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ARMED FORCES EPIDEMIOLOGICAL BOARD

OPEN SESSION

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## 1 P R O C E E D I N G S

2 DR. POLAND: Well, welcome all to this  
3 open meeting of the Armed Forces Epidemiological  
4 Board. We have a lot of important topics on our  
5 agenda for today, but one of the things I've tried  
6 to do with the opening of each of our meetings, at  
7 the very beginning is if I could ask you all to  
8 stand for a moment of silence here. It's a  
9 practical one and honorific one.

10 One, because we still have soldiers,  
11 sailors, airmen and marines in harms way, and  
12 since our last meeting, about 70 or so of them  
13 have paid the ultimate sacrifice.

14 Two, to sort of clear our minds and get  
15 ourselves focused on the reasons that we're here.  
16 So if we could.

17 (Moment of silence observed)

18 DR. POLAND: Thank you. Okay, we'll get  
19 started. Ms. Embrey, would you please call the  
20 meeting to order?

21 MS. EMBREY: Thank you, Dr. Poland. As  
22 the Designated Federal Official for the Armed

1 Forces Epidemiological Board, a Federal Advisory  
2 Committee to the Secretary of Defense, which  
3 serves as a continuing scientific advisory body to  
4 the Assistant Secretary of Defense for Health  
5 Affairs and the Surgeons General of the Military  
6 Department, I hereby call this meeting to order.

7 Colonel Ziegler, please accept my  
8 appreciation for your willingness to host this  
9 meeting and the outstanding support that you and  
10 your staff have provided to the AFEB.

11 DR. POLAND: Thank you, Ms. Embrey. I  
12 also want to thank Colonel Ziegler and Colonel  
13 Brumage for hosting this meeting of the AFEB. I'm  
14 pleased also to advise you of some distinguished  
15 guests that we have here this morning. Dr. Steve  
16 Ostroff, to my left, the past Board president.  
17 Colonel Dan Burnett, who's representing the Air  
18 Force Surgeon General. Colonel Rob Lipnick,  
19 representing Dr. Rice, the Dean of the Uniformed  
20 Services University of the Health Sciences.  
21 Colonel Jim Neville, representing Mr. Eric  
22 Stevens, the 311th Human System Wing Director.

1 And Dr. Florabel Mullick, Principal Deputy  
2 Director of the Armed Forces Institute of  
3 Pathology. In addition, Dr. Todd Weber is our new  
4 CDC League liaison, and it's taken a while to get  
5 one, so thank you for being here. Let's go around  
6 now and introduce everybody in the room and if we  
7 could I'll start with Ms. Embrey and we'll work  
8 our way all the way around.

9 (Board Members and Guests introduce  
10 themselves.)

11 DR. POLAND: Thank you. Colonel Gibson  
12 has some administrative remarks before we begin  
13 the first morning session.

14 COL GIBSON: I want to start off  
15 thanking the Tripler Army Medical Center. General  
16 Pollack, Colonel Ziegler, and particularly Colonel  
17 Mike Brumage for helping for the arrangements for  
18 this meeting and as well as the evening  
19 activities. Colonel Brumage's help was invaluable  
20 in planning this meeting. And I also want to  
21 thank all the speakers who worked hard to prepare  
22 for the briefings. For this meeting we're going

1 to have refreshments available in both the morning  
2 and the afternoon. And we have a catered working  
3 lunch for the distinguished guests, the Board  
4 members and preventive medicine officers. Lunch  
5 is available for the rest of you. See Karen about  
6 that. There's other restaurants near the hotel,  
7 in the hotel, as well. Restrooms are around the  
8 corner outside not too far away. For telephone,  
9 faxes, copies, or you need anything printed, see  
10 Karen. She'll be able to arrange that. Our next  
11 meeting of the Board will be in September. The  
12 26th and the 27th, it's the third Tuesday and  
13 Wednesday of September. It's going to be at the  
14 Naval Academy in Annapolis. On the agenda so far  
15 is an update on antiviral vaccine licensure,  
16 discussion of the Armed Forces Health Surveillance  
17 Center, and a question to the Board that will be  
18 finalizing, at that point, on Pentavalent/Bot Tox  
19 vaccine. We have 6.23 continuing medical  
20 education credits for this meeting from the  
21 Uniformed Services Health University. And to  
22 receive the credits you need to sign the physician

1 attendance roster for both days and complete the  
2 evaluation and the essence statement for the  
3 meeting. They're in back. Karen can get those  
4 for you as you need them. For the Board members,  
5 the evaluation form is in the front of your  
6 notebooks and we'll mail out the CME credits when  
7 we're done. We'll also have the slides from the  
8 open session, today, tomorrow, on the web. On our  
9 website in about a month after the presenters  
10 clear their slides, make sure that they're ready  
11 to post. Want to remind you all that the meeting  
12 is being transcribed, so speak clearly. The A/V  
13 guys have done a wonderful job with these mics.  
14 You really don't have to move them at all. Just  
15 lean your head towards them, they should be set  
16 real well. They spent quite a while last night  
17 getting it set up. So there's not a lot of reason  
18 to move the mics around. Dinner tonight is at  
19 Orchids, which is about a 15-minute walk from  
20 here. Really nice place. I walked down there  
21 last Sunday and took a look at it and I was  
22 improperly dressed for brunch, in my swimsuit, but

1       it's a really nice place. It's open to all of the  
2       attendees. Karen, do we need a show of hands to  
3       get a final count? Okay. We've got our final  
4       count on the attendees for the meeting. One last  
5       reminder, turn your cell phones off or on vibrate,  
6       as well as your pagers. That's it for now.

7                   DR. POLAND: Our first speaker will be  
8       COL Derick Ziegler who is Chief of Staff at  
9       Tripler Army Medical Center who wanted to take a  
10      few minutes to welcome the Board.

11                   COL ZIEGLER: Well since we're in  
12      Hawaii, I'm going to welcome you the way that  
13      everyone here (off mike) first presentation (off  
14      mike) resounding Aloha.

15                   BOARD: Aloha.

16                   COL ZIEGLER: Well, it is indeed an  
17      honor and a privilege to host this important  
18      meeting. I get to stand here today because my  
19      boss (off mike) Pollock has to be in (off mike).  
20      Just make sure I know what I'm doing up here  
21      first.

22                   What I'm going to do for the next few

1 minutes as part of our welcome remarks is to talk  
2 a little bit about Tripler Army Medical Center and  
3 consider (off mike). Hopefully most of the time  
4 (off mike) coming in from the airport down to the  
5 hotel here, saw far we go on the left-hand side to  
6 this rather large and rather obvious structure.  
7 This is Tripler Army Medical Center.  
8 (off mike) constitutes, really,  
9 this building is what you're seeing right here and  
10 we have several other buildings called Tripler  
11 campus. I have had the privilege and honor of  
12 serving as the Chief of Staff (off mike)  
13 administration the last nine months. Prior to  
14 that I was with (off mike) Medical Center, I felt  
15 honored and privileged to serve in the same  
16 capacity there. I am absolutely delighted to be  
17 here. But I wanted to include this slide at first  
18 just to show you the Tripler Army Medical Center,  
19 Pacific Regional Medical Command area of operation  
20 constitutes, sort of this wide (off mike) if you  
21 will, in the middle there, 52 percent of the  
22 earth's surface. We are the single DoD tertiary

1 care referral center in this area. Now that goes  
2 into  
3 (off mike) probably goes over into  
4 (off mike) west side of (off mike) and it's  
5 probably a little bit (off mike). But basically  
6 about half of the earth's surface. A huge area of  
7 responsibility. Our primary focus is the Pacific  
8 area, the Pacific Region. You can see where we  
9 are, Tripler Army Medical Center here on Oahu, and  
10 we also have out in Japan, we have a medical  
11 partner that used to be a (off mike) hospital, now  
12 it's a fairly robust primary care Army Health  
13 Center.

14 This is (off mike) home now, this is the  
15 ionic walk. We're not the only military MTF on  
16 the island. As you can see, on the island we have  
17 Navy, Air Force and Coast Guard at the present, as  
18 well. All (off mike) primary care some with (off  
19 mike) all (off mike) we're the only inpatient  
20 medical treatment facility, again, on the island,  
21 in the State of Hawaii and the Pacific Region (off  
22 mike).

1           This is our (off mike) and vision. We  
2 are really working hard toward achieving our  
3 vision. We really feel it's very important and  
4 absolutely critical that we run a premier tertiary  
5 care referral center. Our focus is health and  
6 education. We do a lot of (off mike) health  
7 education in caring high quality patient safety is  
8 important to us. (off mike) service (off mike)  
9 General Pollock we're completely on focus (off  
10 mike). This is the population in the Pacific  
11 Region that we're responsible for providing care  
12 to, just under half a billion. Got to tell you  
13 though a big part of that is (off mike) Hawaii  
14 medical population. I have a couple slides near  
15 the end that talk about our immediate relationship  
16 with the VA. We're about 120,000 beneficiary (off  
17 mike) Pacific (off mike) our VA (off mike) we're  
18 responsible for providing care and we have through  
19 various U.S. Agencies (off mike).

20           Market population, while we at Tripler  
21 Army Medical Center, you can see that the Army is  
22 actually not the largest percentage of DoD total

1 care (off mike) in the Pacific region, it's  
2 actually the Navy and Marines, together they  
3 constitute about 46 percent in the Pacific region,  
4 followed by Army about 42 percent, about 40  
5 percent (off mike) Air Force (off mike). Located  
6 at the (off mike) distribution and had (off mike)  
7 DoD (off mike) facility in Hawaii. So we're able  
8 to take care of about 95 percent of the patient  
9 requirements. (off mike) not a lot of stuff goes  
10 downtown (off mike) specialty care, (off mike)  
11 primary care and (off mike) little less, again,  
12 (off mike) patients. For the most part (off mike)  
13 entire region. We do (off mike). Tripler (off  
14 mike) operating right now (off mike) beds, we  
15 actually more beds 231 no surprise, staffing (off  
16 mike) nursing staffing has been a challenge here  
17 on the island. You think a lot of folks would  
18 want to come to Hawaii (off mike) contracts not  
19 that difficult trying to get folks for three  
20 months, six months (off mike) folks come here for  
21 two, three, four years. Not the military,  
22 civilians contract (off mike). This is the staff

1 is takes to do the mission. Just under 3,000 (off  
2 mike) to 3,000 staff members, what I want to focus  
3 here, if you look at the Air Force, all total we  
4 have 16 personnel on our staff and 17 Navy. We're  
5 trying to work with the Navy Surgeon General, the  
6 Air Force Surgeon General. Really we are having  
7 some positive successes. Recently seeing about  
8 getting more Navy and Air Force active personnel  
9 on the staff. Reality is it's getting harder and  
10 harder for us to the mission (off mike) resources.  
11 So we're going to the Navy and the Air Force.  
12 And, again, by and large, (off mike) prior to  
13 paying the Air Force this year (off mike)  
14 increasing that number (off mike). Looking at our  
15 general work force (off mike) half civilian, half  
16 military, but no surprise with the movement of the  
17 military to the civilian (off mike) the contract  
18 for civilian workforce is going to continue  
19 increase (off mike) workforce. So I would tell  
20 you that in the next two to three years, it will  
21 be closer to 55, 58 percent (off mike) military.  
22 Again, that's not at all unique (off mike) We have

1 robust graduate health education program training  
2 here. We train just under 20 percent of all the  
3 ranking health education in the Army medical  
4 environment. You can see the red are the ones  
5 (off mike) we currently have (off mike) programs.  
6 Also we have 13 physician training programs, over  
7 220 physician (off mike). June 16th is our  
8 graduation and we'll (off mike) graduate under  
9 110. We also have some trainings not just with  
10 the University of Hawaii, you can see some the  
11 specialties we do, psychology, pharmacy, health  
12 care administration and (off mike)residencies. So  
13 a rather robust graduate (off mike) program.  
14 We're very proud. A lot of our folks that are in  
15 our GHE programs, they're getting trained to go to  
16 war. In fact of that 110 about 50 percent, right  
17 after graduation will be getting ready to go to  
18 Iraq or Afghanistan. That's part of the mission.  
19 That's part of the mission. Training (off mike)  
20 folks and getting them ready to deploy and we've  
21 had a (off mike) staff (off mike) number on staff  
22 (off mike) recently deployed are deployed or

1 recently re-deployed.

2           This is a typical day at Tripler. You  
3 see about (off mike) just a few months ago that  
4 was about six. No surprise we had the 29th (off  
5 mike) Brigade Combat Hawaii National Guard, this  
6 was (off mike) deployment we were expecting in  
7 nine months to have a baby boom. 15 months ago,  
8 no surprise, (off mike) re-deployed, thus the  
9 increase, which is (off mike). You can see a  
10 typical day at Tripler Army Medical Center, fairly  
11 busy military (off mike).

12           We support a lot of the missions in the  
13 Pacific theater. At any given time we could be  
14 asked to send one, two, three or even a team of  
15 our staff to (off mike) countries to a number of  
16 the various different missions. Whether it's (off  
17 mike) type site support. Whether it's (off mike)  
18 mission. Whether it's (off mike) MIA counting.  
19 At any given time we have (off mike) from our  
20 staff in one or more of these countries supporting  
21 the Pacific ACOM Pacific commands (off mike). So  
22 again we're very involved. This is a an important

1 mission for us. Soldier readiness processing. I  
2 just commented about the 25th Infantry Division  
3 re-deployed about 15 months ago. They're getting  
4 ready to go out again a slice of (off mike) 7,  
5 8,000 of division will go to Iraq in September.  
6 We're already getting geared up to do the soldier  
7 readiness processing (off mike) medical screening  
8 to make sure they're ready to deploy and then (off  
9 mike) we do a reverse SRP. So we lay hands on  
10 them, if you will, before they go out and when  
11 they come back. (off mike) that's our (off mike)  
12 mission (off mike). This takes anywhere from 35  
13 to about 45 of our staff go up to Scofield  
14 Barracks (off mike) to do this mission. Again,  
15 these are folks -- these are the (off mike)  
16 day-to-day mission (off mike). (off mike) but  
17 again the good news we've had a lot of practice  
18 (off mike) know exactly what we need to do.

19 I put this slide up here because really  
20 this is (off mike). We're really proud of this.  
21 We stood up with all these soldiers families (off  
22 mike) the Army vice-Chief of Staff was out here

1 last summer, touted it as the best thing. Said I  
2 want this (off mike) Army wide. We're actively  
3 working with some of the other MTFs in the Army  
4 that (off mike) support large troop deployment  
5 population that tells them here's how we did this.  
6 We really get to plan (off mike) support for  
7 soldiers deploying and re-deploying soldiers and  
8 their families. And their families. Critical  
9 support services. And you can see we had a host  
10 of accessions, if you will, that are congregating  
11 one stop shopping. Everything from (off mike)  
12 substance abuse, there's a family center, we've  
13 got social workers, psychologist, alcohol  
14 counselors, financial counselors. And this has  
15 proven to be a real wonderful resource up at  
16 Scofield Barracks. And the commanding General  
17 fully supported this, I think we made significant  
18 strides in dealing with the stigma, because the  
19 Commanders have got no walls. So, this is, in  
20 fact successful and we're very proud and glad to  
21 see other MTFs are in the process of (off mike).

22 I just put this up to whet your appetite

1 because Colonel Mike Brumage actually has the  
2 presentation later this afternoon on this. But we  
3 were real happy, I think, Mike last week got the  
4 official thumbs up that one-year pilot funded,  
5 will be funded for us and (off mike) Quanti-FERON  
6 Gold, FDA blood test and Colonel Brumage has (off  
7 mike) we're real excited. Again we're on the (off  
8 mike) in any respect. This is another indication  
9 that we're doing the right thing. We're forward  
10 thinking, we're ready to execute innovate pilot  
11 studies that (off mike).

12 We're also are involved and have been  
13 since 1990 in what's called Pacific Island Health  
14 Care project. Again, as you see there's a host of  
15 these countries, very small countries. Just to  
16 name a few, the Marianna Islands, Marshall  
17 Islands, Micronesia. Healthcare, as you can  
18 imagine is very limited. Very limited. So since  
19 1990 we have received Congressional funding (off  
20 mike) years to bring some of these individuals to  
21 Tripler and whether they need surgery, what kind  
22 of care they need, provide the medical care.

1 Largely surgical care (off mike) for them, recover  
2 here and then send them back to the reality that  
3 that type of care is not available where they  
4 live. This has really been a wonderful success  
5 story. At any given time this morning (off mike)  
6 that are inpatient. So big support to our  
7 graduate medical education program. So we're real  
8 excited about this and the good news (off mike)  
9 fund us so we can do this on an annual basis (off  
10 mike) 5,000 individuals in the last 15, 16 years.  
11 We decided (off mike) geographically map of the  
12 United States, way up in (off mike) why not.  
13 That's what we want (off mike) this is a huge  
14 distance we're talking. This is one of the things  
15 (off mike) talk about resourcing. If it's not  
16 available on Oahu, it's not like you can get in  
17 your car and drive to the next city. It's not  
18 like (off mike) so you can drive to Houston or San  
19 Antonio, you've got to get on a plane and (off  
20 mike) San Diego, Los Angeles, wherever. So those  
21 are just one of the things that (off mike)  
22 geography, distance, the division.

1                   Here's one of the things, I'm excited  
2                   that we're participating and have participated in  
3                   this, it's been a real success story it's our eICU  
4                   teleconsultation. You can see that 1800 (off  
5                   mike) in the Pacific Region, Army, Navy, Air Force  
6                   facility, no tertiary care referral center (off  
7                   mike) limited ICU (off mike) no ICU, again, we are  
8                   the only facility in the Pacific Region, DoD with  
9                   (off mike). So look at the bottomline. That's  
10                  where we actually have ICU, eICU (off mike)  
11                  hospital in Korea (off mike) USA (off mike) now  
12                  we're looking to expand that as well. But this  
13                  has been (off mike) but by and large this has been  
14                  a real good success story and it's allowed us to  
15                  treat patients and not have to bring them all the  
16                  way to Tripler.

17                  This slide really just talks about --  
18                  because of where we're at, the fact that we're the  
19                  Pacific Region, our infectious disease (off mike)  
20                  this (off mike) what we'll see in a week. We'll  
21                  see one or two patients on average with these  
22                  types of (off mike) presenting with these types of

1 conditions because of where we're at and the  
2 population (off mike) Eisenhower Medical Center if  
3 you would have seen these types of individuals you  
4 would probably raise your hands and say, hmm,  
5 something's going on here. But for us, again,  
6 this is kind of typical given the population we  
7 serve geographically.

8 We closely track and monitor the H5N1.  
9 We get updates on new cases or operations. We  
10 communicate on an ongoing basis with USRPAC, PACOM  
11 and (off mike) we're constantly monitoring what's  
12 going on (off mike) specific area host.

13 We do a lot humanitarian assistance.  
14 Several months ago there was a fire at the one  
15 hospital on the Marshall Islands, and the call  
16 came in, I think it was a Friday afternoon about  
17 5:00. There was a fire. Fire in the warehouse,  
18 all the supplies, pharmaceutical supplies, (off  
19 mike) supplies, building burned down. Help, help.  
20 So we were able to get some pharmacy supplies some  
21 other supplies (off mike) plane ready, had a doc,  
22 had a pharmacist, actually the U.S. Ambassador to

1 the Marshall Islands was visiting, she got on the  
2 plane as well, went out to Marshall Islands and  
3 were able to get there, literally, within about 12  
4 to 15 hours after the call. Pretty exciting  
5 stuff. Very proud to be able to provide support.  
6 The Army response, I'm sure all of you are aware  
7 of the tsunami that (off mike) 16 months ago,  
8 Tripler -- a number of the staff from Tripler, we  
9 even responded (off mike) sent folks over there to  
10 help provide support for the tsunami.

11 T-smiles. This is another project which  
12 is unique to Tripler. (off mike) individuals who  
13 are plastic surgeons, oral surgeons are actively  
14 involved with children, again, some are (off mike)  
15 some of those islands. Again, they do not have  
16 access to medical care to do the (off mike)  
17 surgeries. We were (off mike) approval. We only  
18 do about three to six a year, because it does  
19 require Secretary of the Army approval. Funding  
20 comes through the Jackson foundation. We're real  
21 proud of it. I'm sure you see the before, the  
22 progress and the after. Real excited to be able

1 to do this. Very important humanitarian missions  
2 are very important.

3 I want to talk just a little bit about  
4 our, and it is somewhat unique, our DoD joint  
5 venture agreement that we (off mike) leader. We  
6 are a big facility. We are the primary inpatient  
7 facility for all those 120,000 VA (off mike) and  
8 any given day about 10 to 20 percent of the  
9 inpatient (off mike) Tripler are not DoD  
10 beneficiaries, they're VA beneficiaries. You can  
11 see some of the other things that we have with our  
12 formal agreement. There is a (off mike) support  
13 (off mike) for emergency surgery (off mike)  
14 they're administrative office is physically  
15 located on Tripler campus. They recently built a  
16 ambulatory care. (off mike) mental health and some  
17 primary care standalone (off mike) to our main  
18 building. That's an (off mike) we utilize as  
19 well. Build a parking garage there as well. A  
20 number of things. So we're very involved and  
21 happy over the 10 to 12 years with the VA. We're  
22 excited about that because that's important. It's

1 important that we continue to look at  
2 opportunities to do more partnering with the DoD  
3 and VA. Regional last three years we've had (off  
4 mike) joint venture approved and funded. We got  
5 two funded this year. We're looking at doing all  
6 of our dialysis through the VA, they'll staff it,  
7 or resource it. We'll take care of VA  
8 beneficiaries as well as ours (off mike) in the  
9 hospital. Also we're bucking for a joint venture  
10 for (off mike) staff (off mike). Recently the  
11 (off mike) program (off mike) which was a VA (off  
12 mike) Hawaii (off mike) we need the space (off  
13 mike) so we were able to find the space up here  
14 (off mike) within the last months we had a (off  
15 mike) 16-bed (off mike) program with Senator Taka  
16 and Congressmen Pace came for the ribbon cutting  
17 (off mike). Very challenging, but we're excited  
18 about the opportunities that lay ahead for us.  
19 So, that's my spiel about what we do at Tripler,  
20 what we do as support of the Pacific Region  
21 Medical Command. And, again, I'm happy (off  
22 mike). It is indeed a pleasure and honor to

1 welcome you here to Oahu, Hawaii. So unless there  
2 are any questions, I'm going to go ahead and turn  
3 the meeting over.

4 DR. POLAND: Thank you, COL Ziegler. On  
5 behalf of the entire Board and the Office of the  
6 Assistant Secretary of Defense for Health Affairs,  
7 we'd like to present a certificate of appreciation  
8 and an AFEB coin. We also want to present COL  
9 Mike Brumage with a coin and certificate for his  
10 outstanding support to the Board in helping to  
11 arrange our visit.

12 (Presentations made to COL Ziegler  
13 and COL Brumage)

14 DR. POLAND: Okay. Our first speaker is  
15 COL David Moss from the Army dental office will be  
16 presenting a question to the Board regarding  
17 evidence-based dental examination. He'll then  
18 continue with a presentation on the impact of Army  
19 dental examination policy on dental health. Those  
20 slides are at Tab 2 along with the copy of the  
21 question that he is presenting. So, COL Moss,  
22 thank you, and good morning.

1 COL MOSS: Good morning.

2 DR. POLAND: We decided not to ask the  
3 Board about their own flossing habits, so just go  
4 right ahead.

5 COL MOSS: Karen handed out the slides  
6 you should have them at the tables. I believe the  
7 letter that indicated our question is in your  
8 packet. I wasn't going to address that directly,  
9 but I wanted to talk about the dental examinations  
10 and the current policies.

11 DR. POLAND: You're going to have to  
12 speak and project loudly.

13 COL MOSS: I'll try to project loudly.  
14 The letter regarding our question to the Board, I  
15 believe, is in your packets. I wasn't going to  
16 directly address that, but I wanted to talk about  
17 the dental examination policies for the DoD and  
18 the Army in particular and how that affects the  
19 question that we've asked.

20 So boiled down to basically dental  
21 examinations: How much is enough?

22 The current policy is standardized among

1 all three services. That's in a DoD I. All  
2 service members are required to have a dental  
3 examination. And that means a visual and tactile  
4 examination. A lot of time the term "dental  
5 screening" is used interchangeably. They're not.  
6 A dental screening may be just looking at a record  
7 to say, yes, you've got problems, or no, you  
8 don't. It may be a flashlight in the mouth in  
9 some gymnasium, but that does not constitute a  
10 dental examination. You must have the following:  
11 Including dental visual/tactile exam, a  
12 periodontal probing exam where we do a score based  
13 on your periodontal condition. And we will also  
14 do radiographs as indicated. For the initial  
15 examination of someone just coming in the military  
16 they'll have a Panorex radiograph taken, bitewing  
17 x-rays if necessary. Follow-on exams are purely  
18 done, radiographs are only done when they're  
19 indicated. If there's a clinical change, or if  
20 the provider feels like one year's been long  
21 enough and they need another one.

22 Finally, then, the dental treatment is

1 recorded in the dental treatment is recorded in  
2 the dental treatment record, which currently is  
3 still a paper record.

4 This is the 603 dental record. Now,  
5 this side of the record is where we indicate the  
6 dental treatment needs. Dental treatment needs  
7 are charted in pencil, and it does not include any  
8 diagnosis. It just says, perhaps Tooth No. 1  
9 might need an extraction, it would cross it out.  
10 It won't say why, and those are the wisdom teeth,  
11 or it may have a mark for a filling, or a crown,  
12 or whatever. Once the treatment is completed the  
13 marks over here are erased, then they're  
14 transposed over here to indicate what was done.  
15 Again, it doesn't give any diagnosis, but will say  
16 a filling, needs an occlusal service No. 3, or may  
17 cross out a tooth, X it out, saying it was  
18 extracted. And down below we have an area for a  
19 narrative where the provider can write some notes.  
20 Occasionally there will be some diagnosis there,  
21 but typically we don't put that down.

22 Now everyone in the military is

1 classified according to a standardized  
2 nomenclature. We refer to as Dental Fitness  
3 Classification. Dental Fitness Class 1 means  
4 you're basically healthy, you have no dental  
5 treatment needs. All your fillings are taken care  
6 of, or you don't need any. Your cleaning is done.  
7 Everything is good. We consider that to be  
8 worldwide deployable. This is, again,  
9 standardized on all three services.

10 Now Dental Fitness Class 2 indicates  
11 that you do have some needs. Small fillings,  
12 maybe a filling that needs to be replaced, maybe a  
13 routine extraction of a wisdom tooth that's not  
14 symptomatic. Nothing major. And we make a  
15 judgment that whatever you have here is not going  
16 to cause a problem in the next year, so you could  
17 be deployed and not anticipate having an emergency  
18 within that year. And there are guidelines a  
19 little more detailed than I have here of what  
20 diagnosis fall within those.

21 Dental Fitness Class 3 is the no-no.  
22 That's where they have an urgent condition, it may

1 not be symptomatic, the patient may come and not  
2 know that they have it, but it's either a deep  
3 filling, abscessed tooth, maybe a partially  
4 completed root canal, temporary fillings, wisdom  
5 teeth that have caused problems in the past, but  
6 not currently causing problems. Those personnel  
7 are not considered to be dentally deployable.  
8 It's current policy not to deploy anyone Dental  
9 Fitness Class 3. This means in a lot of cases,  
10 especially with our reserve components, when  
11 people come in and have not had routine care prior  
12 to their SRP exam, they'll find out they have a  
13 lot of needs that need to be taken care of  
14 quickly. That does not mean extract teeth in  
15 place of fixing teeth, it just means a lot of  
16 fixing of teeth being done. We got a bad rap a  
17 few years ago about taking a lot of teeth out on  
18 people getting ready to deploy. And we could  
19 pretty much show those teeth needed to come out,  
20 but it still had the indication that we were in a  
21 hurry trying to take out teeth instead of fix  
22 them. These people are not deployable, again. So

1 they're the ones that we concentrate our effort on  
2 at this point.

3 Then Dental Fitness Class 4 means we  
4 don't know. Either they have no examination, they  
5 have no record, maybe their examination is a year  
6 old. Once they go over one year and they have not  
7 been seen, then we consider them condition  
8 unknown. Class 4, and that means they're due to  
9 get an exam done.

10 Benefits of an annual examination. My  
11 apologies to Major Perkins, she's going to present  
12 some of this also, but I stole her slide ahead of  
13 her. Obviously, documenting the current dental  
14 treatment needs. And, again, I say needs by  
15 procedure, not by diagnosis. We typically do an  
16 oral cancer screening. It's supposed to be done  
17 at every exam. I won't guarantee it's always  
18 done, but that's our intent. It gives us an  
19 opportunity to increase the soldier's health  
20 awareness. A lot of dental disease is  
21 asymptomatic. People won't know they have a  
22 problem. So you may be telling someone something

1 new for the first time. Sometimes they can point  
2 and say, Yeah, this one's been bugging me. But a  
3 lot of times they just won't realize that. And  
4 then promote health lifestyle practices. We do a  
5 lot of tobacco counseling. Obviously that has  
6 oral implications so we try to break people of  
7 that habit. We do a lot of counseling on oral  
8 health and how to take care of your teeth and  
9 dietary implications, for what they're eating and  
10 how that impacts on their oral health.

11 Why is this important? That Army Dental  
12 Care System kind of has a dual mission. We have a  
13 mission to the individual, which is their health.  
14 We'd like to get everyone Class 1, no dental  
15 treatment needed. That's a goal, and indeed  
16 there's a health affairs goal of 65 percent of all  
17 our service members will be Class 1. We've got a  
18 long way to go to get there, but that's our target  
19 we're shooting for. But our other customer is the  
20 big Army. They want a ready force. They want a  
21 force that deploy for 12 months and have  
22 reasonable assurance they're not going to have a

1 dental problem. That does not mean they're  
2 totally dentally healthy. Again, we'd make that  
3 judgment call, what's important to be taken care  
4 of before they deploy and what can wait. With  
5 that dual mission, a lot of times the treatment we  
6 render is directed towards the readiness of the  
7 force. The Class 3 conditions. Some have accused  
8 us of managing people into Class 3 because we -- I  
9 can't deny that we sometimes have to neglect those  
10 routine problems to only get to the serious  
11 problems. As you know dental disease is  
12 progressive. It doesn't generally get better, it  
13 only gets worse. So a lot of people may be Class  
14 2 today, if you let them sit long enough, they  
15 will become Class 3. It's important because of  
16 costs and efficiencies. We do a lot of dental  
17 examinations. That gives us a lot of information,  
18 but it does not treat anyone, it does not improve  
19 any oral health. It imparts knowledge, but that's  
20 about it. And leveraging new data systems, I'll  
21 take about that a little bit later in my  
22 presentation.

1           But getting on to some numbers. This is  
2           for the month of March, and that was the latest  
3           month that I had good data on when I made this up,  
4           and it talks about dental procedures that we have  
5           done. In the Army Dental Care system, we've done,  
6           in the month of March, one month was 610,000  
7           procedures, worldwide. Out of those procedures,  
8           55,000 of those were dental examinations. So it's  
9           not an insignificant amount. It's not a big  
10          piece, but it's still a lot of time on the dental  
11          care systems part to do this.

12           I'll translate that to numbers. We use  
13          a number called the dental weighted value. That  
14          assigns every dental procedure, a cost, and it's  
15          an estimate based on various civilian numbers of  
16          what the cost would be to procure that care  
17          outside. It's not necessarily the cost for us to  
18          do the procedure, we tend to think we can do it  
19          cheaper, and we generally can show that, but if we  
20          had to buy it on the outside, this is what it  
21          would cost. And as you can see, that runs to \$59  
22          million in one month. That includes over \$2

1 million worth of exams, not an insignificant  
2 number if you take that out over a year, \$24  
3 million being spent. Again, why is this  
4 important?

5           You get on to the unmet treatment needs  
6 which I kind of eluded to earlier. In our current  
7 system, we have 1,000,000 Dental Fitness Class 2  
8 procedures awaiting treatment. That means people  
9 have, in the active force, have over 1,000,000  
10 different fillings, extractions, what have you  
11 that are waiting to be done that are not  
12 considered so serious that they would be a  
13 deployment risk for 12 months. If you look at the  
14 Dental Fitness Class 3 procedures, that jumps  
15 down, but it's still 30,000 procedures that we  
16 would have to do immediately before someone could  
17 be deployed. We typically are doing those right  
18 away. That's why I say we tend to push a lot of  
19 those Class 2 procedures back when we're getting  
20 good Class 3s. Class 2 procedures that ultimately  
21 will become Class 3 if we don't get around to it.  
22 Anything we can do to tweak the system to become

1 more efficient to give us more treatment time  
2 versus examination time would be a help in keeping  
3 this up.

4 My issue to the Board, then, is in a  
5 month we're doing almost 55,000 examinations. The  
6 data from that month, I found only 28 percent of  
7 the people -- well, 28 percent of the people who  
8 received these examinations only needed a routine  
9 cleaning, which in some cases might just be a  
10 quick prophylaxis with a rubber cup, but it's not  
11 usually anything serious. So the question would  
12 be: Was that exam really necessary to be done in  
13 that one-year time frame. On the other hand,  
14 between three and five, maybe, seven or eight  
15 percent of the exams we do, people are Dental  
16 Fitness Class 3. Often these people don't realize  
17 they're Class 3. They have a condition that would  
18 have made them an emergency and would need urgent  
19 treatment and we typically treat them right away.  
20 Should they have been examined a little sooner?  
21 Maybe in four, five or six months instead of  
22 waiting 12 months. We might have caught that

1 before it got to be a Class 3 procedure. Bottom  
2 line, is there a way that we could identify those  
3 at higher or lower risk and treatment plan,  
4 accordingly?

5 Under my Future Initiative, I have  
6 AHLTA, which you all are probably somewhat  
7 familiar with. AHLTA being a made up word. The  
8 VA system has a system called VISTA. The story I  
9 was told was we created AHLTA, so we'd have  
10 AHLTA/VISTA and they'd be interchangeable -- well,  
11 they would talk to each other. I don't know if  
12 that's true or not. But Armed Forces Health  
13 Longitudinal Technology Application. I don't know  
14 how they came up with that other than to fit an  
15 AHLTA term. And the term AHLTA, as you normally  
16 spell it, was copyrighted, so they couldn't use  
17 that, formerly CHCS II. That's in use right now  
18 worldwide in the health clinic side and any  
19 practitioners here are probably familiar with it.  
20 I was just in last week and had a procedure done.  
21 I asked him how AHLTA was working and they just  
22 rolled their eyes. But the dental portion of that

1 is rolling out very soon. The training will begin  
2 after the first of the year and we will have a  
3 dental record within AHLTA, an electronic record.  
4 That dental record will have diagnostic codes in  
5 it. It's a very robust system, if we can get it  
6 up and get it going as well as AHLTAs working out,  
7 hopefully, better. It will give us a lot of data  
8 on current treatment needs, treatment needs by  
9 diagnosis also not just by procedures.

10 I would propose with that, that if it  
11 was possible, and that's kind of my question to  
12 you all, if we could develop a customized risk  
13 assessment algorithm based on data that would be  
14 available in this electronic record and currently  
15 data that's somewhat in the record now. Ideally  
16 we could integrate it with AHLTA and then  
17 automatically assign a recall period, and that way  
18 a person could come in, get their examination  
19 done, their treatment needs by diagnosis would be  
20 entered in, and then we could generate a recall  
21 interval instead of just the one size fits all,  
22 one year, perhaps it would be: For a low-risk

1 person, maybe they would go 18 months or two  
2 years. Again, a lot of people, once they reach  
3 oral health, stay in that condition. They don't  
4 really need much care from then on. For  
5 medium-risk personnel, keep them at the usual one  
6 year or some period around that. The high-risk  
7 personnel, maybe they should be at six months or  
8 four months, but something that's more evidence  
9 based, aside from the one-size-fits-all system.

10 I'm open to questions. I just got this  
11 cartoon a little while back. I thought it fit  
12 what we're talking about.

13 DR. POLAND: Thank you. Go, ahead, Ed.

14 DR. KAPLAN: You showed us how many  
15 people are awaiting therapy in the various -- in  
16 two of the four classifications. Do you have a  
17 pie diagram of where the total amount of people  
18 that you have in this program and how they're  
19 classified; in other words, of all the people, in  
20 whatever the denominator is, how many are 1, 2, 3  
21 and 4, or did I miss that?

22 COL MOSS: No. I didn't present that.

1 Those numbers were procedures, those were not  
2 people. The DoD standard is to have 95 percent of  
3 the force in Dental Fitness Class 1 or 2, and we  
4 typically come very close to that. We slipped a  
5 little bit with the war on, but typically about 95  
6 percent of the force is Class 1 or 2. In the  
7 Army, I believe the number is about 10 to 15  
8 percent Class 1, which means no treatment needs.  
9 Class 3s and 4s, in the non-deployable category  
10 standard is less than five percent. We pretty  
11 much hit that pretty closely. Class 3s don't stay  
12 Class 3 very long, they get treated pretty  
13 quickly. Class 4s, they just -- every month, a  
14 certain number pop up Class 4, and then they're  
15 due for exam, and they tend to get in pretty well,  
16 too. Again, it's about 10 to 15 percent in the  
17 Army Class 1s, then the rest would be Class 2s and  
18 then about five percent, 3s and 4s.

19 DR. KAPLAN: So the biggest number is  
20 Class 2?

21 COL MOSS: Exactly. People who have  
22 routine needs that -- and I'm a Class 2 myself,

1 because I'm supposed to get a cleaning done, but  
2 for me it's not a big issue to go in and make  
3 myself Class 1. And a lot of people, their  
4 mission or their work requirements, they just  
5 don't take the time to go in to get that last  
6 little detail done. The appointing system is just  
7 difficult enough with the Class 3 need, that it's  
8 not always as accessible as we'd like it to be.  
9 And that's where efficiency would help.

10 DR. POLAND: Couple of questions. This  
11 backlog of Class 3 procedures, that's a backlog of  
12 how much time? In other words, to clear up 30,000  
13 procedures under your existing prioritization and  
14 time utilization would take how long?

15 COL MOSS: There was a study done about  
16 15 years ago that looked at the time to treat the  
17 average Class 3. Again, one problem we have with  
18 the current system is you may be Class 3 for one  
19 tooth. You could be Class 3 for 10 teeth. So,  
20 you're all Class 3 if you can't combine exactly  
21 the treatment times. But for the average single  
22 Class 3 procedure, I believe it is about

1 two-and-a-half hours.

2 DR. POLAND: I was actually asking the  
3 converse of that. Maybe the way to clarify it is:  
4 How many Class 3 procedures are done per month?  
5 And are these numbers you're giving us Army  
6 numbers or DoD numbers?

7 COL MOSS: These are Army numbers right  
8 now. I didn't have access to DoD level numbers.  
9 Probably, roughly -- I don't have that number at  
10 the top of my head. I can't get that number  
11 though.

12 DR. POLAND: Then my last question: The  
13 idea of some sort of algorithm or prioritization  
14 makes sense. Are there validated evidenced-based  
15 algorithms out there?

16 COL MOSS: I did a little bit of  
17 research on that. Prior studies have primarily  
18 done on children. That's where the emphasis has  
19 been to try to predict among children, who has the  
20 greatest need to target your interventions on a  
21 public health level basis. Typically, though, the  
22 best evidence of future dental care is prior

1 dental care in the form of the decayed, missing  
2 and filled index for each person. Each person  
3 being assigned a number of treatment intensity in  
4 the past, is generally a good predictor of need in  
5 the future. But there are some new technologies  
6 out there and some things associated with  
7 bacteriological testing that also have an affect  
8 on potential treatment needs in the future.

9 DR. SILVA: Thank you for your  
10 presentation. It's sort of a repeat question, and  
11 then one comment. In this 1,000,000 procedures  
12 are these people or are they procedures?

13 COL MOSS: Those are procedures.

14 DR. SILVA: You don't have good data as  
15 to when you get into someone's mouth. Getting  
16 them there and sitting them in the chair, getting  
17 the equipment all ready to go, whether you're  
18 going to take on two or three teeth or work each  
19 side of the jaw for a while, you don't have that  
20 strata worked out. To devise an algorithm you  
21 need to get into that.

22 COL MOSS: That may be something we

1 would need to do.

2 DR. SILVA: And the other thing is, and  
3 Dr. Kaplan alluded to it, I think there has to be  
4 some risk stratification. If you're going to  
5 prioritize your service, there's some people who  
6 probably don't have a cavity and the initial  
7 assessment can tell you what are their chances in  
8 the future? On a very simple scale, are they  
9 drinking, are they smoking, do they floss, as you  
10 said, prior dental record. And if you had some  
11 risk stratification then the algorithm you set up  
12 could use that and fine tune it.

13 COL MOSS: Right.

14 DR. SILVA: But you don't have that  
15 right now?

16 COL MOSS: Well, there is a carries risk  
17 classification system that three services use, or  
18 I should say, ideally would be using and they're  
19 all slightly different. The Army's is based on  
20 the ADA, the American Dental Association has one.  
21 It primarily talks about habits and prior history  
22 also. But the dental fitness classification is

1 somewhat of a stratification in themselves. So  
2 that's about as refined as we have right now.

3 DR. POLAND: Col Gibson, and then Dr.  
4 Shamoo.

5 COL GIBSON: Two questions. One is --  
6 and was is sort of a general -- what kind of data  
7 do you have. From your conversation on the SF  
8 603, it sounds like that is big-based form, those  
9 data are not collected electronically in anyway,  
10 but also serve that purpose. The other thing is  
11 every time I go into the dental center, for care,  
12 I fill out a dental risk factor questionnaire and  
13 I have to put my name down five times and all of  
14 that; is that data collected electronically  
15 anywhere? Will it be through AHLTA? What I'm  
16 getting at is: What's the scope of data that you  
17 have now that we can think about to start  
18 developing an algorithm? What do you think  
19 AHLTA's going to have in the future for those  
20 prospects? The other question has to do with the  
21 efficacy of oral cancer screening. Do you have  
22 any type of estimate on the number of oral cancers

1 that are picked up by dental exams versus a  
2 clinical/medical exam, or clinical/medical count?

3 COL MOSS: I do not have any data on  
4 that. I suspect that it's fairly low for the  
5 dental exam just because our population,  
6 generally, is pretty young. Obviously, as a  
7 person gets older with tobacco use, they have a  
8 greater chance of having an oral cancer or pre-  
9 cancerous lesion. That's what we're trying to see  
10 in the mouth. I don't have the data in front of  
11 me on that.

12 COL GIBSON: As a follow on the data --  
13 latency for oral cancer, or how fast do those  
14 types of -- I imagine those are mostly  
15 squamous-cell carcinomas. How fast would those  
16 things -- if we went to a two or three- year  
17 examination, would we put folks at greater risk  
18 for progression of disease before it was diagnosed  
19 some other way? Your thoughts?

20 COL MOSS: That would definitely be  
21 something to consider. Oral cancer is not my  
22 specialty by any means, so I don't have that

1 answer right at hand. Again, part of the problem  
2 we have with the current system also is all three  
3 services have slightly different requirements for  
4 how they document dental treatment. The form you  
5 talked about filling out, I believe, is an Air  
6 Force specific form and that data, as far as I  
7 know, is not compiled anywhere. It's kept in the  
8 record. The Army, ideally the question is asked,  
9 and there is a risk factor assigned to that,  
10 again, we have an electronic system in the Army  
11 that records treatment needs by individual, no  
12 diagnosis again. But it will say number of teeth  
13 that need filling, number of teeth that need  
14 extraction, and that's where I got those procedure  
15 numbers from. It's rather rudimentary and, again,  
16 doesn't have any diagnosis. The Navy has its own  
17 form where it records that and, again, they have a  
18 risk factors block they fill out also. Again,  
19 it's not very well utilized and as far as I know,  
20 it's not compiled; although there is an effort  
21 right now to use our smoking and tobacco use data  
22 at Chipham to do some tobacco use strategies

1       there. I think they're trying to get better with  
2       that, at least.

3                   DR. POLAND: Dr. Shamoo.

4                   DR. SHAMOO: Would it be useful to tag  
5       Class 2 into A, B and C, because if I understood  
6       you correctly, only three to five percent of them  
7       will eventually have a serious procedure.

8                   COL MOSS: Well, I think the current  
9       classification system lacks granularity. I think,  
10      maybe more importantly would be to make a degree  
11      of risk among the Class 3s. As I said you have  
12      one Class 3 tooth, you're Class 3, you have 10  
13      Class 3 teeth, you're a Class 3. I think that is  
14      where it would be of great value to be able to  
15      figure out how bad, how far into Class 3 people  
16      are.

17                  DR. HALPERIN: Thank you. You've  
18      obviously given a lot of thought to this issue.  
19      I'm wondering if whether you've described the  
20      data, since this is screening effort in terms of  
21      predictive value, sensitivity. Has it gotten that  
22      far or have we seen this as far as it's gotten?

1 COL MOSS: There are some studies that  
2 show how well the dental fitness classification  
3 predicts emergencies. Basically showing that  
4 Dental Fitness Class 3 has at least a 75 percent  
5 or greater possibility of having an examination in  
6 the next year. A Dental Fitness Class 2 that  
7 drops way back to more like 25 percent. Class 1  
8 down around 10 percent. There's some new studies  
9 that have not yet been published, but I was at a  
10 presentation that assigns a risk density to each  
11 dental fitness classification. It gave some very  
12 good numbers using survival figures. I'm getting  
13 a little above myself in statistics, showing that  
14 a dental emergency among Class 3 Personnel  
15 typically won't happen on average until in excess  
16 of 365 days. So it's kind of proving that it does  
17 work to identify risk for one year. A dental  
18 fitness class 3 person typically has an emergency,  
19 using that same system, within, I believe it's 30  
20 or 40 days. That data does show a pretty good  
21 correlation between emergencies and dental fitness  
22 classification. There's some more data out there,

1 I'm kind of keeping this at a simple level right  
2 now.

3 DR. PARKINSON: Again, excellent  
4 question. A couple of data points. I recall that  
5 emergency dental procedures, at some point in the  
6 deployments, has been one of the leading causes  
7 for evacuations from theater, and I just wondered  
8 if you have any updated information on how  
9 frequently that's the cause of removal from an  
10 operation setting?

11 COL MOSS: Major Perkins is going to  
12 address that a little bit in her discussion, but I  
13 would like to say that a lot of people have that  
14 in their mind and that's kind of a wives tale. No  
15 one really is taken out of theater, very, very  
16 few; I can count them on both hands in a year  
17 probably, that have to leave their -- because we  
18 have a lot of dental assets in theater to treat  
19 them. A lot of the data systems will report  
20 evacuation as just going from point A to point B  
21 within theater.

22 DR. PARKINSON: Okay. The next question

1 that I've got is: By calculation, roughly, I  
2 don't know if the Army's doing 650,000 annual  
3 exams a year. I just 12 times whatever it is per  
4 month. Of that, on an individual basis, you're  
5 saying that you've got approximately 10 to 15  
6 percent in Class 1 and 95 percent in Class 1 or 2,  
7 so the vast majority of people are being  
8 classified as Class 2, right?

9 COL MOSS: That's right.

10 DR. PARKINSON: Eighty percent of  
11 people, you look in their mouth once a year,  
12 you're going to find, Hey, you can probably get  
13 that cavity filled. That's something that we  
14 might look at type of thing.

15 COL MOSS: Right.

16 DR. PARKINSON: Just to make sure, so  
17 we've got to 15, 80 percent in Class 2, a trickle  
18 of three to five percent in, maybe, 3.

19 COL MOSS: Again, a big portion of those  
20 80 percent probably had that before they came in.  
21 They may go Class 2, Class 2, Class 2 for year on  
22 end.

1 DR. PARKINSON: Right. For many years.  
2 That gets me back to the evidence base that we  
3 always come to on the Board and that is: It would  
4 seem to me that with a relatively intense focus,  
5 short-term study across the services, basically  
6 going back to the old pencil-and-paper  
7 epidemiology, let's look at 1,000 Class 2s, one,  
8 three, five, seven years out describe the natural  
9 history of this so that we could come back to the  
10 Board with a little bit more granular information.  
11 I get very nervous when we want to bet the future  
12 of evidence on an IT system that is yet to be  
13 stood up, knowing how those tend to go. I think  
14 that with a couple of MPH projects out of USIS or  
15 something, maybe we could -- I'm just turning to  
16 you a little bit, but we've got manpower here to  
17 do this, and we've got the largest single  
18 longitudinal database of dental health in the  
19 world in DoD. We should roll up our sleeves and  
20 get at it and really come back with some evidence.  
21 And it may be that at the end of the day in the  
22 spirit of total force, that what we're talking

1 about is not necessarily shifting 650,000 exams,  
2 but changing the distribution of what the Guard  
3 and Reserve and a broader array of services around  
4 restorative care to get those people up to speed  
5 as we increasingly rely on them to get to theater.  
6 That's my first blush at this, but I think we've  
7 got a lot of good data, we just need to dust it  
8 off and get into it.

9 COL MOSS: Well, I would say that the  
10 issue of the Guard and Reserve is a whole other  
11 issue, a whole other question to the Board  
12 perhaps, because they do not have the year-round  
13 dental entitlement. So the treatment and  
14 maintenance of them in (off mike) status is a  
15 monumental effort and has a lot of questions that  
16 need to be answered. I'm trying to keep this one  
17 framed for the what the active component provides  
18 on a yearly basis. But, you're right, that's a  
19 huge question.

20 DR. POLAND: Col Gibson.

21 COL GIBSON: Correct me if I'm wrong,  
22 Dave, but if you went in as a dental class 1 for

1 your annual exam, and your provider recommended a  
2 cleaning, which they usually do, you automatically  
3 become Class2, correct?

4 COL MOSS: That's correct in the Army.  
5 But there has been sometimes an effort to have a  
6 Class 1 after prophylaxis designation, because a prophylaxis  
7 -- the evidence there is not very strong that  
8 routine simple rubber-cup prophylaxis has any clinical  
9 effect on a person's oral health.

10 COL GIBSON: I just brought that up  
11 after Dr. Parkinson's discussion because it does  
12 play a role in what is a Class 2.

13 COL MOSS: Right.

14 COL GIBSON: It may be nothing more than  
15 a routine cleaning that a provider recommended  
16 whether you need it or not.

17 COL MOSS: And that's why the Air Force  
18 numbers tend to look better than Army, because  
19 they provide a cleaning immediately after exam,  
20 where the Army will tell them to come back and  
21 make an appointment. So that makes a huge  
22 difference too.

1 DR. POLAND: My thinking about this  
2 right now is this question has really opened up  
3 some other interesting questions. The question  
4 that you've asked is focused and it would be easy  
5 to rush to well that makes sense, let's do that.  
6 I'm thinking that at the break, Col Gibson and the  
7 chairs of the OccMed and Health Promotion sub-  
8 committees should put their heads together and  
9 decide how we want to approach this. I think  
10 there's a lot of issues that you've raised. It  
11 seems hard to believe that there's no diagnoses  
12 kept, and hence you have no data to appeal to in  
13 order to make a rational decision about how to  
14 proceed with this. I think, in fact, there's some  
15 larger issues here and the one you've asked is  
16 just symptomatic or emblematic of the underlying  
17 problem. Why don't we go ahead and proceed then  
18 with the next one and at the break we'll talk  
19 further about this.

20 COL MOSS: I have just one other quick  
21 point I'll make. This is a very sensitive issue  
22 on the civilian side, because our dental insurance

1 plans typically pay for two exams and cleanings  
2 every year. A lot of service members see a dental  
3 cleaning as an entitlement, whether they need it  
4 or not, they ought to be able to get a cleaning.  
5 So there are issues beyond clinical involved here,  
6 and we are somewhat at the cutting edge of this if  
7 say we came up with the suggestion that people  
8 don't need cleanings every year, the American  
9 Dental Association will weigh in pretty heavily on  
10 that, but that aside, I think there's a lot of  
11 information that needs to be gleaned out of this.  
12 I thank you all.

13 DR. POLAND: Our next speaker will be  
14 Major Kimberly Perkins. She also works in the  
15 Army Dental Office with Col Moss and will brief  
16 the Board on Deployment as a Dental Health Risk  
17 Factor. Her slides are also under Tab 2. Major  
18 Perkins, good morning.

19 MAJ(P) PERKINS: Good morning.

20 DR. POLAND: I'm sorry. They were  
21 handed out, so you'll have to put them under Tab  
22 2.

1 MAJ(P) PERKINS: First, the references  
2 that I used for the talk this morning.

3 Anecdotal reports have been made that  
4 the oral health of deployed soldiers is unusually  
5 poor. It is unclear whether or not there is true  
6 acceleration. A study of 111 soldiers that  
7 returned after a six-month deployment showed a  
8 greater than expected rate of caries progression  
9 and increased need for oral surgery services when  
10 compared to a demographically similar non-deployed  
11 cohort. Oral health survey results stated that  
12 oral disease in combat arms units, doubled in six  
13 months. This is for information purposes only.

14 The primary causes for oral health  
15 degradation as dietary changes to the meal --  
16 because of the meals ready to eat, which are  
17 carbohydrate rich foods essential for a field  
18 environment. Long-term deployment with high  
19 operational tempo and limited access to dental  
20 providers is also a major cause. Increased stress  
21 leads to decreased salivary flow and increased  
22 amounts of inter-oral bacterial that causes

1       caries. Some soldiers have never received  
2       education on oral health, and without knowledge  
3       patience can't change their habits. So education  
4       is the key to prevention. Also the increased use  
5       of smokeless tobacco adds additional sucrose to be  
6       consumed and fermented.

7               Meals ready-to-eat, for those of you all  
8       who are not familiar, are packaged meals that are  
9       provided to U.S. Military personnel in the field  
10       environment whenever hot cooked meals are not  
11       available. They are one-third of the military  
12       recommended daily allowance of vitamins and  
13       minerals determined essential by the Surgeon  
14       General of the United States. One bag provides an  
15       average of 1,250 kilocalories, 13 percent protein,  
16       36 percent fat, and 51 percent carbohydrate. It  
17       includes a main entrée, a side dish, dessert, a  
18       bakery item, crackers, candy, spread, coffee,  
19       beverage mix, snacks, chewing gum pellets, and an  
20       accessory pack. MREs are high in fermentable  
21       carbohydrates and the daily consumption of three  
22       MREs with the snacks and sweetened drinks creates

1 an ideal environment for bacteria to thrive. The  
2 increased use of smokeless tobacco also adds  
3 additional sucrose to be consumed and fermented.  
4 The vast majority of dental- related issues can be  
5 handled in the theater by dental providers with  
6 the soldier being returned to duty that same day  
7 or within 24 to 48 hours, if the soldier has to  
8 travel to see a specific provider.

9 Patients evacuated from theater with a  
10 dental issue most likely have co-existing medical  
11 conditions that may not be entered as the primary  
12 reason for evacuation due to clerical  
13 subjectivity. The most common causes of patients  
14 being evacuated from theater for a dental-related  
15 issue would be as listed on the slide. For  
16 maxillofacial trauma, odontogenic infection,  
17 intraoral or a bony pathology, or a  
18 temporomandibular joint disorder.

19 228 soldiers out of 18,195, which equates  
20 to about 1.3 percent, had a list of medical  
21 evacuation that were coded with a dental issue as  
22 their primary reason for evacuation from September

1 2001 to May 2005. The broad and vague nature of  
2 diagnostic categories for dental issues in medical  
3 codes does not allow for much granularity as the  
4 true nature of the conditions resulting in  
5 evacuations. And as Colonel Moss mentioned, in  
6 the patient administration world, an evacuation is  
7 considered if a patient moves, inter-theater or is  
8 evacuated back to Germany. As I listed in the  
9 previous the previous slide, those would be the  
10 most likely dental causes for evacuation, and if a  
11 patient goes from Balad to Baghdad to see a  
12 specific provider, that is also listed as a dental  
13 evacuation. That's why the numbers seem so  
14 unusually high.

15 Lost time to dental emergencies can have  
16 a tremendous impact on unit readiness. It has  
17 been historically shown that the time a unit loses  
18 a soldier with a dental emergency which required  
19 evacuation to the rear is about five days. This  
20 fact leads to a potential loss to a division of  
21 18,000 man days during a one-year deployment.  
22 This chart happens to show the dental patient

1 procedures during the month of August 2004. It  
2 was performed by the 380th and 257th Dental  
3 company's. What is shown is routine, emergency  
4 and the true country nationals that were treated,  
5 which would be Iraqi civilians and detainees.  
6 Emergency is subjected to the dental provider, but  
7 most of the procedures that were performed here  
8 were done on contract workers.

9 The annual exam is a yearly requirement  
10 of all service members as required under Health  
11 Affairs policy 98-021. Caries risk assessment is  
12 a method of determining a soldier's risk for  
13 future caries and can translate into a  
14 personalized prevention program for the soldier.  
15 The U.S. Army dental command utilizes the caries  
16 risk assessment program developed by the American  
17 Dental Association. At each annual exam soldiers  
18 are classified as low, moderate, or high for  
19 dental caries. Past caries activity is the best  
20 indicator for future caries, and when you increase  
21 a soldier's health awareness, you can increase the  
22 chances of improved oral hygiene. While we have

1 soldiers in our chair it is prime time for  
2 education and promotion of a healthy lifestyle.

3 As Colonel Moss mentioned, the dental  
4 fitness classification is a method of measuring  
5 the severity of dental disease. This is  
6 determined during the routine periodic dental  
7 examination that is required yearly of all service  
8 members. A soldier is deployable if he or she is  
9 in dental fitness classification 1 or 2.

10 Deployment is always going to be a  
11 factor in military operations. We need to  
12 increase the dental health risk factor,  
13 presumably, in a more mature theater there are  
14 fewer detractors from good oral health. Increased  
15 prevention programs and education to the soldiers  
16 is also a way to benefit the oral health of the  
17 soldier. The placement of xylitol gum in MREs, if  
18 used properly, can reduced the incidents of  
19 caries. First-term dental readiness is a  
20 initiative that has been started at the TRADOC  
21 post that ensures a soldier will present to his or  
22 her unit after advanced individual training in

1 dental fitness classification 1 or 2. The oral  
2 health initiative is also to send soldiers that  
3 are in dental fitness classification 2 and just  
4 need limited treatment in order to make them Class  
5 1. They are given prescription vouchers to take  
6 to local dentists and have their dental work  
7 completed, and the dentist submits the claim for  
8 payment.

9           It is documented that chewing gum  
10 increases salivary flow which increases the  
11 buffering capacity of saliva. Even the use of  
12 sucrose chewing gum after meals and snacks can  
13 enhance the re-mineralization potential of the  
14 mouth. The preventative and partially  
15 re-mineralizing effect of Xylitol was shown in the  
16 Ter Q study, sugar studies in Finland in 1971 to  
17 1972. Xylitol is found in nature in a variety of  
18 fruits, berries and vegetables and is extracted  
19 from the bark of birch trees for commercial use.  
20 The dental benefits discovered in Finland in 1970  
21 state that it's a five carbon sugar molecule that  
22 cannot be utilized by streptococcus mutans which

1 is the primary bacteria indicated in dental  
2 caries. An increased concentration of xylitol in  
3 the gum resulted in a lower number of strep mutans  
4 in both saliva and plaque. It's non-cariogenic  
5 and five to ten grams daily consumption can result  
6 in a 30 to 85 percent reduction in caries. You  
7 chew it for five minutes after each meal and this  
8 yields your five to ten grams of xylitol per day.  
9 The maximum is two pieces, five times a day. And  
10 gastrointestinal intolerance at higher doses than  
11 10 grams is the only known side effect.

12 February 2004, the Joint Services  
13 Operation Rations Forum approved replacement of  
14 chewing gum currently in MREs with the  
15 xylitol-containing variety. The defense supply  
16 service center now uses xylitol gum in their  
17 current MRE version. Powdered drink mixes are now  
18 made with alternative sweeteners replacing the  
19 sugar drink mixes in MREs. It's not known the  
20 quantity of MREs that are still being used that  
21 have the regular gum and the regular sugar drink  
22 mixes, but these new MREs that have the xylitol

1 containing products in them are being made and  
2 distributed to soldiers now.

3           There are several Health Affairs  
4 policies with standardize many aspects of oral  
5 health. Policy 01-011 standardizes the dental  
6 fitness classifications for all military services.  
7 Policy 98-021 requires that active duty and  
8 selective reserve service members have an annual  
9 dental examination. Policy 96-023 determines that  
10 the dental readiness of military units and  
11 individuals can be accurately assessed and it  
12 requires that each installation maintain at least  
13 95 percent of its soldiers in dental fitness  
14 classification 1 or 2.

15           Dental providers must take every  
16 opportunity to stress oral health and the  
17 importance of maintaining dental health during  
18 deployment. Patients and soldiers need to make a  
19 conscious decision to improve their oral health.  
20 Interactive workshops as they did in the Vietnam  
21 era, where they had soldiers all stand in one area  
22 and brush their teeth to ensure that they had

1 proper oral hygiene is also a way that we can,  
2 potentially, make sure that the soldiers are  
3 brushing and flossing as they need to. Increase  
4 the posters and pamphlets that are given to  
5 soldiers in the dining facilities. Posters can be  
6 placed to encourage soldiers to make healthy  
7 choices and increase their oral hygiene. And  
8 first line leader emphasis is the most important,  
9 because often soldiers battle buddy, squad leader,  
10 platoon sergeant and commander can stress the  
11 importance of oral hygiene if they are made aware  
12 of how important this is. Subject to your  
13 questions.

14 COL UNDERWOOD: Major Perkins, I have a  
15 question for you. Is there any way we can put  
16 floss in each of the MREs?

17 MAJ(P) PERKINS: It's been discussed.  
18 Yes, ma'am. But nothing definitive has come from  
19 that.

20 DR. POLAND: Were there some objections  
21 or reasons?

22 MAJ(P) PERKINS: No. We actually have a

1 floss card that's passed out to soldiers when they  
2 go to through the SRP sites. I don't have one  
3 with me, but it's flat like a credit card and it  
4 fits in the wallet and that's given out. Soldiers  
5 are told to brush and floss, this is at ease, but,  
6 no, there weren't any objections, it's not come to  
7 fruition yet.

8 DR. POLAND: Dr. Weber.

9 DR. WEBER: I'd like to return to your  
10 list of risk factors and you'll have to figure my  
11 ignorance of theater operations, but can you tell  
12 me what is the principal source of water for the  
13 troops; and is that water fluoridated?

14 MAJ(P) PERKINS: Bottled water is the  
15 primary water that the troops are given in theater  
16 and some of the water is fluoridated, yes.

17 DR. WEBER: And why would that not be a  
18 risk factor, the presence or absence of  
19 fluoridated water for the troops?

20 MAJ(P) PERKINS: It could possibly be a  
21 risk factor, yes.

22 DR. HALPERIN: Admittedly this doesn't

1 follow your presentation, but has there been an  
2 assessment of person power in the dental arena for  
3 the military? That is: Are there enough dentists  
4 and hygienists; has that assessment been done?

5 MAJ(P) PERKINS: The Army is budgeted in  
6 strength for providers in the military, yes. So  
7 when you say are there enough providers for the  
8 service members that we have currently on active  
9 duty? The answer would be, probably, no.

10 DR. POLAND: Though interestingly enough  
11 the answer is unknown because you don't really  
12 know what your workload is. You know what comes  
13 to you, but people don't get exams, there's no  
14 recording of diagnosis. You can't answer the  
15 question of how many dental hours of work do we  
16 have this month because there's no database to  
17 appeal to to understand what diagnoses are out  
18 there and pending.

19 COL MOSS: The Navy and the Army both  
20 have a rudimentary treatment needs module in their  
21 databases. So we can say this number of  
22 procedures are outstanding. That's what some of

1 the number I presented. But you're right, we  
2 don't have a good solid diagnoses-based needs  
3 model. And our in-strength is low. We're budget  
4 in- strength about 1100, I believe we're down  
5 around 850 or 900. So we are low.

6 DR. HALPERIN: In the absence of other  
7 data, waiting lines are a good indication that  
8 there aren't enough resources. It sounds, from  
9 your presentation that there are conceptually long  
10 waiting lines.

11 COL MOSS: We do have a measure of the  
12 appointment waiting time in our database, and part  
13 of the problem too is soldiers, by their  
14 deployment status and training status, have a hard  
15 time getting away from work to come in to. So  
16 that's an impediment to care. It's not as simple  
17 as just walking down, sitting down and getting it  
18 down. It's a multi-factorial thing.

19 DR. KAPLAN: This is a little bit  
20 peripheral to what you asked, but there's an  
21 increase, as I understand it, there's an  
22 increasing body of evidence that tends to

1 correlate periodontal disease with subsequent  
2 cardiovascular risk factors later in life, is this  
3 kind of literature -- it's gotten a lot of play in  
4 the press and also in the scientific literature,  
5 has this kind of thing ever been taken into  
6 consideration? What made me think about it was  
7 the description here in the islands of the  
8 collaboration between the VA and the active  
9 military personnel. This probably might not show  
10 up until people were older at that point in time,  
11 but it may be an additional argument, or certainly  
12 might be a risk factor that should be added, at  
13 least, for an eye opener to your list.

14 COL MOSS: That had been an issue and in  
15 our database we do record the PSR score, which is  
16 a measure of periodontal need. Especially once  
17 AHLTA come online it would be a fairly simple  
18 study to correlate that score with certain health  
19 outcomes in the medical record. It's been  
20 suggested that we take the PSR score of female  
21 soldiers who were pregnant and look at low birth  
22 weight from deliveries. We don't have a real

1 robust system for doing dental research and  
2 applying it in the healthcare sector. The dental  
3 care system doesn't really support that very well.

4 DR. KAPLAN: To say you have a captive  
5 population may be unacceptable terminology, but a  
6 lot of good information, which could ultimately,  
7 seems to me, impact on the VA system.

8 COL MOSS: That is certainly a second  
9 order affect of all of this, because the VA is  
10 looming bigger and bigger all the time.  
11 Especially now with these reserve component  
12 soldiers coming back with a lot of treatment  
13 needs. We don't even examine them before they go  
14 out the door to go home. They're hitting the VA's  
15 with a lot of treatment needs.

16 DR. POLAND: Dr. Joe Silva.

17 DR. SILVA: Either presenters, what is  
18 the variability between dentists ranking  
19 periodontal disease or caries?

20 COL MOSS: Periodontal disease, the PSR  
21 scoring system is fairly defined, but I will not  
22 make any claim that it's correctly applied.

1 Caries, I don't know what the correlation would be  
2 from provider to provider on that. I just don't  
3 have that number in hand. I'm not sure it's been  
4 studied very closely.

5 DR. GARDNER: That's a very important  
6 question because I think fundamentally our issue  
7 today is should we get away from a time schedule  
8 of a rigid one year, which seems to be wasteful of  
9 resources in some sense, and a lot more  
10 professional judgment as to what categories people  
11 fall into. I had a couple of questions. In that  
12 category, other than just the exam, obviously  
13 things like age -- we've heard that kids and old  
14 folks probably need different scheduled and  
15 healthy young people. I think a history of  
16 chewing tobacco would put somebody in this  
17 category than somebody who didn't. So coming back  
18 to the benefits of the exam, annual exam, some of  
19 these things don't need to be seen on a regular  
20 basis. The oral cancer screening for some of you  
21 who is young and not chewing tobacco seems to be  
22 remarkably low and you certainly could get away

1 with a much less frequent than every year exam for  
2 that. Increasing soldier's health awareness and  
3 lifestyle practices, I'm not sure you have to walk  
4 in and sit in the dentist chair to actually  
5 accomplish that. You can probably do that through  
6 less consumption of scarce resources. The things  
7 that you seriously need to do are caries risk  
8 assessment and current dental treatment needs and  
9 that's where we get back to this issue of are  
10 there -- once you are in a good health category,  
11 can we make it a much less frequent -- and I think  
12 all of us would agree, yes. But you have to be  
13 able to be sure that the assessments are  
14 comparable and collect all the data that Greg's  
15 been pushing for. So I think the Board in general  
16 would vote for more discretion, but needs much  
17 more data to get these folks in the right  
18 algorithms. It's more than just the exams, it's  
19 going to include the history of needs and other  
20 things too.

21 COL MOSS: Partly, my feeling with AHLTA  
22 is that down the road we've got this great data

1 source and by asking the question now perhaps the  
2 Board would indicate, or it could drive pressure  
3 to get more data in there that is less subjective  
4 to subjectivity and more conducive to analysis to  
5 create recall like that.

6 COL RUSCIO: Sir, if I could ask you a  
7 question on AHLTA. I understand that for the  
8 dental issues that it will ICD-10 in that there  
9 will be a more robust data system that is about to  
10 deployed shortly; is that correct?

11 COL MOSS: They're trying to set up for  
12 training which hopefully will start after the  
13 first of the year and then it will start  
14 deployment shortly after that. But that number  
15 keeps slipping a little bit as I understand to.

16 COL RUSCIO: Is it the ICD-10 table?

17 COL MOSS: I believe so.

18 DR. POLAND: Any other questions. Thank  
19 you, Major Perkins. Our next speaker is  
20 Lieutenant Colonel David Niebuhr, he works at  
21 AMSARA and is going to brief the Board on dental  
22 status as it relates to military accession, and

1 those are at the back of Tab 2. Good morning.

2 LTC NIEBUHR: Good morning and thank you  
3 for the opportunity to speak to you this morning.  
4 I'll take this chance to explain some of the data  
5 that we have available to in terms of accession  
6 dental standards with the focus on enlisted.

7 This is my agenda for this morning. I  
8 will discuss the dental Accession standards that  
9 codified in DoD Instructions 6130.4. There are  
10 four of those standards and I'll present them to  
11 you. I'll give you some data on enlisted dental  
12 accession disqualifications with the focus on  
13 active duty. We'll also discuss medical waivers  
14 for dental conditions. Dental existed prior to  
15 service discharges, which I will abbreviate at  
16 EPTS. These are expedited, actually personnel  
17 discharges that occur within the first 180 days of  
18 service in all the uniformed services. I'll  
19 briefly mention the dental retention standards,  
20 which are service specific, but actually very,  
21 very, very little in content between the three  
22 services. Not on this slide is the Navy/Marine

1 Corps standard which is SEC NAV 1850.4(e) and  
2 that's dated 30 April '02. I'll briefly discuss  
3 those retention standards and then conclude.

4 This is the question before the Board as  
5 you already have had it detailed to you. The  
6 essential feature is the appropriate periodicity  
7 and methodology of a routine dental exam. Should  
8 it be a single fixed period or varied based on  
9 history and risk factors?

10 In terms of the DoD Instruction 6130.4,  
11 there are four dental standards. These are the  
12 first two. E1.7.1, states current diseases of the  
13 jaws or associated tissues that prevent normal  
14 functioning are disqualifying. These diseases  
15 include, but are not limited to temporomandibular  
16 joint disorders (ICD-9 Code 524.6) and/or  
17 myofascial pain that have not been corrected.  
18 E1.7.2, states current severe malocclusion (ICD-9  
19 Code 524) which interferes with normal mastication  
20 or requires early and protracted treatment, or a  
21 relationship between the mandible and maxilla that  
22 prevents satisfactory future prosthodontic

1 replacement is disqualifying.

2           The third standard, E1.7.3, current  
3 insufficient natural healthy teeth (ICD-9 Code  
4 521) which includes Code 521.0 which is caries or  
5 lack of serviceable prosthesis that prevents  
6 adequate incision and mastication of a normal diet  
7 and/or includes complex multiple fixtures, dental  
8 implant systems with associated complications are  
9 disqualifying. Individuals undergoing endodontic  
10 care are acceptable for entry in the Delayed Entry  
11 Program only if a civilian or military provider  
12 provides documentation that active endodontic  
13 treatment shall be completed prior to sworn into  
14 military active duty.

15           And the final standard, E1.7.4, current  
16 orthodontic appliances for continued treatment  
17 (Code V53.4) are disqualifying. Retainer  
18 appliances are permissible, provided all active  
19 orthodontic treatment has been satisfactorily  
20 completed. Individuals undergoing orthodontic  
21 care are acceptable for enlistment initiative he  
22 Delayed Entry Program, only if a military or

1 civilian orthodontist provides documentation that  
2 active orthodontic treatment shall be completed  
3 prior to being sworn into active duty.

4 This slide gives you an overview of the  
5 current medical accession process, again, for  
6 enlisted as performed by U.S. Army Medical  
7 Entrance Processing Command. Obviously a history  
8 and physical examination is conducted by a medical  
9 officer who, in fact, performs the oral and dental  
10 examination. There was no standard for routine  
11 panoramic or bitewing x-rays to be done. The  
12 medical officer does not assign a dental class to  
13 the military applicant. As you may recall from my  
14 other presentations, on average, about 60 to 70  
15 percent of all applicants getting a physical  
16 actually access into the military. These  
17 providers at the MEPS station may refer to a  
18 dentist if it is indicated by either the history  
19 or examination. If a disqualifying dental  
20 condition is detected, a dental waiver may be  
21 requested from the services after appropriate  
22 consultation and/or treatment has been completed.

1 The dental evaluation of new recruits at the  
2 initial entry training site does vary by service  
3 in terms of, specifically, timing of when that is  
4 done.

5 Now, I'm going to turn to the data  
6 portion of my presentation and the next four  
7 slides will focus on dental disqualifications by  
8 service. This data is a two-year average. The  
9 counts in the third column are counts per year.  
10 The years averaged for each of these four slides  
11 are 2003 and 2004. The first column is diagnosis,  
12 followed by the ICD-9 codes that are assigned to  
13 those diagnosis and the percent of the total DQ'S.  
14 On this slide I'd like to highlight that teeth,  
15 ICD-9 521, and caries specifically, 521 are the  
16 most common Army dental disqualifications in this  
17 time period. You see on this slide also  
18 orthodontic devices, V53.4 is the third most  
19 common. We had a total of 278 dental  
20 disqualifications per year in this time period  
21 representing about 259 individuals. Some  
22 individuals have more than one dental

1       disqualification assigned to them. The  
2       denominator, if you're interested in calculating a  
3       rate, is approximately 83,000 active duty,  
4       non-prior service applicants per year to the Army.  
5       TMJ, I'm going to brief you on this slide is  
6       temporomandibular joint disorder. I should  
7       mention the OMF code on the bottom. This is a  
8       code that U.S. MEPCOM uses. It's not ICD-9 based  
9       and probably gives you the best capture of all  
10      dental disqualifications combined at 313 per year  
11      during this period. Approximately 2001, 2002,  
12      U.S. MEPCOM began an ICD-9 based system of  
13      capturing disqualifications. Prior to that they  
14      used a non-specific code, OMF field. This is a  
15      similar slide for the U.S. Navy. You can see,  
16      again, teeth conditions and caries, specifically,  
17      are the most common, followed by orthodontic per  
18      year. That's approximately 74 individuals per  
19      year are disqualified and they had, on average,  
20      52,000 active duty, non-prior service accession  
21      per year.

22                   This is the U.S. Marine Corps. Again,

1 same story. Teeth, 26 per year. Caries, 10 per  
2 year. Orthodontic devices about nine per year.  
3 46 individuals per year. 41,000 active duty,  
4 non-prior service applicants per year.

5 And the U.S. Air Force, 23  
6 disqualifications for teeth, 10 for caries, nine  
7 for orthodontic devices, about 46 individuals  
8 disqualified, about 38,000 active duty, non-prior  
9 service applicants per year.

10 Next I'd like to break and discuss  
11 medical waivers, specifically dental waivers. For  
12 these series of four slides I'm presenting  
13 five-year average data. This is from 2000 to  
14 2004. Same format. Diagnosis followed by the  
15 ICD-9 code. Now it's the number considered per  
16 year and the number approved per year in the third  
17 and fourth column respectively. The most common  
18 condition considered for waiver and approved, in  
19 the U.S. Army is teeth conditions in general with  
20 about 50 per year and 17 of those approved. You  
21 can see, dropping down to the bottom, that about  
22 68 individuals applied for a dental waiver per

1 year and about 27, 28 when you round up, per year.  
2 So the overall approval rate for dental waivers in  
3 this time period was about 40 percent approved of  
4 all those considered. What I cannot tell you is  
5 what factors went into whether or not they were  
6 approved.

7 This is the data for the U.S. Navy for  
8 this five-year average. Annual accounts  
9 considered and approved per year. Again, dental  
10 caries is the most common followed by orthodontic  
11 devices. You can see there were about 25  
12 individuals considered per year and 11 to 12 of  
13 those were approved each year. Something under 50  
14 percent approval rate for the U.S. Navy.

15 This is the data for the U.S. Marine  
16 Corps. In this case, orthodontic devices were the  
17 most common at 11 considered per year. Six of  
18 those were approved. Overall about 15 individuals  
19 were considered for a dental waiver each year and  
20 about eight approved for approximately 50 percent  
21 approval rate.

22 The U.S. Air Force had very small

1 numbers. Other dentofacial was the most common  
2 ICD-9 codes 524.0 to.9 excluding 524.6, which was  
3 the second most common, TMJ. They considered only  
4 about six individuals per year and approved about  
5 30, so roughly 50 percent approval rate. Whereas  
6 the waiver approval process is service specific,  
7 you can see that their approval rates are at least  
8 within the ballpark of each other.

9 Now, I'd like to existed prior to  
10 service discharges by service. Again we have  
11 five-year averages over the 2000 to 2004 time  
12 period. In this case I present the diagnosis and  
13 the code and then the average number of existed  
14 prior to service discharges per year for that  
15 condition. For the U.S. Army, you can see that  
16 the most common diagnosis for discharge was TMJ,  
17 followed by teeth in general, which would include  
18 caries. About 13 individuals are discharged per  
19 year for dental conditions within the first 180  
20 days of service.

21 This is the data for the U.S. Navy.  
22 Again, TMJ is the most common, about.8 individuals

1 per year are discharged overall 1.4 individuals  
2 per year.

3 The U.S. Marine Corps, again, TMJ leads  
4 the way. About 12 individuals discharged per year  
5 for dental conditions.

6 The Air Force, TMJ 1.6 per year, overall  
7 about two individuals per year are discharged.

8 At this point, I'd like to turn to  
9 dental retention standards and this is AR40-501,  
10 16 February '06 states that "The causes for  
11 referral for a Medical Evaluation Board are  
12 diseases of the jaws, peridontium, or associated  
13 tissues when, following restorative surgery there  
14 are residuals that are incapacitating or interfere  
15 with the individual's satisfactory performance of  
16 military duty." Bear with me, I will just read  
17 you the dental -- the Air Force and the Navy,  
18 they're very much the same with slight nuisances  
19 that are different. Air Force Instruction 48-123,  
20 May of '01 states, "Diseases and abnormalities of  
21 the jaws or associated tissues, which despite  
22 treatment prevent normal mastication, normal

1 speech or the wearing of required life support of  
2 chemical, biological warfare ensemble or which  
3 otherwise interfere with performance are  
4 disqualifying." SEC NAV Instruction 1850.4(e) for  
5 the Navy and Marine Corps, April of '02 states,  
6 "Diseases and abnormalities of the jaws or  
7 associated tissues when following restorative  
8 surgery, there remain residuals which are  
9 incapacitating or deformities which are severely  
10 disfiguring..." So I think you could say that  
11 these are more similar than not.

12 In conclusion, I think the dental  
13 disqualifications, waivers, and EPTS' are  
14 relatively rare for each of the services, but they  
15 do vary somewhat by diagnosis by year, by service.  
16 U.S. MEPCOM does not formal assess dental  
17 classification as referred to in the prior two  
18 speakers. During the accession nomination, that  
19 is left to the initial entry training bases.  
20 Perhaps people in the room could better speak to  
21 how this training bases differ in their screening  
22 for dental health. Dental panograms and bitewings

1 are not performed at the MEPS examination. Again,  
2 they're deferred to the training bases and AMSARA  
3 does not have access to dental classification  
4 codes of trainees, otherwise we would have been  
5 happy to present it to you all this morning. That  
6 concludes my brief subject to your questions.

7 DR. POLAND: Thank you. Colonel Gibson.

8 COL GIBSON: A couple questions, Dave.  
9 If your providers are doing an oral exam and oral  
10 exam is part of accession process, but not doing  
11 any dental x-rays, I assume that the caries that  
12 they're picking up are rather profound? They're  
13 the far-end, tip of the iceberg type of issue and  
14 that we can assume that dental caries is probably  
15 under reported as a condition among the  
16 accessions?

17 LTC NIEBUHR: That seems logical. I'm  
18 not a dentist to speak on that with direct  
19 knowledge. But, certainly, you are correct there  
20 are no x-rays being done. There used to be, as I  
21 understand it, years ago x-ray machines within  
22 U.S. MEPCOM, but those are all sent out. They do

1 not come in with dental records routinely, but if  
2 a provider looks in the mouth and has suspicion,  
3 he or she may request that the civilian providers  
4 dental records be brought in and that kind of  
5 thing. But it is subject to the judgment of the  
6 MEPS provider. So there would be variability.  
7 And I think you would be correct that what they do  
8 detect visually would be the more serious caries  
9 than what you pick up radiologically.

10 COL GIBSON: Would you conclude, based  
11 on what you presented here and your review of the  
12 accessions, that we have, of our accessions, the  
13 overwhelming majority are coming in with pretty  
14 normal dental health?

15 LTC NIEBUHR: No. The reason I would  
16 not is because I don't have data to support what  
17 is their initial classification, dental  
18 classification. I think to really answer that  
19 question -- and someone mentioned getting an NPH,  
20 that kind of thing. What I would do is I would  
21 start with the IET dental clinics and try to get  
22 data on their initial dental classification and

1 see what kind of a rate you have for Class 1  
2 versus non-1 or something like that. I think many  
3 of the training bases may be able to answer that  
4 individually already, and so it would be simply a  
5 matter of aggregating that up across all the  
6 training bases. I don't think the ICD-9 coding  
7 that the MEPS uses is very sensitive for the  
8 incidents of, say, caries or even TMJ compared to  
9 what a dentist would detect on initial screening.

10 DR. POLAND: Colonel Moss, you have a  
11 comment?

12 COL MOSS: Yes. The initial entry  
13 exams, when they're done, I don't have the exact  
14 numbers in front of me, we do have those numbers  
15 and I believe for recruits coming into the Army it  
16 varies between 25 to 40 percent Class 3. It  
17 varies depending on whether you've got a lot of  
18 Reserve component personnel coming in versus  
19 otherwise. We do know those numbers. I can get  
20 that number if you'd like it, but it is a pretty  
21 high percentage of Class 3 (off mike).

22 As far as I know, there is no real

1 exam done at all at the MEPS station, obviously.  
2 I don't think anyone is ever turned away from  
3 service because of dental issues, primarily  
4 because by the time they get to the MEPS station  
5 they've spent so much money accessing them that  
6 the Army does not want to lose 10 or \$15,000 in  
7 administrative costs to get them that far because  
8 they've got some bad teeth. So they'll usually  
9 come in, they'll get examined, they'll get treated  
10 unless they have a neoplast or something like  
11 that.

12 DR. KAPLAN: Again, excuse me, but did I  
13 miss something? Does it sound like -- am I right  
14 in concluding that they don't have a thorough  
15 examination on entry and they don't have a  
16 thorough examination when being processed out of  
17 the service. Because it sounded like somebody  
18 said a few minutes ago that when people leave the  
19 service, they don't have a routine dental exam.  
20 Maybe I missed that.

21 COL MOSS: What I was referring to at  
22 that point were returning deployed National Guard

1 or Reserve component soldiers come back. They out  
2 process, typically, in five to seven to ten days  
3 and then they leave to service. They do not get a  
4 dental examination.

5 DR. KAPLAN: Am I correct, then, in  
6 saying that people don't get a -- there are a  
7 component that don't get a thorough examination on  
8 entry or on discharge?

9 COL MOSS: No. Everyone coming through  
10 the initial entry training will receive a dental  
11 examination at some point. Typically not until  
12 they get to basic training and then it varies from  
13 service to service. The Air Force doesn't exam  
14 their initial entry Airmen until after they've  
15 completed basic training and gone on to their  
16 first assignment. The Navy and Marines and the  
17 Army are attempting -- and the Navy better than  
18 the Army to do exams during active duty or initial  
19 entry training. So they'll get that exam before  
20 they go on to their permanent duty assignment.  
21 Everyone including the Reserve component.

22 DR. POLAND: Colonel Underwood.

1 COL UNDERWOOD: For any of the speakers.  
2 But the question I have is: Is there any  
3 initiative to standardize the parameters for  
4 granting the waivers for dental issues?

5 COL MOSS: I'm not aware of any, but the  
6 number of waivers are so small that I'm not sure  
7 there's really a need to. Again, it's pretty rare  
8 that there's a dental condition so bad that we  
9 would not take someone, and typically that would  
10 be the neoplasm's or the type of things that would  
11 require extensive surgical procedures.

12 LTC NIEBUHR: I would add to that,  
13 speaking for the Army, there is an initiative for  
14 the more common conditions for standardization, or  
15 actually clinical management guidelines for  
16 waivers for things like asthma, ADHD, selected  
17 musculoskeletal conditions. I'm not aware that  
18 the Army dental consultants are involved in any  
19 kind of a guideline for the dental conditions,  
20 that kind of thing. But there is a push in  
21 general for those kind of guidelines, because you  
22 have U.S. Army recruiting command surgeon, you

1 have the cadet command surgeons, you have the  
2 military academy and that kind of thing. So it's  
3 not just -- it crosses several commands, as you  
4 well know. So OTSG has looked at standardizing  
5 for the more common conditions. I'm not aware of  
6 anything for dental, and I'm not aware what the  
7 other services are doing for standardization of  
8 waivers either.

9 DR. POLAND: Dr. Silva.

10 DR. SILVA: I want to state the obvious,  
11 most of you are physicians, we don't really train  
12 physicians to exam the mouth. Teaching medical  
13 students and residents for over 35 years, in fact,  
14 how many physicians here knows many teeth are in  
15 the mouth of an adult? So to look at the entry  
16 exam as doing anything except finding the grossest  
17 of the gross, it has to go to the dentist.

18 DR. POLAND: It's true.

19 DR. SILVA: It's 32 by the way.

20 DR. POLAND: Depends on what state  
21 you're accessing from. Dr. Parkinson and then  
22 we'll stop.

1 DR. PARKINSON: Dave, thanks for your  
2 presentation. I always your approach. It always  
3 informs of with policy and with real numbers,  
4 which is great. But just as a picture, crude as  
5 it is, and if you look at why most people are  
6 kicked out of the MEPS it's because, geez a doc  
7 looks in there and says there's a whole bunch of  
8 teeth missing, I think. That's what 60 of the  
9 100, actually get kicked out for and a few have  
10 really bad cavities that probably look black.  
11 Beyond that the lighting is bad in the room, you  
12 can't tell -- but I did the math on the back of an  
13 envelope, if you say that the disqualifications at  
14 the MEPS stations is basically 0.3 to 0.4 percent,  
15 so it's well under half of a percent. Then we go  
16 -- and it would be invaluable, I think, to the  
17 Board to have initial dental examination  
18 information. I totally agree with you Dave.  
19 That's the baseline. By the way, whether it's  
20 Army, Navy, Air Force, I really, probably don't  
21 care as much as it's a large cohort of people with  
22 just initial status, because at the other end

1 we've got 10 to 15 percent who are Class 1 and  
2 we've got 70 to 85 percent that is a big thing  
3 called Class 2, which I need cavities worked on;  
4 or I need something kind of done, and then five  
5 percent 3. So if we could just kind of create our  
6 own cohort natural history, if you will, a degree  
7 of pathology, then perhaps we could, on the back  
8 of an envelope, construct something that looks  
9 like natural history, if you will, of a cohort of  
10 what happens. That would be useful.

11 The second comment, in general, is -- I  
12 always kind of go back to my gold standard when it  
13 comes to any screening question, and that is:  
14 What would U.S. Preventive Services Task Force do  
15 on this issue? There's a reason that they didn't  
16 venture into the mouth and dental exams. A, it's  
17 probably very political. B, it's also hard to  
18 measure -- go up against standards of  
19 professionalism, which really is -- you've always  
20 got to get your dental exam. Well, maybe not. I  
21 mean, that's what they took on 25 years worth of  
22 complete physicals, about. But I would like to

1 see the data that establishes, somewhere in the  
2 baseline dental literature, if we were sitting  
3 right now at the U.S. Preventive Services Task  
4 Force, what is the evidence that a dental  
5 examination of any type, of any kind, at any time  
6 prevents premature, probably not mortality, but  
7 morbidity, medical costs and expenses or whatever?  
8 I mean, as if I was working at the Task Force now,  
9 what is the data, if I knew nothing about looking  
10 in your mouth, with or without a dentist, to  
11 support the examination at all? Then,  
12 secondarily, what we always get down to is the  
13 periodicity. Periodicity is very problematic,  
14 because if there's two studies done in the RCT  
15 that wouldn't let you do the exam at all, there's  
16 even fewer done on periodicity. So then you get  
17 in the area of expert opinion as to (off mike) of  
18 evidence A through D. So those are ways that I  
19 think it would be useful, on I guess, two pieces  
20 of information; baseline dental examinations and  
21 then a comprehensive lit review on just what is  
22 the history of the evidence of effectiveness, not

1 of periodicity, of a dental exam, would be very  
2 informative to me personally and I suspect to the  
3 Board.

4 DR. POLAND: Okay. Thank you. We're  
5 going to break until 10:40. Can I have the chair  
6 or representative from Health Promotion and  
7 OCC/Med subcommittees come up to confer with us.  
8 Thank you.

9 (Recess)

10 DR. POLAND: Okay. Our next speaker for  
11 this morning's session is Dr. Wayne Horn. Some of  
12 you may remember him from two years ago when we  
13 were at the submarine base at New London in  
14 Connecticut. He's here to introduce the Board to  
15 issues related to submarine health surveillance.  
16 The slides are at Tab 3. Thank you for coming all  
17 the way from New England. And we'll go ahead and  
18 get started.

19 DR. HORN: Good morning. The submarine  
20 force needs a health surveillance program. What  
21 I'd like to do over the next 20 slides or so is to  
22 outline the reasons why we think we need one.

1 They're fairly compelling. And also outline a  
2 proposed program that we can use to monitor the  
3 health of our submariners. This is an information  
4 only brief.

5 Just a little bit about the submarine  
6 force. It plays a key role in the Navy's warfare  
7 fighting capability. It is about one-fourth of  
8 the operating ships in the Navy's fleet. There  
9 are a number and variety of missions that  
10 submarines perform, strategic, warfare deterrents,  
11 special warfare operations, certainly torpedo and  
12 cruise missile launches, and intelligence and  
13 surveillance gathering. So a wide variety of  
14 platforms. With the submarines advantage of  
15 stealth, which submarines achieve by being  
16 submerged and operating below the surface.  
17 Despite the large number, relatively speaking of  
18 percentage of ships in the fleet, the submarine  
19 force is actually a very small population. About  
20 three percent of the Navy's manpower. There are  
21 just short of 22,000 submariners on active duty.  
22 14,000 are assigned to submarines. This force is

1 100 percent male, about a third of these are over  
2 the age of 30. There are 10 percent of the forces  
3 officers, most are Caucasian. And in this  
4 population, about a third smoke, and they smoke  
5 onboard. There's no prohibition against smoking  
6 in our submarines. This is a medically screened,  
7 very healthy population, and it needs to be  
8 because when submerged submarines, essentially  
9 provide a closed living space for the crew. The  
10 crew constantly breathes for up to over 100 days a  
11 re-circulated atmosphere, unless the boat happens  
12 to go to the surface and ventilates the  
13 atmosphere. The atmosphere in the submarine has  
14 lower levels of oxygen. It's equivalent to about  
15 the altitude of Albuquerque in terms of oxygen  
16 level. Carbon dioxide levels run about .5 percent  
17 the same as the space shuttle. Submarines,  
18 naturally, when submerged there's no sunlight.  
19 There's very little communications due to the  
20 inability to radio waves to get below the surface  
21 of the ocean to any degree, and certainly  
22 submarines are medically isolated. Submarines

1 have no surgical capability, no doctor on board,  
2 no x-ray facility. They have one independent duty  
3 corpsman who is trained for about a year, an  
4 intensive training, to simulate -- or to get about  
5 the equivalent of a physician's assistant  
6 training. This corpsman has limited assess to  
7 communications with specialists, so it is a very  
8 unique environment. Submariners have been in this  
9 environment for about 50 years, since the Navy's  
10 been operating nuclear-powered submarines. And  
11 they've been very healthy, this is a healthy  
12 cohort. Nonetheless, we have actually done no  
13 systematic collection of health data in the  
14 submarine force, which is why I'm here today.

15           There have been a couple of mortality  
16 studies completed. The Charpentier study with his  
17 colleagues at Yale, they came out in '93. A  
18 recently completed NYU study that is in draft and  
19 submitted for publication. There have also been  
20 some morbidity studies over the last 50 years. The  
21 vast majority of these though were in the '60s and  
22 '70s. There's really only been one good morbidity

1 study, performed by USIS, funded by NASA when they  
2 were looking for data to help plan long-term space  
3 flight. That study came out in '99 looking at  
4 SAMS data.

5 Basically there's a real deficiency in  
6 how closely we've looked at the health of our  
7 submariners in an unusual environment. The  
8 Charpentier study looked at a cohort of over  
9 76,000 submariners, just short of 600,000  
10 person-years the mean follow up in this population  
11 was 7.8 years, a rather short duration. No  
12 smoking gun out of this study. Basically it  
13 mortality looked to be the equivalent of the  
14 age-adjusted U.S. male population. The recently  
15 completed NYU study looked at an expanded cohort  
16 of over 85,000 submariners. There was a longer  
17 follow-up period, obviously, 15 plus years. The  
18 SMRs for all the causes in the study were 70 with  
19 a cancer SMR of 87. There was one unique data  
20 point, the SMR for prostate cancer was 200. The  
21 overall cohort mortality was less than four  
22 percent. In these mortality studies, we're seeing

1        what we feel is a strong healthy worker affect,  
2        but problems with the studies included the fact  
3        that we were unable to parse out smokers versus  
4        non-smokers, and due to relatively inadequate  
5        atmosphere, monitoring, looking for toxicants, we  
6        couldn't link individuals with exposure to any  
7        know atmospheric contaminants. Our morbidity  
8        study showed illness to injury ration about 3:4:1.  
9        Respiratory, skin problems were the leading causes  
10       of morbidity, but for lost hours, lost time,  
11       injuries; injuries led the list.

12                What I'd like to do over the next few  
13       minutes is just cover this list of issues of  
14       concern that we have about the submarine  
15       environment, which is driving our program to get a  
16       health surveillance project going.

17                Air contaminants are a big problem.  
18       OPNAV in '87 has written the U.S. Navy has  
19       insufficient knowledge of the total spectrum of  
20       atmospheric contaminants in submarine and  
21       inadequate knowledge about the long-term affects  
22       of the exposure to those contaminants. Again, due

1 to the fact that there's off-gassing in the  
2 submarine from everything on board, all these  
3 chemicals create a soup in the atmosphere is  
4 continually breathed by the sailors unless the  
5 boat surfaces and ventilates. We have identified  
6 in submarines over 220 compounds of concern and  
7 we've had limited monitoring with the submarine  
8 atmosphere health assessment program funded by  
9 Naval Sea Systems command. We expect an increase  
10 in funding to improve that, but nonetheless we  
11 have inadequate knowledge there, and certainly  
12 inadequate knowledge about the long-term health  
13 affects. Some of these air contaminants include  
14 some pretty bad stuff: Formaldehyde, Acrolein,  
15 elevated carbon dioxide levels, ozone, heavy metal  
16 exposures, ultrafine particles, there's oil mist  
17 in the air, quite frequently, and certainly  
18 there's some secondhand smoke as well.

19           Bone health is another issue that we're  
20 concerned about that we have no real data on.  
21 We've documented that with the absence of sunlight  
22 and the inability to maintain fresh dairy products

1 on board that the submariners get sub-normal  
2 vitamin D levels and markers for increased  
3 osteoclastic activity. What that affect has on  
4 the long-term bone health, we really don't know.  
5 We've never looked at bone densitometry in  
6 submariners, active duty or retired.

7 Submarines because there is absence of  
8 sunlight there's a loss of day/night cues.  
9 Submariners are also on an 18-hour day with six  
10 hours on watch, 12 hours off before they get back  
11 on watch again. So there's a tremendous circadian  
12 rhythm disruption that essentially leaves  
13 everybody in an equivalent state to jet lag.  
14 Kidney health, renal health is another question  
15 mark we have. Submariners essentially have a  
16 chronic respiratory acidosis with increased  
17 bicarbonate levels, increased pCO<sub>2</sub>, slightly  
18 increase blood PH. This along with our changes in  
19 calcium metabolism certainly give us cause for  
20 concern about long-term kidney, renal health. If  
21 you talk to any submariners, one of the things  
22 they'll tell you about living in submarines is

1 that any kind of minor scratch, any kind of wound  
2 just will not heal underway. It'll be chronically  
3 sore until the boat pulls in or the hatch is open,  
4 and then the wound will rapidly heal. This is  
5 anecdotal, this has not been documented firmly,  
6 but the bottom line is everyone in the community,  
7 submarine medical community has noted this.  
8 Whether this is associated with a change in immune  
9 status, increased carbon dioxide level, or some  
10 other cause, we, again, really don't know.

11 Submariners have the highest physical  
12 fitness test failure rate in the Navy, as a  
13 community. It's very difficult to get exercise  
14 underway. You can only get a few pieces of  
15 equipment on board. An exercycle, a stair stepper  
16 and in the ballistic missile boats that are  
17 larger, maybe a treadmill. But it's difficult to  
18 get exercise. There's no formally designated or  
19 designed exercise area and certainly submariners  
20 are busy to the extent that it's difficult to take  
21 time off and work out.

22 MEDEVACS another big issue for

1 submarines. I think you can appreciate the  
2 difficulty in trying to get a casualty up to the  
3 bridge. Basically the casualty is upright in a  
4 stretcher, he's going to have to be held up by one  
5 of the watch stander in a helo essentially drops  
6 the hook and does a lift off. And you can  
7 appreciate in heavy seas when there's a good bit  
8 of roll, I think it doesn't take a whole lot of  
9 imagination to appreciate how difficult that is.  
10 Submarines, we don't like to do MEDEVACS at sea.  
11 We prefer to bring submarine into port for  
12 transfer for obvious reason. MEDEVACS are a big  
13 problem interfering with submarine operations  
14 mission achievement and certainly because they  
15 cause the submarine to surface they compromise  
16 secure operations.

17 Mental Health, again, a big issue in  
18 submarines. There's extended isolation. We've  
19 documented depressed mood states underway.  
20 Whether this is the affect of lack of sunlight and  
21 a submarine equivalent of a seasonal-affected  
22 disorder we're really not sure. One thing we have

1 noted over the past year or so is a dramatic  
2 increase in our suicide rate. Right now it's  
3 three times the Navy average. This has caused us  
4 to put quite a bit of work and attention into this  
5 problem over the past year.

6           So with all of these concerns and  
7 questions that we have, how do we address those?  
8 What we're looking for is a health surveillance  
9 program that provides and validates a safe and  
10 healthy work environment for our submariners.  
11 What we're looking to do here is to improve the  
12 submariner health throughout their career past  
13 retirement and separation. We certainly think  
14 that the outcome, the reports, the data from a  
15 surveillance program will improve our war fighting  
16 capability, readiness, safety and mission  
17 achievement. We also feel it can definitely  
18 improve and optimize our logistical support, focus  
19 our training and research effort, and finally, and  
20 very importantly, provide a basis for fair  
21 settlement of claims against the government,  
22 disability claims.

1           This is just a ground -- simple  
2           epidemiology program that we're outlining. We're  
3           looking to determine distribution and causes of  
4           illness and injury, identify health trends, and  
5           develop programs for prevention and control. We  
6           want to, in this program, initiate standards for  
7           collection, archiving and analysis of data.  
8           Integrate that with our atmosphere contaminant  
9           results and look at the existing data that we  
10          already collect.

11           We're already collecting a good bit of  
12          data. The fleet in the -- the two fleets have  
13          medical evacuation data. There's a lot of data  
14          from duty disqualifications, waivers, data from  
15          SAMS, safety reports, medical discharges,  
16          hospitalizations and mortality reports. So a lot  
17          of data is already out there. We just need to  
18          archive it, analyze it, generate reports. There  
19          are a lot of customers that are interested in this  
20          data who actively back the setting up of this  
21          program. The submarine force type commanders need  
22          data to help with personnel manning, to put the

1 proper equipment and medications in submarine.  
2 BUMED is looking to have a database for claims  
3 against the government. They certainly are  
4 interested in waiver and disqualification  
5 standards for which this data can help as well as  
6 medical screening requirements for submarine duty.  
7 At the lab we're definitely interested in data  
8 that will help us focus research. Naval sea  
9 systems command has been active in getting a  
10 submarine atmospheric contaminant monitoring  
11 program going, but there's no health data to link  
12 that to, so we really don't have good data to show  
13 that their life support systems and procedures are  
14 effective. Certainly data can also help them with  
15 submarine design and human systems engineering's  
16 in our future submarine classes. The undersea  
17 medical institute where our IDC's, our independent  
18 duty corpsmen and medical officers are trained can  
19 definitely benefit from focusing training with the  
20 results that we get out of this project. And  
21 certainly other communities such as NASA. They  
22 consider the submarine forces an analog population

1 for space flight. They've funded our morbidity  
2 study in the late '90s and we certainly have  
3 queries from the NATO allies as to our experience  
4 with submariner health. The Swedish and Germany  
5 Navy's have recently introduced air independent  
6 propulsion systems. They've come to us asking for  
7 health data and atmosphere data on operating these  
8 submarines for long periods of time. Previous  
9 classes of submarines really have only stayed  
10 submerged for just a few days at most.

11 Bottom line is we're actively moving to  
12 get a project set up. We feel one is badly  
13 needed. Certainly, looking in the past we feel it  
14 can answer the questions that we have about a lot  
15 of environmental risks and exposures that our  
16 submariners face. Any questions?

17 DR. WEBER: Thank you. That was a very  
18 nice presentation. I wonder one thing that -- if  
19 I missed it, forgive me, but I didn't recall you  
20 talking about crowding and hygiene as risk factors  
21 on the submarine. My area of interest is the  
22 phenomenon of community-associated

1       methicillan-resistant staphylococcus, which is  
2       really an epidemic at this point throughout the  
3       country, and the risk factors of that being, among  
4       others, cleanliness and crowding. I wonder if you  
5       could comment one, on the crowding in the  
6       submarine whether they're sharing their personal  
7       items, how well can things like towels, etc. be  
8       kept clean, and surfaces and other areas that  
9       might be (off mike) this particular organism. I  
10      have a sort of follow-up question after you --

11                 DR. HORN: Every submarine really has  
12      about 130 to 170 men who live in the equivalent of  
13      an American three-bedroom home. Each submariner  
14      has about three cubic feet of personal space. We  
15      haven't looked at hygiene very hard, but in one  
16      study on one boat, underway the average submariner  
17      showers every day, or showers fell from seven a  
18      week, while they were on shore, to five a week  
19      when they were underway. Tooth brushing also had  
20      somewhat of a drop. There is definitely  
21      outbreaks, or identified infections with MRSA. So  
22      we definitely see MRSA as well as a drop in

1 hygiene. It's an issue. It's basically a  
2 function of crowded conditions, having to line up  
3 to take a shower, line up to go to the restroom,  
4 and essentially do that in the face of a very  
5 demanding work schedule, essentially on watch, on  
6 average, eight hours a day and doing a lot of work  
7 on equipment, maintenance, training in  
8 watch-standing qualification.

9 DR. WEBER: Thank you. As a follow up  
10 to that, I guess I would -- the limited medical  
11 care that's available on the Board is concerning  
12 if there was a true outbreak of MRSA since  
13 significant incision and drainage might need to be  
14 done especially given your comment about how  
15 anecdotal as it might be that wounds don't heal  
16 on board and I wonder if the medical corpsmen has  
17 the ability, skills to do I and D and such?

18 DR. HORN: Yes, they do. They have that  
19 training. I would point out that wound healing  
20 has been a problem that one of my submariner  
21 instructors talked to our class at officer  
22 candidate school about 30 years ago. It's

1 certainly nothing new and well recognized.

2 DR. POLAND: Joe and then Ed.

3 DR. SILVA: Thank you for the  
4 presentation. There's so many elements of health  
5 here, I think the study of what you're doing is  
6 just fascinating and the success over 50 years, as  
7 you say, is there. It's a large number of men who  
8 have weathered some really tough physiologic  
9 conditions. I am absolutely astounded that  
10 smoking is allowed on board. I'm just blown away.  
11 And you may have an opportunity with 75 subs,  
12 maybe have smoking and non- smoking subs and  
13 really see what the heck that does to a whole  
14 bunch of things.

15 DR. HORN: Smoking in submarines is an  
16 issue that's getting very hard to look right now.  
17 It's been the focus of a lot of discussion of the  
18 Submarine Atmosphere Board that meets about four  
19 times a year. There are a number of --  
20 practically the whole submarine medical community  
21 feels that smoking should not be allowed. This is  
22 getting serious review and look at the Type

1 Commander level and they will Naval Sea Systems  
2 Command is looking at funding a study to look at  
3 the ability of the current life support equipment  
4 on board submarines to manage, filter out  
5 secondhand smoke. We feel there is some evidence  
6 of enough cigarette smoke in the air that we do  
7 have some concerns. Right now though our policy  
8 in the U.S. Navy is that smoking is allowed. On a  
9 practical basis the submariner -- each CO on the  
10 submarine designates a smoking area. Usually very  
11 near the air intakes and usually there's a line of  
12 smokers waiting to get into that space and smoke.  
13 I would say that foreign Navy's a number do not  
14 allow smoking in submarines, the most prominent  
15 being France. They have no smoking in their  
16 submarines. Also the Dutch Navy recently adopted  
17 a no smoking policy in submarines at least while  
18 submerged. One of the watch standers,  
19 submariners, in the Dutch Navy told me a few  
20 months ago that when they surface and he gets up  
21 to the bridge, he's got to stand there with about  
22 20 other men all smoking, while he drives the

1 boat. But the bottom line is that it certainly  
2 has gotten our attention.

3 DR. KAPLAN: And three short questions.  
4 One is, a third of the people, you said are older  
5 than 30 years. How does that vary from nay other  
6 part of the Navy? It suggests there are an older  
7 population among submariners; is that correct?

8 DR. HORN: I don't have any data right  
9 now.

10 DR. KAPLAN: The second question is  
11 while I can understand the concern about MRSA,  
12 recently during some discussions the question  
13 about something like influenza has come up. What  
14 experience has there been, obviously not with  
15 H5N1, but what is the air contamination rate of  
16 respiratory viruses on submarines?

17 DR. HORN: Submariners will all tell you  
18 that when a boat gets underway for a long mission,  
19 virtually everybody gets some kind of a cold,  
20 upper respiratory infection, and this goes on for  
21 about two weeks. After that there's no other  
22 problems of a respiratory fashion.

1 DR. KAPLAN: Have there been documented  
2 outbreaks of influenza?

3 DR. HORN: No. Nothing that's been  
4 documented or incapacitated in a large number of  
5 the crew.

6 DR. KAPLAN: The ventilation system is  
7 --

8 DR. HORN: It's not germicidal, but it  
9 is effective at doing a lot of filtering, removal  
10 of carbon dioxide. There are carbon monoxide  
11 hydrogen burners that rid the atmosphere of those  
12 compounds. There is carbon filtration and  
13 electrostatic precipitators.

14 DR. KAPLAN: Then, finally, there's an  
15 entire science that I don't know much about, but  
16 people looking at serum for evidence of toxins or  
17 toxic materials or chemicals or so forth, has that  
18 ever been studied in submariners?

19 DR. HORN: Generally, no. Not serum,  
20 per se. It's really easy to get submariners to  
21 come up with urine collections. It's a lot harder  
22 when you show a needle in front of them. But the

1 bottom line is we've gotten a lot of data rather  
2 than -- a lot of data, actually from monitoring  
3 the atmosphere itself, rather than looking at  
4 serum or urine levels.

5 DR. KAPLAN: I was thinking more in  
6 terms of persistence over a period of time.

7 DR. HORN: No. We've not done in depth  
8 studies looking at body burdens of compounds, no.  
9 That's certainly an issue with a compound like  
10 lead for example.

11 DR. KAPLAN: Thank you.

12 DR. POLAND: Other questions? Bruce.

13 COL RUSCIO: I was wondering because  
14 they're so highly trained individuals, the  
15 enlisting officers, once they're a submariner,  
16 they extend their career, can they move outside to  
17 a different ship or do they stay where --

18 DR. HORN: By and large, qualified  
19 submariners stay in the submarine community;  
20 however some of the senior ranking enlisteds do --  
21 some do go to surface ships. Certainly some  
22 sailors who are deemed medically unfit for

1 submarine duty, but not Naval duty, will go to  
2 surface ships. That's a small number. The  
3 officer community is of course like the other  
4 communities in the Navy, Naval Air Surface Force,  
5 with a good bit of rotation through other jobs.

6 DR. POLAND: Any sense of why the  
7 suicide rate has tripled? Is that what you were  
8 saying or just that it was three times higher and  
9 it's been stably that?

10 DR. HORN: It's three times the Navy  
11 average.

12 DR. POLAND: Has that been a change?

13 DR. HORN: Yes. It's a fairly dramatic  
14 increase. Statistically it's still a small  
15 number, but this year, over the last, say 12  
16 months, we're averaging now eight a year in the  
17 submarine community. That's a large number for  
18 us. And no real specific identifiers. Most of  
19 the cases of suicide that we see are usually  
20 related to issues with spouses, loved ones.

21 DR. POLAND: Are they occurring while  
22 underway or back at home?

1 DR. HORN: On the shore. On the beach,  
2 by and large.

3 DR. POLAND: Dr. Halperin.

4 DR. HALPERIN: Thank you for the  
5 presentation. I have to admit a certain sense of  
6 déjà vu having sat on the committee on toxicology  
7 at the National Research Council when Rojean  
8 Henderson did the submarine exposure studies and I  
9 wonder whether -- and I know you're completely  
10 familiar with those. I wonder whether if you  
11 frame what the question is now versus what the  
12 questions were then, what would you think we would  
13 be focusing on now that differs? For example, I  
14 don't remember the discussion of the prostate  
15 cancer from back then, it must have been 10 years  
16 ago, I would imagine, but the issue of the smoking  
17 and the protection of the submarine versus the  
18 protection of individuals and recruitment  
19 problems, I remember were fully discussed back  
20 then. What would your sense be of what would be  
21 rewarding, if you would, to focus on now that  
22 really wasn't really covered by this prior

1 efforts?

2 DR. HORN: Well, that raises a number of  
3 issues. What sort of concerns do we have now that  
4 we didn't have maybe a decade ago?

5 DR. HALPERIN: Or persists.

6 DR. HORN: Or persists. Certainly if  
7 you survey the submarine medical community, the  
8 big concern we have is air contaminants. We don't  
9 really have any smoking guns yet that we see. We  
10 think we're operating safely in terms of  
11 atmosphere systems, but it's like we really don't  
12 have the hard evidence to say that we've done that  
13 -- that we're doing that. I think certainly the  
14 trend has been over the last decade or so,  
15 increasing awareness that rotating watch  
16 schedules, disruption of circadian rhythm plays a  
17 big role in immune status and stress. Certainly  
18 our submariners are already in a stress  
19 environment. That's a concern. The fact that  
20 vitamin D is increasingly now being recognized as  
21 almost a hormone rather than a vitamin, certainly  
22 may have an impact on bone health and other

1 factors. So those are just some of the issues  
2 that we're concerned about. I don't know if that  
3 answers your question, but the more we -- as time  
4 has gone by the more we realize that really the  
5 U.S. Navy submarine force, this is the first time  
6 in man's history that large numbers of people have  
7 ever lived in a closed environment, and we just  
8 don't know how safe that is, bottom line.

9 MS. EMBREY: Have you been able to take  
10 the screening program that you implement to  
11 identify whether a person should or should not be  
12 a submariner and correlate those results to the  
13 individuals who have committed suicide over time  
14 and maybe identify some risk factors?

15 DR. HORN: Yes, ma'am. That's a good  
16 question. We have gone back and started to look  
17 at that. I can provide some data. Our  
18 submariners are psychologically screened for duty.  
19 About 10 percent of them are flagged and been  
20 referred for a mental health evaluation by a  
21 psychologist or psychiatrist at the Naval  
22 Ambulatory Care Center in Groton. Most of these

1 are okay'd for continued duty. There's a small  
2 percent, several percent that are deemed unfit for  
3 submarine duty. We have instituted a program  
4 called SMART that is a look at using part of our  
5 submarine psychological screening test to look at  
6 prediction of success in the submarine fleet. But  
7 we have gone back and looked at some. I can get  
8 you some data, but I don't have any hard figures  
9 here with me now. I can certainly provide that.

10 DR. POLAND: Do you recall if the  
11 suicides were "flagged" individuals?

12 DR. HORN: There were several -- there  
13 were none that scored in the test severely enough  
14 to prevent them from going to the submarine force.  
15 That is the bottom line. One of the issues we  
16 have is we do this test primarily on very young  
17 submariners, roughly about 18, 19 years old and of  
18 course psychological testing in that age group is  
19 in individuals who really aren't mature, does give  
20 data that has to be interpreted in the light of  
21 the fact that you are looking at a younger, not  
22 fully developed personality.

1 DR. PARKINSON: Again, thank you. That  
2 was eye opening for those of us not knowledgeable  
3 about submarines. But what interests me is if the  
4 delayed wound healing is something that's been  
5 described for as long as it has, but there's not  
6 some systematic evaluation of why that is and how  
7 to accelerate it. It would seem given the  
8 emergence of MRSA that that's a major exposure  
9 root. Lack of integument that's all together,  
10 delays, injuries, you said are a major concern. I  
11 actually, in my hierarchy of things would put air  
12 and respiratory contaminants that a third of the  
13 boat is smoking, I mean, let's take care of that  
14 one with a policy change. By and large, the long-  
15 term affects versus this chronic wound healing  
16 issue, which is -- to me is a little  
17 counterintuitive in a way. One of the things we  
18 do is put people into hyperbaric atmospheres and  
19 chambers so that it heals faster. I know it's a  
20 normal baric atmosphere, I guess, I didn't see  
21 that in the environmental slide. Is it really,  
22 essentially, in a submarine is it normal baric or

1 is it --

2 DR. HORN: There is slight pressure  
3 variation, but by and large, it's normal baric  
4 atmosphere.

5 DR. PARKINSON: Okay. So that shouldn't  
6 be -- but it's very intriguing to me, what are the  
7 reasons for that, and if it's been known for 30  
8 years, that would seem to be an area, with some  
9 focused study, maybe some animal experiments with  
10 rats, or I don't know that we could come up with  
11 something might be a near-term intervention that  
12 could be useful in preventing something that could  
13 be a nightmare. But maybe it's just right around  
14 the corner. Just an impression.

15 DR. HORN: At the laboratory we've  
16 proposed studies in the past. By and large in the  
17 priority of issues, this is not a big show  
18 stopper, we're not MEDEVACing individuals with  
19 poor wound healing. We're not seeing bad  
20 infections. With the injuries we have, the  
21 serious lacerations and so forth, they do end up  
22 not getting infected with good wound care that we

1 have. In terms of lost man hours, this phenomenon  
2 is not really impacting submariner health in a big  
3 way or interfering with submarine missions. It  
4 certainly, intellectually intriguing, something  
5 we'd like to get to the bottom of, and you're  
6 exactly right, any open wound is just an avenue  
7 for serious infection, potentially. But given  
8 everything else we're looking at it just has not  
9 gotten the priority in funding and investigation.

10 DR. POLAND: Dr. Halperin and then Dr.  
11 Shamoo.

12 DR. HORN: That's not to say that there  
13 hasn't been interest by the dermatology community.

14 DR. HALPERIN: I'm going to assume that  
15 the prostate cancer is mortality not morbidity,  
16 because I think that there are only those two  
17 mortality studies that have been done.

18 DR. HORN: That's right.

19 DR. HALPERIN: Is there additional  
20 evidence like tours of duty on the submarine or  
21 time since a person joins the submarine service  
22 that make this more biologically plausible? Is

1       there more information that makes this worrisome,  
2       or is this just --

3               DR. HORN:  In the study, as I recall,  
4       there were four identified cases of prostate  
5       cancer in that cohort.  The bottom line is I can't  
6       because -- at this point I really can't go further  
7       than that in terms of how we look.  It's something  
8       that obviously deserves scrutiny, but at this  
9       point we have no information on parsing that into  
10      more detail that might give us better answers  
11      there.  Again, it is a medically screened  
12      population.  You can certainly see that  
13      submariners are an above-average group in terms of  
14      intelligence, more inclined to take care of  
15      themselves.  The submariners see the value of  
16      preventive maintenance.  You could certainly think  
17      or surmise that they might value periodic medical  
18      screening more than the average adult male.

19              DR. SHAMOO:  You mentioned suicide among  
20      the submariners.  I don't know if I missed it, but  
21      was there any data on the range of mental  
22      disorders for the submariners and their families?

1 Is there any data on that?

2 DR. HORN: There is in the medical  
3 waivers, medical disqualifications for duty.

4 DR. SHAMOO: I'm talking about  
5 post-deployment, not prior.

6 DR. HORN: No. One of the issues --

7 DR. SHAMOO: Because the suicide rate, I  
8 presume, is post-deployment?

9 DR. HORN: It's post-mission. The  
10 submarine community despite a war going on and  
11 despite the fact that a third of all the cruise  
12 missiles fired in operation Iraqi freedom were  
13 fired from submarines, actually doesn't operate a  
14 whole lot differently than they do in peacetime.  
15 A lot of the missions being done now have  
16 continued -- are really just continuations from  
17 operations that have always been done. You don't  
18 hear about it much, the submarine force is the  
19 silent service. But the bottom line is the  
20 missions, per se, are not really that much  
21 different.

22 DR. SHAMOO: So we don't have any data

1 then on mental disorders post-mission?

2 DR. HORN: Not specifically  
3 post-mission, but that is certainly something  
4 we're interested in. Basically we get a diagnosis  
5 in the form of some of our SAMS data, but by and  
6 large, psychological issues, when they surface,  
7 are usually fall into the medical waiver,  
8 temporary disqualification, permanent  
9 disqualification for duty or even discharge.

10 We do have the data, but it's not  
11 collective and reported out, or even archived.

12 DR. POLAND: Colonel Gibson, and then  
13 we'll stop.

14 COL GIBSON: Just an observation, first  
15 of all and then a couple of short, short  
16 questions. It seems to me what you're needing is  
17 some workplace surveillance data collection  
18 efforts. Environmental monitoring in the  
19 workplace and then health outcomes data as it  
20 applies to the mission or whatever is going on so  
21 that we can look at the issues of wound -- delayed  
22 wound healing and other health events that are

1 occurring while under mission. And then the other  
2 side of this is the chronic health concerns that  
3 you've alluded to. It seems to me that these are  
4 good MPH projects for -- these folks have unique  
5 MOS's it seems as though these would be nice MPH  
6 projects for folks at you chose to follow up on  
7 those chronic measures.

8 The other two questions come in with the  
9 mortality study. You mentioned healthy worker  
10 affect that you thought you were seeing that, but  
11 you also mentioned that these service members,  
12 these submariners are -- their fitness level was  
13 the lowest in the Navy. In the mortality studies  
14 that you were referencing, did they use a control  
15 group, a non-military control group? Is that why  
16 you're concerned about healthy worker affect?

17 And then, finally, a real quick  
18 question, do submariners fill out pre and  
19 post-deployment health assessments? It's a way  
20 for us to get at these mental health issues.

21 DR. HORN: Well, to answer your question  
22 sequentially, we expect a strong collaboration

1 with USIS and the department of preventive  
2 medicine and bio- statistics there. We are  
3 working closely with Tony Hooper and we also want  
4 to collaborate with the Naval Health Research  
5 Center, as well as Naval Environmental Health  
6 Center. So we see an active group, and certainly  
7 USIS, the department there, Drs. Hooper and Thomas  
8 did an excellent job in the morbidity study in the  
9 late '90s. But, yes, I certainly agree with your  
10 comment about that. The second question was --

11 COL GIBSON: The mortality study.

12 DR. HORN: The mortality study compared  
13 the submariner population with aged adjusted U.S.  
14 males.

15 COL GIBSON: Age adjusted U.S. Navy or  
16 males?

17 DR. HORN: Males.

18 COL GIBSON: Males.

19 DR. HORN: In the U.S. population. And  
20 you had one other question?

21 COL GIBSON: It had to do with the 2796,  
22 2795. Are those filled out before these folks go

1 out on mission? I hate to use the word  
2 deployment. The Navy addresses deployments  
3 differently. As you just said, routine mission  
4 versus deployment. I just wondered about the  
5 forms?

6 DR. HORN: I was told that they do not.  
7 I don't know that that's changed. That was the  
8 information I got over a year ago. The bottom  
9 line is, again, the Navy feels, as I've been told,  
10 that -- certainly the submarine force the Navy  
11 submarine missions are really hardly any different  
12 from what they've done prior to 9-11, only just  
13 more intense and certainly in some cases more  
14 unusual. But by and large, they'll get them. It  
15 is quite a bit different from combat in Iraq, for  
16 example, certainly.

17 COL GIBSON: Thank you.

18 DR. POLAND: Okay, Dr. Horn. Thank you.  
19 We have a slight switch in our schedule. We're  
20 going to do the leishmaniasis registry now and  
21 we'll save the scheduled topic for after lunch.  
22 This one will be briefed by Dr. Mary

1 Klassen-Fischer.

2 DR. KLASSEN-FISCHER: Actually we were  
3 worried that you might call (off mike) after  
4 lunch. Leishmaniasis is a very interesting  
5 disease and the leishmania registry is an exciting  
6 project. My briefing is going to have two  
7 informational parts to it. This briefing is to  
8 provide information and there's going to be two  
9 parts. In the first part, I will give you some  
10 background information on the disease  
11 leishmaniasis and in the second part, I will give  
12 you some information about the leishmaniasis  
13 registry in particular.

14 For background information, it's the one  
15 called MON -- for background information we'll  
16 talk about the what, where and how the disease is  
17 transmitted, how it presents clinically, the  
18 diagnosis, prevention and treatment. And then for  
19 the information on the registry itself, I will  
20 describe the purpose, the design, how data is  
21 collected and what analysis has been done so far  
22 on the data.

1           Leishmaniasis is caused by a protozoan  
2 parasite a unicellular organism that belongs to  
3 the genus Leishmania. And this genus could cause  
4 disease that is cutaneous, visceral or  
5 mucocutaneous. The type of disease depends on  
6 the species and the geographic location. Most of  
7 the cases that we've been seeing recently from the  
8 Middle East have been cutaneous leishmaniasis  
9 caused by Leishmania major. Leishmaniasis is  
10 endemic in over 80 countries around the world,  
11 mostly in tropical and sub tropical areas. It is  
12 transmitted by the bite of female sandflies.

13           The map on the top shows, in red, areas  
14 of the world where Leishmania is endemic and you  
15 can see that a large part of the Middle East has  
16 Leishmaniasis, including Iran, Iraq and  
17 Afghanistan. It also occurs the entire  
18 Mediterranean sea. Most of South America and  
19 Central America extending all the way into  
20 southern Texas. On the bottom of the screen is a  
21 phlebotomist sandfly, sucking blood from a  
22 volunteer. This is blown up about 20,000 times.

1 They're actually very small, about the size of a  
2 small gnat.

3 The rest of my talk is going to be about  
4 cutaneous Leishmaniasis, since that's most of what  
5 we've been seeing from people coming back from the  
6 Middle East. Cutaneous Leishmaniasis usually  
7 starts as a small papule at the site of the  
8 sandfly bite. It very slowly enlarges and  
9 eventually ulcerates. Then the ulcer enlarges and  
10 can get up to several centimeters in diameter.  
11 This is a self-limited disease that will heal on  
12 its own in most cases, but very slowly. It's not  
13 a life-threatening disease, but it can be very  
14 deforming depending on the location of the ulcer  
15 and the subsequent scar.

16 Here's some examples of cutaneous leish  
17 ulcers in service members. The picture on the top  
18 shows a line of ulcers that end right at the edge  
19 of the sleeve. So these are sandfly bites right  
20 where the clothing ended. They typical ulceration  
21 shown on the bottom right, with a lot of  
22 granulation tissue in the center and kind of

1 heaped up in a erythematous border. This ulcer on  
2 the eyelid shows how this condition can be  
3 debilitating. If this is allowed to enlarge and  
4 scar, it would result in loss of function of the  
5 eyelid. Or if these ulcers would occur across the  
6 joint space and the scarring causes shrinkage of  
7 the tissue, it could compromise the function of a  
8 joint. The patient in the lower left has multiple  
9 ulcers, and the ulcers have some nodules that  
10 haven't yet ulcerated.

11 The diagnosis is made by collecting  
12 tissue material from an ulcer. This can be done  
13 either by performing a biopsy or scraping some  
14 material from the base of the ulcer. Then the  
15 diagnostic procedures that are performed on the  
16 material from these specimens include, microscopy,  
17 molecular testing and cultures.

18 This series of pictures shows the  
19 techniques that's being used on most of the  
20 servicemen who are in Iraq, and that is to perform  
21 a scraping. First a liberal amount of Lidocaine  
22 is injected into the ulcer to get it good and

1 numb, and then a vigorous scraping is performed.  
2 The scraping shouldn't be done on ulcers that are  
3 starting to heal on their own because it could  
4 interfere with the healing process. The material  
5 that is collected on the scalpel can then either  
6 be smeared onto a slide and stained for  
7 microscopy, or it can be put into a tube of  
8 alcohol for molecular testing.

9           This is what the organism looks like in  
10 microscopic sections in cytology specimens. It  
11 can either be intracellular, is on the right,  
12 these are all amastigote forms of the parasite  
13 with a macrophage or they can just be floating  
14 around freely. This is a single-cell organism  
15 that has three features that are diagnostic. It  
16 has a cell membrane that distinguishes it from the  
17 background, it has a nucleus that stains dark blue  
18 and then a small rod-shaped organelle called a  
19 connectoplasm within the cytoplasm. We need to  
20 see all three of those features in order to make  
21 the diagnosis. It's a simple organism and you  
22 would think that this would be a simple diagnosis

1 to make, but actually there are only five of us at  
2 the AFIP who can make this diagnosis reliably,  
3 either in military members or in civilians of the  
4 United States. The CDC will not release Pentostam  
5 treatment for civilians unless the slide has been  
6 to the AFIP for one of us to look at it. The  
7 reason is there are a lot of other objects that  
8 can mimic this. We've done quite a bit of  
9 training with Army pathologists to try to train  
10 them to be able to recognize this parasite, but  
11 training isn't enough. It also requires a lot of  
12 experience. Even though we've sent them slides  
13 and given them some instructions, we still require  
14 that the slides come to the AFIP for diagnosis.

15 This is just a picture of how the  
16 organisms look on histologic sections. Either  
17 with a routine H and E stain or a tissue gramst.

18 The other diagnostic techniques are  
19 performed by Walter Reed Army Institute of  
20 Research in the Leishmania diagnostics laboratory.  
21 They've developed polymerase chain reaction, PCR  
22 tests, that identify the genus leishmania and then

1 if necessary they can do additional testing with  
2 sequencing to determine the species. They're also  
3 able to do cultures, but this is technically more  
4 difficult, more time consuming, and in most cases  
5 it hasn't been necessary.

6 Protection against Leishmaniasis is  
7 limited to just not getting sandfly bites because  
8 there is not immunoprophylaxis or chemoprophylaxis  
9 or vaccine against this disease. Protection  
10 against sandfly bites just involves a DEET insect  
11 repellent or a treated uniform or bed nets. In  
12 some situations people have tried to control this  
13 disease by eradication of the sandfly or  
14 elimination of the mammalian hosts, but these  
15 practices aren't consistent with good  
16 environmental conservation.

17 There are a number of treatment options  
18 for cutaneous Leishmaniasis and one of them is  
19 just no treatment at all consistent with  
20 self-limited disease. So if a person has just a  
21 few ulcers or very small ulcers and they look like  
22 they're healing on their own, one option would be

1 to just not treat it. Cryotherapy which involves  
2 using liquid nitrogen on the ulcer is another  
3 option and the patients that would qualify for  
4 cryotherapy overlap with the same patients that  
5 might not need any therapy at all. A new  
6 treatment that's being tested is heat therapy with  
7 a device called ThermoMed, that was approved by  
8 the FDA for this purpose. This needs to be done  
9 by a person who's been trained to use the device  
10 and it can only be done on lesions that are fairly  
11 small and not in patients who are darkly  
12 pigmented, because it can result in permanent  
13 de-pigmentation. The mainstay of therapy for  
14 Leishmaniasis is Pentostam, which is a pentavalent  
15 antimony compound that is available under research  
16 protocol from Walter Reed or Brook Army Medical  
17 Center. It involves 10 to 20 days of intravenous  
18 therapy depending on which arm of the protocol the  
19 patient is in. It's a very toxic drug and a fair  
20 percentage of soldiers have quit therapy because  
21 of side effects before they completed their 10 or  
22 20 day course. Imidazoles are also under

1 investigation and these can be given orally and  
2 have fewer side effects than the Pentostam, but it  
3 seems that the Imidazoles are possibly not as  
4 effective as Pentostam. Topical antibiotics are  
5 also an option that's being investigated.

6 The treatment outcome isn't known for 60  
7 to 90 days because the length of time it takes for  
8 these lesions to respond. A treatment failure is  
9 defined as the appearance of new lesions or that  
10 the old lesions continue to enlarge. Treatment  
11 success is defined as no new lesions appear and  
12 the old lesions show signs of healing.

13 Now, for the rest of the briefing, I'll  
14 talk about the registry itself. The purpose of  
15 the Leishmania registry was to formally  
16 consolidate the data and materials that we're  
17 getting from the soldiers who are in Operation  
18 Enduring Freedom or in Operation Iraqi Freedom.  
19 This includes not only those patients that are  
20 proven diagnostically to have Leishmaniasis, but  
21 those that were clinically suspected to have  
22 Leishmaniasis.

1           The purpose was to prospectively capture  
2 all this data and tissue so that hopefully we  
3 could work on more effective diagnostic and  
4 treatment methods.

5           The Leish registry is part of the  
6 International Toxicology Data Center at the AFIP.  
7 This is one of 12 separate registries and all of  
8 them fall within the Defense Manpower Data Center  
9 and Leishmaniasis is shown here with two others.  
10 The Afghan Service Database and Iraqi Freedom  
11 Database which are subsets of the DMDCs Gulf War  
12 database.

13           Most of the data is collected when  
14 specimens are sent to the AFIP. We've developed a  
15 web-based questionnaire that's filled out by the  
16 patient with their healthcare provider, at three  
17 points. At the time of entry or initial  
18 presentation and then six and 12 months later.  
19 The specimens come to the AFIP and get accessioned  
20 and assigned a number and we do our diagnostic  
21 testing on them. Once the diagnostic testing is  
22 completed the specimens are SNOMED coded and

1 entered into the database. Healthcare providers  
2 are required to report Leishmaniasis to the DMSS  
3 and the AFIP is consolidating the data that we  
4 receive on the specimens that we get along with  
5 the data from the Leishmaniasis diagnostic lab at  
6 WRAIR and also what the healthcare providers are  
7 collecting. We have received specimens from  
8 service members who have separated and gone to  
9 civilian healthcare facilities or to VA hospitals.  
10 The VA is required to send their specimens to us  
11 or mandated to. Civilian healthcare providers, of  
12 course, are not required to send specimens to us,  
13 but many of them do because they know that we can  
14 make the diagnosis for them.

15 The questionnaire is three pages long  
16 and I have copies of it if anyone is interested in  
17 looking at it. It includes details of where the  
18 patient has been, what the environment was like,  
19 in terms of humidity or other environmental  
20 features. How many insect bites they would  
21 routinely get and what methods they undertook to  
22 prevent sandfly bites. Any other medications or

1 medical problems they might have had, clinical  
2 observations, their treatment adverse reactions  
3 and outcome.

4           And the questionnaire includes a drawing  
5 where clinicians can draw where anatomically on  
6 the body these ulcers are occurring. They're  
7 encouraged to measure them so that we can compare  
8 them over time. It's possible to even photograph  
9 them. Objective measurements of size are  
10 sometimes not very accurate.

11           When the first cases that came out  
12 towards the end of 2003 and 2004 the data was  
13 analyzed and published and they just looked at  
14 some of the epidemiologic data on these patients  
15 an they found that the distribution of cutaneous  
16 Leish wasn't any different in distribution than  
17 soldiers who didn't have cutaneous Leishmaniasis.  
18 They found that that the mean time from when a  
19 person first received a sandfly bite until they  
20 actually came to medical attention was nine weeks.  
21 The time that we receive specimens peaks in autumn  
22 which probably correlates with sandfly bites that

1 occurred during the summer.

2           This is a analysis on the first 1,018  
3 patients. We were wondering what diagnoses were  
4 we making on those patients that didn't have  
5 Leishmaniasis. You can see that most of them were  
6 positive, either by microscopic exam or by PCR.  
7 Of the 316 that were negative, when we looked at  
8 the histology, the histologic features were very  
9 similar to what we see in cutaneous leishmaniasis.  
10 So in those cases we thought that even though we  
11 weren't able to see the amastigotes and they  
12 weren't picked up by PCR, we couldn't exclude the  
13 possibility that those 202 cases were  
14 leishmaniasis. Among the 114 other patients who  
15 were negative, there was a broad rang of  
16 dermalogic conditions that these people had  
17 including various dermatitis, infections by other  
18 organisms and even some neoplasms. This was  
19 somewhat surprising to us that there were several  
20 basal cell carcinomas in this group and they  
21 weren't recognized to be basal cell because they  
22 were relatively young people with an ulcer and

1 they thought well, this probably going to be  
2 leishmaniasis, but these sun-induced skin cancers  
3 are occurring in people in younger and younger age  
4 groups. We thought that was a significant  
5 finding. We thought it would be important for  
6 people to recognize, not only when soldiers are  
7 coming back to the United States after deployment  
8 that they could have cutaneous leishmaniasis, but  
9 if they do have a non-healing skin ulcer, it isn't  
10 necessarily leishmaniasis. They still have the  
11 other dermatologic conditions that other people  
12 get.

13 One of the reasons the leishmaniasis  
14 registry is so powerful, I thin, is that it's the  
15 largest cohort of its kind of people who have been  
16 in the same place at the same time and have the  
17 same disease. This has implications for numerous  
18 potential studies on this data. We've already  
19 started to compare the sensitivity and specificity  
20 of the diagnostic tests that we do. It's going to  
21 allow for comparison of the efficacy of the  
22 different treatment modalities and also because

1       it's a collection of both data and tissue, it can  
2       be used for basic science research on the  
3       pathogenesis of leishmaniasis, but if someone  
4       wanted to they could look at this tissue and find  
5       out, for example, what subsets of inflammatory  
6       cells are involved in leishmaniasis and how is  
7       that different in people who are healing on their  
8       own and people who aren't healing. How is it  
9       affected by different kinds of treatment.  
10      Research could be done on the organism itself with  
11      sequencing to perhaps find out if there's some  
12      genetic variation among the organisms that result  
13      in different clinical presentations.

14                 If you want to learn more about  
15      leishmaniasis, these are two good websites. The  
16      Deployment Health Clinical Center has the policies  
17      and directives from all the branches of the  
18      military and the VA and lots of information on  
19      clinical guidance fact sheets, education and  
20      training and research. And on the AFIP's website  
21      we have a shorter, what we call a hot topic, that  
22      has a good summary of leishmaniasis.

1 Well, I thank you very much for allowing  
2 me to come here and tell you about the  
3 leishmaniasis registry. I can answer questions.

4 DR. POLAND: I have got a few questions.  
5 First, can you speak to the distribution of types  
6 of cases that you've seen, have they all been  
7 cutaneous or have you seen some visceral?

8 DR. KLASSEN-FISCHER: We have seen some  
9 visceral, but very few.

10 DR. POLAND: Very few. The other thing  
11 is when you talk about these 1,018, these are  
12 patients for which a primary care doctor is  
13 concerned that this -- because they're remarkable  
14 accurate.

15 DR. KLASSEN-FISCHER: That's right.

16 DR. POLAND: Sensitivity of well over 90  
17 percent.

18 DR. KLASSEN-FISCHER: That's right. So  
19 if you have a non-healing ulcer in Iraq, chances  
20 are it's leishmaniasis.

21 DR. POLAND: Are they --

22 COL GIBSON: Could you repeat that? I'm

1       sorry.

2                   DR. KLASSEN-FISCHER:  If you have a  
3       non-healing ulcer and you're in Iraq, chances are  
4       it is leishmaniasis.

5                   DR. POLAND:  Over 90 percent of them are  
6       going to be.  Given the delay to time of  
7       presentation, are they screened in any way once  
8       they come back or are the troops educated in any  
9       way about, well, in the next nine weeks or  
10      something if you develop --

11                  DR. KLASSEN-FISCHER:  They are educated,  
12      but they aren't screened.  I think that most of  
13      the patients are self reporting.

14                  MS. EMBREY:  They have the  
15      post-deployment health assessments that's filled  
16      out immediately upon return as well as three to  
17      six months later.  And they screen for any kind of  
18      health issue with that.

19                  DR. POLAND:  Jackie.

20                  DR. CATTANI:  It's been a long time  
21      since I've worked on leishmaniasis, but about ten  
22      years ago the WHO was testing the vaccine.  I

1 wondered if you know what the current status or  
2 whether there is any work being done on a vaccine  
3 for L major now? And also does an infection  
4 confer immunity once someone has had a lesion are  
5 they susceptible to get other lesions?

6 DR. KLASSEN-FISCHER: Vaccine studies  
7 still are being done, but as far as I know, there  
8 is no candidate vaccine that's close to being  
9 useful. And, yes, you do get immunity from lesion  
10 or from one infection. I don't think it's 100  
11 percent, but I think that in endemic areas usually  
12 people get it when they're children and then when  
13 they're adults they don't get new lesions.

14 DR. POLAND: Colonel Brumage has a  
15 comment.

16 COL BRUMAGE: In operation Iraqi Freedom  
17 II, in the first infantry division, we had -- this  
18 was from 2004 to 2005, we had a mandatory  
19 leishmaniasis awareness program for our soldiers  
20 where we had every soldier sign off that they  
21 viewed a presentation on leishmaniasis and how it  
22 would present so that they were aware that if they

1 had a lesion that they would present for medical  
2 care.

3 DR. KLASSEN-FISCHER: I think that those  
4 programs are effective, because we've seen a  
5 dramatic decrease in the number of cases. Also, I  
6 think people have more access to the sandfly bite  
7 prevention material too.

8 COL BRUMAGE: I think the predominant  
9 thing that has changed in Iraq is the living  
10 conditions for the soldiers. They've moved away  
11 from tents into what are called containerized  
12 housing units, basically small trailers that are  
13 air conditioned that reduce the activity of the  
14 sandflies. It's made a tremendous difference. By  
15 the way, we did try to eradicate the sandfly, it's  
16 not successful.

17 DR. POLAND: Dr. McNeill and then Dr.  
18 Ostroff.

19 DR. McNEILL: I think this came out  
20 fairly clearly in your presentation, but I would  
21 caution; if a reader of your slides only were to  
22 go by the narrative on your slides it might give a

1 very misleading perception of the disease, whereas  
2 such comments as "not life threatening" "treatment  
3 options include no treatment." This definitely  
4 depends on the type of leishmaniasis you're  
5 talking about. We saw a good bit of cutaneous  
6 leishmaniasis in the late 1970s coming from  
7 Central America. Certainly we didn't consider no  
8 treatment as an option for these because there's a  
9 small and ill-defined percentage of disease that  
10 they just felt possibly going from mucocutaneous,  
11 similar to L imperatriz, which is the primary  
12 strain in Brazil. So, great presentation. I just  
13 think it's important that the slides not stand  
14 alone. Someone may read them and get the wrong  
15 impression. Question, and you may not be the best  
16 person to address this, we all know the problem  
17 with Pentostam; is there any information that you  
18 might have on what the status of WR6026, which was  
19 the oral anti-leishmanial that was -- some initial  
20 clinical trials which I was involved in in Kenya  
21 in the 1980s and '90s were done. The last I  
22 heard, these trials were going to be reinstated

1 in South America and I've heard nothing about  
2 that. But there's some very promising results  
3 from the early clinical trials of WR6026, which  
4 was a compound that came out of the malaria drug  
5 development program. I would urge anyone who has  
6 influence at Walter Reed or otherwise, that we get  
7 WR6026 back on track. We look at this drug,  
8 because it's certainly offered an enormous  
9 advantage. It was efficacious in visceral and I  
10 don't know whether any trials were done with  
11 cutaneous or not, but WR6026 was a very promising  
12 drug at one point in time.

13 COL UNDERWOOD: This is Colonel  
14 Underwood. I can respond to Mills. On the cream  
15 formulation that was used in Brazil, well,  
16 actually in Manaus in Brazilian soldiers with  
17 leishmaniasis, as you know very, very common. And  
18 the Army, rare, in particular was developing this  
19 topical treatment and that had also been tried in  
20 Columbia in the school. The military academy in  
21 Bogota very successful. I don't believe it's FDA  
22 approved yet, but there's certainly great promise

1 for this cream formulation to treat cutaneous  
2 leishmaniasis. Let me just add that if you look  
3 at the epidemic curve of what we saw coming out of  
4 OIF/OEF, you'll see a dramatic precipitous drop in  
5 the cases of leishmaniasis and primarily for what  
6 Colonel Brumage just said because of better living  
7 conditions, air conditioning, getting out of the  
8 environment. We did have a problem with bed nets  
9 actually when we first went in there we didn't  
10 have enough bed nets for all of the soldiers that  
11 were in this enough, so we ginned that up, but we  
12 got more of these products in there. I'm also  
13 very happy to say that we convinced the uniform  
14 board, the Army uniform board logistics to go  
15 ahead agree to treat uniforms with Permethrin, so  
16 this is a great success. Now the problem is one  
17 of logistics in getting those uniforms. And when  
18 I say uniforms I mean the ACU, the Army combat  
19 uniforms.

20 COL GIBSON: This is Colonel Gibson. I  
21 just wanted to tag onto Paula's statement and the  
22 big members are here who played on this when it

1 first came out. We literally got a briefing from  
2 Colonel Cox who had got information from theater  
3 about leishmaniasis and overwhelming sandfly  
4 populations. The response, the tri- service  
5 response was effective and quick and because of  
6 the education, because of the bed net issues,  
7 because of the things that we were able to drive  
8 very, very quickly when we became aware of the  
9 problem, we did see this precipitous drop. So it  
10 was an example of effective preventive medicine  
11 response to an acute problem.

12 DR. POLAND: Dr. Ostroff.

13 DR. OSTROFF: I have two questions. One  
14 of them is, I wonder if you have data on what  
15 proportion of your cases came from active-duty  
16 personnel as opposed to Reservists or National  
17 Guard, because I have a feeling that even with the  
18 post-deployment screening if these folks were seen  
19 by civilian physicians within the United States,  
20 they wouldn't have a clue about this particular  
21 diagnosis or even necessarily think about this  
22 diagnosis.

1           And then my other question is in follow  
2 up -- I did a presentation a couple of months ago  
3 and I did a lot of surfing the internet about  
4 Permethrin impregnated uniforms and there's a lot  
5 of stuff on there about concerns about safety and  
6 toxicity of those uniforms and I'm wondering if  
7 that's come up as an issue at all.

8           COL UNDERWOOD: It did come up as an  
9 issue. In fact, that was primarily on the Army  
10 uniform board, that was General Maranz concern who  
11 is head of PEO soldier. He was concerned about  
12 the long-term affects of wearing these uniforms  
13 over many, over a lifetime of service. In fact,  
14 the surgeon general composed a letter detailing  
15 very succinctly the evidence against this. Quite  
16 frankly we've treated uniforms for years, as you  
17 know, with the kits, and then he actually had the  
18 experts at Chipham put together the statistics to  
19 show what the actual risk was. Successfully so,  
20 to convince the line officers that the medical  
21 issues should not be a stumbling block in order to  
22 get the uniforms treated with Permethrin, and I

1 can share that with the AFEB. I'll get that  
2 letter to Colonel Gibson so he can send that out  
3 and you can see exactly those statistics. I don't  
4 want to misspeak here by not having the letter in  
5 front of me.

6 Your second question on knowing how many  
7 are Reserves, we do have a breakdown of that. And  
8 they're -- again, I don't want to misspeak, because  
9 I don't have the statistics in front of me. At  
10 one point there was, within Health Affairs, and  
11 Ms. Embrey, correct me if I'm wrong, you know I  
12 don't want to misspeak here either, but to get out  
13 a letter to providers in the civilian sector to  
14 ensure that they knew what to look for and also  
15 how to access diagnosis and follow-on treatment  
16 for suspected cases of leishmaniasis.

17 COL GIBSON: As a follow onto that. We  
18 decided to do two things. One, is the initial  
19 case reports of leishmaniasis were published in  
20 the MMWR in an attempt to inform private  
21 practitioners of this issue. The other thing is  
22 the strong educational campaign that went into

1       affect with the service members in hopes that if  
2       they have these lesions that don't heal, after  
3       they're back in Bozeman, Montana or wherever they  
4       would know enough to talk to the provider about  
5       and mention the possibility of leishmaniasis.

6                   DR. POLAND:  Dr. Carpenter and then Dr.  
7       Halperin and Parkinson and then we'll stop.

8                   CDR CARPENTER:  David Carpenter, Canada.  
9       We have for some time been pushing the importance  
10      of Permethrin-treated uniforms.  One of the things  
11      we're looking at is the model that the Germany  
12      Army uses which is actually impregnating the  
13      material used in their uniforms prior to the  
14      material being used to make the uniforms.  In  
15      other words, the uniforms are made from  
16      impregnated material and it seems to work very  
17      well.  As you know the treatment lasts for more  
18      than 50 washings, which is considered the lifetime  
19      of the uniform.  Sounds to me like a good idea.

20                  DR. HALPERIN:  I seem to recall that  
21      every appendectomy is an affected appendix, that  
22      the threshold for doing appendectomy is too high.

1 In this instance, 90 percent of the cases sent to  
2 you actually have -- leishmaniasis has been  
3 pointed out, that's predictive value. That's, as  
4 it's been pointed out, very high and maybe  
5 worryingly high in that the sensitivity we have  
6 no idea about because we don't know how many are  
7 not sent to you. So even though there's this  
8 general educational campaign, you wonder with the  
9 predictive value of 90 percent whether it's really  
10 kind of a worrisome thing that there might be a  
11 lot more subtle cases out there that you're just  
12 not getting.

13 DR. KLASSEN-FISCHER: Right.

14 MS. EMBREY: We have instituted in  
15 theater, at the places where they go for sick  
16 call, and it may be that they present and they  
17 say, yeah, you've got this. Monitor it, if it  
18 starts to heal, if it meets the protocol, they  
19 just note it in their records and they move on.  
20 Not all of them get sent to AFIP. I think that  
21 even those that aren't being sent are still being  
22 captured in medical records if they report for

1 that purpose.

2 COL UNDERWOOD: This is Colonel  
3 Underwood, if I can just caveat too onto what Ms.  
4 Embrey said. We found that there were higher  
5 numbers of MEDEVACS in the beginning when there  
6 was concern about what this constituted and as  
7 time went along and living conditions changed and  
8 soldiers became aware of what it was, quite right,  
9 we had fewer MEDEVACS and more understanding that  
10 this was a self-limited process.

11 DR. PARKINSON: Very good presentation,  
12 again. Personal aside, I, for one, have always  
13 had difficulty with the term impregnated uniform.  
14 But I'll leave that aside. At any rate -- it's  
15 just an interesting turn of phrase. What strikes  
16 me about this is that what we've always got to  
17 think about, I think, and this is a wonderful  
18 example, if we had a best practice for something  
19 that was a recognized problem that has a specific  
20 laboratory test that then we have a protocol that  
21 people will go into for treatment, et cetera. We  
22 should really try to use this as a prototype for

1 other conditions that perhaps aren't as visible  
2 with a skin lesion, that don't have a specific  
3 laboratory test or you have the three criteria in  
4 order to get it so that we can learn. I'm  
5 thinking about such things that even this survey  
6 that you put together, which is a vector-borne  
7 disease survey of sorts. There should be a  
8 standardized, I hope, DoD vector-borne survey that  
9 just has two or three tailored questions based on  
10 whether or not it's a water-borne vector or one  
11 that's air-borne in a fly or a tick. I mean, if  
12 we invested one time, we shouldn't redo it 80  
13 times. So if this is becoming a standard of  
14 sorts, I would hope that the preventive medicine  
15 group or others would say this should just become  
16 standardized. This should be the way that we do  
17 this. This should be the way that we should think  
18 about analyzing psychiatric syndromes or stress  
19 disorders or how can you get as close to this  
20 model as possible for all of the other  
21 deployment-related stuff that continually comes  
22 before this Board. It's just kind of -- not that

1       it's totally applicable, but it's agent/host  
2       environment, it's how do you diagnose it, why do  
3       you then confirm it. All this stuff is just a  
4       wonderful prototype, and you might map it against  
5       two or three other types of common recurring  
6       deployment-related health issues and just see  
7       where does it line up in terms of what we could do  
8       advance the standardization of our thinking. I  
9       think this is a wonderful model and it may not be  
10      applicable to everything, but there may be great  
11      pieces of it that we can make standardized for  
12      other things. I guess that's just for anybody to  
13      comment on, but it just strikes me this is a great  
14      model and maybe we should try to extend it beyond  
15      the traditional ID approach.

16                 DR. KLASSEN-FISCHER: I'm sure those  
17      questionnaires exist, but I'm not aware of them.  
18      But ours is available on the AKO website so people  
19      use them and adapt as they wish.

20                 DR. POLAND: Okay. Thank you very much.  
21      We are going to break for lunch and we will  
22      reconvene at 1:00. Roger, any admin comments

1 about lunch?

2 COL GIBSON: No. Just return at 1:00.

3 DR. POLAND: Okay. 1:00 then. Thank  
4 you all.

5 COL GIBSON: Lunch is out back.

6 (Lunch break)

7 DR. POLAND: Okay. I think we'll go  
8 ahead and get started. If you Board members take  
9 their seats please. I'll try to remember to say  
10 it again, but we're going to meet for dinner at  
11 6:45 in the lobby. Reservations have been made,  
12 if you don't show up for your reservation, there's  
13 a \$50 charge from this restaurant. So, if by  
14 chance you need to cancel your reservation, please  
15 let Karen know, or give her \$50, whichever.

16 Our first presentation then is going to  
17 be feasibility? Okay. Is going to be the  
18 feasibility pilot study that QuantiFERON-Gold  
19 application in the U.S. Army and Colonel Brumage  
20 is going to briefing us on that. Tab 6.

21 COL BRUMAGE: Ms. Embrey, Dr. Poland,  
22 Colonel Gibson, members of the Board, it's a big

1 honor for me to be here for the second straight  
2 Armed Forces Epidemiological Board. I also wanted  
3 to let everybody know here that I have a new set  
4 of slides that I've updated since the set that you  
5 have in your hands today. So you might just lay  
6 those to the side right now and watch the  
7 presentation that way we can go through this,  
8 hopefully, fairly quickly. Now I've got the  
9 coveted post- lunch slot and I know how it is, it  
10 happens to me too. So if I fall asleep during the  
11 presentation, I hope you'll wake me. Once again  
12 this is a feasibility study, it's not a scientific  
13 study using QuantiFERON-Gold TB test. As you know  
14 QuantiFERON-Gold is an FDA approved, actually it's  
15 an advance in public health because it removes the  
16 subjectivity from interpreting tests that can help  
17 us diagnosis latent tuberculosis infection. It  
18 can be used in all instances where the Mantoux  
19 tuberculin test is currently being used. This  
20 project, which was funded just last Thursday by  
21 MEDCOM is aimed to do the following: To serve as  
22 a large pilot study to test the capabilities,

1 limitations and economic impact of performing the  
2 QuantiFERON-Gold test in the military setting. To  
3 assess the impact of switching from TB testing  
4 from nursing services over to lab services and  
5 seeing how they can handle the increased workload.  
6 To collect economic data and technical expertise  
7 that allows a smooth follow on to the next  
8 generation test which is the QuantiFERON-Gold  
9 in-tube test. The follow-on test would eliminate  
10 the 12- hour window that's currently a restriction  
11 in QuantiFERON- Gold in terms of processing the  
12 blood and making sure that it gets handled  
13 properly.

14           The QuantiFERON-Gold test is not a  
15 novelty. It's being used actively right now by  
16 the city and county of San Francisco among others  
17 and their population. When I looked up their  
18 information on the web just the other day, I found  
19 out that they've tested around 11,000 people since  
20 November 2003. It's also being considered at the  
21 United States Air Force, Lackland Air Force base  
22 for testing their recruits. It has many

1 advantages which you can see listed on the screen,  
2 including: Less subjectivity. You're not out  
3 reading a bump on the skin any longer. Has  
4 improved specificity over the Mantoux tuberculin  
5 skin test. You have less productivity that's lost  
6 of soldiers because they only come in for one  
7 visit. They don't have it placed and then read  
8 later on. You have reduced lost medical  
9 productivity. We looked at these statistics right  
10 within the walls of Tripler and found out that the  
11 non-compliance or the non-return rate for the 48  
12 to 72-hour read was running between 20 and 50  
13 percent. You have a reduced false positive rate,  
14 which means that you have reduced lab, radiology  
15 and pharmacy costs and less unnecessary treatment.  
16 It also improves IMR, which stands for Individual  
17 Medical Readiness, by having improved compliance.  
18 Some of the disadvantages that you see listed.  
19 Increase your laboratory workload, individual  
20 testing costs, and you do still have with  
21 QuantiFERON-Gold that 12-hour window. The test  
22 looks at fresh Heparinized whole blood and it

1 needs to be processed and exposed to the antigen  
2 and incubated and currently the current test is  
3 unsuitable for remote settings.

4 Just to run through a few points here,  
5 very quickly, all positives require further  
6 testing and/or treatment. The skin tests, as you  
7 know, are subject to misinterpretation. The  
8 QuantiFERON-Gold is less affected by BSG  
9 vaccination than the TST test is. It's because it  
10 uses synthetic peptides that are only component of  
11 the purified protein derivative, and there are  
12 many other antigens in the purified protein  
13 derivative that have cross reactivity with the  
14 BCG. As well, QuantiFERON, in its original form  
15 was approved by the Armed Forces Epidemiological  
16 Board in the year 2000 and can be used, in all  
17 cases where the skin test is currently used.

18 What we have proposed, and it's no  
19 longer a proposal, we've received the funding for  
20 it, is to test approximately 3600, both military  
21 and civilian healthcare workers at Tripler Army  
22 Medical Center for their annual screening and to

1 test inprocessing personnel as they come into  
2 Tripler and into all of south Oahu. We plan to  
3 fully develop the protocols that are in  
4 preparation for larger- scale testing, and so this  
5 is basically a test -- a pilot that looks at doing  
6 this on a smaller scale in preparation for a  
7 larger-scale test with the QuantiFERON-Gold  
8 in-tube test. The Gold in-tube test, by the way,  
9 is expected to be available by the end of the year  
10 after approval from the FDA. This is proof of  
11 concept in advance of the mandatory re-deployment  
12 testing. As you know, all our re- deploying  
13 soldiers have to have a skin test currently, and  
14 we're going to switch over with QuantiFERON-Gold.  
15 The 25th Infantry Division, as you heard earlier  
16 today, is going to be deploying to Iraq, roughly 7  
17 to 8,000 soldiers will be re-deploying in  
18 mid-2007. By that time we hope to fund a larger  
19 pilot study. There's less unnecessary treatment  
20 which represents an advance in care.

21 The total cost for the pilot study that  
22 we received from MEDCOM is \$95,000. We think that

1 we can even do it for a little bit less than that,  
2 but working out \$95,000 divided by 3600 patients  
3 or personnel comes out to roughly \$26 per person,  
4 which includes the equipment, supplies, re-agents,  
5 training and necessary validation to conduct the  
6 study. The testing kit itself costs \$15 per  
7 person. That's only the supplies for testing  
8 whereas the cost of a Mantoux skin test is only  
9 two dollars in supplies, but that does not include  
10 the labor, the lost productivity, the treating the  
11 false positives, and the cost of non-compliance to  
12 follow-up visits and our Army public health nurses  
13 spend an enormous amount of their time tracking  
14 down soldiers who have positive skin tests. And  
15 as we know the DRS is not always up-to-date so we  
16 have the address. It's an enormous, time  
17 consuming process to track the non-compliant  
18 soldiers to have them come in and be re-tested  
19 only to have that group of people not show up for  
20 their second reading again. We save roughly \$88  
21 per person on a chest x-ray and labs alone for  
22 each false positive. Of course the benefits

1 include less manpower intensive and we think this  
2 is going to be the standard of care for testing  
3 soldiers.

4 In conclusion, the QuantiFERON-Gold is  
5 least subjective and the most specific screening  
6 procedure available. I think our re-deploying  
7 soldiers deserve the most advance screening to  
8 prevent unnecessary testing and misdiagnosis. It  
9 is more costly, but has better clinical  
10 effectiveness. It doesn't matter how sensitive a  
11 test is, if soldiers don't follow through with the  
12 testing. It's less manpower intensive and at the  
13 SRP site, we think that this is going to become a  
14 legitimate GWOT expense. And that is the  
15 conclusion of my brief. If there are any  
16 questions.

17 DR. KAPLAN: Out of 3600 how many would  
18 you just guess would normally be positive?

19 COL BRUMAGE: Our conversion rate at  
20 Tripler runs about 1.5 to less than one percent  
21 depending on the year you look at it. Less than  
22 one to 1.5 percent.

1 DR. KAPLAN: So you'd expect about 30 --

2 COL BRUMAGE: That is correct. It's  
3 very interesting. Looking at the experience in  
4 the city and county of San Francisco, what they've  
5 shown is that they've had a decrease, a historical  
6 decrease in the number of positives by switching  
7 over to QuantiFERON-Gold by 60 to 70 percent.

8 DR. POLAND: Dr. Oxman has a question  
9 although I have to say he just returned from doing  
10 some field work on what it's like to be a homeless  
11 person in the airport.

12 DR. OXMAN: What about the need for  
13 preparatory tests for the initial negative test in  
14 personnel --

15 COL BRUMAGE: The --

16 DR. OXMAN: -- already recommended by  
17 the CDC?

18 COL BRUMAGE: The CDC came out in  
19 December 16th, 2005 and recommended that there  
20 needs to be no further follow-up testing. That  
21 was the case with the QuantiFERON, the original  
22 test. With the Gold that's no longer the case.

1 So the CDC recommends it's a standalone test,  
2 there's no need for a TST follow up.

3 DR. POLAND: Dr. Weber.

4 DR. WEBER: You talked a little bit  
5 about the specificity, I wonder if you could talk  
6 a little bit about sensitivity. My understanding  
7 was the QuantiFERON was less sensitive than TST,  
8 if it was performed exactly correctly, and I  
9 wonder what would be the cost of say, missing a  
10 case as opposed to the saved costs in not having  
11 follow up. I assume one case of TB spread to the  
12 unit would have its own costs as well.

13 COL BRUMAGE: Well the city and county  
14 of San Francisco looked exactly at that question  
15 about sensitivity. If you look on the  
16 manufacturers website and the information that  
17 came out in the MMWR in December 2005, you would  
18 be led to think that the sensitivity is roughly  
19 equivalent to the current Mantoux skin test. City  
20 and county of San Francisco found that in follow  
21 up of people who have been exposed to tuberculosis  
22 that were high risk and those who had active TB

1 and especially extrapulmonary TB it definitely had  
2 a decreased sensitivity. However, in our  
3 population at large, we would still want to  
4 institute some questions. You have to always  
5 interpret the tests results on the background of  
6 the physical exam of the epidemiological  
7 background anyway. It's just like with the  
8 interpretation of a rapid influenza test. If  
9 you're still strongly clinically suspicious you're  
10 still going to prescribe that person Tamiflu, for  
11 instance. So it's really going to depend on the  
12 background of our soldiers but you're correct, it  
13 appears to have less sensitivity.

14 DR. POLAND: Dr. Ostroff.

15 DR. OSTROFF: Colonel Brumage, I'd like  
16 to congratulate you for being able to move this  
17 proposal and protocol forward because I'm the one  
18 that wrote the AFEB recommendation suggesting that  
19 this was the appropriate way to go to move towards  
20 more objective testing because all of us that have  
21 been on the Board for some period time have heard  
22 all of the stories about difficulties that we get

1       into with the TST testing. I have just a couple  
2       of questions and they're not specifically for you.  
3       When we wrote that previous recommendation, our  
4       feeling was that this was basically a cost neutral  
5       circumstance. The test was indeed more expensive  
6       but all the savings that you got, that you  
7       mentioned, were legitimate. So it all basically  
8       came out a wash. The problem is, as you pointed  
9       out, that the cost is on the laboratory side and  
10      the savings is on the clinical side and the  
11      laboratory folks didn't want to have to pick up  
12      the additional expenses that would be encumbered  
13      on them to be able to run this task. Then I'm  
14      wondering what their current feeling is about  
15      potentially having to do this on a more sustained  
16      basis and where the resources would come to them  
17      to be able to support it.

18                   Then the other question I have is where  
19      the various services currently stand in terms of  
20      potentially moving towards using this test because  
21      one of the great difficulties will be that if you  
22      want a QuantiFERON test at one site and you're

1 doing tuberculin skin testing at another site, you  
2 might get divergent results and that doesn't  
3 necessarily mean the patients status has changed.  
4 So in order for this to really be most effective  
5 as a routine screening tool, it has to be used on  
6 a much more widespread basis than simply doing it  
7 in one MTF or another MTF. It has to be really a  
8 system-wide switch.

9 DR. GARDNER: I'm not sure I totally  
10 agree with that Steve. It seems to me one of the  
11 things we've dealt with frequently that led to our  
12 wanting to use this was the frequency of  
13 false-positive PPDs and the background noise from  
14 BCG, et cetera. This seems to be a much better  
15 mousetrap. I have a question and then a comment.  
16 I think it's been looked at, but perhaps you could  
17 review for us, how well it differentiates from  
18 other microbacteria in terms of those sorts of  
19 false positive. Middle ground, just to address  
20 your concern, would be using -- certainly  
21 QuantiFERON as the definitive back up for people  
22 who have problems with interpretation of a Mantoux

1 test that looks -- a regular PPD test, I think  
2 there's -- if we can't get uniform acceptance  
3 across the board we certainly can make the  
4 recommendation that it be used as the back-up test  
5 to sort this out. Because the efforts that were  
6 put into the epidemiologic evaluation of all these  
7 false positives were enormous and that's what  
8 we're trying to get rid of.

9 COL BRUMAGE: Well, there are a number  
10 of issues here that were raised by your questions.  
11 Dr. Ostroff, to answer your question about the  
12 laboratory, and there seems to be a shift in  
13 attitude. I remember when I first tried to launch  
14 these kind of pilot or feasibility studies  
15 initiative the past, there was a lot of resistance  
16 to doing this because they saw it as another  
17 unfinanced requirement for the laboratory. That's  
18 different than the approach we took this time.  
19 This time I went to the laboratory and said what  
20 would you need to do this test. Also the  
21 laboratory, for their part, saw it in an  
22 entrepreneurial light, in that they could become

1 the center of excellence here at Tripler, and sign  
2 intra- service support agreements from the Air  
3 Force potentially, from the Marines potentially,  
4 from the Navy potentially, and the Coast Guard,  
5 and to do all that testing at Tripler and see it  
6 as money maker for Tripler rather than as a money  
7 loss. So there was that shift in attitude. I'm  
8 sorry I forgot all the other parts of the question  
9 now.

10 DR. OSTROFF: The issue for the services  
11 in terms of where they stand in terms of  
12 potentially implementing this because it is a  
13 definite problem to have a negative QuantiFERON at  
14 one site and then go to another site where they're  
15 doing skin testing and then the skin test is  
16 positive and you reach the false assumption that  
17 it's a conversion.

18 DR. GARDNER: And then you need another  
19 QuantiFERON test be done.

20 DR. OSTROFF: Yeah. And then you need a  
21 second test to be able to try to validate exactly  
22 what's happening. So it really can't be done

1 treatment facility by treatment facility. It has  
2 to be a system-wide conversion over to, I think,  
3 what clearly everyone says this is what you do for  
4 a TB screening in the 21st century. I mean, it's  
5 just not acceptable to keep on using an outmoded  
6 test like this.

7 COL BRUMAGE: I think that in terms of  
8 trying to get other services to use it, once we  
9 can work the kinks out of it and trying it in a  
10 military setting, and there are a number of pieces  
11 to that. There's AHLTA, there's CHCS and then  
12 there's getting all those results into MEDPROS and  
13 to get them recognized by MEDPROS for individual  
14 medical readiness. Once we overcome those  
15 barriers it will be a lot easier for people to  
16 adopt it and say well, we already have an example  
17 here of one place that's done this and moved over.  
18 Hopefully that will serve as an itus for  
19 instituting this test further. But, sir, you  
20 asked me another question in regard to the test  
21 and what kind of mycobacteria can it differentiate  
22 between. The QuantiFERON test used PPD to

1 incubate with the fresh whole Heparinized blood,  
2 and the newer test, the Gold test, just uses two  
3 synthetic peptides that are components of the PPD  
4 that are not found in BCG, and they can pick up  
5 all the pathogenic strains -- they're all  
6 pathogenic, but the mycobacterium tuberculosis and  
7 the pathogenic M. Bovis strains and it can also --  
8 it does not have cross-activity with BCG, but it  
9 does include M. kansasii, M. szulgai, M. marinum.

10 DR. GARDNER: So it does include those  
11 last three you said?

12 COL BRUMAGE: It does.

13 DR. OXMAN: By design or by accident?

14 COL BRUMAGE: No. Because the peptides  
15 that they chose cross-react with those. Although  
16 those are not so common.

17 DR. POLAND: Dr. Oxman.

18 DR. OXMAN: I'd like to respond to (off  
19 mike) question. We're just getting started  
20 adapting for routine testing at the VA in San  
21 Diego. If you combined it as you're suggesting as  
22 a back up, the records test, you'd lose all the

1 economic advantages (off mike) personnel doing.  
2 So if the test is good and it lives up to its  
3 promise it will be a tremendous advance and the  
4 overall cost would be low. We figure that the  
5 dollar outlet will be greater.

6 DR. McNEILL: I appreciate the  
7 presentation. I enjoyed it. I think it's very  
8 timely. We're looking at implementing this test  
9 at our state public health laboratory. As it  
10 turns out some of the test equipment that we were  
11 formerly using for the EI tests were arboviruses  
12 is now being phased to a new methodology so we  
13 actually have the equipment on hand to do the  
14 testing. However, I think in (off mike)  
15 applications the logistical issues of the 12-hour  
16 time frame cannot be over emphasized because as a  
17 lab director I can assure you there are a lot of  
18 pre-analytically requirements to absolutely ensure  
19 that these specimens are collected, they're  
20 maintained properly and that they are put into the  
21 test system within the 12-hour window. I can just  
22 tell you that is a showstopper in most situations.

1 For example, in our state public health  
2 laboratory, we cannot provide that kind of  
3 transport even within our state. A lot of  
4 hospitals are wanting to go to this to do their  
5 annual TB screening. I think the military  
6 population Colonel Brumage has just described this  
7 pilot study is an excellent population in which to  
8 look at some of the feasibility issue that will  
9 have to be successfully addressed otherwise we'll  
10 be generating test results that are maybe worse  
11 than meaningless, they'll be dangerous.

12 DAN BEDER: Speaking in behalf of  
13 Colonel Webster who is lab consultant. Some of  
14 the issues that were brought up were the initial  
15 reason that he did not want to move to this test.  
16 You have a 12-hour window, you can't transport it  
17 as easily. Now, when they go to the second  
18 generation test, which is tube test, we'll change  
19 the fundamental how we do it. What has to happen  
20 is dependent on the types of systems you have in  
21 place, hopefully, your TMCs and some other places  
22 are not going to draw this on a Friday evening,

1 because that means you're going to have to work  
2 the rest of the night to get through with it. I  
3 think that was part of thing that was brought up  
4 initially was the problem with the timing and the  
5 time it was going to take for the technicians.  
6 Now, again, when they move to a different format,  
7 it changes the whole mechanism of the test.

8 COL BRUMAGE: I'm glad you brought up  
9 that point, because the lab has complete control  
10 over when this is drawn, what hours and what days.  
11 They have complete ownership now over the project  
12 and are going to move forward with it like that.  
13 Thank you for bringing that up.

14 DR. POLAND: Colonel Underwood and then  
15 Dr. Parkinson.

16 COL UNDERWOOD: Colonel Underwood. I  
17 just want to say that at the Joint Preventive  
18 Medicine Policy Group level we have discussed  
19 QuantiFERON-Gold in many respects. We had this  
20 issue presented to us on two occasions actually,  
21 and we're also very interested in kicking this  
22 down the road, if you will, when the in-test

1 training comes. So we are addressing this and  
2 we've addressed this before.

3 COL BRUMAGE: I think the only other  
4 comment that I would like to add is that there  
5 does need to be caution when interpreting the  
6 results, just like with any test. The negative  
7 predictive value of the test is going to decrease  
8 as the incidents or the prevalence increases in  
9 any particular population. So it's very important  
10 to look at the test results in light of the  
11 clinical and epidemiological background.

12 DR. PARKINSON: This is a great  
13 background for me because I was not on the Board  
14 Steve when this came up in 2000, so I'm kind of  
15 catching up here. But at the risk of being  
16 absolutely blasphemous as we look at whether or  
17 not this is a way to evaluate the population for  
18 military active duty, perhaps we should revisit  
19 and have a refresher on what is the prevalence  
20 tuberculosis and conversion of the services. I  
21 think I'm reminded, nationally we're at an all  
22 time low. I think the number is going down for

1 tuberculosis, although in pockets, clearly like  
2 San Francisco immunocompromised, our strategy and  
3 doctrine seems to be when we deploy people that  
4 they go into air conditioned facilities in  
5 compounds like the Green Zone in Baghdad where we  
6 have little or no local contacts of the sustained  
7 type of nature that would necessarily acquire  
8 disease. This is a very -- every nickel counts  
9 and I think we just had a presentation about  
10 annual exams to look in your mouth for your teeth,  
11 I think we should probably just get a refresher on  
12 prevalence of both active disease and conversion  
13 as best we have in the military, unless that was  
14 just recently done, before we go with all these  
15 issues out there.

16 COL UNDERWOOD: Colonel Underwood again.  
17 Within the personnel policy guidance, and here I'm  
18 speaking for the Army, we have the policies or  
19 there's a Chapter 7 which deals with the medical  
20 and dental requirements for deployment. And in  
21 that we differentiate those countries which are  
22 considered to be high risk with high prevalence of

1 tuberculosis. For those deployments not to those  
2 countries, we don't require TB skin testing. But  
3 historically, with every major deployment that  
4 we've had, we've had this issue of having -- we  
5 don't really know what the conversion rate is for  
6 all of the issues related to the TB skin testing,  
7 including not necessarily knowing what the  
8 baseline was, not knowing what the true exposure  
9 is, not knowing -- we've had the conversion rate  
10 all over the map from OIF. We had a conversion  
11 rate as high as six percent coming out of the 25th  
12 Infantry Division. We had seven percent at Ft.  
13 Carson and we don't really know what these figures  
14 mean, primarily because of that we know the  
15 positive predictive value is lower when prevalence  
16 is low and you apply the test. But all that being  
17 said, I think that the way forward is to look at  
18 this test but with all the caveats of what we know  
19 to be true from an epidemiological spectrum.

20 COL BRUMAGE: I'd like to also address  
21 that. In the 1st Infantry Division when we  
22 returned from Iraq, our overall conversion rate

1 was running around five percent TB skin test  
2 conversion. Five percent for our time there.  
3 It's not contact with the Iraqi's that's really  
4 troublesome, it's contact with the third country  
5 nationals who work on our forward operating bases,  
6 one of which was a active tuberculosis case that  
7 was discovered after she had already been cutting,  
8 for three months, one of our general's hair.  
9 Another one was a another native of India who died  
10 of tuberculous meningitis on one of our bases  
11 before he could be evacuated out of theater. So  
12 there are real risks and I think Dr. Underwood  
13 brought up the interesting comment about the 25th  
14 Infantry Division. When they returned from  
15 Afghanistan, they had conversion rate of 14  
16 percent and then they had that EPICON that went  
17 over to Afghanistan to investigate what happened.  
18 To make a long story short, they re-tested the  
19 soldiers and found out a conversion rate was truly  
20 six percent which shows some of the problems with  
21 which PPD reagent that you use to actually do the  
22 testing with.

1 DR. POLAND: Ms. Embrey and then Dr.  
2 Ostroff.

3 MS. EMBREY: Two comments. The  
4 legitimate GWOT expense, just so you all know, the  
5 official comptroller position on GWOT dollars is  
6 we will probably have one more year of shuffle  
7 mental factor, which it has to be all of our  
8 expenses for this global war on terrorism, has to  
9 actually be budgeted for. So this is beginning in  
10 FY '08. So if you're going to show an increase  
11 cost associated with the re-deployment or the SRP  
12 process that has to be built in, that wedge, needs  
13 to built into your '08 and be outprocessed. If  
14 this is determined to be a requirement that you  
15 will expand to the rest of the force. That's the  
16 first thing.

17 Second thing. I think we need to make  
18 sure that -- and I actually think that what you're  
19 doing is the right thing, my personal opinion, but  
20 I think we need to look at lab capacity and  
21 capability in general at our MTFs. Increasingly  
22 the science and the technology is going to demand

1 our labs do more and more for us. We don't have  
2 the manpower resources in our force structure and  
3 we haven't budgeted the more sophisticated  
4 equipment across the system yet to be able to  
5 implement this, especially in light of other  
6 emerging infectious diseases, and understanding  
7 that at the local treatment level. So, for me,  
8 this is the first example of many we're going to  
9 be seeing the next several years and we ought to  
10 be a little bit more foresighted about what do our  
11 labs at our MTFs have to be capable of, and start  
12 working on that now.

13 DR. OSTROFF: I'll just make a quick  
14 comment in follow up to Mike's question, in that  
15 the Board also looked at the issue of frequency of  
16 tuberculosis testing and the recommendation was  
17 precisely what was mentioned, which is that there  
18 needed to be -- the overall perspective of the  
19 Board was that there was too much testing going on  
20 and that they needed to -- the services needed to  
21 take more of a risk-based approach, which was to  
22 look at where they deploy to. If you deploy to

1 Finland or someplace like that, the overall amount  
2 of active tuberculosis in Finland is pretty low  
3 and you probably don't need to re-screen everyone  
4 upon re-deployment, but if you're deploying to the  
5 Philippines or if you're deploying to CENTCOM, in  
6 may of those areas, et cetera, there is a high  
7 risk of potentially being exposed and so that  
8 certainly would be appropriate to do that, even in  
9 the absence of relatively good information about  
10 what the actual skin test conversion rates are  
11 because it is very much operator driven and it is  
12 very subjective. And we run into all kinds of  
13 difficulties about false positives and the actual  
14 material that's being used, et cetera. You  
15 couldn't quite tell what it was, but you at least  
16 had some way to assess where it was appropriate to  
17 be doing the screening and where it wasn't.

18 DR. KILBANE: This is Ed Kilbane from  
19 ViewMED. Because you asked about where the  
20 military was on this, just two points for the Navy  
21 experience on this. We ran -- I wasn't involved,  
22 but they ran a similar pilot study at Great Lakes

1 last year and I think they were disappointed in  
2 the performance of the test and I think it's been  
3 abandoned -- well, I think they aren't pursuing it  
4 anymore. I don't have the particulars, but if you  
5 want, I can get you in touch with the people who  
6 did that study. I don't know if you've spoken  
7 with them.

8 COL BRUMAGE: Yes. I talked to Mazurik  
9 about that particular study. Dr. Mazurik and one  
10 was LTC Lisa Keep from WRAIR who were involved in  
11 the study at Great Lakes and Dr. Mazurik's point  
12 was about the caution that we need to all have  
13 because we know that Mantoux skin test does  
14 predict future development of tuberculosis. It  
15 correlates very closely, and we don't know that  
16 with QuantiFERON-Gold just because it's not been  
17 around so long. That was one of their big  
18 hesitations, but the feedback that I got from Dr.  
19 Mazurik was that, overall, in the low-risk  
20 population it was an adequate test.

21 DR. KILBANE: I don't know if they want  
22 -- they're working out a publication of that or

1       whatever.  If you've talked to them, that's fine.  
2       Also, the Navy having about 20 percent of their  
3       people, at least, out on ships, this is not  
4       something that they're going to do on the ships.  
5       So it's a problem for us in the Navy.

6                   DAN BURNETT:  Dan Burnett from the Air  
7       Force Surgeon General's Office.  Similar to what  
8       you indicated and what you said (off mike) the Air  
9       Force has been -- in Lackland there was pilot  
10      study back as early as 2002, I know was initiated.  
11      I can't tell you the results of that, but it  
12      sounds like you may have talked with some people,  
13      if not, again I can talk with you more about it.  
14      More recently I know one of the people at the  
15      AFIOH has been engaging to potentially do this  
16      again.  There are Air Force efforts along these  
17      lines as well.  The question I had for you:  
18      Everybody's kind of intuitively assumed that we'll  
19      recoup the cost with the less medical manpower  
20      pieces; has anybody done any quantification of  
21      that because I think that will make it easier to  
22      sell if we can actually, more objectively quantify

1 these are the cost savings in manpower? Are you  
2 aware of anybody doing that?

3 COL BRUMAGE: No. But that's one of the  
4 goals of our particular pilot is to look at it and  
5 say, how many people did we test? How many would  
6 we have tested the other way considering that we  
7 would have lost a certain proportion of those to  
8 follow up and had to go back and look at them  
9 again, and so be able to justify it in that way.

10 DAN BURNETT: I think it will be an  
11 easier sale once we do that.

12 COL BRUMAGE: But the in-tube test will  
13 help with a point that Ms. Embrey brought up too,  
14 which was the lab capacity, because once we have  
15 the in-tube test, it can be refrigerated and run  
16 at a later date, so you have a much more steady  
17 state. Right now we had originally proposed to do  
18 this at the SRP site at Scofield barracks that you  
19 saw this morning, but we found out that up to a  
20 thousand soldiers per day were going to come  
21 through. We would have needed three FTEs just to  
22 process all that, and that was completely

1 impractical. So we just dropped it and OTSG  
2 actually came back and said, "Well, you know,  
3 what? This was an interesting idea. Let's pursue  
4 it further." So we took a more steady, state  
5 population that was more easily within our grasp  
6 and pursued it from there and they funded it.

7 DR. POLAND: Okay. Thank you.

8 DR. OSTROFF: I'll just mention just one  
9 other thing. The other significant cost saving  
10 besides the second follow up is, is the  
11 significant reduction in the number of people that  
12 need to be put on preventive therapy that clearly  
13 don't have the disease, but simply have a  
14 false-positive skin test, and I wouldn't  
15 underestimate the cost of putting people on  
16 preventive therapy because it's not easy.

17 DR. POLAND: Thank you very much.

18 (Next presentation included with  
19 closed session)

20 DR. POLAND: Our next speaker is going  
21 to be Dr. Tom Burke, who will be talking about  
22 the Mental Health Task Force. This is important

1 for the Board, not only because of the nature of  
2 the information, but because of the incorporation,  
3 or what's the right term that we're using? This  
4 will become a part of the activities of the Board,  
5 so we need to be paying a lot of attention to  
6 this.

7 DR. BURKE: Dr. Poland, Ms. Embrey,  
8 Colonel Gibson, ladies and gentlemen. It's a  
9 pleasure to be here. I'm Dr. Tom Burke. Colonel  
10 Gibson has afforded me the opportunity to be the  
11 executive secretary for the DoD task force on  
12 mental health. I'm a physician. My first  
13 specialty was aerospace medicine, which is a  
14 sub-specialty of preventive medicine. I spent a  
15 good bit of time with medical research, Army  
16 medical research and development command. I'm a  
17 retired Army Colonel, retired from the Army  
18 Medical Corps about a year ago, and I'm also a  
19 psychiatrist.

20 The DoD Task Force on Mental Health is a  
21 requirement that was found in the FY 2006 NDAA.  
22 The NDAA was signed on January 6th, by the

1 President. The requirement is that the Secretary  
2 of Defense shall establish, within the Department  
3 of Defense, a task force to examine matters  
4 relating to mental health in the armed forces. So  
5 the Secretary of Defense is the one who's on the  
6 hook for this.

7 The major deliverable of the task force  
8 is a report to be submitted to the SECDEF, no  
9 later than one year after the appointment of the  
10 members. The members were appointed on May 15th.  
11 Their appointments became effective on May 15th,  
12 2006, so we have until May 15th, 2007 to deliver  
13 the report to the Secretary of Defense. The  
14 Secretary of Defense then has 90 days -- let's  
15 see. The report is to contain an assessment and  
16 recommendations for improving the efficacy of  
17 mental health services provided to the members of  
18 the armed forces by the Department of Defense.  
19 The two things that I find particularly important  
20 about that is that it says "efficacy" it doesn't  
21 say efficiency, it doesn't say cost benefit. It  
22 doesn't say anything about costs. It's the

1 efficacy of mental health services. It is  
2 provided to the members of the armed forces by the  
3 Department of Defense. This is a study of the  
4 Department of Defense, and the danger in that is  
5 that it tends to see the Department of Defense as  
6 existing on its own in a vacuum, when it is not.  
7 The DoD mental health system, as with the entire  
8 medical care system is intimately interlinked with  
9 the VA and with the civilian communities in  
10 providing care for soldiers as they come in, as  
11 they are in the service, as they're deployed,  
12 their families and then after they're separated.

13 The SECDEF then has 90 days to review  
14 the report and forward it to Congress. The Senate  
15 and House Committees on Armed Services and  
16 Veteran's Affairs. So this has got wide interest.  
17 And then it has 90 days further to develop a plan  
18 based on the recommendations of the task force and  
19 submit the plan to the Congressional Defense  
20 Committees. In the handout that you were given,  
21 there's a bunch of attachments behind the slides.  
22 The language of the report is in there so you can

1 read for yourself the level of detail that was  
2 provided by Congress to the Department of Defense  
3 on how to run this task force. The more in  
4 general, it's been my experience that the more  
5 detail there is in Congressional language, the  
6 more interest there is. This is not just a window  
7 dressing. This is a serious tasking for the  
8 Department of Defense. Membership, no more than  
9 14 members evenly divided between DoD and non-DoD  
10 members. If anybody can figure out a term that's  
11 a little bit less unfriendly or pejorative than  
12 non-DoD members, I would certainly love to hear  
13 about it, because I'd like to be able to use it.  
14 There's language in there directing that Army,  
15 Navy, Air Force and Marines be represented. There  
16 will be two co- chairs. One selected by the  
17 Secretary of Defense from the DoD membership. The  
18 DoD co-chair is Lieutenant General Kevin Kiley,  
19 the Surgeon General of the Army. The  
20 Congressional language also specified that one of  
21 the members of the committee be a surgeon general  
22 of an armed service. And then the other, the

1 other co-chair is to be selected from the non-DoD  
2 members by the membership.

3 This is our membership list that was  
4 approved by the White House and the actual  
5 appointments were made by the office of Secretary  
6 of the Army. There has already been a change. We  
7 are going to put -- because the Marine Corps has  
8 no medical department, care for the Marines is  
9 provided by the Navy, we picked the chief  
10 behavioral health officer for the Marine Corps to  
11 be the Marine Corps representative, but he is  
12 actually a Navy psychologist. They wanted a  
13 Marine, not a Navy officer dressed as a Marine, so  
14 we will get someone from the personnel department  
15 of the Marine Corps and we'll remove one of the  
16 Navy personnel, probably Captain McKeathern. DoD  
17 members co-chairs, General Kiley we have gotten  
18 people from -- and this is in accordance with the  
19 Congressional language, Army, Navy, Air Force,  
20 Marines. Not in accordance with the Congressional  
21 language, there was no language about having  
22 members of all of the behavioral health community,

1 psychiatry, psychology, social work, all  
2 represented, but we have those represented here.  
3 And then in the non-DoD members it was specified  
4 that there would be someone from the Department of  
5 Veteran's Affairs, someone from Health and Human  
6 Services, and a family member with experience  
7 working with family member programs, be Deborah  
8 Friar. And then we have Dr. Blazer from the AFEB  
9 and then members with academic backgrounds and in  
10 the case of Dr. McCormick, significant history  
11 with the veteran's health care system.

12           These are the elements of the report.  
13 These were specified in the Congressional  
14 language. There is a legible copy of that in the  
15 attachments to the handout.

16           Elements plus a 16th that says "such  
17 other matters as the task force deems  
18 appropriate." These range in scope from Ph.D.  
19 thesis size to work of a lifetime. The access to  
20 an efficacy of existing programs in primary care  
21 and mental health care to prevent, identify and  
22 treat mental health conditions among members of

1 the armed forces including programs for and with  
2 respect to forward deployed troops. That's just  
3 one of the elements that the committee has been  
4 tasked to address.

5 Because this was on such a short time  
6 line and because this is a committee that has  
7 non-DoD members and it comes under the Federal  
8 Advisory Committee Act, and in order to most  
9 efficiently and expeditiously get this committee  
10 up and running, it was decided to make it a sub-  
11 committee of the Armed Forces Epidemiological  
12 Board, which already meets FACA standards. Task  
13 force will conduct our business and submit our  
14 reports in accordance with AFEB rules and through  
15 AFEB reporting channels. I have been appointed as  
16 the Executive Secretary for the task force. I am  
17 not a member of the committee, I am the project  
18 manager, if you will, that will be responsible for  
19 organizing the support and assembling the products  
20 and making sure that the process of the committee  
21 moves along. As I said, I'm not a member of the  
22 task force, I work for the task force under the

1 leadership of its co-chairs, but for the purposes  
2 of gaining support and moving paper for the task  
3 force, I will be working through the executive  
4 secretary of the AFEB.

5 This is our timeline. This has also  
6 changed. We have one year to do this. The task  
7 force members were appointed on the 15th of May.  
8 The CONOPS briefing for the task force co-chair,  
9 General Kiley, has been moved up to the 31st of  
10 May. The rest of the dates are estimates that I  
11 think we need to make. Part of the scheduling,  
12 because it is a sub-committee of the AFEB, our  
13 schedule has to mesh so that we meet the meetings  
14 -- the final report, for example, of the task  
15 force has to be considered in open session of the  
16 AFEB so we have to have it ready for the March  
17 meeting of the AFEB if it's to be delivered to the  
18 SECDEF on time on May 15th.

19 Can I answer any questions?

20 DR. POLAND: I think we probably need to  
21 schedule in there a formal update to the Board,  
22 probably at our December meeting so that we can

1 have any discussion or recommendation in time to  
2 make changes or provisions for that full report  
3 coming back to us in March of '07. So maybe in  
4 the December meeting we can schedule a time to  
5 have a complete update-type briefing.

6 DR. SHAMOO: Will this include what's in  
7 the media last week about the recruitee, the  
8 entrants to the military service, that number of  
9 them have mental health problems, disorders and  
10 they were still shipped on a mission or deployed?  
11 I'm sure you've been aware of it.

12 DR. BURKE: Yes. The exact questions  
13 and exact -- well, the elements, we have to meet  
14 the element, we have to answer the questions the  
15 Congress has posed. The specific instance of  
16 those problems or of the problems that seem to be  
17 identified by those elements will be determined by  
18 the task force. If there are specific things that  
19 the Board would like for us to look at, please let  
20 Colonel Gibson or myself know and we can look into  
21 those.

22 COL GIBSON: Just to clarify a few

1 things. There were a lot of reasons why we  
2 progressed this way with this task force. Number  
3 one is that this falls well within the mission of  
4 the Armed Forces Epidemiological Board. The Board  
5 has dealt with mental health issues before. We  
6 wrote a pretty powerful recommendation on mental  
7 health research that plays into some of the  
8 specific elements that Congress is requiring, last  
9 year. That's when we wrote the report. So it  
10 made logical sense for the Board to be the parent  
11 advisory Board, federal advisory board for this.

12 The other thing is we had 90 days from  
13 the time that the Congressional language that was  
14 signed into effect to stand up this task force.  
15 We didn't quite make that, but I will tell you if  
16 we had decided the Department of Defense would  
17 have decided to form an entirely new Federal  
18 Advisory Board called the DoD Mental Health Task  
19 Force, we'd be about halfway through the charter  
20 now and we'd be another six months before we got  
21 the task force fully formed. So it saved us a  
22 bunch of, not only time, but having the Board

1       serve as the parent for this sub- committee serves  
2       us very well.

3               Third thing. By having this as a  
4       sub-committee of the Board, it allows them to have  
5       fully closed sessions like our sub-committees do  
6       at the present time, and then report their  
7       activities back through the parent Board. That  
8       gives them a lot of flexibility. You'll notice up  
9       there they are planning to have some open meetings  
10      and I think that's very appropriate given the  
11      subject matter that was going to be covered, but  
12      it allows them to work in closed session and  
13      actually get some things done effectively, because  
14      a year is not much time to address all of the  
15      issues in this -- all of the elements that are  
16      being presented to them. Finally, we put Dr.  
17      Blazer on here to give us a good tie in back to  
18      the Board.

19              DR. POLAND: Ms. Embrey.

20              MS. EMBREY: A veteran of FACA group and  
21      the Department for the last 32 years, I would  
22      suggest that if this is a sub-committee, and it

1 will be, your timeline must include when AFEB  
2 general meetings are, and there's one in September  
3 that's not shown on your timeline. There's one in  
4 December that's not shown and again in Spring and  
5 so forth. So those need to be included as part of  
6 the vetting process.

7 DR. BURKE: Yes, ma'am.

8 MS. EMBREY: Secondly, General Kiley as  
9 the co- chair, it will be very important, I think,  
10 that he and the task force designated non-DoD task  
11 force co-chair member, provide at the earliest  
12 opportunity possible how that group intends to  
13 interact with this group. And if that's what's  
14 meant by the CONOPS, good. If it isn't it should  
15 be made clear whether or not this task force is  
16 autonomous or whether or not it is making  
17 recommendations to this Board and this Board is  
18 the one making the recommendations.

19 DR. OSTROFF: I'm no longer on the Board  
20 and I find this fascinating and I'm always happy  
21 when I see the Board serving a purpose that's of  
22 high military relevance. I find it, that the

1 composition of the sub-committee, I find very  
2 interesting and I understand that it's  
3 Congressionally mandated, but I don't -- thinking  
4 of the history of the Board, I can't ever think of  
5 a time when there's a sub-committee that's been,  
6 at least, co-chaired by one of the Surgeons  
7 General of one of the military forces. My  
8 question is: Is this composition compatible with  
9 the AFEB charter? Because I think it's an unusual  
10 sub-committee setup for the AFEB and I just want  
11 to make sure that it's legitimate and kosher from  
12 the standpoint of our charter.

13 COL GIBSON: Yes. Short answer is yes.  
14 We ran it through OGC to make sure it was. This  
15 is very similar to the architecture of the Defense  
16 Science Board where they have several task force  
17 sub-committees, et cetera, that work with their  
18 own agendas and then bring their product back to  
19 the full Board before it goes further. And we  
20 were mandated to have the membership as it exists,  
21 but it fully complies with our charter.

22 DR. POLAND: Roger, we were just having

1 a side conversation, and you may have just said  
2 this and I missed it, but my expectation would be  
3 that this would be vetted and approved by the  
4 Board, they would not operate autonomously. Just  
5 so we're clear on that.

6 COL GIBSON: The sub-committee of the  
7 Board, which is the task force, will have their  
8 own meetings. They will be able to work their own  
9 agendas, use their own CONOPS to deliver, to  
10 address these issues. The products of that task  
11 force must, must come to this committee, this  
12 Board before they go out. This Board must  
13 deliberate in open session and the final product  
14 will have to be a -- it will be a product of this  
15 Board from the task force.

16 DR. PARKINSON: Is Congress okay with  
17 that? I mean, that the Board has approval  
18 authority of the by- named composition of that  
19 Board with their mission and the people they want  
20 on it? I mean, did they consider that there would  
21 be another 15 members -- that was DoD's choice to  
22 set it up that way, it's not certainly specified

1 that there'd be another in between that body and  
2 as much as rationally it makes sense -- I don't  
3 imagine that there would be discordance  
4 necessarily, but --

5 COL GIBSON: Yes. Congress is okay with  
6 this and they haven't had a problem with that at  
7 all.

8 DR. PARKINSON: Okay. Good.

9 COL GIBSON: The appointment of the  
10 membership -- all of those task force appointees  
11 had to go through White House for approval. Same  
12 as you did to be appointed.

13 DR. PARKINSON: Right. Okay. Thank  
14 you.

15 DR. POLAND: Okay. Dr. Burke, thank  
16 you. You've got a big job ahead of you, but an  
17 important one. And we, by the way, I'll just say  
18 for the Board that we're available should you want  
19 to consult with any of us or have questions, we'll  
20 make ourselves available.

21 Okay. The next is an interim report.  
22 Dr. Halperin is going to go over with us the

1 occupational health and environmental implications  
2 of low-dose short- term chemical munitions  
3 exposures. Under Tab 8 you'll see some of that  
4 information.

5 DR. HALPERIN: Hello. I'm happy to fill  
6 in for Wayne Lednar who couldn't be here today.  
7 This story begins in 1991, I guess it was, when  
8 our military detonated some munition dumps in  
9 Khamisiyah, Iraq that produced a plume that went  
10 forth from the dump and there was a potential for  
11 U.S. soldiers to be exposed to the contents of  
12 that plume. Subsequent to the incineration of the  
13 dump, there were various visits by the U.S.  
14 military and others to the dump site and it was  
15 determined that there were remnants of Sarin nerve  
16 gas at the dump site and in some of the  
17 un-detonated munitions that were at the dump site.  
18 So the question became: Was there Sarin gas in  
19 the plume, and what was the affect on the soldiers  
20 there? The story continues in the late '90s when  
21 the Veteran's Administration conducted a mortality  
22 study of soldiers who were in the area, the two

1 chief authors of the study were Tim Bullman and  
2 Han Kang, both epidemiologists at the Veteran's  
3 Administration, and the study's really -- that was  
4 about 1996, really didn't find much of anything  
5 and there was really no a priority hypothesis as  
6 to what they would find and the story might have  
7 ended at that point. However, in 2000, two things  
8 happened. One was that there was remodeling of  
9 the plume with better definition of where it went  
10 in Iraq as it left the munition site. Secondly,  
11 there was better information available about where  
12 soldiers were in Iraq. No longer was the data  
13 just available on battalions, which I guess have  
14 thousands of people and can cover a large area,  
15 but was down to the company level, which is  
16 hundreds of people in a very specific area. So  
17 with this more specific area there was better  
18 information about where people were and hence  
19 their likelihood of being potentially exposed in  
20 the plume. There was also, by 2000, several more  
21 years of follow up of this cohort to see if the  
22 soldiers, and there were a couple hundred thousand

1 of them, were alive or had deceased, and if they  
2 were deceased, what they died of. I notice  
3 everybody watching this. I'm not presenting  
4 anything from here. If somebody wants to turn it  
5 off, be my guest.

6 In the follow-up study that was started  
7 in 2000, the soldiers were then followed from 1991  
8 to 2000, alive or dead, what did they die from.  
9 That study was then published in the American  
10 Journal of Public Health, I think it was, just  
11 last year. And as you remember, Tim Bullman  
12 presented the results of that study to us. The  
13 study, again, had no a priority hypothesis so it  
14 looked at all causes of death, and as is typical  
15 and standard for cohort mortality studies, grouped  
16 these causes into various categories. One of  
17 which was brain cancer. The only finding from  
18 that study that was in significant excess was an  
19 excess of brain cancer. As I remember there are  
20 about 25 cases of brain cancer in those soldiers  
21 who were likely to be exposed in the plume and  
22 there were about 25 brain cancers amongst soldiers

1 who were not likely to be in the plume. The  
2 problem was that the ratio of brain cancer was  
3 about twofold in the soldiers potentially exposed.  
4 So, relative risk, if you will, of about twofold.

5           Some may say well, this could be by  
6 chance and what does it really mean, and the  
7 epidemiologists Bullman and Kang went forward to  
8 do the appropriate thing which was to look for  
9 other information that would either support an  
10 association of deflate the evidence for the  
11 association. One way of doing that was to say,  
12 okay, how long were soldiers potentially exposed  
13 to the plume, and they categorized people as  
14 exposed for one day or two or more days. So it's  
15 essentially a dose response what they were looking  
16 for. And the facts are that the brain cancer  
17 excess rose with the longer that there was  
18 exposure to the plume and that's about where the  
19 epidemiology stops as of the year 2000.

20           The request to this group came from the  
21 director of the Army Chemical Materials Agency  
22 that is responsible for the deconstruction of

1 munitions located around the territorial United  
2 States and in one overseas area, in this area,  
3 where munitions that have nerve gas and other  
4 things in them are decommissioned. They're taken  
5 apart, the materials are incinerated in five very  
6 unusual industrial plants. The concern voice was  
7 that if there is a brain cancer excess that is  
8 resultant from this, must be very low level of  
9 exposure, what are the ramifications for the  
10 workers in these plants, and what are the  
11 ramifications for the people who live around these  
12 plants, because inevitably, they like all of us,  
13 will have 100- percent mortality. And the  
14 question is, what is it that they will die from  
15 and some of will die inevitably from brain cancer  
16 and other things, and will an association be drawn  
17 to their potential exposure here in their  
18 workplace with all of the ramifications that one  
19 can think of as far as lawsuits and culpability  
20 and on and on and on. So the question to the  
21 Board was, essentially, what did we think of the  
22 epidemiology and what do we think of the

1 protection that was in place at these five  
2 industrial sites and to make recommendations back.  
3 The committee under Wayne Lednar has met by  
4 telephone call once and discussed the  
5 epidemiologic report and it has many strengths and  
6 it certainly has weaknesses. Some of the  
7 weaknesses are that the information about exposure  
8 is minimal, the brain cancer, as a category  
9 grouped all sorts of brain cancers. It did not  
10 have a specific pathology, but that is standard  
11 approach for this kind of study without an a  
12 priority hypothesis at this point. So the study  
13 looked fairly reasonable although it had some  
14 deficits. As far as looking at it on a scale of  
15 how strong was the causal association, I think the  
16 general sense would be, it certainly is not proof  
17 positive. There is some information that's  
18 worrisome, because of this dose response  
19 relationship, but definitely not a causal  
20 association has been shown.

21 The next stage in our efforts were to do  
22 a site visit, and I have to give credit to Roger

1 and his staff that over a -- I think it was a  
2 four-day period, Roger? Four of us, Dr. Lauder,  
3 myself, Roger and Wayne cleared our schedules, got  
4 the tickets, went to Edjuit arsenal, the charge of  
5 the light cavalry, and we got there and visited a  
6 mock up of the decommissioning site. This was not  
7 a decommissioning site, this was a mock up of the  
8 decommissioning site that had all of the processes  
9 right there for training people how to do the  
10 decommissioning of the munitions. What we found  
11 was really -- and I've been in a lot of factories  
12 through my experience with NIOSH over the years,  
13 was really quite an unusual place with a degree of  
14 personal protection, suits and airline respirators  
15 and continuous monitoring that was really quite  
16 exemplary. They reported to us that over the past  
17 20 years that things had changed in the chemical  
18 munitions deconstruction agency, or whatever the  
19 name is, in that there were, 20 years ago, some  
20 infrequent evidence that there might have been  
21 exposure to the hazardous materials, but over the  
22 last five years or more, that there really had

1       been absolutely no evidence that there had been  
2       any exposure that they could detect by monitoring  
3       of workers and so forth.

4               But we also found that there was no  
5       long-term follow up of these workers in the sense  
6       of medical monitoring or surveillance, et cetera,  
7       of the workers. There was also, not a very  
8       intensive program from the point of view of health  
9       promotion disease prevention as far as smoking  
10      cessation, weight control, exercise and so forth.  
11      We then proceeded to come to conclusions about  
12      recommendations that we would make as far as what  
13      needed to be done, henceforth. The tentative  
14      conclusions are several and I'll go over them with  
15      you one by one.

16              The first is -- it's a recommendation  
17      and a conclusion, which is that the Bullman  
18      article while providing some information of an  
19      association had follow up through the year of  
20      2000, so that's really only ten years of follow  
21      up, from 1991 to 2000, or nine years. Five more  
22      years have gone by since then. One of the best

1 things that could happen, at this point, is that  
2 the cohort be followed up for another five years.  
3 Hopefully, it will lead in one of two directions.  
4 The one direction is that things will regress to  
5 the mean, and this excess of brain tumors that was  
6 observed very early, if you will, after the  
7 exposure will dissipate or even go negative and  
8 there won't be a continuing wave of brain cancers  
9 as one might expect in an occupational group that  
10 had a carcinogenic exposure where evidence of that  
11 exposure was manifest fairly early. So the first  
12 possibility is that the excess will go away, it  
13 will regress to the mean and there won't be a  
14 problem as far as brain cancer excess.

15 The other possibility is that a  
16 follow-up study would be equivocal. It might have  
17 some excess, but it won't tell one way or the  
18 other where reality lies and what that will mean  
19 that even further follow up will be necessary over  
20 a period of years.

21 And the third, which is really the worst  
22 scenario, is that this excess, which we're getting

1 a glimpse of very early in latency, will actually  
2 become more accentuated and there will be more of  
3 a brain cancer excess amongst this population.  
4 And then there's something more to worry about.

5 Other recommendations that we are  
6 contemplating making is that this study needs to  
7 be done in a way that is beyond reproach, and  
8 there is in epidemiology, and you're seeing  
9 essentially in the informal system of checks and  
10 balances, the VA published their paper, it's now  
11 going to be critiqued. There will be other follow  
12 up and the results will either be supported or  
13 not. We're going to recommend that when this  
14 follow-up study, starting at 2000 and going  
15 through 2005 or even more years, if possible, is  
16 done that there be a blue-ribbon panel that  
17 watches over its conduct. Make sure that  
18 hypothesis are specified beforehand. That the  
19 data is looked at legitimately so there are  
20 absolutely no questions on one side or the other  
21 that there was some underlying preconception of  
22 how the study should come out. So the second

1 recommendation is that there be a blue-ribbon  
2 panel.

3           The next recommendation is that really  
4 there ought to be more emphasis on the health of  
5 the workforce at these five plants. Again, many  
6 of these workers are contractors, they are aging.  
7 There is great opportunity for reducing the  
8 morbidity and mortality through health promotion.  
9 They're industrial hygiene side of things look  
10 like they're very well taken care of, but as far  
11 as health promotion there really could be a lot  
12 more work that could be done for them. Included  
13 in that recommendation is that their morbidity  
14 and/or mortality experience ought to be tracked  
15 over the years to ensure that they have no excess  
16 of any malignancy, especially, one that now we  
17 have to take as an A priority, which is that  
18 low-dose Sarin may actually be associated with the  
19 brain cancer excess.

20           So in very brief that's where we have  
21 gotten to. The next phase is basically revisions  
22 of an excellent draft that Wayne and Roger have

1 put together of the report back to the chemical  
2 munition -- Army Chemical Materials Agency, and  
3 then come back to the Board with the final report  
4 for your approval. That's it in thumbnail. I'd  
5 be happy to answer any questions and I'm sure  
6 other people -- Dr. Lauder is here, and Roger is  
7 here -- would be happy to participate in answering  
8 any questions you might have.

9 DR. POLAND: Thank you, Bill. And  
10 particularly thank you for the time and effort  
11 that this sub-committee has spent on that. That's  
12 quite a testament to take four days out of your  
13 schedule. I appreciate that.

14 DR. HALPERIN: We actually only one day.  
15 It took Roger four days --

16 DR. POLAND: One question I have for you  
17 is -- I'm sure you guys looked at: Is there any  
18 data, anecdotal or otherwise from other countries  
19 that have faced similar, sort of,  
20 deconstruction-type tasks or blown up other sorts  
21 of chemical munition?

22 DR. HALPERIN: I'm not aware of any.

1 Roger?

2 COL GIBSON: The Institute of Medicine  
3 did two reviews on Sarin. One of them back in '95  
4 and then they completed another just recently in  
5 2004. Some of those studies did look at other  
6 countries and they're not necessarily the  
7 deconstruction of munitions, but in fact, there's  
8 a paucity of data in that area, but they did look  
9 at other countries in low-level exposures to  
10 organophosphates and acetylcholine inhibitors and  
11 basically there's no evidence outside of this  
12 study of an association between nerve agents or  
13 that category of chemicals and cancer in general,  
14 or brain cancer. Keep in mind, and one thing that  
15 I believe you brought up -- Dr. Poland brought up  
16 during our discussion with Dr. Bowman, they did  
17 scores of comparisons -- of outcome comparisons,  
18 isn't wasn't just focusing on brain cancer.  
19 Scores of comparisons and they found one that was  
20 statistically significant.

21 DR. POLAND: So very much -- Bill didn't  
22 quite say it this way, but I think that's what he

1       meant, at best we can take this study as a  
2       hypothesis-generating type study. Did you have  
3       specifics, Bill, about the blue- ribbon panel that  
4       you were thinking of? Were you thinking of  
5       something IOM or something within DoD?

6               DR. HALPERIN: My advice here is to this  
7       the way that we did it within the National  
8       Institute for Occupational Safety and Health,  
9       which is to thoughtfully think of who the key  
10      people would be, who would be turned to to ask for  
11      their evaluation of the study once it's done, and  
12      invite them to be on the blue-ribbon panel. So  
13      you're really looking for very solid hitters who  
14      are the best in the area of occupational cancer,  
15      epidemiology and so forth. It should include  
16      people from the Board, but I think we should  
17      outside as well for this.

18             DR. POLAND: Ms. Embrey.

19             MS. EMBREY: I want to thank you for  
20      doing the work that you have done. My office,  
21      before it became what it is, was the office that  
22      was the special assistant to the secretary for

1 Gulf War illness and sponsored much of the  
2 research that went into Gulf War illness and the  
3 unexplained illnesses that have resulted. I do  
4 think a couple of things. I think you've got  
5 significant differences between how the Department  
6 of Defense plans to destroy the chemical munitions  
7 and the incident in Khamisiyah, and I think it  
8 would be important to highlight that in your --  
9 because one was an uncontrolled, accidental  
10 explosion and the other is very controlled, very  
11 health safety, occupational, environmental  
12 controlled situation.

13           Second, I do believe we are sponsoring  
14 in my office a follow up of the cohorts from the  
15 Khamisiyah, specifically in combination with the  
16 VA, as well as we're covering some of that to the  
17 millennium cohort study. I think it's important  
18 for us, me especially, to follow up with you and  
19 your committee to make sure that that's happening  
20 so that you don't waste a recommendation.

21           Thirdly, the idea of a blue-ribbon panel  
22 I think is extraordinarily helpful especially in

1 dealing with VA when they do independent research  
2 and don't necessarily coordinate with us. There  
3 is a panel that was formed at the request of  
4 Congress to advise VA on Gulf War research,  
5 sponsored by the VA. It is headed up by a  
6 gentleman named Dr. Bins, Dr. Hayley and some  
7 other very interested scientist trying to  
8 articulate what might have happened to these  
9 veterans. Does not meet your criterion  
10 necessarily for this blue-ribbon panel, but it  
11 would be competing with that group, so you need to  
12 know that such a group exists for the purposes of  
13 overseeing the research being done by DoD and VA  
14 on these kinds of topics. I think that's all  
15 before I probably will be fired after (off mike).

16 DR. HALPERIN: I think this panel ought  
17 to be selected not because of its experience with  
18 Gulf War syndrome, but it's ability to evaluate  
19 complex epidemiologic and industrial hygiene  
20 exposure, plume modeling, et cetera. Not because  
21 of what they've done in the past.

22 DR. POLAND: Dr. Silva and then Dr.

1 Kaplan.

2 DR. SILVA: Thank you for the nice  
3 summary of the report. It is complicated. I  
4 asked this last fall when I first joined the  
5 Board, and that is: These ICD-9 Codes that they  
6 use are only two, 191 and 192, I haven't had a  
7 chance, I should have looked up -- what does that  
8 incorporate?

9 DR. HALPERIN: It essentially  
10 incorporates everything including metastatic brain  
11 cancer. In the paper they go through an analysis,  
12 essentially a sensitivity analysis where they take  
13 out the metastatic, they limit it to the ones  
14 where they have pathologic confirmation. They do  
15 all sorts of combinations of things and they're  
16 still stuck with the excess of brain cancer and  
17 with this dose response excess of brain cancer.  
18 It essentially in the next round, now that there  
19 is a hypothesis, much more can be done as far as  
20 looking at specific cell types, pathology, et  
21 cetera. But I just want to say that this is  
22 standard. This is standard how a mortality study

1 of dioxin-exposed workers, or ethylene oxide, et  
2 cetera, et cetera. There are just too many ICD  
3 codes. Imagine if you analyzed every one of them,  
4 you'd have lots and lots of excesses that would be  
5 spurious. So they're usually grouped and then a  
6 follow-up study happens so it's not unusual.

7 DR. SILVA: Thank you, Bill.

8 DR. KAPLAN: That may be the question  
9 that I was going to ask. I was trying to recreate  
10 that conversation at the fall meeting. It seems  
11 to me that I recall us talking about co-factors,  
12 or at least it was raised at the time in the  
13 population. And the other issue was somebody had  
14 looked or was going to look or find out more about  
15 pathogenetic or suspected pathogenesis of the  
16 different types of the many different types of  
17 brain cancer. Did I imagine that or is that, in  
18 fact, a valid question?

19 DR. HALPERIN: Well, either you imagined  
20 it or we forgot it. I don't remember that.  
21 Roger, do you?

22 COL GIBSON: I don't remember that

1 either, but you very well may be right.

2 DR. KAPLAN: I've been accused of having  
3 a vivid imagination.

4 COL GIBSON: We did note very clearly  
5 during those discussions that we're talking about,  
6 different cell types of brain cancer and the  
7 biological plausibility of all of those cell types  
8 responding exactly the same way to a specific  
9 chemical insult is unlikely at best.

10 DR. KAPLAN: So I didn't totally imagine  
11 it. Thank you.

12 COL UNDERWOOD: This is Colonel  
13 Underwood. When this was presented to us, when  
14 the researchers presented this article to us, I  
15 asked that question: What were these astocytomas,  
16 what were the cell types? And they didn't have  
17 that information.

18 DR. OXMAN: When you sense the  
19 blue-ribbon panel -- in a sense the blue-ribbon  
20 panel will be monitored or won't it be modeled on  
21 a large study data safety and monitoring board  
22 that in addition to having people with interest

1 and expertise also has some disinterested people  
2 who are good statisticians.

3 CDR McMILLAN: Is there any information  
4 from the Japanese cohorts following the Sarin  
5 attack in Tokyo?

6 DR. HALPERIN: Not that I'm aware of.  
7 Roger, do you know?

8 DR. POLAND: Any follow up after the  
9 Sarin attack in Tokyo.

10 COL GIBSON: There's ongoing follow up  
11 with those folks. So far there's been no  
12 indication of any association with neoplasms at  
13 this time. We're out 12 years on that; is that  
14 correct?

15 DR. HALPERIN: But understand it's a  
16 very small group so even if there were no evidence  
17 it wouldn't weigh. If there were an excess it  
18 would be phenomenal given how small a group it is.

19 COL GIBSON: I would add, as a follow-on  
20 to Ms. Embrey's statement, one of the reasons  
21 that these two tie together is the detection of  
22 sarin/cyclosarin from Khamisiyah was basically

1 nonexistent. We didn't know about it until  
2 afterwards when we started doing some explosion  
3 site, or detonation site analysis. Within our  
4 working environment, this occupational cohort,  
5 we're talking about levels of exposure that are  
6 virtually undetectable. They are doing realtime  
7 monitoring with alarms that are set way, way below  
8 any action-level for these chemicals. The times  
9 that those alarms go off where a human is actually  
10 involved are incredibly rare. But if zero is  
11 related to brain cancer than the follow on is  
12 what's going on within an occupational community  
13 where zero is what we're measuring.

14 DR. POLAND: Okay. Thank you, Bill,  
15 very much. We're going to take 15-minute break or  
16 thereabouts. We'll reconvene at 3:15.

17 (Recess)

18 DR. POLAND: Before our closed session,  
19 and that is an interim report on trainee health  
20 surveillance. And our own Dr. Michael Parkinson  
21 is going to that.

22 DR. PARKINSON: Good afternoon. In like

1 vein with Bill's report, I wanted to give you an  
2 update of where we're at, and also to use an old  
3 Air Force term get a vector check, from not only  
4 my committee but from the Board as whole in the  
5 direction that we're going. Now, I will tell you  
6 that this question was briefed, the original  
7 question is in your briefing book in December, the  
8 December 2005 meeting, and the sub-committee on  
9 Health promotion of disease prevention, we tried  
10 to meet at the last AFEB, but it really was me and  
11 about three preventive medicine officers. For  
12 some reason the change in the membership. So what  
13 you're seeing today is largely my pen to paper  
14 with some vector feedback, if you will, from the  
15 preventive medicines representatives. So what I'd  
16 like to do is walk you through a very high-level  
17 draft recommendation. I'd also caveat a little  
18 bit by saying that initially my tendency was to  
19 jump back in without demeaning the term "do  
20 staff-level work" in terms of actually working  
21 with and developing templates and flow charts and  
22 how this fits into the broader challenge of DoD

1 comprehensive longitudinal health surveillance.  
2 As you'll see my thinking evolved a little bit to  
3 say let's get it back to answering the three  
4 questions that General Pete Taylor of the Air  
5 Force asked us and then put some suggestive  
6 material in the report that suggests from the  
7 Board's perspective the general direction that we  
8 would like the department to go as they grapple  
9 with this issue, which, as you know, is just the  
10 tip of a bigger iceberg. So what I projected for  
11 you here, restated the question up there as you  
12 can see. Does the current trainee health  
13 surveillance reporting and information-sharing  
14 processes and infrastructure at all accession  
15 sites meet minimum requirements to:

16 Monitor and take action on acute health  
17 events; Archive and analyze data for longer-term  
18 health trends and research studies; and allow the  
19 sharing of data, reports and best practices  
20 between similar function services sites?

21 So without being too tutorial, which  
22 sometimes I think our reports in the past have

1       been either just a little bit too educational or  
2       perhaps even bordering on preachy. What I was  
3       trying to do was just say that the goal of  
4       effective trainee health surveillance should meet  
5       what I always keep, in my mind, as the CDC  
6       definition for surveillance and that is:  
7       Systematic collection, collation and analysis of  
8       data, not just for its own sake, but the  
9       dissemination of who need to know, whoever those  
10      are, so that an action can result. That will be  
11      the operational definition in responding to this  
12      question that we'd like to be able to respond to.

13                So the first one, individual services  
14      have adequate though varying and inconsistent  
15      approaches to monitoring and responding to acute  
16      events such as infectious disease outbreaks,  
17      training and health-related illness and injuries,  
18      likely to cause significant health threats to  
19      trainees while enrolled in basic training, the  
20      Academies and in officer training schools.

21                Current surveillance, reporting and  
22      information- sharing processes and infrastructure

1 are inadequate to provide data for analysis on  
2 longer-term health trends and research studies.

3           And the third question, because of this  
4 lack of standardization of surveillance policies,  
5 procedures, screening tests and databases, the  
6 sharing of data, reports and best practices is not  
7 optimal. Significant improvement in health  
8 outcomes, operational performance and utilization  
9 of resources are likely by employing and codifying  
10 a DoD or Tri-Service "enterprise" approach to  
11 trainee health surveillance and research.

12           Secondly, those are the three questions  
13 that I just kind of framed there. If current  
14 processes are insufficient what does the Board  
15 recommend for short-term efforts to meet basic  
16 requirements and for longer-term enhancements to  
17 future trainee health surveillance, reporting and  
18 information-sharing processes and infrastructure?  
19 The Board recommends the creation of a DoD  
20 Instruction on trainee health surveillance and  
21 research which would establish a DoD-level body,  
22 comprised of HA, Service Preventive Medicine

1 Officers and key representatives of major  
2 acquisition function and sites -- it should say  
3 accession functions and sites, such as MEPS, basic  
4 and secondary enlisted training bases, service  
5 academies, officer training schools, which would:  
6 First, compare -- the first thing is get baseline  
7 information. Compare service trainee accession  
8 and surveillance practices, for example, as  
9 preliminarily outlined in Attachment 1. Now, if  
10 you'll bear with me, I'll go to Attachment 1,  
11 which appears in your paper version as Attachment  
12 1. This is document that Colonel Snedecor of the  
13 Air Force pulled together looking across the  
14 entire continuum of Air Force facilities. What  
15 are the requirements? Where do those requirements  
16 come from? Are they done at Lackland? Are they  
17 done at the Air Force Academy? Are they done in  
18 officer training schools? Similarly, I think as I  
19 talked to the service preventive medicine reps at  
20 the last meeting, a similar grid would be able  
21 very quickly for us to identify where Army, Navy,  
22 Air Force and Marines are with respect to

1 screening requirements, periodic health exams, et  
2 cetera. This is all kind of compiled here.

3 If I go back to the document, the second  
4 major function, once that was done, is to define a  
5 core set of requirements and best practices which  
6 would serve to create a uniform "baseline" data  
7 set for current and future DoD surveillance,  
8 including such things as periodic health exams,  
9 pre- and post-surveillance requirements and  
10 separation evaluations.

11 No. 3, define and share, where  
12 appropriate, service-unique requirements based  
13 primarily on unique operational demands specific  
14 to that service. The thrust that I would like to  
15 lay forward is that if there is a unique service  
16 operational demand, that should be the primary  
17 reason for deviation from a trainee health "best  
18 practice." If one cannot define what that is,  
19 then it should have a very high threshold as to  
20 why one of the services -- it's the same reason in  
21 healthcare quality improvement, variation for  
22 variations sake, inevitably wastes resources and

1 doesn't have the best outcome.

2 No. 4, obviously, share, then, the  
3 experience and best practices for adoption across  
4 the services appropriate.

5 And, No. 5, this is the broader picture,  
6 assure integration with broader DoD health  
7 surveillance requirements and practices as  
8 preliminarily outlined in Attachment 2. If you  
9 turn to Attachment 2, and Colonel Ruscio you'll  
10 remember this is what I was talking about at our  
11 last meeting, is that if you look at the lifelong  
12 continuum from MEPS, the good work that David and  
13 his group does, all the way to separation and  
14 retirement, there are questionnaire, physical  
15 examination, screening tests, mental health and  
16 functional status exams, immunizations, serology  
17 draws, fitness assessments and huge issues around  
18 data storage and acquisition. Where does the data  
19 reside? Is it in CHCS, now AHLTA, or does it live  
20 in other data specific databases? Again, I was  
21 not meant to be prescriptive here, but to say the  
22 order of magnitude in answering this question

1 really must ultimately get into an enterprise view  
2 of cross-service trainee requirements and  
3 cross-DoD surveillance requirements and that was  
4 the thrust of actually attaching these to the  
5 document. That may be overkill, but I think in  
6 the absence of that type of systematic direction,  
7 we might be missing something.

8           So to wind up, based on the December  
9 2005 review of service trainee health programs,  
10 which we had at a high level, from all the  
11 services, the Board believes that standardizing  
12 best practices for the surveillance of febrile,  
13 respiratory illness, GABHS prophylaxis and  
14 treatment, surveillance for heat-related injuries  
15 and the elimination of sickle cell screening in  
16 accordance with the private AFEB recommendation  
17 should receive priorities of this body as it  
18 begins to look at it. So the question is not only  
19 to form it, but in our opinion, hearing those  
20 briefings, at least those are the things I culled  
21 out, that I sensed a little angst among the Board  
22 itself, in terms of saying these are areas -- I

1 know Dr. Kaplan is over there, that we should  
2 probably revisit sooner rather than later.

3           Then the last question: What does the  
4 Board recommend to enhance trainee health research  
5 efforts currently conducted separately by the  
6 services? This is exciting for me as I scroll  
7 down, because I don't remember what the heck I  
8 wrote. I'm just kidding. The DoD trainee  
9 surveillance and research body, and I'm not going  
10 prescribe, we shouldn't prescribe what the name  
11 is; but this function should:

12           One, periodically review the leading  
13 causes of lost training days,  
14 recruit/academy/officer training school attrition  
15 and suboptimal performance across the services.  
16 Major areas of collaboration, at a minimum, should  
17 include infectious disease and training-related  
18 illnesses and injuries.

19           No. 2, define common research questions  
20 and collaborate to maximize the effectiveness,  
21 efficiency and DoD-wide impact of studies  
22 conducted.

1                   No. 3, always do more research and  
2                   present to the Armed Forces Epi Board annually on  
3                   current trainee surveillance practices and  
4                   research efforts. I think this would  
5                   systematically raise the level of dialogue, and  
6                   hopefully focusing us on getting rid of variation  
7                   for variations sake, getting a research agenda  
8                   that's actionable and hopefully meet the goals,  
9                   not only of General Taylor's question, but even  
10                  more broadly of the AFEB mission itself. So with  
11                  that I'll be quiet and just take notes and  
12                  reactions to that as a general approach and  
13                  hopefully, Roger, working with you between now and  
14                  the next meeting, have something finalized if  
15                  we're getting close with this draft.

16                  DR. POLAND: Thank you, Mike. Nice  
17                  work, nice conceptual framework. We were having a  
18                  few sideline conversations here. This would fit  
19                  very nicely in the Armed Forces Health  
20                  Surveillance Center activities that are ongoing.  
21                  This would be a piece of that. One thing in the  
22                  best practices and some of things that we thought

1 would be high priority among those have been  
2 Chlamydia screening, which as we previously  
3 discussed in inconsistent across the services and  
4 we've seen what the morbidity related to that has  
5 been and I don't know, at the training level,  
6 whether we've had much discussion about any of the  
7 mental health issues and whether those would fit  
8 into the tracking, the longitudinal tracking  
9 aspect of it. I think this is an excellent  
10 conceptual start. It's sort of surprising that we  
11 don't have it yet, but this is a good way forward  
12 for it. Any comments from the Board? Roger you  
13 wanted to make a comment?

14 COL GIBSON: Just one. Thanks, Mike.  
15 This looks very, very good. It ties together the  
16 dashboard concepts that the commanders need at the  
17 training sites with a long-term strategic  
18 approach, and that approach to improving the  
19 health of accessions, improving the training  
20 programs, et cetera. Well constructed.

21 DR. WEBER: That was informative. I  
22 don't know the history to this, so what I'm going

1 to ask may be outside the scope of what you were  
2 intending to do. The limited interaction I've had  
3 with DoD over my years with CDC, it's often been  
4 in the context of outbreaks in trainee context. I  
5 wonder, is it outside the scope of what you were  
6 doing or is there some way to integrate lessons  
7 learned from such outbreaks and how to tailor  
8 further surveillance prevention screening, et  
9 cetera? I wonder if that can be made explicit or  
10 whether it should be explicit or whether it's just  
11 outside the scope of what you were intending to  
12 do.

13 DR. PARKINSON: Certainly the spirit of  
14 what this is exactly that. We shouldn't have to  
15 somebody go out and do an independent search for  
16 the latest information on febrile respiratory  
17 illness outbreaks in the military. We should  
18 almost have a little repository of trainee health  
19 information and lessons learned, and hopefully by  
20 codifying somewhat of a structure to a high- level  
21 desirable processes, that would be something that  
22 would be a major part of this Tri-Service group or

1 the DoD thing. We continually have to re-learn  
2 lessons as opposed to just building sequentially  
3 on previous experience.

4 DR. WEBER: Right. I'm thinking -- I'm  
5 trying to think ahead, not like you say, the  
6 febrile illness-type thing, but when's the next  
7 whatever it is. Monkey pox, SARS, et cetera. How  
8 do we incorporate those kinds of lessons since the  
9 way those things are transmitted within the  
10 trainee context may differ significantly from the  
11 general population.

12 DAN BURNETT: Dan Burnett from the Air  
13 Force Surgeon General's Office. I was at the Air  
14 Force meeting on trainee health that we had a few  
15 months ago and a lot of these thoughts were  
16 exactly what we were discussing there. The  
17 overriding one, again, was the concern about  
18 trying to have a data infrastructure to pull all  
19 of this from. We all recognized we have so many  
20 different data sources to try and get this  
21 information from that it's not very easy to answer  
22 any seemingly simple question. I think we're all

1 hoping that AHLTA will eventually be the answer,  
2 but I think we need some solutions, maybe before  
3 that or we really need to be talking a lot to the  
4 AHLTA people to try and build some of these things  
5 in. That seems to me to be the overriding theme  
6 and the main thing from the Air Force meeting we  
7 were hoping would come out of the AFEB  
8 recommendations.

9 A second small point is, again, it came  
10 up at our meeting and I've had inquiries from  
11 other people in the field about musculoskeletal  
12 injuries maybe as opposed to practice surveillance  
13 (off mike).

14 DR. PARKINSON: Right. I tried to  
15 mention that in here, but maybe it needs a little  
16 more highlighting. But to your first point, Dan,  
17 it really is -- what you realize that so much of  
18 this rides on the rails of broader DoD  
19 surveillance architecture. Our IT systems -- I  
20 know Colonel Ruscio is dealing with a lot of these  
21 issues. I happen to actually love -- I have it in  
22 earlier draft of this, the accession flow chart

1 that, Dave Hughes, when he talks about MEPS and  
2 how many people fall off along the way. You can  
3 almost think there needs to be a macro/schema that  
4 is DoD wide that is for accession -- that they can  
5 drill down into the services and understand  
6 where's our attrition? What are the reasons  
7 you're doing it? It's all out there, it's a  
8 combination of -- and that sometimes the AFEB can  
9 serve as, if you will, just a little bit of a  
10 conscience of the Health Affairs and Services to  
11 keep constructive engagement so that we get those  
12 things. That's might hope, because a lot of these  
13 issues we've been around before, I think. But  
14 hopefully we can move a couple steps forward  
15 through this recommendation process.

16 DAN BURNETT: And your testament too I  
17 think is a really nice step in that because it  
18 puts a broad scheme around it about how we need to  
19 approach it ultimately.

20 DR. PARKINSON: What I hope to say here  
21 is that it's not to say that there's not times  
22 where there should be some service variation, but

1       it should be a relatively high threshold to think  
2       about why we're doing that. And it should, to the  
3       degree possible, being based on evidence rather  
4       than usual practice. I think we would all agree  
5       with that. That's really the spirit of it.

6                   DR. POLAND: Other comments? Mike.

7                   DR. OXMAN: What's the progress we made  
8       since a year ago in having one integrated database  
9       and language for the Tri-Services?

10                  MS. EMBREY: In part, because of the  
11       work that the Board has been doing since I've been  
12       sitting here in this seat, you were given several  
13       briefings a couple years ago on the kind of  
14       surveillance that each of the services engages in  
15       in terms of health and medical surveillance. That  
16       instructed me that we needed to do something. In  
17       my own capacity, I've beaten the services into a  
18       process over the last two and a half years where  
19       we've come to the conclusion that we need a  
20       department-wide architecture that leverages the  
21       existing surveillance capacity of each of the  
22       services and uses that architecture to have a

1 single center that would do the many things that  
2 are identified here in terms of setting the  
3 standards, defining algorithms, showing  
4 relationships so we're using common information in  
5 the architecture so that we can obtain and  
6 enterprise-wide sense of what's going on,  
7 longitudinally for the force from the very  
8 beginning to the time folks leave. It does  
9 require AHLTA to be fully fielded everywhere. It  
10 does require the community to agree on specific  
11 sets of additional information based on cohorts of  
12 interest, and it requires a central authority to  
13 define what that is in collaboration with everyone  
14 in the architecture. We finally came to  
15 conclusion on this three months ago, and we are in  
16 the process now of showing how all of the  
17 resources associated with that architecture would  
18 be allocated in such a way that it would function  
19 as an enterprise across the departments. So this  
20 is a very, very positive, good-news story. It  
21 will not be going into affect though until FY '08  
22 because it takes time to identify the resources,

1 allocate them, put them in place so that they can  
2 actually begin to do what they've been tasked to  
3 do. But it's a very promising thing, and I owe  
4 this community here for educating me to make sure  
5 that I understood it enough to be able to move  
6 forward with that idea. This concept that you're  
7 proposing would be one piece of that. Some of the  
8 specific things that you've outlined, I think  
9 would be very helpful to us in further defining  
10 the role of the central authority, it's not a  
11 group, it's an entity that would guide how the  
12 architecture works. What we didn't want to do was  
13 take away the authority of the services to use  
14 that actionable data to act. What we wanted was  
15 everyone connected using the same kind of  
16 information using it in the same way so that we  
17 understood what it meant when we were talking  
18 about something across the enterprise, but still  
19 allow that entity to use it for action at the  
20 local level. That's where we are. We're  
21 committed to doing this, we just can't fully  
22 execute it until the money is all in place.

1 COL GIBSON: Let me add to that. The  
2 last two meetings I've penciled in a briefing on  
3 what Ms. Embrey's talking about, the Armed Forces  
4 Health Surveillance Center, and in both cases  
5 they're not quite ready for primetime, not quite  
6 ready. Next meeting we will brief on this.

7 DR. OXMAN: Ready or not.

8 COL GIBSON: Yes. Ready or not.

9 DR. POLAND: Other feedback from the  
10 Board. Dave, did you have a comment?

11 CDR McMILLAN: Yes. This has been  
12 something that (off mike) although I talked to  
13 both the NCRD, they had a big problem with (off  
14 mike) for a long time. With our injury prevention  
15 tracking program we can do detailed tracking on --  
16 as well as (off mike) the activity during that  
17 injury (off mike) falls (off mike) guidelines and  
18 those charts never overlay each other. They're  
19 completely different and it's very down deep in  
20 the drill instructors (off mike) of an activity.  
21 It's tough and it's something that our office to  
22 try and give as much guidance, because (off mike)

1 all the time. They just don't (off mike) any  
2 problems and so I can imagine that the variations  
3 are (off mike) among the Army there's different  
4 slices of (off mike) that think that way to look  
5 at each one, that each are so different they (off  
6 mike) problems (off mike). So from a surveillance  
7 perspective they know they're supposed to be  
8 looking at, but (off mike) you're looking at it  
9 (off mike).

10 DR. PARKINSON: Right. I guess what I  
11 would see going back to Ms. Embry's observation  
12 with this Dave is that notionally laying out these  
13 draft grids of -- first just data assessment of  
14 what is being done. Secondly is it will  
15 invariably be the Creole-rule, it will be 90/10.  
16 Ninety percent of the stuff is in agreement and  
17 it's just the outlying stuff. I mean, you're  
18 going to have repetitive stress. You're going to  
19 have things related to heat, you're going to have  
20 things -- these are uniform. Whether or not they  
21 have zero that's great, but everyone's got to do  
22 this. Historically they're major risks. Then

1 when you get more and more granular, then you'll  
2 get down to that 10 percent that's the one offs  
3 and maybe that's the consensus of the services can  
4 be used either positively or perhaps wait and  
5 watch mode. But at least you'll have a database  
6 and some degree of evidence-based consensus to  
7 move forward on in a way that right now it's this  
8 colonel or this commander's decision about what  
9 they want to do. I think we could move beyond  
10 that. So I think this may be helpful in that  
11 vein. I might just anybody, if you have any  
12 thoughts, please e-mail them to Roger or myself  
13 and we'll work of this draft taking these at it  
14 slower.

15 DR. OXMAN: I just want to comment that  
16 the key to this is to have an extensive  
17 architecture and the Air Force can fill in part of  
18 it and not use other parts, but that talks to each  
19 other and you can add to it. It's like having the  
20 same operating system for three computers. You  
21 don't. No matter how similar the data is, you  
22 can't use it.

1 MS. EMBREY: Right. Exactly.

2 DR. POLAND: All right. Mike, thank  
3 you.

4 DR. PARKINSON: Final comment. Thank  
5 you Karen for all your hard work. This was on key  
6 disk this morning so I appreciate her help.

7 COL GIBSON: We're going to go into  
8 closed session now. This is the last of the open  
9 session information so I don't believe there's  
10 anybody who's non- DoD in the audience at the  
11 present time, but if they are, this is the end of  
12 open session and we'd ask that you leave. The  
13 next two briefings are for official use only and  
14 information that's sensitive enough that we don't  
15 want to have it in open session. We're going to  
16 continue to transcribe but these will be for  
17 official use only transcripts from this point on.

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