or the end of a training program and so people build up towards the end of that training program. They take the PFT and then they're done.

We've moved the physical fitness test earlier in

the schedule. We get them in shape to a point where they're able to pass that PFT and then we continue to get them in shape afterwards. Quite honestly, they're probably in better shape upon graduation than when they took their physical fitness test.

The challenge of the recruit training schedule is to start off as slow as needed, progressively increase the activities while also allowing opportunities for the injured recruits to progress at their individual improvement. Recruits don't arrive at Parris Island in shape. The CDC's report on physical activity and health shows activity levels in adolescents bottoms out right when we're trying to enlist them into our military services. When the recruits arrive less than 15 percent are in excellent condition and another 30 percent are in poor to very poor condition. So that's quite a challenge. Less than 50 percent have run at least three times a week in the two months prior to recruit training. So that adds up to quite a challenge of getting them in shape in a short amount of time, or at least start to get them in shape in a short amount of time but keep the risk of injuries low as possible.

Therefore, we start the females -- they start off in a one mile distance, their first run is that

short. And for the males also, it starts off at a mile and a half and progressively increases. The first three mile run isn't until training day 28, the middle twenties. Then they do a PFT then at training day 40.

Calisthenics, likewise all the other activities, start off the repetitions slow and gradually increase those activities.

Then of course, the PFT at training day 40 and also conditioning marches, gradually increase those. The first one starts at three miles, we talked about that earlier, progressively gets to five and then moving on up to the ten mile march before they get to the crucible.

The hardest concept to hold the recruit trainers to is to maintain appropriate rest between physical activities. If a little bit is good, a lot is better. Well, we know that's not appropriate. There has to be appropriate rest between so that the activity session we just got done performing, we're going to recover from that and that's ultimately how our body will adjust to that, it will adjust by getting stronger.

Our cardiovascular fitness program includes formation runs. While not being the ideal training tool, it is needed for unit integrity. That helps to build up the unit. There is, yes, a cardiovascular effect from

that, but most of our cardiovascular training money is made during a lot of the individual effort and interval training runs. The interval runs start at a work/rest ratio of 1 to 1.5 and progressively gets the respiration ratio to a 1 to 1.

Our individual effort runs are also used to evaluate progress. CAPT Dunne mentioned fitness evaluation on training days 10, 20, 30. Those were also individual effort runs and definitely an ideal training effect with that also.

Conditioning marches are done at 2.5 miles per hour. That too is going to provide an aerobic component. Starting off at three miles, roughly half hour, and then progressively getting longer, so there's definitely a cardiovascular effect from those activities also.

Ideally, we would like to include weight training in that everybody has access to a gym to lift weights or pump iron. Unfortunately, that type logistically just doesn't work as well. We have to use our next available resistance, which is body weight. We do calisthenics, it's progressive, as I mentioned earlier. We also do have circuit courses. That does allow for some weights, again it's very limited because we have maybe three companies on a PT field at one time

and that can be 1500 recruits on one PT field. So sometimes it's logistically very difficult to get everybody to do all activities that we need to do.

Log drills, there is definitely a strength component to that, although the goal of log drills is team building. Having them work together to lift that heavy load.

Also, we have two other programs, developmental exercise and the evening exercise program which supplement our muscular strength and muscular endurance activities.

An important component of fitness is often neglected -- flexibility. Our goal is to improve range of motion over a long time period. There's no need for a recruit to go out and just stretch for that PT session and that PT session alone. It's part of a program. They start off improving the range of motion and continue that over a longer time period. They do flexibility training in relationship to every physical training session and then other activities that involve movement of any sort will also involve some type of flexibility work, such as the obstacle course and then obviously running.

There's a lot of other physical activities that happen, that go beyond just a scheduled physical training

schedule. Swim qualification is up to four sessions of swimming. Close combat, you will be seeing some of that this afternoon. There's various body awareness activities, obstacle course, confidence course puts somebody in a safe but precarious position that they're not used to and show them that they're able to control their body climbing up a ladder that's 30 feet high, et cetera.

Then there's various other foot movements which we hit a couple of times earlier this morning. There's a lot of time on the feet, not only in the conditioning marches but in administrative movements. And that's moving the platoon from the company area to chow and back, from the company area maybe to a classroom or out to this area of instructions. So there's plenty of foot movement.

These activities tied together with PT does lead to a high energy expenditure throughout a whole training cycle.

As with any activity, there's always going to be some type of risk of injury. Again, the trick with recruit training is to try to keep that risk as minimal as possible but while still accomplishing the mission of why the recruit is at Parris Island, to become basically

trained Marines.

I do a great deal of instruction on injury prevention as well as the branch medical clinic does. Drill instructor school is obviously a great place to catch the drill instructors who will be leading these recruits. Education in terms of flexibility training, running gait. We talk to the drill instructors on how to look at your recruits at how they're running. Many of these young men and women have done very little running and they just don't know how to do it. And so we do some instruction with that.

And then obviously blister prevention is a great activity to try to decrease. Blisters in itself may not be that bad but boy that blister hurts, so I'm going to limp and when I limp, that's how I make myself susceptible to an injury.

We also do track injuries as much as possible. Every recruit that comes down to a medical rehabilitation platoon for an injury, that's part of our database, we're keeping well track of that as well as some other information along that line. There's other systems in place to capture data such as that. We try to evaluate those injuries, look for any trends and then we will go out and evaluate that event that is showing some

injuries. Evaluation will be done by probably myself, sports medicine, depot safety is involved with that and then of course the Marines that are involved with that training event also. We'll put together some options then that might help to diminish risk of injury at that event.

Shoulder dislocations were brought up earlier, combat hitting skills. It's showed up to be a high traumatic injury incident, but I'll tell you right now, we're probably running one-half to one-third less than what we were during fiscal year '90 because we've done some modifications to that training, not only the oral training that's passed on from the instructor to the recruits, but in how we do the training. And you will see some of that, again, this afternoon. So we have been able to do some changes along that line.

Obviously that type of evaluation is most effective for traumatic injuries. Over-use injuries we know is probably a little more related to a training cycle and we've done some strides with that also.

As a nation, we have problems with healthy behaviors. Ultimately this does affect our armed services and their combat readiness. For the Marine Corps, this means that we need to ensure that these

basically trained Marines understand the importance of physical fitness as a Marine and even beyond that, beyond their time in the Marine Corps.

With that, again you will be visiting our area later on this afternoon. Do we still have time for questions or do we --

DR. FLETCHER: We'll hold questions.

MR. BOCKELMAN: Hold them until this afternoon. I'll see you this afternoon.

(Applause.)

COL FOGELMAN: MAJ Fisher will lead you out to the front, take all your personal possessions with you. You need to be on the bus right away.

(Whereupon the meeting was concluded at 11:35.)

C E R T I F I C A T E

I, Peggy J. Warren, do hereby certify that the foregoing pages represent a true and accurate transcription of the events which transpired at the time and place set out in the caption, to the best of my ability.

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Peggy J. Warren, CVR-CM, CCR A-171