

BEFORE THE  
UNITED STATES DEPARTMENT OF DEFENSE  
ARMED FORCES EPIDEMIOLOGICAL BOARD

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PUBLIC MEETING: :  
: :  
GREAT LAKES NAVAL TRAINING :  
CENTER, ILLINOIS :  
: :  
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Friday, July 7, 1995  
Great Lakes, Illinois

The above-entitled matter came on for meeting pursuant to Notice before LEWIS H. KULLER, President, Armed Forces Epidemiological Board, at Building 140, Great Lakes Naval Training Center, Illinois, in the Banquet Room, on Friday, July 7, 1995, at 8:30 a.m.

APPEARANCES:

- LEWIS H. KULLER, President, AFEB
- Dr. David Arday
- Dr. John. B. Bagby
- Dr. G. Vaden Blackwood
- Dr. Rosent Brawley
- Dr. C. Broome
- Dr. Joseph P. Bryan
- Dr. James Chin

Ron Conley  
Florence Cook  
Dr. Benedici M. Dinega  
Dr. James L. Fleming  
Dr. Gary Guckstetter  
Dr. Bruce H. Jones  
Dr. Stephen Joseph  
Dr. Kenton Kaufman  
Dr. William Klenke  
Dr. Sven Knudsen  
Dr. Amy Luckey  
Dr. Sharon L. Ludwig  
Lieutenant J. J. McLaughlin  
Dr. Seileen Mullen  
Dr. Francis L. O'Donnell  
Dr. Jennifer B. Ota  
Dr. Michael D. Parkinson  
Dr. D. M. Perotta  
Dr. Mary Peters  
Dr. Steve Plunkett  
Dr. G. Poland  
Dr. Gil Potter  
Ruth A. Kiraly, RN  
Dr. Jim Roudebush

Dr. Margaret A. K. Ryan

Dr. Cladd E. Stevens

Dr. Ernest T. Takafuji

Janette Tavs

Admiral P.A. Tracey

Dr. David Trump

Dr. Jo White

Dr. Sanford Zelnick

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

2 DR. KULLER: Okay. It was a very good and  
3 lively session yesterday. It was very important, I  
4 think, and very interesting issues.

5 Colonel O'Donnell, do you have anything?

6 COLONEL O'DONNELL: I don't have any  
7 administrative announcements.

8 Ensign Boyce, do you have any  
9 administrative announcements?

10 MR. BOYCE: Good morning. Anyone who needs  
11 any type of transportation this afternoon or needs  
12 help getting back out to the airport, I'll be glad  
13 to assist you or if anyone needs an actual ride.

14 DR. KULLER: We have plenty of cars, so  
15 anyone who needs a car after the meeting?

16 DR. KULLER: Anybody who needs a ride, I  
17 know I have a car that's empty.

18 MR. BOYCE: If you can, let me know at the  
19 adjournment, so we will know.

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1 DR. KULLER: If you have a little map on  
2 how we get out to the road to go to O'Hara, that  
3 would be helpful.

4 MR. BOYCE: I'll make a map for you.

5 DR. KULLER: Thank you.

6 MR. BOYCE: If there is anything anyone  
7 needs, feel free to let me know. That's all I have.

8 DR. KULLER: Thank you. We're going to  
9 have the preventive medicine officers' reports.  
10 We'll start out with Captain Trump in the Navy.

11 CAPTAIN TRUMP: Good morning. Before we  
12 get started, although I don't see any of them here,  
13 I just wanted for the record to show my appreciation  
14 and that of Navy Medicine for Captain Select Bayer,  
15 General Commander Mewshaw, Ensign Boyce, and the  
16 rest of their staff here at Great Lakes for  
17 supporting us, going with the flow when the  
18 schedules ran long and the like for the sessions and  
19 in keeping things on track.

1           They did a good job and I hope everybody  
2 enjoyed their visit here to Naval Training Center  
3 Great Lakes.

4           I don't have a lot of things to present  
5 this morning for the preventive medicine officers'  
6 report. I just wanted to go over a few items. We  
7 did have shortly after the last Board meeting out  
8 37th Navy Environmental Health Workshop, Navy  
9 Occupational Health and Preventive Medicine  
10 Workshop, again with about 1500 plus attendees in  
11 multiple services and civilian organizations.

12           We also had that meeting the 3rd Annual  
13 Navy Health Promotion, which has been -- again,  
14 another growing activity within Navy Medicine.

15           These are some of preventive medicine units  
16 that have continued their activities. Captain Berg,  
17 whom many of you are familiar with from previous  
18 presentations, is here once again for the  
19 Epidemiology Board. Currently, the task force and

1 surgeon down in Guantanamo Bay, Cuba taking care of  
2 the Cuban population down there.

3           Other members of his unit in May spent two  
4 weeks in Jamaica. This was a joint operational  
5 training effort with the 27th Army Engineers from  
6 Ft. Bragg. What they were doing was developing a  
7 public health model for -- the acronym is MEDRETES.

8           But it is historically when the military  
9 medicine is brought into deployment after the field,  
10 they will often do medical clinics in the field, med  
11 camps. The utility of those from time to time is  
12 questionable, whether we really do any good out  
13 there if you go in for a couple of days and you give  
14 bills, immunizations or whatever.

15           What they were doing in this effort was  
16 working very closely with the engineers, with a team  
17 of seven preventive medicine specialists,  
18 entomologists, medical health officers, technicians  
19 and epidemiologists, working with the ministry of

1 health and the ministry of defense there in Jamaica,  
2 trying to set the stage not only on that exercise  
3 but for future ones and how we can make these  
4 efforts more for the public health focus and  
5 hopefully with a longer term investment.

6           They have plans to go back next year and  
7 continue that effort.

8           The other thing that's going on -- and this  
9 is a tri-service effort of preventive medicine  
10 people, especially in Norfolk, who have been very  
11 involved with the Armed Forces Medical Intelligence  
12 Center, Preventive Medicine Officers from the other  
13 services, should look at our disease information.  
14 And this is really part of the 12 point plan that  
15 Dr. Joseph mentioned yesterday, trying to do a  
16 better job with future deployments in as far as  
17 getting information out, identifying the health  
18 risks.

19           And the current effort is to try between

1 the three services to come up with a single set of  
2 preventive medicine recommendations for deployments  
3 to particular countries. So that if we're deploying  
4 a team to Croatia, the basic recommendation is going  
5 to be the same, whether it's a Navy team, an Army  
6 unit that's going out. That the source of  
7 information that they go for risk information will  
8 be the Armed Forces Medical Intelligence Center.  
9 And then as a part of that, they will also be able  
10 to get what is the three services preventive  
11 medicine position on what those disease  
12 recommendations should be. And hopefully avoid some  
13 of the confusion that was brought up yesterday, like  
14 with the meningococcal vaccine.

15           There are some issues that we will bring  
16 before the Board. There are a lot of other issues  
17 that we really just need to sit down as the service  
18 preventive medicine folks and work out our  
19 differences and make it a standard policy.

1           Our preventive medicine unit out in San  
2 Diego has been involved with an ongoing outbreak or  
3 follow-up of an outbreak at the Basic Underwater  
4 Demolition SEALS training course. I mentioned this  
5 at the last meeting.

6           Where out of -- in Class 199, they had an  
7 outbreak or suspected outbreak of Group A beta  
8 hemabitic streptococcus. Ended up admitting six of  
9 the students from that class; two of whom were  
10 positive for Group A beta hemabitic strep, one of  
11 whom did have an extensive necartizing faciitis,  
12 requiring skin grafting and a long convalescent  
13 period.

14           They have implemented some control measures  
15 at present, including pneumococcal vaccine and  
16 hipmopalis influenza B vaccination, along with  
17 bicilla prophylaxis. They are looking at the  
18 effectiveness of this. And with the following  
19 class, they had two out of 214 students went through

1 -- had evidence were carriers of Group A beta  
2 hemabitic strep. In the following class, they found  
3 no carriers.

4           They're going to collect -- continue to  
5 collect information. This is a topic that we would  
6 like to present hopefully at the next Board so that  
7 you're aware of the issues and can only assist us in  
8 looking at some of the questions about the control  
9 measures that are in place and whether those are  
10 appropriate to continue.

11           The preventive medicine team at -- in San  
12 Diego has also been involved with vector  
13 surveillance, in particular with hanta virus  
14 surveillance in rodent populations on the West Coast  
15 at Miramar Naval Air Station. And at present is  
16 found just a very low prevalence of the virus  
17 comparable to the surrounding community.

18           Our preventive medicine unit out in Hawaii,  
19 EPMU 6 participated in Cobra Gold 94, which is a

1 joint training exercise in Thailand, where they  
2 developed some village specific patient needs,  
3 profiles, during the medical clinics that they  
4 conducted ashore. Did mosquito surveillance.  
5 Another vector surveillance and pesticide safety  
6 training with the local population there.

7           And the other activity that's been going on  
8 recently has been a joint effort with CDC's Division  
9 of Vector Borne Infectious Diseases at Ft. Collins,  
10 our vector ecology and control center in California  
11 and the preventive medicine team out of Hawaii,  
12 where they investigated a dengue outbreak on Palau. In  
13 an island population of 22,000, there were 734  
14 cases, including two deaths, that had been reported  
15 by the end of May.

16           They have confirmed that dengue Type 4  
17 which was not previously isolated on Palau, is  
18 present. And conducted household surveys.

19           The environmental surveillance demonstrated

1 Aedes aegypti and albopictus were present in 18  
2 percent of the homes and in 19 percent of those  
3 homes, they had found active breeding sites.

4           And they have done some other surveillance,  
5 including rodent trapping and at present have found  
6 about 20 percent of the rodents positive for typhus.

7           Finally, in Europe, our preventive medicine  
8 unit there has historically since the early 1950s  
9 been located in Naples, Italy. For a variety of  
10 reasons, the unit has relocated in the past few  
11 months and has moved down to the Island of Sicily to  
12 our Naval Air Station at Singanella. And in the  
13 midst of moving 20 people, plus the equipment and  
14 staff, they've continued their activities including  
15 exercises -- again, joint exercises in the Ivory  
16 Coast, and also over in Albania.

17           And just finally as a follow-up to Dr.  
18 Fletcher's presentation on health promotion in the  
19 workplace yesterday, all three of the services have

1 very active and growing programs in health  
2 promotion.

3           This may be an item that the Armed Forces  
4 Epidemiological Board would like to hear about in  
5 more detail in the future, I think. That's  
6 something that we could put together as a tri-  
7 service presentation for a future Board meeting.

8           One of the things that I think is of  
9 interest and came up briefly yesterday is that there  
10 are -- we are doing some things to collect data on  
11 the health status of our population. There are two  
12 large Department of Defense surveys, one among  
13 active duty members and then another among all  
14 health beneficiaries. The active duty member survey  
15 is an outgrowth of what had been an historic survey  
16 of drug use, alcohol and other substance abuse  
17 surveys that had been useful over the years,  
18 documenting a declining drug use in our population.  
19

1           But realize that as that problem goes away,  
2 there is still value from the survey. The current  
3 survey that's out, the results should be coming.  
4 Initial results should be available within the next  
5 month or so. Have added a lot of questions that get  
6 into health behaviors, health beliefs, health status  
7 including perceptions of the mental health status.

8           The survey among all DOD health care  
9 beneficiaries -- that includes active duty family  
10 members and also includes the retiree population  
11 -- is looking at their health status in their health  
12 care use, including some questions about  
13 satisfaction with DOD health care. I think when  
14 those analyses are available -- and I'm very  
15 interested in those. I think they would be of great  
16 value to the Board here to hear some of those  
17 results, and I think that's something we could  
18 arrange for our future meeting, also.

19           Any particular questions?

1           Yes.

2           DR. PEROTTA: Captain, do you have the  
3 isolates of the Group A strep? Are you going to  
4 keep them? Because that probably would be helpful.

5           CAPTAIN TRUMP: I think they have those. I  
6 don't know what the results are.

7           DR. KULLER: Sometime back we had a report  
8 on tuberculosis. Is there any update or anything  
9 which could happen with problems with tuberculosis  
10 ship-board, about a year or so back?

11          CAPTAIN TRUMP: We have not had any recent  
12 tuberculosis, ship-board outbreaks. And we  
13 certainly have not backed off on our tuberculosis  
14 control program, which is still annual testing.  
15 Thank you.

16          DR. KULLER: Colonel O'Donnell is going to  
17 go next.

18          COLONEL O'DONNELL: Good morning. I'm  
19 going to be using a few slides to project off the

1 computer. Dr. Blackwood can help me with that.

2           Please slip to the next slide. The topics  
3 I'm going to address very briefly are those shown  
4 there. And I've got a slide for each, so we can go  
5 to the next slide.

6           First, with respect to tropical medicine  
7 training -- and this is -- I'm going to summarize  
8 the results of a tri-service consolidation of  
9 tropical medicine training that goes on in DOD.  
10 Many of you may be familiar with the rare course,  
11 Walter Reed Army Institute of Research, the six-week  
12 course in tropical medicine. The Navy course I  
13 believe is a four-week course, is that right, in San  
14 Juan?

15           AUDIENCE MEMBER: About six weeks.

16           COLONEL O'DONNELL: Six weeks. Okay. As a  
17 result of I guess a DOD Directive study, those two  
18 courses are going to be merged. It will end up  
19 being a four-week consolidated course, probably to

1 be put on at Bethesda on the campus, actually on the  
2 Uches facilities. That will be primarily an  
3 academic laboratory kind of endeavor.

4           And then there will be follow-up practical  
5 experience associated with the academic phase. And  
6 that will then follow on with specialty. My  
7 understanding is that infectious disease docs will  
8 get the four weeks at one of the laboratories,  
9 either in the Navy or the Army, that are scattered  
10 around the world. And all others will do two weeks  
11 in a field site, that I'm not sure of the specifics  
12 of where that will be.

13           The Air Force course which gone for many  
14 years down at -- I guess Brooks Air Force Base,  
15 global medicine, will continue. The major change in  
16 that is that will be open to all of the services.  
17 And as I understand it, it will still be a once a  
18 year course, but its capacity will be expanded and  
19 each of the services will have -- hopefully will

1 have a code of slots in that course.

2           Next slide.

3           DR. KULLER: Can I ask you a question about  
4 that before you go on?

5           COLONEL O'DONNELL: Sure.

6           DR. KULLER: Is there any thought ever to  
7 open that course, even for a fee, to non-military  
8 people, given the cost that the training in tropical  
9 medicine in the United States and the availability  
10 of training and the fact that a fair number of  
11 people go out of the United States to get training.  
12 Maybe because it's a nice environment. But has  
13 there ever been any thought about opening those  
14 courses up to non-military in the sense even for a  
15 fee, kind of a fee for service basis almost?

16           COLONEL O'DONNELL: I do know that the  
17 course of Rare has in the past years has had non-DOD  
18 students in the class. I don't know the details of  
19 how they got there. I think it was a space

1 available basis.

2           AUDIENCE MEMBER: The Navy course did,  
3 also.

4           DR. KULLER: You charged them for that or  
5 something

6           AUDIENCE MEMBER: I don't know what the  
7 details were.

8           DR. KULLER: Okay.

9           COLONEL O'DONNELL: Many of them were -- I  
10 can remember when I attended, there were many  
11 prospective Peace Corps volunteers who were going to  
12 places in the world where they might need it. But I  
13 don't know more recently. Does anybody else know?

14           AUDIENCE MEMBER: It's becoming more the  
15 norm.

16           DR. TRUMP: I think there may be some uses  
17 also -- I'm not sure what the title is. It's one of  
18 the centers for tropical medicine training. I  
19 expect that would be an expectation that that would

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1 eventually be the case.

2 DR. KULLER: It might be worthwhile to look  
3 at that and see even about potential advertising and  
4 charging a fee for it in the sense of supporting  
5 some of these activities.

6 DR. TRUMP: Their MBAs program is open to  
7 non-Department of Defense.

8 DR. KULLER: I'm thinking of these short  
9 courses especially where there may be some real  
10 value.

11 COLONEL O'DONNELL: A brief word about HIV  
12 testing in the reserve component. In the Army,  
13 within the reserve component -- that is USAR and the  
14 National Guard -- policy from routine force testing  
15 for HIV has been the same as for the active  
16 component, which is a test every two years.

17 At the initiative of the folks at  
18 essentially the force com commander -- and actually  
19 the initiative came out of National Guard, they're

1 interested in backing that up to a less frequent  
2 testing. In essence, the force com commander bore  
3 off on that.

4           There was some resistance out of the  
5 medical community to doing that. However, in  
6 essence, we have acceded to the wishes of the line  
7 commanders. And the frequency is being moved back  
8 to every five years. That at least puts it in  
9 synchrony with the requirement for routine periodic  
10 physicals to folks in the reserve component.

11           How that will be done, there is some real  
12 details there on how to work that out. In the past,  
13 a contractor would simply go to sites and draw  
14 blood. And that worked out pretty conveniently.  
15 Physical exams are done on a myriad of sites. And  
16 it's going to be an entirely different process.  
17 Reserve components are going to have to work through  
18 those details.

19           The goal, in essence, the justification was

1 that the reserve component felt simply the process  
2 for collecting specimens was detriment to the  
3 training process because of the limited time  
4 available for the reserve component to train on  
5 weekends. They felt this was a major impact on the  
6 training.

7           Again, we felt that was debatable, but they  
8 came on very strong about that issue.

9           Next slide.

10           The follow-up to the Board's  
11 recommendations on Hepatitis A vaccine, the Army has  
12 come out with a policy to the field, in essence, on  
13 how the vaccine will be used. It very much mirrors  
14 the general recommendations to the AFEB, the focus  
15 being on folks who are going to places where the  
16 risk is high, particularly going for a long period  
17 of time.

18           There was a little bit of internal  
19 discussion about when to use IG versus when to use

1 the vaccine. We settled on a policy which says that  
2 if you're going for longer than five months, you  
3 probably ought to go to the vaccine. Or if you're  
4 going repeatedly, which is difficult to anticipate,  
5 but if one expects to go repeatedly through a high  
6 risk portion on the walls, then the vaccine is  
7 probably the way to go.

8           The attempt is to reemphasize the values of  
9 immunoglobulin in a controlled Hepatitis A. This  
10 certainly has a role in post exposure to prophylaxis  
11 of Hepatitis A. So that was an important statement  
12 as a part of the policy.

13           Of course, with many initiatives and  
14 innovations coming on in the military, there were no  
15 funds associated with this policy. And so a formal  
16 request to get additional funding to be able to  
17 immunize things is in the works.

18           Next slide.

19           Dr. Joseph alluded briefly to evaluation

1 for the Gulf veterans. The only thing I wanted to  
2 mention is that of the many who have actually  
3 completed or are in the midst of seeking their  
4 evaluations to be done, the Army is greatly over-  
5 represented. About 50 percent of those who went to  
6 the Persian Gulf were Army, either active component  
7 or reserve component. About three-quarters of those  
8 in the program, the DOD program, are Army veterans  
9 of a conflict.

10           As I think you've heard, the -- given the  
11 constraints of this program in an epidemiologic  
12 sense, but even forgetting those constrains, nothing  
13 new, shocking or surprising has arise.

14           Next.

15           A follow-up on the adenovirus business  
16 which we talked about at the last meeting. That  
17 issue of a dependable supply of the vaccine is not  
18 yet resolved. Again, the issue relates primarily to  
19 problems the manufacturer is having with coming up

1 with a permanent basis of manufacturer for the  
2 vaccine that they feel is up to standard, given FDA  
3 and OSHA criteria for what is a sound vaccine plant.

4           You may recall that in essence the services  
5 went without adenovirus vaccine for essentially a  
6 year. It was just around the time of our last  
7 meeting that the manufacturer produced a year's  
8 worth of the vaccine. And that got out to the field  
9 and started to be used.

10           But during that year without vaccine, some  
11 picked up on the fact that there actually did not  
12 appear to be any outbreaks of adenovirus disease in  
13 basic training centers, which might give one cause  
14 to think about the merits of continuing the problem.

15 But as luck -- perhaps bad luck would have it -- in  
16 late April, actually the last week in April, first  
17 week of May, there was an outbreak of adenovirus 4  
18 disease in Jackson.

19           It turned out it struck the training

1 battalion, whose training cycle began just before  
2 the vaccine became available at Ft. Jackson. This  
3 represented a cohort of trainees who essentially had  
4 not received the vaccine. Amongst the company which  
5 was harvested, they had during this two-week period  
6 essentially 10 percent of the trainees hospitalized  
7 for adenovirus disease. And that figure is very  
8 reminiscent of historical precedence of the problems  
9 that adenovirus represented in basic training.

10           Next.

11           DR. KULLER: Can I ask you a question with  
12 the adenovirus. Do you see any hyperactive airway  
13 disease or any problem for hyperactive airway  
14 disease in response to the adenovirus? Most of our  
15 -- we see a peaking of admissions for asthma in our  
16 population when the kids go back to school about  
17 that, which would suggest that there must be at  
18 least some infectious component to it? But most to  
19 the asthma outbreaks.

1           But most of my colleagues in the civilian  
2 world has absolutely nothing to do with asthma.  
3 But, of course, when I ask them proof, they just  
4 tell me their superior intelligence says that  
5 adenovirus is not related to asthma.

6           I was just wondering whether --

7           DR. PEROTTA: It's a paraflu agent and RSD  
8 at the beginning of the school year.

9           DR. KULLER: I know, but have you seen  
10 -- that seems to be what it is. But have you seen  
11 any hyperactive airway disease?

12          COLONEL O'DONNELL: I don't have any  
13 information on that at all.

14          DR. KULLER: It might be interesting to  
15 look at the people who got hospitalized and whether  
16 there is any evidence in the past of having  
17 hyperactive airway problems or exactly what they're  
18 developing. There may be no relationship at all.

19          DR. ASCHER: I'm sure it's true

1 anecdotally. Not necessarily the adenovirus. But  
2 during those respiratory illnesses, weeks and weeks  
3 of night cough in adults and everything else. And  
4 there are some studies underway. I don't remember  
5 what virus they're doing, but there are some people  
6 at UCSF that are actually working on that in the  
7 model.

8           DR. KULLER: It's a huge prevalence in the  
9 minority population now and getting worse. I don't  
10 know if that has any impact on hospitalizations from  
11 -- there are actually recruits who are among your  
12 adenovirus population, especially looking at, again,  
13 whether there is any -- it would be interesting to  
14 look and see if there are any relationship even with  
15 race or other ethnic contributions to the  
16 hospitalizations for adenovirus, whether there is  
17 any relationship at all.

18           COLONEL O'DONNELL: I really don't have any  
19 information to shed any light on that.

1           I want to make a few comments about  
2 personnel issues in Army preventive medicine. At  
3 the moment, we feel we're suffering from a shortage  
4 of occupational medicine physicians, in part because  
5 our training base would turn out two to three  
6 occupational medicine docs a year from our residency  
7 program. But our attrition rate is pretty severe  
8 for a variety of reasons. People are retiring.  
9 People are simply getting out, completing their  
10 obligation.

11           And that's much more acute than in the  
12 other major, large component of preventive medicine,  
13 the general preventive medicine for public health.

14           We do have three residency training  
15 programs within the Army. I mention it just in case  
16 some of the Board members are not aware of that. We  
17 have the one program of occupational medicine at the  
18 CHPM, where I think we'll be meeting next time. And  
19 then there are two other programs, one at the Walter

1 Reed Army Institute of Research in general  
2 preventive medicine and one out in Madigan Army  
3 Medical Center Takoma, which is public health,  
4 general preventive medicine.

5           This is simply a listing again for  
6 familiarizing members of the Board to remind them  
7 that within the Army there are other preventive  
8 medicine professionals who we consider part of the  
9 preventive medicine family. And they include -- and  
10 they're sort of ordered in terms of size.

11 Environmental science officers and sanitary  
12 engineers. Ensign Boyce, who is actually the Navy's  
13 counterpart to environmental science officer, he's  
14 an environmental health officer. There is about 150  
15 of these in the Army.

16           We have just over 100 community health  
17 nurses active duty community health nurses. There  
18 are about roughly 50 immunologists and about 50  
19 health physicists, active duty officers. And then

1 we have 650 or so enlisted preventive medicine  
2 technicians. That's about 600 general preventive  
3 medicine technicians, who are sort of jacks of all  
4 trade. The emphasis of their duties, at least  
5 training emphasis, is on their ability to perform  
6 field preventive medicine duties that is to  
7 basically oversee the quality of sanitation or  
8 environmental health in a deployed force or at least  
9 a force in the field.

10           And then we've got about 50 or so who are  
11 actually trained in -- as health physics  
12 technicians. Their basis of operations is actually  
13 in hospitals primarily to support the hospital  
14 radiation safety program.

15           And then I would be remiss if I didn't  
16 mention we actually have a large number of civilians  
17 who work in the preventive medicine program. I  
18 don't have a number for you there. But they number  
19 -- besides administrative personnel -- many

1 occupational medicine physicians, occupational  
2 health nurses and industrial hygienists. Virtually  
3 all of our industrial hygienists working out there  
4 and doing grass roots industrial hygiene are  
5 civilians.

6 Next.

7 And that's all I wanted to report on this  
8 morning. Any questions?

9 Yes, ma'am.

10 DR. STEVENS: I have some questions about  
11 the Hepatitis A vaccine. I guess I'm puzzled about  
12 the rationale for not vaccinating people who are  
13 deployed for less than five months.

14 COLONEL O'DONNELL: The rationale is  
15 primarily cost driven. It's \$2 for IG. It's \$32  
16 for Hepatitis A. The reasonable -- if one is going  
17 overseas, one is active duty and going overseas for  
18 four months, let's say, to use kind of a silly  
19 example. And one is a captain in the Army, let's

1 say. The chances of that happening if he stays in  
2 the Army he's going to go overseas again to a high  
3 risk area is probably excellent.

4           So if one were able to say that with some  
5 surety, he probably should get the vaccine.

6           But, in essence, we had to draw a line  
7 somewhere in terms of when to use IG and when to use  
8 vaccine, cost being a primary factor which was a  
9 consideration.

10           And initial proposition was if the travel  
11 was for longer than two months, and that edged up to  
12 five months primarily as people looked at the dollar  
13 cost. As a matter of fact, what was issued to the  
14 field was primarily a -- I guess you could say it  
15 was a policy or a set of guidelines for the field to  
16 use, how strictly people were observing that  
17 particular criteria. And I have no idea. It  
18 wouldn't disturb me that people were edging it down  
19 towards two months, because frankly what we were

1 trying to be considerate of was the fact that there  
2 is no extra funding accompanied this policy. So the  
3 cost of whatever was done at the local level would  
4 have to be borne out of the local budget.

5           So if they chose to go with what is  
6 essentially a proved indication for the vaccine,  
7 we're not about to second guess them. So it's sort  
8 of a compromise, I guess, if one looks at it.

9           DR. STEVENS: Do you have any idea how many  
10 people have been vaccinated?

11           COLONEL O'DONNELL: I have no idea.

12           DR. BROOME: They've taken -- you've taken  
13 the agenda item off on immunoglobulin, but I  
14 understand there is continuing issues of potential  
15 shortages and there is also, as you say, potential  
16 need for the immunoglobulin for post-exposure  
17 prophylaxis let alone the civilian sector, which  
18 Dennis and I have some reason to be concerned about.

19           So I guess I wonder whether any of those

1 considerations go into decisions about the use of a  
2 vaccine, which I think we all agreed would be the  
3 optimal strategy for prophylaxis in advance.

4 COLONEL O'DONNELL: Well, the wording of  
5 the policy was nice in the sense that it had a large  
6 introduction. But, in essence, it said the day will  
7 come when we will just give the vaccine to  
8 everybody, a universal vaccination. And then it  
9 went on to describe why we're not suggesting that at  
10 the moment and cost was essentially the major  
11 consideration.

12 You mentioned the IG issue. We did have  
13 that on a tentative agenda for this time. It kind  
14 of fell out. But -- and I'm not sure whether or not  
15 it might not be worth revisiting at a future  
16 meeting. That was some of the lingering question  
17 about Hepatitis C.

18 DR. CHIN: Just a general question with  
19 regard to this policy. How about the other services

1 in terms of Hepatitis A?

2 DR. TRUMP: The Navy issued a very similar  
3 policy endorsing the use of the vaccine, but not  
4 mandating it. We are looking at whether we can make  
5 a case for readiness purposes and whether we should  
6 vaccinate all of our Marine Corps recruits in  
7 particular, and also those that go through some of  
8 the special warfare and the construction battalion,  
9 the CBs. Because they historically will deploy to a  
10 high risk area for three months to six months during  
11 their assignment. Even the Marines, 85 percent of  
12 them leave after one tour, it would probably benefit  
13 in vaccinating them.

14 So we're looking at that and also trying to  
15 get funding to do that. But as far as mandating  
16 that for all travelers, all deployed personnel right  
17 now we do not do it.

18 DR. CHIN: The Navy when you go out on --

19 DR. TRUMP: On ships.

1 DR. CHIN: On ships, yes. Basically, you  
2 know, the two-month business is --

3 DR. TRUMP: Right. When they're deployed  
4 on ships, depending on where they go, they'll be  
5 making port of calls. In general, we have not  
6 recommended, except for a few places, that they were  
7 getting immunoglobulin. The port visits are short.  
8 You know, it's a very brief travel to a port city,  
9 and just basically historical data. There's not  
10 extremely high risk of Hepatitis A.

11 DR. CHIN: And two or three months later  
12 they could be in another city.

13 DR. TRUMP: Right. But again, you know,  
14 even as they go from port to port, we're not  
15 recommending immunoglobulin, either for the whole  
16 five month -- six-month deployment or necessarily  
17 for whole period. The ideal situation would be to  
18 have a big pot of money and just make this  
19 mandatory. But the reality is we have to look at

1 the cost and hopefully phase it in over time.

2 COLONEL O'DONNELL: In essence, what we  
3 came out and strongly recommended, if you will, is  
4 if you're going overseas for five months to a high  
5 risk area on orders, and that would apply not only  
6 to the active duty but also to family members and  
7 civilian employees.

8 And we also had a high order of priority  
9 for units, whose mission is essentially rapid  
10 deployment to places in the world like that.

11 And then the fourth category, which was in  
12 the high bracket, for people who are at occupational  
13 risk of Hepatitis A infection. It's a pretty small  
14 group, but it's a must, I think, for that group.

15 And then there were all others, which we  
16 did in rank order. And I think the rank ordering  
17 was next for new accessions to the military. And  
18 any last or all other active duty folks. So they  
19 are kind of in catch up. But we acknowledge that

1 those last two are probably at some time in the  
2 future, we'll be able to do that.

3 DR. STEVENS: Do the people for the Navy,  
4 are they vaccinated?

5 COLONEL O'DONNELL: No. They've got  
6 immunoglobulin. I don't know what's happening now  
7 actually. I can't speak for today.

8 Thank you.

9 DR. KULLER: Colonel Parkinson, the Air  
10 Force.

11 DR. PARKINSON: I did some higher level map  
12 and I saw we had four presentations in 35 minutes.  
13 That gives us about eight minutes a piece. So I'll  
14 be brief. It's considerably less than the defense's  
15 case against O.J. I have a sense of loss, as a  
16 matter of fact.

17 As I said, I'm just going to -- what I want  
18 to cover very briefly today is the -- a few  
19 highlights from our 1994 TB report very briefly. An

1 update on some of the 20 projects that the Office  
2 for Prevention and Health Services Assessments has  
3 underway, and solicit your input as to which ones  
4 you would like to hear about at future meetings as  
5 they come on-line.

6           I put prevention and practice campaign in  
7 what I call potpourri, which is just a couple of  
8 reflections. First of all, if I could have a poetic  
9 license to say a couple of things about -- along the  
10 lines that Dr. Joseph talked about yesterday, what's  
11 happening in the Air Force and how our surgeon  
12 general was specifically setting some strategic  
13 initiatives in a couple of major areas that directly  
14 involve preventive medicine.

15           Basically, TB -- despite the increase of  
16 deployments around the world, the Air Force is  
17 having declining numbers of tuberculosis cases. We  
18 only had three active duty TB cases last year.  
19 That's less than one per 100,000 compared to a

1 national rate in excess of ten, of course. But that  
2 rate was as high as 400,000 in 1990. But the  
3 biggest impact is that we have lost the really  
4 sudden philosophy of TB. Clark Air Force Base in  
5 the Philippines is no longer on our plate. And that  
6 was a major vector of tuberculosis in the Air Force,  
7 if you will.

8           We have given approximately 20 percent more  
9 tuberculin skin tests in 1994 due to our  
10 deployments. However, our conversion rate is very  
11 low.

12           And what is good news is we looked at what  
13 proportion of our recent converters to be given, 89  
14 percent. We asked people to document why we did not  
15 place people on INH. And indeed they weren't. We  
16 weren't pretty happy with that number, which has  
17 increased over recent years.

18           Under OPHSA, I just want to show you there  
19 are three major areas that OPHSA has initiatives

1 undergoing. Just to remind you, this is a unique  
2 organization with the Air Force in the sense that it  
3 responds directly with the surgeon general and what  
4 we call the executive policy board, which is made of  
5 all of the five rank officers in the medical corps,  
6 nursing corps, biomedical services corps, et cetera,  
7 in the Air Force.

8           And they overview -- they oversee all of  
9 these projects quarterly to make sure that they're  
10 on time, below budget, and that we actually turn out  
11 something useful, which is a little bit neat I think  
12 sometimes in the military.

13           Central research database. This will be  
14 on-line in about six months. It will link for the  
15 first time Air Force personnel, medical, financial  
16 and PD wide type database. So we will begin to be  
17 able to get at questions of who went TDY, when.  
18 What is their promotion rate as it relates to the  
19 medical problems they may have had. Can we get

1 their fitness scores, their true max score into that  
2 database, to start to do the type of second level  
3 epidemiology, which is where I think is where health  
4 status and health research is going these days.

5           The Air Force behavioral risk factor  
6 surveillance system is not just an HRA. It's  
7 modeled on the telephone survey of CDC, but it's  
8 tailor made for a few more additional Air Force  
9 factors. That will be conducted this fall on a  
10 representative sample of the Air Force. And that's  
11 what we will use as a metric to monitor our health  
12 promotion year to year.

13           Now, it's self important and can validate  
14 some of it for other aspects, but that's certainly  
15 what we will use for Air Force specific information.

16           Morbidity mortality disability chart book  
17 is something that we've provided to every single MPF  
18 commander. That will be a snapshot and profile of  
19 the Air Force, the health status and the population,

1 if you will, as well as some indicators I think to  
2 track on their base to monitor key things we  
3 consider to be important.

4           The health enrollment assessment review on  
5 July 12th. This is the enrollment document that's  
6 being used in Region 10 to assess the health status  
7 and to predict the future health care needs of  
8 enrollees under the tri-care benefit plan. It's  
9 being -- it will be used in Region 6, rather, which  
10 is Wilford Hall; Region 4, which is Keesler Air  
11 Force Base. It asked for the product as well as  
12 Region 10.

13           It's our intention to deliver this and also  
14 to put prevention in the practice of an annual video  
15 to General Anderson to then take to Dr. Joseph at  
16 the tri-care executive committee, General George P.  
17 Anderson who is the PDASD for tri-care and is  
18 already very involved in both of these projects and  
19 would like to see them go tri-care wide.

1           So the notion here is that we develop  
2 products, farm them out. If DOD wants to pick off  
3 of them, fine. There has already been interest in  
4 the commercial sectors, some managed care  
5 organizations to look at these projects and say,  
6 this is the kind of state of the art stuff we're  
7 interested in.

8           The second major area, of course, is  
9 prevention readiness. These reflect the areas that  
10 I think Dr. Joseph spoke about yesterday, the two  
11 hot areas being readiness and managed care.

12           Best practices in health promotion. I  
13 won't go into all of these. This is exciting.  
14 Immunization tracking has been a recurrent problem.  
15 Region 10, which is Travis, is asked to link all of  
16 their various immunization clinics throughout the  
17 entire region in its automated database.

18           We're collaborating with the Center for  
19 Immunization with CDC. And CDC has told us that

1 this is one of the prototypes that they would look  
2 at nationally for linking immunization databases as  
3 they try to upgrade the level of immunization  
4 systems information.

5           Alcohol abuse reduction and prevention is  
6 what are predictors of alcohol abuse that we could  
7 pick up early in a young, enlisted person's career,  
8 such as weekend institutes and preventive  
9 interventions before they turn up with a DWI or some  
10 type of "unintentional injury" in ER later in their  
11 career. How can we develop a screening instrument  
12 that's more sensitive than either the cage or the  
13 mask that could be used for that type of thing?  
14 They're relatively crude. What are some things we  
15 can do to get at that sooner.

16           Injury in female recruits, increasing a  
17 professional interest in females. We're looking at  
18 that among Air Force and also their experience in  
19 Desert Storm. I talked before about how we're now

1 linking up -- all our Air Force bases are now on-  
2 line with Wonder PC, so that we have a real time  
3 communicable disease report. In a sense, our  
4 account is the 51st state for CDC and we'll be able  
5 to look at that data electronically.

6           Under managed care -- and these are just  
7 some of the ones. What do physicians,  
8 administrators, others needs to know in the managed  
9 care environment to make us compete effectively with  
10 the private sector? What we realized -- we just  
11 held the first meeting of this last week in Denver  
12 with a group out of Puget Sound. We had Kaiser out  
13 there, of Colorado, and a number of other groups.

14           What we found, of course, is a consistency,  
15 but it's not the first. You put intelligent people  
16 in the right system and they behave appropriately.

17           And to be honest, some of the managed care  
18 directors are absolutely incredulous. The DOD would  
19 want to try to compete in a managed care

1 environment, the personnel, particularly clinic  
2 commanders, rotate every two to three years. They  
3 said it's absolutely incomprehensible of us that you  
4 could expect to have a systems approach that looks  
5 at improving quality when providers and the  
6 commander change every two to three years.

7           And there is no incentive to the things  
8 that are important to them. Incentives being a  
9 totally capitated population with an impermeable  
10 wall. The patients getting in and out of your  
11 patient panel and a truly capitated budget where  
12 there is no place to bleed off money. Then you  
13 change leadership every two to three years. They're  
14 saying you have an uphill row to hoe.

15           I think one of the things that will come  
16 out of this project in the report within six months  
17 is that it may look good on paper, but you've got to  
18 look at the incentives in the structured system.

19           I want to go a little more into PIP,

1 because this represents kind of, I think, the Air  
2 Force and Navy DOD's first major clinical  
3 -- clinical guideline, as well. We currently have a  
4 pilot study underway at Randolph Air Force Base to  
5 see how the materials work in the clinic, how the  
6 Air Force clinical preventive services flow sheet,  
7 which was adapted off the PIP materials for which we  
8 have provisional approval for one year to use in the  
9 medical record, how that is being accepted in the  
10 clinic.

11           What type of manning and staff you need to  
12 have to fill that thing out. Because, again, we  
13 just don't -- our provider, our personnel ratio, is  
14 very poor. This is a program that doesn't have to  
15 be done by the physician. It's better not done by  
16 the physician. The problem is we tend to keep all  
17 of our physicians and get rid of all of our  
18 administrative staff when we do down-sizing. It's a  
19 problem.

1           One of the reasons in the FY96 budget,  
2 General Anderson has ear-marked approximately \$26  
3 million specifically for disease prevention and  
4 health promotion is to do those additional things  
5 that you might need to increase the appropriate  
6 delivery of mammograms, pap smears, two-year-old  
7 immunizations, et cetera, et cetera. We made the  
8 argument that we do not have the incentive that a  
9 private HMO has. We don't have a nasty consumer  
10 breathing down our backs looking for numerous report  
11 cards or standards. We don't have a capitated  
12 budget and we don't have enrolled populations.  
13 Until we do, we need to ear-mark \$25 million and  
14 tell those commanders we expect this to be done.  
15 That's essentially what's going to happen on 1  
16 September.

17           From 28 to 31 August, we are -- just went  
18 out and said we want two provider/administrators, at  
19 least one provider from every single Air Force NTF

1 worldwide to come down to San Antonio. We'll put on  
2 a three-day course that will have the logistics of  
3 foot prevention and practice, but more importantly  
4 what is the skill building in clinical prevention.  
5 How do you do an effective five-minute exercise  
6 counseling intervention that Dr. Fletcher was  
7 talking about yesterday? The physician assisted  
8 counseling for exercise, the Pace project in San  
9 Diego is something we'll use. The NCI five-minute  
10 smoking cessation, ask it by the system range.

11           We've got to build skills in each of our  
12 NTS about how you do effective clinical prevention.  
13

14           What are the ways -- what is EDIS? What  
15 are we tracking? What is the HMO downtown competing  
16 with you? What are they measuring?

17           So it's really the guts of how we're taking  
18 it seriously, planning programming and budgeting for  
19 some of this stuff.

1           That leads me to my potpourri comment.  
2 Hepatitis A, very briefly. We put out guidance  
3 saying that if you're a mobility physician -- that  
4 is, you're expected to go frequently overseas to UI,  
5 we recommend very strongly that you use the  
6 Hepatitis A vaccine. And we have asked for the  
7 budget requests from all of our major commands that  
8 have come in. Colonel Roudebush confirmed that our  
9 SG office has been very proactive in looking for the  
10 funding for this and trying to go forward, whether  
11 it's supplemental or whatever.

12           But my -- the spin-off of this is  
13 eliminating mobility lines. Mobility lines is a  
14 creature of World War I, as far as I can tell. And  
15 as we get to more automated systems with smart cards  
16 and things like that, there is no reason we have  
17 people lining up, look at shot records and get on  
18 the plane.

19           Now that we've eliminated essentially the

1 last pass of immunization from the immunizations  
2 we're giving, we don't have to have them there for  
3 immunizations if we have the right system. So maybe  
4 what we can do is stream-line that process.

5           The total force concept which comes up  
6 here, with the Guard and Reserve and things, is when  
7 I say real or Memorex, we talk about it all of the  
8 time, but increasingly in all of our jobs when we  
9 talk about what's going on with the CCP, we're  
10 talking about policies that just don't wash with the  
11 Guard and Reserve. How can we get to that? I mean,  
12 I'm just raising issues that the three of us  
13 confront all of the time.

14           Increasingly, we down-size the active  
15 force, go to more Guard and Reserve, the very types  
16 of disjoints that Colonel O'Donnell just said about  
17 HIV periodicity and people who have got full-time  
18 jobs is an issue. We don't address that  
19 systematically. Only a handful of us go to the

1 Association of Military Surgeons U.S. Conference,  
2 which is what the Guard and Reserve go. There is a  
3 lot of things we need to think about.

4           There is a major initiative going on in our  
5 office called Building Healthy Communities, a  
6 Quantitatively Epidemiologically Based Approach.  
7 Two products that we're going to try to generate in  
8 the next three months:

9           One is a briefing to the Chief of Staff of  
10 the Air Force by our surgeon general using existing  
11 Air Force data and best civilian data, either from  
12 fortune 10 companies or from the public health  
13 sector says, it's not 100 percent perfect. But here  
14 is our estimate of how much money you are spending  
15 ineffectively in line operations because you are not  
16 investing line dollars in medical programs that are  
17 cost savings, in the same way that Chrysler, GM and  
18 Tenaco does.

19           We have a dysfunctional incentive system.

1 What DOD does is split off the medical budget from  
2 the line budget within the five sides of the  
3 Pentagon. And that disincentive goes all the way  
4 down to the base level. So the incentive that the  
5 corporate medical director of IBM has to basically  
6 decrease Workmen's Comp, be responsive to the line,  
7 we don't have the base level. We have to build in  
8 the incentives to make that happen. We're going to  
9 go to the chief and say, give us X amount of dollars  
10 to give you this amount of bucks. We'll sign a  
11 contract. And we'll measure Workmen's Comp, smoking  
12 cessation rates, hospitalization rates, et cetera.

13           But we act as if the DHP operates in and of  
14 itself. We're the only organization in the United  
15 States that does. You know, DHP's real product is  
16 defense. But we never talk to the line commanders  
17 about what we can do for them. So this is a  
18 quantitative approach to try to do that. On one  
19 level, it's very ambitious.

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1           But on another level, I think it's where we  
2 have to go, because, as you heard Dr. Joseph say,  
3 the medical side of the house is getting increased  
4 scrutiny. We've got to show our relevance to the  
5 line. And that is the bottom line. It is the line  
6 stupid, and we've got to go back and link to what  
7 we're doing to what the product of this Air Force  
8 is. And it follows on target. And if we can't do  
9 that, then we really should be out of the business  
10 probably and we should go downtown to some other  
11 health care.

12           Hopefully that unifies some of the themes  
13 of the things we've talked about. From our  
14 standpoint, it's an exciting time. We've got some  
15 dynamic leadership and potential for a lot of change  
16 in a short period of time, I hope.

17           We'll be pleased to update the Board on any  
18 or all of these as they come on-line.

19           DR. STEVENS: I don't understand the

1 mobility line.

2           DR. PARKINSON: Well, that's -- and I was  
3 just being -- part of that is they're very  
4 practical. Part of it is more theoretical.  
5 Mobility line is the classic -- okay. We're going  
6 to go on mobility. Everybody comes down to the  
7 hangar in the Air Force. They all show up with  
8 their bag. And everyone makes sure, okay, you have  
9 one set of underwear, you got your sunglasses,  
10 you've got your lip balm. But more importantly, do  
11 you have your immunizations, do you have your dog  
12 tags, do you have your whatever.

13           And as we move to an era where on ID or  
14 something like that we have electronic information,  
15 you could do one of two things. You could just  
16 quarterly run that thing through a machine that  
17 says, my entire unit is fully up to date on all of  
18 these things or they're not. And we can use that as  
19 a metric to measure commander's performance and

1 flight service performance for units.

2           Right now, again, we're using 1890s  
3 technology and it's like the Civil War with the way  
4 we're doing some of this stuff. And Hepatitis A was  
5 really the last passive immunization that we had to  
6 use for performance at least in the Air Force. We  
7 don't have anything else that we have to give. So  
8 that's one less reason that we have to have people  
9 doing that type of thing. Our goal is to automate  
10 things so that we don't have any last minute -- oh,  
11 by the way, we had a briefing three weeks ago by the  
12 optometry community that said, a lot of people in  
13 Desert Storm were unable to perform their jobs  
14 because we didn't have enough eyeglasses. To be  
15 honest with you, that's something that shouldn't  
16 happen. Part of it was there is not a data tracking  
17 system to see who has got their eyeglasses. When  
18 you're over in Saudi Arabia, you don't have Four  
19 Eyes right down the street and you can go and get

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1 another pair. Things like that. You know, they're  
2 not medical, but they are medical, because -- you  
3 know -- it's a piece of medical equipment that  
4 should be there.

5           Ostensibly they were arguing that what we  
6 need is a forward based optometry lab. You know, it  
7 sounded a little bit like, well, let's make -- you  
8 know. No, we make sure people got eyeglasses.  
9 That's just a prohibitional procedure. But that's  
10 typical of the type of -- you know -- kind of system  
11 failures that are very simple stuff. This is not  
12 complicated stuff. It's just a system to do better.

13           DR. STEVENS: Are you saying that now  
14 certain types of magazine vaccinations are better  
15 options and you don't have to worry about it.

16           DR. ASCHER: Talking about the reserves,  
17 you know, I always mention this, the same issue  
18 comes up. When the Reserves used to be bigger and  
19 Desert Storm happened, there were lots of units out

1 there that had various levels of readiness and  
2 various levels of designation of deployment. And  
3 when it happened, there was a random assortment of  
4 who went and who didn't. And the readiness was  
5 absolutely what you said. The people would go down  
6 there and spend all this time figuring out who  
7 needed what and it was a nightmare.

8           What has happened very clearly in my  
9 experience in the down-sizing era is they've taken  
10 out all of the lower tier units and they put all of  
11 the resources into preparing the upper tier units  
12 for mobilization. And this has been practical  
13 because they don't have a problem of limited  
14 resources. They've got limited resources, but it's  
15 a limited population now. So what you're left with,  
16 at least in my experience is -- and I just left a  
17 unit that closed 600 people, is that what's left is  
18 deployment and they've got all of their stuff up to  
19 date. And that's the goal. You can do it when you

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1 have a small force.

2           But it means every single person is on the  
3 line to go and there are no surprises. And there is  
4 nobody left that's not ready to go in concept.

5           DR. KULLER: And I think that was the  
6 thrust of like a GAO report and others that came  
7 out, because this was a big, contentious political  
8 issue, as well as it probably should have been when  
9 some 25 percent of some units couldn't go or had to  
10 be recalled. There were large numbers of people,  
11 very cost inefficient, to do that type of thing.

12           DR. STEVENS: We found one of the largest  
13 things we worked with is we found PGI issue, is that  
14 the Congress is extremely angry at all of us for is  
15 that shot records were lost or people claimed they  
16 got a shot and it wasn't on their record. People in  
17 the program, 80 percent of the people in the program  
18 claimed they got peristygmi. We know that's not  
19 true, but we can't prove that. And records were

1 lost. I mean, wholesale unit medical records were  
2 lost. And they're hoping that going to the  
3 automated system here down the line -- we were  
4 talking about it earlier, a smart card or something,  
5 is going to help some of that, because  
6 accountability is a real problem with us right now.

7 DR. KULLER: I only want to say is I served  
8 from day one when the problem occurred with Agent  
9 Orange for two reasons, because before it happened  
10 we were interested in what happened that twins in  
11 Vietnam -- we were involved with the first twin  
12 study which exploded into this huge Vietnam research  
13 program. And the one thing that we spent an umpteen  
14 amount of time was on the absence of records in  
15 database. We made recommendations after  
16 recommendations. And that's why I said ten years  
17 about what we're hearing again today.

18 And I think it's nice to keep making the  
19 recommendations. But sooner or later, I think -- as

1 I mentioned yesterday -- there needs to be some real  
2 effort not only to get people experts in computers,  
3 but also the people who know how to build the  
4 systems which will work for the people who have to  
5 do the work who need the systems to make things  
6 work, to work together, because the systems really  
7 are awful.

8           I mean, the standing joke was we fed back  
9 the information to the military about where the  
10 troops were in Vietnam. And they could never  
11 basically replicate where people were when you gave  
12 them exactly the same names but blinded them  
13 essentially to what they said before. We got totally  
14 different data back and realized that nobody really  
15 knew where anybody was.

16           There was nothing wrong with that, I mean,  
17 with what was going on there. It wasn't their job  
18 to keep a database. They were fighting a war. But  
19 I mean, the reality was there was no data -- really

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1 was no database that's useful. And I think it's the  
2 same problem. It's people telling us where they  
3 were, what they were doing, you know.

4 DR. ASCHER: You said before the more  
5 things change, the more they stay the same. In  
6 World War I, there was gas exposure of a few  
7 Americans. The number of claims for that illness  
8 later on far exceeded the number known to have been  
9 exposed, but nobody could figure it out. So we had  
10 to pay them.

11 DR. KULLER: I think it's interesting and  
12 there's a real need to develop the systems for  
13 keeping track. A modern system database is  
14 critical.

15 DR. LEE: Along that line, I was just  
16 wondering what's -- can you elaborate a little bit?  
17 What is a central research database and who has  
18 access to it?

19 DR. PARKINSON: Well, the problem has been

1 to link databases in such a way that you can -- you  
2 can look epidemiologically at any question you want  
3 to know about. So what it is basically is the  
4 personnel records which is everything from a  
5 person's home, where they were born, country of  
6 origin, their home residence, level of education,  
7 their promotional records, all of that type of  
8 thing. Of course, the hospital records -- you know  
9 -- by social security number, hospitalization  
10 records. The other major piece involved, TDY,  
11 personnel things, or DCPDC type of defense command  
12 power data center.

13           In other words, the degree to which we can  
14 get a snapshot. And it really is just the systems,  
15 you know, accountability things that we heard about.  
16 Is that people say, hey, you've got the care of my  
17 son or daughter for three, five, twenty years.  
18 You've got to be able to tell me what happened to  
19 him. And if we can't say that this person had this,

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1 that and the other deployment as part of his 12  
2 point performance plan and what the health -- it's  
3 just the health records says that person is and what  
4 we did over them over time, put them in harm's way,  
5 is just not -- it's not the right thing to do, first  
6 of all. Politically, it's unsaveable.

7           But, more importantly, there are some  
8 important questions. Particularly if we get the  
9 chronic disease and health promotion, we'll be able  
10 to get the -- there is so much of this, the outcomes  
11 are not necessarily health status. There are a lot  
12 of other areas. Productivity, lost work days,  
13 Workmen's Compensation, all of that stuff. We could  
14 do that.

15           So it's the ideal -- it's kind of a Holy  
16 Grail, but we're going to take a crack at it and see  
17 if we can get you back here in four to six months.

18           One final announcement. We started  
19 dialogue yesterday. Last year, the Navy hosted a

1 recruit training medicine conference, if you will,  
2 in -- I guess it was May of last year, this year,  
3 May of '95. Dr. Blackwood and the folks down at  
4 Wilford Hall would like to propose, and both David  
5 and I -- Frank, I haven't talked to you about it  
6 yet. But with the notion that we make that kind of  
7 a tri-service effort every year in May. We propose  
8 next year that it be May 6th to 8th. The Air Force  
9 would host it as a tri-service effort, if you would  
10 talk to Dr. Blackwood. And that we rotate it among  
11 the services every year.

12           I mean, the issues we're talking about are  
13 all overlapping. They come here to AFEB. We could  
14 probably invite AFEB representations for the  
15 infectious disease committee to come. But it's just  
16 leveraging our scarce resources. So if you'd like  
17 to talk more to Dr. Blackwood, it would be a  
18 comprehensive look at medicine on an annual basis  
19 for scientific updates and things like that.

1 Thank you.

2 DR. LEE: Do the services have some special  
3 program for females? Do you have one?

4 DR. PARKINSON: Part of that was because  
5 -- yeah. Some of the other research is being done,  
6 I believe, in Army. The Defense Women's Health  
7 Initiative was Congressionally mandated research  
8 funding, and there is some women's health issues.  
9 And that was done through an internal peer review  
10 process.

11 DR. ARDAY: There are miniatures of the  
12 slides, hand-outs at the table if you want them.  
13 I'll try and keep this brief since we're running way  
14 behind. And I will talk about Hepatitis A  
15 recommendations, but not the first thing off.

16 One of the issues that came up in the last  
17 quarter for us is the alien migrant intradiction  
18 operations exposure again. We had a case where we  
19 had a vessel with 150 Chinese aliens, which was

1 intradicted off the coast of Mexico. And there was  
2 some concern as to what disease exposures were  
3 involved. So we -- in coordination with the CDC and  
4 some folks in PHS, a PHS officer went out there and  
5 medically examined each of the aliens that were on  
6 board the ship.

7           One of the prime concerns was Hepatitis  
8 risk. So we drew 49 blood samples. It was not a  
9 truly random sample, but more of a convenient sample  
10 among the crew members. None of the people were  
11 clinically jaundiced. But of those 49 samples, 22  
12 or 44 percent were Hepatitis B surface antigen  
13 positive and anti HBC IGM negative, indicating they  
14 had carrier state for Hepatitis B.

15           Other diseases that they noted among them,  
16 primarily upper respiratory illness symptoms. There  
17 was a minimum amount of diarrheal illness. And  
18 scabies was fairly common among these individuals.

19           Environmental sanitation on the ship, no

1 surprise of course, was poor. They didn't have any  
2 hand washing facilities. They didn't have any  
3 functioning toilets. This is an issue primarily for  
4 our folks that go on board and that stand watch on  
5 the ship during the interdiction process.

6 DR. SCHAFFNER: What happened to these  
7 folks?

8 DR. ARDAY: These individuals -- I'm not  
9 totally sure. I believe they were -- they  
10 originally went to Mexico and then were returned to  
11 China. They were not admitted to the United States.  
12 Although there were some females on board and I  
13 note kind of as an aside that it is INS policy that  
14 if there are females that are pregnant, they are  
15 given automatic asylum. So pregnancy tests were  
16 provided for the females on board, but none of them  
17 happened to be pregnant. Don't ask me why. I  
18 didn't --

19 At any rate, the primary concern for us now

1 is revision or reconsideration over Hepatitis B  
2 immunization policy. As it presently stands, all  
3 full-time health service personnel are required to  
4 have Hepatitis B immunization, emergency medical  
5 technicians, other than the health service personnel  
6 -- and we have a fair number of them in the Coast  
7 Guard -- are strongly recommended. But it's not  
8 mandatory. The issue here primarily is for the  
9 boarding crews. And as our policy has stood, it was  
10 felt that it was -- their exposure risk was  
11 relatively low and it was not recommended, although  
12 we allowed for case by case immunizations.

13           The issue now is that there are a number of  
14 folks in our Major Logistics Command Pacific, MLC  
15 Pac, that want to have all of the boarding parties  
16 immunized based on this data. So we're looking at  
17 the cost of that and we're consulting with some of  
18 our folks at the -- consultants at the CDC and  
19 Hepatitis Branch, as to whether that would be

1 feasible and what the cost would be. But we know  
2 that it would be in the millions of dollars to get  
3 everybody, because probably half the Coast Guard is  
4 at risk for being involved in a boarding party at  
5 any particular time.

6 DR. PEROTTA: Do you have any cases among  
7 those boarding parties?

8 DR. ARDAY: No, we have had no cases.

9 DR. SCHAFFNER: Injuries? Do you have any  
10 injury record of what happens to boarding parties?  
11 Are they likely to sustain injury that are  
12 potentially contaminated?

13 DR. ARDAY: No, they are not likely to  
14 sustain injuries. I won't say that injuries never  
15 occur. Boarding parties do occasionally trip, fall,  
16 have cuts, things like that.

17 DR. SCHAFFNER: I mean, you know, injuries  
18 that might be contaminated by blood and body fluids.

19 DR. ARDAY: Right. We also have

1 occasionally there are altercations on board the  
2 ships where you could have this type -- that type of  
3 exposure occur.

4 DR. SCHAFFNER: So you're really like a  
5 public safety officer.

6 DR. ARDAY: Correct.

7 DR. SCHAFFNER: I'm curious about the EMTs.  
8 Do the EMTs in the Coast Guard do the same kinds of  
9 activities that civilian EMTs do?

10 DR. ARDAY: Yes. They are --

11 DR. SCHAFFNER: I must say I'm surprised at  
12 the immunization policy, because that certainly  
13 applies to the -- you know -- the OSHA requirements  
14 apply to EMTs and I think quite appropriately.

15 DR. ARDAY: Right. I understand what  
16 you're saying. Again, it became a cost issue and in  
17 looking at the data, we didn't have any reports of  
18 Hepatitis B. We looked at our rates among the Coast  
19 Guard members and didn't find anything.

1           The reason we don't -- hadn't done it for  
2 blanket EMTs, we have a lot of people that basically  
3 do the EMT certification, serve as an EMT for two  
4 years and then aren't an EMT again. So we have a  
5 high turn-over in our EMT population.

6           DR. SCHAFFNER: I know what you're saying,  
7 but during that period, two things. They are  
8 exposed to blood and body fluids. Second, the  
9 recommendation is that anybody who enters the health  
10 provider field ought to be immunized during their  
11 training. There is some -- there are some data to  
12 suggest -- and I think they're also reasonable  
13 -- that injuries and exposures are actually more  
14 common during training during the early years of  
15 performance than they are when you get to be kind of  
16 senior.

17           So what you've got is a group of folks who  
18 are turning over fairly rapidly, but they're  
19 actually the highest -- probably at the highest risk

1 period of their lives, their professional lives. It  
2 strikes me that they ought to be immunized.

3 DR. ARDAY: Well, as I said, the policy is  
4 currently under review. So it's probably going to  
5 be changed. I don't know particularly what the  
6 decision will be on the EMTs and the boarding crews  
7 at this point in time.

8 DR. KULLER: Would it help you at all if a  
9 statement came from the Board with just -- if the  
10 Board put a statement for you saying that, would it  
11 help at all? If the Board made a full body  
12 statement saying that.

13 DR. ARDAY: It would help.

14 DR. SCHAFFNER: You could convey the  
15 informal sense of the discussion and ask for a  
16 recommendation.

17 DR. KULLER: At the next meeting of the  
18 Board, if it's at all helpful, you could ask a  
19 question and the Board would be glad to give you a

1 statement back through the Board saying that you  
2 presented this issue and the Board made the  
3 following recommendation.

4 DR. ARDAY: I'll raise that when I get back  
5 to Headquarters. I imagine the decision to immunize  
6 these folks are probably going to be made within the  
7 next couple of weeks. So if it's still going back  
8 and forth by the next Board meeting, I'm sure I  
9 definitely will be bringing it up.

10 DR. STEVENS: What do you think is the  
11 sense of -- where do you think it's going to come  
12 out?

13 DR. ARDAY: Well, I'm kind of treading a  
14 thin, political line here, because there's quite a  
15 bit of in-fighting in the Coast Guard as to this.  
16 There is one camp that feels very strongly about the  
17 immunization. And there is another camp that feels  
18 very much that it's not worth the cost.

19 We're looking at probably in the \$4 million

1 to \$5 million range to do this, which is a  
2 significant part of our budget, our health budget,  
3 because the Coast Guard is so small.

4 DR. STEVENS: Four to five million dollars?

5 DR. ARDAY: Yeah.

6 DR. ASCHER: The infections in civilian  
7 life and OSHA provides that. It's the rule.

8 DR. ARDAY: Right.

9 DR. ASCHER: It's very hard to defend a  
10 case when you have a community standard like this.

11 DR. ARDAY: Yeah, I understand the OSHA  
12 business. But, as I say, that's the way it stands  
13 at the moment. The other issue is that the PPD  
14 testing of Coast Guard members -- this has kind of  
15 been a nebulous policy, but it has been firmed up in  
16 the last few months. And we are going to annual  
17 testing for the folks that are involved in the EMIO  
18 exposures. We have not had any cases of active  
19 tuberculosis reported on anybody that was involved

1 in the Haitian operations or anything else to date.

2 But we are going to up our screening to look at

3 that in a little bit more involved.

4           A little bit of update on the HIV issue,  
5 which I mentioned the last time we were there -- or  
6 the last time I was here, rather. We were out in  
7 Utah. We have had a total of nine HIV positive  
8 cases reported since September of '91. All of these  
9 cases were discovered in either clinically indicated  
10 testing, which includes individuals that came to the  
11 clinics with STD, drug or alcohol use problems or  
12 prenatal care, or administrative testing which is  
13 involved in accessions, new recruits, or outside of  
14 the continental United States, PCF moves, or if  
15 they're selected for officer candidate school.

16           However, there is a feeling -- and, of  
17 course, this is not statistically shown or anything  
18 like that, but the impression is that the rate seems  
19 to be getting more frequent. Since September of '93

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1 through June of '95 you have a total of six cases.  
2 Only four of those are among active duty, but all  
3 four of the active duty HIV positives have been  
4 reported in the last nine months, which gives us an  
5 overall rate of about 14 per 100,000 per year.

6           Therefore, the decision was made that the  
7 Coast Guard would reinstitute routine periodic  
8 testing. It will be tied with the routine physical  
9 exams, which are done quadrennially. And otherwise  
10 the clinical indicated testing and stuff will remain  
11 as it currently stands.

12           This policy has not yet been implemented.  
13 It's probably going to start with FY96.

14           AUDIENCE MEMBER: How many people have been  
15 tested total for HIV?

16           DR. ARDAY: How many people tested total?  
17 Well, the whole Coast Guard has been tested, because  
18 we were doing routine periodic testing up through  
19 '91. And they are required to have had an HIV test

1 on the record. So everybody has been tested in the  
2 entire force. In terms of how many tests that we're  
3 doing a year, as it currently stands now we're doing  
4 fewer than 10,000 tests a year, but those are not  
5 all active duty. Those includes our dependents,  
6 retirees, anybody else that comes in and walks in  
7 for a test. Among the active duty population, we're  
8 probably doing about 5,000 tests a year.

9           On our Hepatitis A vaccination policy, it's  
10 still be drafted and staffed. Our like provisions  
11 as it stands right now, we're going to have routine  
12 administration for deployments greater than or equal  
13 to 90 days. And we're kind of doing a similar kind  
14 of idea as to what the Army has decided, but we're  
15 going to probably have a gray area where they can  
16 use either the vaccine or the IG in the three month  
17 to five month window being a local call. And then  
18 anybody that's going for five months or more will  
19 absolutely get the vaccine.

1           The blanket coverage will only be applied  
2 to our individuals that are in our court security  
3 units which are the only people we have in the Coast  
4 Guard which definitely go on the ground in foreign  
5 countries during deployments. And there are only a  
6 couple of thousand of those in the Coast Guard  
7 -- actually fewer than 2,000. And many of them are  
8 Reserve units. They are not active duty members in  
9 the Coast Guard.

10           And we have decided we're going to give it  
11 to all of our food service personnel, which is fewer  
12 than a thousand in the Coast Guard. So they are  
13 going to get -- unless, of course, this changes  
14 before the thing is published. But as it stands  
15 right now.

16           And, of course, we'll use it where  
17 immunoglobulin is unavailable and otherwise any  
18 administration will be in accordance with the ACIP  
19 guidelines.

1           Now, we did consider -- I want to mention  
2 this because the issue of screening for some of  
3 these immunizations has come up in the last couple  
4 of days. We did look at the idea of screening all  
5 of our members who would be eligible who would be  
6 over 40, because based on the information that was  
7 presented the last time, the Navy study that was  
8 done at Uchets, they showed an average cost of  
9 -- in-house cost of about \$10 per test and a break-  
10 even point of about 20. Our break-even point, of  
11 course, still holds because our vaccine costs are  
12 the same.

13           But interestingly enough we don't have any  
14 in-house laboratories. We have some level 2 level  
15 laboratories. We have no level 3's. So anything  
16 like this would have to be done by outside  
17 contractors. Some of our larger volume facilities  
18 do have contracts, standing contracts to perform  
19 these types of tests in the range of about \$20 a

1 test. It's real close to the break-even point. But  
2 most of our clinics are very, very small. And they  
3 pay the market rate, which is anywhere from \$36 to  
4 \$56 per test for an IGG anti-HIV screen. So we are  
5 probably not going to implement any screening.

6       We have Coast Guard wide in terms of our over-40  
7 population that would be requiring this, we would  
8 probably have fewer than a thousand. And if you  
9 crank out the numbers, it ends up costing about  
10 \$2,000 more to screen them all than it is just to  
11 immunize them all.

12           DR. ASCHER: You couldn't pull their  
13 repository samples and do them all at once?

14           DR. ARDAY: That's a thought. I hadn't  
15 thought about doing that, but I don't know how much  
16 that would cost, whether we could coordinate that  
17 with the repository to pull them and see.

18           DR. STEVENS: It doesn't save you the cost  
19 of the test.

1 DR. ASCHER: Well, it should. You should  
2 be able to get them for \$5 or \$7.

3 DR. ARDAY: Yeah, if they --

4 DR. ASCHER: You know, the depository is  
5 still looking for stuff, so think about it.

6 DR. ARDAY: Good thought. I think we might  
7 look into that and see if we can do screening. The  
8 problem there I think is going to be once we get the  
9 data, tracking down the people and notifying the  
10 units and so on and so forth and who is going to be  
11 immunized. I think we may end spending as much on  
12 the administrative end after we do the testing. But  
13 I'd have to look at it. I'm just speculating.

14 DR. ASCHER: Those are the links that we  
15 keep talking about and need to be made. This would  
16 be a way to start those links. You can't get back  
17 to the people, keep trying.

18 DR. ARDAY: The last issue that I want to  
19 mention is something that just came up in the last

1 month. We had a couple of Coast Guard cutters that  
2 went into the yard for decommissioning and a couple  
3 of non-scientific swipe tests were done and they  
4 found extremely high levels of PCBs in some of the  
5 living standards that are greater than or equal to  
6 20,000 parts per million. EPA standard is 50 parts  
7 per million.

8           So as it stands right now, we're basically  
9 at the confirm the epidemic stage. I mean, we  
10 really do have a problem here. So we're going to do  
11 some random, i.e., scientific type of sampling from  
12 several cutters in conjunction with some folks from  
13 NIOSH.

14           We have not an occupational medicine  
15 monitoring program database. It's not very  
16 accessible. The data is basically in text format,  
17 so we can't really go in there and do much  
18 sophisticated analysis of the data. We primarily  
19 rely on our occupational health screeners and what

1 they've seen in terms of picking their brains. We  
2 really haven't had any reports of any of the  
3 sentinel illnesses associated with PCB exposure  
4 -- no hepatic porphorias, no infertility, no atopic  
5 conjunctivitis. So we don't think we have a  
6 problem. We don't know for sure.

7           In terms of -- right now, the problem  
8 exists entirely in terms of cleaning up these ships  
9 for disposal. We're going to look at the ships that  
10 are actively in the fleet and find out what's going  
11 on with them and whether they have any PCB  
12 contamination.

13           That's all I have unless you have any  
14 additional questions.

15           AUDIENCE MEMBER: Just a comment. Use of  
16 the serum repository, there are charged for that  
17 that exceed \$10 per treatment. So it's not only the  
18 cost of the test.

19           DR. ARDAY: Okay. Well, that's probably

1 going to throw it the other -- over the limit.  
2 Because, again, our break-even point is about \$20.

3 DR. KULLER: Thank you very much. Dr.  
4 Hansen is going to provide the report on the injury  
5 working group.

6 DR. HANSEN: I'm very pleased to have the  
7 opportunity to bring to you the results of a study  
8 that really has roots at least five years ago and  
9 when we were doing some historical background,  
10 Colonel Bruce Jones discovered some reports from I  
11 believe the 60s or something like that. So injury  
12 prevention is not exactly a new topic for the AFEB,  
13 but it is a topic that has risen in the last year or  
14 two to a high level of priority.

15 I think the reason for that is because we  
16 were presented with some data concerning readiness  
17 of the forces and the medical related factors the  
18 most affect readiness. And I think it was  
19 surprising perhaps to everyone how huge a percentage

1 of injury related factors were reducing readiness  
2 and were accounting for unavailable soldier or  
3 sailor days.

4           The report that I'm going to present was  
5 heavily written by members of the committee with  
6 great assistance from and support of and writing from  
7 Lieutenant Colonel Bruce Jones, who has really  
8 spear-headed this whole effort. And I commend him  
9 for his long-term commitment to injury surveillance  
10 and the potential for prevention.

11           The working group divided into subgroups to  
12 write the various sections and to analyze the data.  
13 And the final report will convey all of the  
14 contributions from those members. And the report  
15 itself has also benefitted from other subgroups of  
16 other groups that are associated with AFEB, who have  
17 been involved in examining this issue. And they  
18 will be cited as well.

19           The interesting thing about organizing this

1 report was that it became clear that the way to  
2 organize it was around existing databases. So we  
3 again are brought to the issue of how important  
4 computerized databases are to understanding and  
5 strategizing on military priorities. So we would  
6 certainly commend the effort to continue to improve  
7 various means of keeping track of medical and injury  
8 related issues by computer.

9           The databases that we had available to us  
10 are now formed as the sections of this report. The  
11 first is on deaths due to injury, which of course is  
12 a very small component of the pyramid of injuries.  
13 If you think of the pyramid, the next tier down are  
14 disabilities as a result of injuries. So that's the  
15 second section.

16           If you look at the next tier down, it's  
17 hospitalizations related to injuries. And the final  
18 tier down is out-patient clinic visits related to  
19 injuries. Some of those the data are less adequate

1 than others.

2           And the final section deals with deployment  
3 and combat related injuries principally deriving  
4 from the recent experience in the Persian Gulf.

5           Each of the sections deals with a  
6 particular data set and asks the question: What's  
7 the magnitude of the problem as exposed by this data  
8 set? What are the types of injuries that contribute  
9 to deaths, injuries, disabilities, hospitalizations  
10 and out-patient visits?

11           What are the causes? And in many cases,  
12 those were the most difficult to come by.

13           And, finally, each section deals with what  
14 are some of the potential measures that could be  
15 considered for prevention or what are some of the  
16 research issues in the prevention area that need to  
17 be addressed.

18           The final part of the report is the  
19 conclusions. And rather than go into the sections

1 that I've just reviewed, I'm going to start with the  
2 conclusions and then move to our recommendations.  
3 The report itself will be circulated to the Board a  
4 little over a month from now. At this point, it's  
5 having final editing done and will get one more  
6 perusal by the committee. Colonel Jones expects to  
7 mail it about the end of August, so you will all get  
8 another chance to see the details.

9           So going right to the conclusions of the  
10 report and not each of the specific databases.

11           Injuries have a great impact on health and  
12 readiness for the U.S. Armed Forces than any other  
13 category of military complaint. So we must raise  
14 injuries to the same level that we have for a long  
15 time looked at medical and illness issues.

16           The disability compensation for injury  
17 related disabilities appears to be close to a  
18 billion dollars. The last data available from four  
19 years ago was \$750 million. And we know that the

1 disability compensation has increased in the last  
2 four years. So we're approaching a billion dollars  
3 per year in compensation by the military of  
4 individuals who have suffered injuries.

5           Training injuries seem to be a very large  
6 problem. They are mostly treated on an out-patient  
7 basis, but they contribute massively to readiness  
8 issues and certainly contribute to issues in the  
9 Persian Gulf.

10           Among those training injuries, back and  
11 knee injuries appear to be very important. Certainly  
12 major causes of morbidity, disability and  
13 limitations in service abilities.

14           Sports appears to be an important factor  
15 that could be amenable to more remediation by both  
16 research to identify the specific sports and  
17 injuries and by strategizing on ways to reduce those  
18 injuries.

19           Motor vehicle accident certainly

1 contributes a major piece to the injury rate. And  
2 among those we come back to the ever present alcohol  
3 issue, one that clearly is involved in many injuries  
4 in the military and certainly motor vehicle ones.

5 Falls came up very high on the cause of  
6 injuries and were puzzling to some of us who  
7 couldn't intuitively see why falls would be a very  
8 high proportion of injuries. And we suggest a need  
9 for careful examination for causes of those falls  
10 and perhaps study of preventive measures.

11 There are automated databases, particularly  
12 the ones that we evaluated. But it's quite clear  
13 that very few of them are being used in any  
14 consistent way for surveillance purposes. That is,  
15 to look at them from an epidemiological point for  
16 implications for changes and actions. So the report  
17 does encourage greater visiting of those reports in  
18 a systematic way, to produce trends and injuries and  
19 to identify changes in injury rates in different

1 units as well as some different circumstances.

2           Finally, the last conclusion is that  
3 significantly increased amount of research in the  
4 military should be addressed to identifying  
5 modifiable risk factors, since injury prevention can  
6 certainly save money and will by all means increase  
7 readiness. And also research is needed to evaluate  
8 the effectiveness of various preventive measures  
9 that have been or are being tested or that research  
10 suggests might be tested.

11           Now, recommendations, which we hope will  
12 receive the greatest attention from the military  
13 authorities as well as others, were broken down into  
14 several areas. The first is surveillance related  
15 recommendations. The second is recommendations  
16 concerning research. The third is recommendations  
17 concerning prevention.

18           In the area of surveillance, our  
19 recommendations start with the issue of improving

1 automated population based medical surveillance  
2 systems, systems that link if at all possible -- and  
3 it is certainly possible. But whether it can be  
4 done in a reasonable time frame is another question.

5 But that link hospitalization data with disability  
6 data and death data, all of which are currently  
7 separate data sets, and that add more information  
8 concerning sites of these accident and injuries.

9           Concerning out-patient surveillance, while  
10 we would applaud the idea of having everything  
11 computerized in medical records, it's a very  
12 expensive undertaking. And with the millions of  
13 out-patient visits per year, it may not be cost  
14 effective to automate every out-patient visit in  
15 some massive data base. But we recommend at least  
16 for the short term the importance of developing  
17 sentinel site out-patient surveillance. That is,  
18 some kind of sampling, either by random or by  
19 selected sites, to look at injuries in the medical

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1 system.

2           We also suggested improvement and continued  
3 improvement of the deployment related injury data  
4 such as was really done effectively but can be  
5 improved during the Persian Gulf data collection.

6           There was also a recommendation to increase  
7 the data collection to include at a very minimum the  
8 international collaborative effort on injury  
9 statistics, minimum data set, which has just been  
10 published. It's an international set of items that  
11 should be requested and collected concerning each  
12 injury. And that's recommended as a minimum data  
13 set.

14           Obviously the same old horse arises about  
15 coding not being the same across the services and  
16 greater tri-services work together to increase both  
17 the recording and the recording of injuries is  
18 clearly needed.

19           We also think that the records of such

1 report should be periodically tested for validity  
2 and completeness by some kind of sampling procedure,  
3 such as is normally done to assure the quality of  
4 the record.

5           Now, one of the most important things in my  
6 view is the concern about lack of data, about cause  
7 of injuries. Many of the medical records are  
8 inadequate in cause. Certainly the databases are  
9 inadequate in cause. And causal information is  
10 really what's needed to better focus preventive  
11 efforts.

12           So we've suggested considering adding cause  
13 particularly in the area of musculoskeletal  
14 injuries, where the causes may be amenable to some  
15 particular actions in training or in the work site.

16           We also suggested adding a free text field  
17 for cause, so that causes that are compound or are  
18 not standard or that have multiple factors in them  
19 can be written by the admitting person in a free way

1 that can later be used.

2           And, lastly, concerning surveillance, there  
3 was very little ability to differentiate work  
4 related or on duty type work injuries from non-work  
5 related. And we used work so that in a deployment  
6 situation, you're talking about the sports and non-  
7 work related, not just duty related aspects. And  
8 that, too, is not being well recorded so that it can  
9 be analyzed.

10           There is a need to exchange injury data  
11 with some of the other components of the military  
12 that are also interested in military. Certainly the  
13 safety officers fall into that category.

14           The safety officers were not directly  
15 involved in the work that we did and we carefully  
16 circumscribed our effort to deal with the medical  
17 side, the medical records of various sorts. But  
18 certainly interaction with and dove-tailing with the  
19 safety office is an important aspect, which Colonel

1 Jones was doing as an individual but which needs to  
2 be built into the future developments of our injury  
3 prevention program.

4           We are suggesting that the tri-services  
5 convene a workshop on injury surveillance including  
6 the safety center individuals and that they use this  
7 report as kind of a launching of enhanced inter-  
8 service collaboration on this issue.

9           There are some pockets of excellence going  
10 on in injury research and true prevention research.  
11 There are some studies going on in the Navy, for  
12 example, that could be expanded. But there are very  
13 few of them. So the number of actual experimental  
14 studies of injury prevention we find to be  
15 appallingly low considering the magnitude of the  
16 importance of injury to the readiness of the  
17 services.

18           Finally, we have a section concerning  
19 injury research and have suggested prioritizing more

1 research resources given the magnitude of the  
2 problem into the whole area of injury research. We  
3 think the need -- particularly the knee injuries  
4 would be a rich area in which the military could  
5 contribute to studies of means to reduce and prevent  
6 injuries. And back injuries continue to be a big  
7 issue that additional studies could lend information  
8 to.

9           We think there should be research into  
10 various strategies on preventing and reducing sports  
11 injuries because, clearly, sports are an important  
12 part of the military. No one would like to ban  
13 sports from the military agenda. And yet they are a  
14 significant contributor to lack of readiness. And  
15 they were a problem even in the Persian Gulf.

16           Risk factors and the circumstances for  
17 falls I mentioned earlier, call out for research on  
18 what's going on to produce them, and that could be  
19 done to prevent them.

1           The amount of research going on on training  
2 injuries is extremely low. And yet training  
3 injuries account for a tremendous number of lost  
4 training days inspection trainees. And, of course,  
5 major costs because of those loss of training days.

6           And, finally, in the research agenda, we  
7 suggest further examination and study of the  
8 associations between the training program, the  
9 fitness program, performance evaluations and  
10 injuries to better get the whole gestalt of what  
11 this military is and how we can reduce the injuries  
12 while assuring performance standards and the types  
13 of fitness needed in various components of the  
14 military.

15           Finally, recommendations concerning  
16 prevention. Clearly, there are a number of methods  
17 of prevention that are out in the literature, that  
18 are known to exist, that are not being implemented.  
19 And we think greater attention to prevention

1 programs, to education, perhaps of trainees and  
2 trainers, for example, would be a major contributor  
3 to reducing injury.

4           So we think, although there is a lot of  
5 research to be done and a lot better data collection  
6 to be done, that enhancement of actual prevention  
7 efforts does not need to wait until all of those  
8 data are in and analyzed. And clearly the knee and  
9 back injuries are an area where at least some  
10 measures of prevention are known and could be  
11 enhanced. And the same goes with sports injuries.

12           Finally, we think any prevention programs  
13 that are implemented should be monitored to  
14 determine their effectiveness.

15           Now the group has concluded by assessing  
16 ideas for the future. We expect the final report to  
17 be available to you about the end of August and to  
18 be submitted to all members of this group and more  
19 broadly. This injury work groups suggests that a

1 group be made of DOD in a work group to have at  
2 least a comparison of what's being collected by the  
3 environmental people, the safety people, the  
4 security people and other aspects of DOD that could  
5 perhaps bring more together through some sort of  
6 collaborative effort.

7           We're suggesting the tri-services work shop  
8 that I mentioned that would bring together AFEB and  
9 the tri-services components, as well as safety  
10 center people, and that be held perhaps about six or  
11 eight months from now after the report has had a  
12 chance to be well circulated and considered.

13           We think the report will require  
14 refinement, that it is not in any way a final  
15 report. And in line with the type of thing the  
16 commissions did, we would anticipate updating,  
17 adding data, and continuing to improve the nature of  
18 the reporting of this issue. And we would suggest  
19 that some sort of vehicle be produced to assure the

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1 ongoing effort in this area.

2           I might add from a personal standpoint that  
3 the amount of time that the committee put into just  
4 learning about these databases, learning what's in  
5 them, who puts them in, the quality of the data of,  
6 what the reports from those data are, what the  
7 questions are, was a massive undertaking. And I  
8 would suggest you not under-estimate the importance  
9 of continuing those consultants who have already  
10 been involved in this group. The consultants were  
11 major contributors to the report and brought a lot  
12 of expertise to AFEB and were certainly very  
13 helpful.

14           Now, two areas that we did not touch on and  
15 that we think ought to be open for future evaluation  
16 are the issues of civilian employees in the work  
17 setting. We did not look at injury data for that  
18 group at all. And yet it's clearly an important  
19 group for the military.

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1           And another area we didn't look at in any  
2 detail at all is violence related injuries, both  
3 self and other perpetrated violence. And those are  
4 two areas that we think should in the future receive  
5 some additional attention. That's the conclusion of  
6 the injury work group report.

7           Do you have any questions, comments?

8           Yes.

9           DR. KULLER: I think this is very  
10 important. And I think the most important thing  
11 would really to be to make certain that there be a  
12 continual monitoring and goals to be established for  
13 reduction of injuries in the military, because  
14 clearly this is a place where there is a potential  
15 for substantial reduction, both of morbidity,  
16 disability and costs, and it's also, as pointed out,  
17 preventable. It doesn't really require us to have  
18 some new technology or find some new agent that you  
19 might say, a new therapeutic agent. And it's not

1 unique to -- again, to U.S. military, but it's been  
2 an issue that involves a lot of both other military  
3 groups and also obviously major civilian groups.

4           So I think that one thing we should  
5 encourage through the Board, because the Board also  
6 has obviously a turn-over of Board members and its  
7 history sometimes disappears. But as you pointed  
8 out, this has been a five-year phenomenon in getting  
9 to this point. And it would be a shame now after  
10 five years and this much effort that it disappears  
11 into the woodwork.

12           I think that perhaps at each of the  
13 subsequent Board meetings, and somehow there should  
14 be an update of what's going on and how this report  
15 and the activities are being implemented in terms of  
16 modifying the injury and accident rates in the  
17 service and the programs that are being developed,  
18 because clearly they're much too high and there  
19 really needs to be an effort to modify the problems

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1 that are recurring.

2           And especially as technology is changing,  
3 also what the military is supposed to be doing is  
4 changing. The cost of this just has to be modified  
5 and hopefully we set up a protocol, so that at least  
6 every so often the Board -- if not at every meeting  
7 -- we get an update of what's happening, so that it  
8 doesn't just become something on the shelf.

9           DR. PEROTTA: I wanted to reiterate what  
10 Dr. Joseph and I think you spoke about yesterday,  
11 using this as a model for other efforts within the  
12 AFEB.

13           I wasn't able to attend Wednesday's  
14 meeting, but I can tell you that in my opinion, the  
15 success or at least the progress of this particular  
16 work group has really related to the fact that there  
17 is somebody who is staffing it, if you want to use  
18 that term. And we don't see that in all of the other  
19 ones.

1           I guess I would just highly recommend that  
2 as we as an organization move towards doing more of  
3 these projects -- my feeling is that's what Dr.  
4 Joseph was asking us to do -- is that there be  
5 somebody whose job it is to really take this on.  
6 Because I can tell you that I would have not been  
7 able to contribute the little that I was if it  
8 wasn't for Bruce calling me up and keeping me  
9 informed and getting meetings together and sharing  
10 the information and Barbara's leadership, as well.

11           So I think it really going to serve as a  
12 model and I recommend that we make sure that we  
13 consider that as an organization as we take on more  
14 of these projects.

15           DR. HANSEN: Well, I would conclude by just  
16 commending again the efforts of Colonel Jones. He  
17 clearly has been the appointed person on this. And  
18 he needs to be joined by many more, I feel, to make  
19 this effort come about. It can not be a one-man

1 operation. It's clear it's going to need to be a  
2 military agenda.

3 I'm standing here because I presume you  
4 want me to continue to answer more.

5 DR. KULLER: If there aren't any more  
6 questions, then we'll go onto the -- the report will  
7 be available in -- you said, what, August you think?

8 DR. HANSEN: The end of August.

9 DR. KULLER: So the end of August it will  
10 be distributed to the Board.

11 DR. HANSEN: The reason the next item is on  
12 your agenda is a couple of meetings back, the Board  
13 had some discussion about the importance of looking  
14 at some of the non-infectious diseases that are also  
15 epidemics in the military or potential epidemics and  
16 that are potentially amenable to preventive  
17 measures.

18 Dr. Fletcher spoke yesterday. And his and  
19 my reports were to be back to back, but agenda

1 considerations and flight schedules made us be  
2 separated. So consider Dr. Fletcher's introduction  
3 to this. Certainly exercise and cardiovascular  
4 system issues are of critical importance to the  
5 military.

6           And I'm going to bring to you a couple of  
7 additional areas that I think at military has the  
8 potential to, A, effect; B, produce good research;  
9 C, even alter what lay people do outside of the  
10 military, because of the unique research environment  
11 you have toward prevention.

12           Now, let's see here. I thought I'd get  
13 your attention by telling you that this monkey does  
14 not have Ebola. He does, however, have B virus.  
15 And B virus is almost uniformly, not quite uniformly  
16 fatal to humans. That's not what we're going to  
17 talk about.

18           Can you see this? Am I standing kind of in  
19 your way there?

1 (Pause.)

2 DR. HANSEN: You might want to move a  
3 little bit towards that side. I'm going to talk  
4 back and forth between human data and non-human  
5 primate data, because some of the studies have been  
6 done in non-human primates because they haven't yet  
7 had the potential to be done in humans, such as the  
8 military environment could permit. Let me just  
9 start with a little bit of overview about the  
10 importance of nutrition related disorders in the  
11 United States and this clearly applies to the older  
12 half of our military, as well.

13 We never think about the fact that  
14 nutrition contributes to virtually all of the major  
15 causes of death and of disease. It's not new that  
16 obesity is a major factor among the nutrition  
17 factors in contributing to disease and death. This  
18 quote from Hippocrates shows that we haven't learned  
19 a great deal in the subsequent years since 300 B.C.,

1 except I would -- I put this up to remind me that  
2 the time is long gone when we have to think of or  
3 even should consider obesity a moral weakness, the  
4 first item on here.

5           We know that it's genetic. We know that  
6 it's physiological. That there is a very small,  
7 modifiable component. And it's that component we  
8 can now modify that's important. That it is almost  
9 never, very rarely due to gluttony. It is almost  
10 never, very rarely due to moral problems or ethics  
11 or even psychiatric of a diagnosable sort.

12           So let us start by saying that obesity is a  
13 physical illness promoting feature that if we can  
14 understand it better and prevent it better, it will  
15 certainly improve health. It contributes to all  
16 kinds of problems as Hippocrates knew. There are a  
17 few items that I would -- that I put up, too, that I  
18 want to comment on right at the beginning. And so  
19 that I establish my credentials, because I'm going

1 to say a few things that you're not going to  
2 believe, I am presently president of the American  
3 Society of Clinical Nutrition, which is the  
4 scientific nutrition organization in the United  
5 States of mostly physicians and all PhDs, only those  
6 two, about 70 percent physicians.

7           And I say that because we have an awful lot  
8 of misinformation about nutrition, about exercise  
9 and about obesity. And one of those is a question  
10 of what we eat. And how that contributes or doesn't  
11 contribute to obesity.

12           He put up, eat dry foods. We now say, eat  
13 high fiber foods. But there is no credible  
14 scientific evidence -- credible scientific evidence  
15 that eating high fiber foods will do anything for  
16 obesity whatsoever: prevent it, or cause it, or  
17 mitigate it, or anything else. Think about that a  
18 minute. That's not what your prevailing view out  
19 there is. That's not what the lay public is being

1 told. But we have a lot of Hippocra-ful information  
2 going on.

3           So I'm going to start by making a plea that  
4 as we look at a military program in the area of  
5 exercise, obesity and heart disease prevention, that  
6 we think about assuring that our nutritional  
7 messages are scientifically valid and correct.  
8 Okay.

9           The same issue arises when you talk about  
10 high fat foods. The evidence on high fat foods is  
11 extremely complicated. And the public is getting a  
12 lot of varied and inappropriate and unscientifically  
13 based recommendation, including the latest folderol  
14 about trans-fatty acids. So, again, I will make a  
15 plea that as we develop this, in the military  
16 environment we have the ability to teach young men  
17 and women about nutrition, to teach them the way  
18 they can contribute to their own health. And I  
19 think we have an obligation to do so and and a

1 natural laboratory where we can improve the health  
2 of the latter half of our military by what we do in  
3 the first half of our training time and education  
4 time.

5           Sleeping on a hard bed won't hurt or help  
6 obesity. Okay.

7           It has not escaped even Flemmyng in the  
8 1700s that a voracious appetite didn't cause  
9 obesity. In fact, it might not even be the most  
10 important cause is what he concluded. And we are  
11 quite certain that it is not an important cause of  
12 obesity. So I start there.

13           Now, obesity is associated with a lot of  
14 other risk factors, all of which have an increasing  
15 incidence with age. And in our deliberations, we  
16 have so often focused on the young, new entering  
17 trainees. But this particular presentation calls  
18 for looking at the over-35 group in the military,  
19 because that's where you're going to find all of

1 these various complications which we often call  
2 syndrome X, just for lack of a good term for it.

3           The physiologically basis of syndrome X is  
4 unknown, despite reputations to the contrary. No  
5 one knows to what degree these things are physically  
6 -- that is, physically, biochemically linked. But  
7 at least they occur in frequent association.

8           Now, some data from monkeys. I'm going to  
9 present to you as an example of some of the things  
10 we could learn in the future through careful studies  
11 done in the military environment. Well, we skipped  
12 one, but that's all right. Don't worry about it.

13           I wanted to mention that monkeys have 98  
14 percent of the genes of humans and that almost every  
15 research study done on monkeys has been shown to be  
16 applicable to humans with rare exceptions.

17           In the case of both obesity and diabetes,  
18 monkeys get the same centrally distributed obesity,  
19 middle age onset that is the most prevalent form of

1 obesity in America today. They get it at middle  
2 age. It is not associated with any hyper-facia,  
3 high increase in food intake. There is a decline in  
4 physical activity, but there is a decline that  
5 naturally occurs with aging and that also takes  
6 place in older, thinner people. So physical  
7 activity is an enigma as to what its contribution  
8 is.

9           Every aspect of type 2 diabetes, adult  
10 onset, non-insulin dependent diabetes take place in  
11 monkeys.

12           Now, I was talking with one of your  
13 physicians yesterday about the handling of diabetes  
14 in the military. And adult onset diabetes  
15 apparently -- and I don't have first-hand knowledge  
16 of this. If the person needs to be treated with  
17 insulin, is cause for consideration for medical  
18 discharge or MEB.

19           It's clear to us from the studies that I'm

1 going to show you a few slides of that that form of  
2 diabetes and that insulin treatment can be probably  
3 90 percent prevented if the prevention efforts are  
4 started early. And the military has the unique  
5 ability to identify the people at risk early and to  
6 implement early prevention measures.

7           Again, even some of the other risk factors,  
8 such as hypertension, dyslipidemia, low HDL  
9 cholesterol, hypercholesterolemia, are all found  
10 in monkeys as well as in humans.

11           Now, the study I want to mention has two  
12 components. The first is studying the natural  
13 history of the disease, that is, the development of  
14 type 2 diabetes. Believe it or not, until this  
15 point, it has never been done in humans. It is  
16 impossible to start a human study with a normal  
17 human, say, age 15, and study him to the point you  
18 can be certain he has either gotten or not gotten  
19 type 2 diabetes, which means you would have to study

1 him to age 90. That's one of the biggest problems  
2 with genetic studies of type 2 diabetes, because we  
3 can't identify non-effectants, because the disease  
4 comes on virtually throughout life. In type 2  
5 diabetes, the age range is 20 to 90. In monkeys,  
6 it's age 10 to 30. So it's about the same relative  
7 time frame for onset.

8           But in monkeys, what we've been able to do  
9 is prospectively study in the obesity and diabetes  
10 research center at Maryland normal monkeys as they  
11 went through the process of progressing to  
12 hyperglycemia. This dashed line is the point at  
13 which this particular individual monkey became  
14 diabetic.

15           What we have discovered in that progress is  
16 that there is a progen to diabetes that allows us to  
17 identify high risk, almost virtual certain risk,  
18 that high risk, way before diabetes and it's the  
19 change in insulin resistance and insulin

1 sensitivity, hyperinsunemia. This is basal insulin  
2 in one monkey.

3           Now, we've studied this in many, many  
4 monkeys now and show that this pattern takes place  
5 in virtually every monkey that ultimately develops  
6 diabetes.

7           Now, the great news is that the human data  
8 are now supporting this pattern. This was initially  
9 reported ten years ago. But the human data are  
10 short trains. So a short train meaning a ten-year  
11 piece of a human will show this piece or will show  
12 this piece or will show this piece or will show that  
13 piece. But it's very hard right now to put all of  
14 the pieces together. But we're beginning to be able  
15 to companionate the data from stretches of human  
16 studies and showing every single study going on now,  
17 Mexican-Americans, Pima Indians, Black Americans,  
18 are showing this same pattern.

19           So it's clear that we can identify humans

1 and monkeys at high risk for the development of type  
2 2 diabetes. So in all of these groups, early  
3 hyperinsunemia predicts diabetes. And if within an  
4 individual you have the pattern of insulin across  
5 time, you can even predict how soon it's likely to  
6 come on, whether the person is in the rising phase  
7 or the falling phase. And that's where the military  
8 record keeping could be extraordinarily valuable,  
9 because you do have the ability to follow individual  
10 people, prospectively, longitudinally, for 20 years  
11 or more.

12           This just shows you some of the variables  
13 that change during the progression to diabetes.  
14 Remember that some people do die before they get  
15 diabetic. So not everybody who is obese gets  
16 diabetic. But individuals who are progressing  
17 toward diabetes begin to increase their insulin  
18 responsiveness to glucose. They increase their  
19 fasting insulin. They show decreases in glucose

1 tolerance, but it's a terrible clinical test. It is  
2 so noisy and so biologically and experimentally  
3 variable that it's only out here that you can detect  
4 when we call it impaired glucose tolerance, that  
5 it's actually occurring in an individual -- that is,  
6 that they are becoming diabetic.

7           But within a single individual, it's not a  
8 bad test if it's repeated periodically, perhaps  
9 every five years. So it does give you some measure,  
10 but it's not as good as others. So we've defined a  
11 whole series of progressive steps into which humans  
12 as well as monkeys can now fit and from which each  
13 adult can be evaluated in terms of progression  
14 toward diabetes.

15           Now, for those who are not aware of it,  
16 it's believed that probably 12 percent or more of  
17 all current Americans will get diabetes during their  
18 life time. So if you translate that to the military  
19 and subtract out a little bit of bias because of the

1 entry criteria, such that some people are eliminated  
2 who could have become diabetic -- in other words,  
3 you've probably reduced your risk to some degree.  
4 You should really be thinking 7 to 8 percent, maybe  
5 more, still remain in your pool of adults.

6           Now, it's not easy to do a longitudinal  
7 study, but the military certainly permits that  
8 possibility because of your fitness evaluations and  
9 your ongoing health assessment. And I for one would  
10 be hopeful that through such evaluation and study we  
11 can improve the ability to reduce diabetes.

12           Now, there is one way that has been shown  
13 to improve the health of rats. And it's been known  
14 since 1935. That if you simply reduce calories by  
15 about 30 percent, rats are healthier. They do  
16 everything better. Their fur is better. Their  
17 immune system is better. Every aspect of them is  
18 better. They don't get cancer as fast. Rats aren't  
19 very good models for diabetes because they -- most

1 of the species do not get diabetes. But certainly  
2 this gave an impetus to studies to see whether any  
3 kind of calorie reduction in humans could be of any  
4 use.

5           There was some anecdotal data to suggest  
6 that under conditions of calorie restriction,  
7 somewhat reduction, not starvation -- we're not  
8 talking starvation here. We're talking about modest  
9 reduction. That perhaps there was benefit to  
10 humans.

11           So we started a study that is now at this  
12 point has been going for more than ten years,  
13 prospectively in monkeys, looking to see whether if  
14 you did nothing more than prevent the development of  
15 obesity, what would be the effects. So these  
16 monkeys were not put on a diet. They were simply  
17 weighed weekly. Bathroom scale model, we referred  
18 to it as. If they gained weight, their calories for  
19 the next week were reduced. If they lost weight,

1 their calories for the next week were increased.  
2 But the calories were adjusted for that individual.  
3 And it's an important point, because individuals  
4 vary in the number of calories they require, for the  
5 sole purpose of preventing obesity. And that's all  
6 that was done in this study.

7 I'm comparing this is the group that has  
8 had the long-term obesity prevention program. This  
9 is an age mass, just allowed it to ad lib and to  
10 feed. By the way, as a nutritionist, I have to  
11 comment. These are all an American Heart diet.  
12 Zero cholesterol, high fiber, low fat, and they  
13 still get everything. Okay. So this is the age  
14 match group.

15 These are young controls, just to anchor  
16 what the most health value might look like.

17 So the body weights of the ad lib fed  
18 monkeys are on average considerably higher, because  
19 these we kept the body weight slimmer. You can see

1 that we kept the weight at the adult weight. We  
2 didn't take them down. They're quite healthy. We  
3 prevented the increase in body fat that takes place  
4 at middle age.

5           We prevented hyperglycemia. They look  
6 normal. This one, by the way, is missing this  
7 group. These are the ones that became diabetic  
8 during the study. So to give a little comparison, I  
9 removed them.

10           This is the fasting insulin, which I  
11 mentioned early on is a very good marker. I noticed  
12 that fast insulin stays like lean, young animals.  
13 You have the grail of youth or whatever it is,  
14 fountain of youth showing up right here. No  
15 hyperinsunemia compared to significant in the ad lib  
16 one.

17           Glucose tolerance is completely normal,  
18 although half of these monkeys should be obese and  
19 diabetic by now.

1           And the insulin responsiveness which I  
2 mentioned earlier is also normal.

3           Now we've looked at many other variables.  
4 I just wanted to give you an overview picture.  
5 We've looked at the biochemical changes, molecular  
6 biological changes, syn phase and many others. But  
7 I just wanted to give you the impact of a very small  
8 intervention, bathroom scale weekly, alter calories  
9 to keep the scale stable. And the tremendous impact  
10 on primate health that we have been able to  
11 demonstrate prospectively.

12           Now, the Federal Government under NIH is  
13 now initiating a prevention trial of this same sort  
14 in humans. And it's being initiated in clinical  
15 settings of, you know, kind of normal civilian  
16 humans. I predict it's going to be extremely  
17 difficult to get good data, however, because a  
18 clinical setting, out-patient with people living not  
19 in a consistent environment such as the military

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1 provides will not -- will be a lot noisier. The  
2 data will be a lot noisier.

3           So another suggestion I have is for the  
4 military to join that study, because I think you  
5 could produce, A, better data; and, B, more  
6 important data on the whole process and improve  
7 health in the meantime.

8           So the question is: Can we intervene here;  
9 or intervene here or here? But, clearly, the  
10 earlier we intervene in this progression the better  
11 it is for the health of the individual.

12           Dr. Eastman is the head of the NDDG trial.  
13 He works for NIH. And he's done some projections  
14 based on a previous trial done in type 1 diabetics  
15 of what happens if you just postpone the onset of  
16 the disease. Don't think about something so  
17 magnificent as preventing it completely. But delay  
18 its onset. And has shown the tremendous cost  
19 improvement.

1           It's clear that it will improve costs of  
2 health care in older military personnel and will  
3 certainly have an impact on the Veterans  
4 Administration ultimately if we could institute  
5 anything that delays the onset of obesity and  
6 diabetes by, say, a modest five years, which is not  
7 a great deal of change.

8           So I put this out for you as a titillation  
9 to suggest that the AFEB consider further looking at  
10 ways in which the health of the older half of our  
11 military can be improved, can be evaluated, can be  
12 prospectively studied.

13           Any questions?

14           AUDIENCE MEMBER: I think this is an  
15 extremely important issue in terms of individual  
16 health and U.S. population health. I think to make  
17 it militarily relevant, it would be nice to have  
18 some data on what kind of a problem this is for the  
19 military in terms of whether how many MUBs or long-

1 term lifetime benefits due to diabetes and so on.  
2 As it's presented now, I'm not sure that it has any  
3 effect on the military.

4 DR. HANSEN: It ties to the whole program  
5 that Dr. Fletcher mentioned yesterday. All of the  
6 cardiovascular risk factors, every one of them. So  
7 heart disease, atherosclerosis, dyslipademia,  
8 hypertension. It's not just diabetes. My slides  
9 just happened to focus on diabetes.

10 But I think you're absolutely right. And  
11 that should be the next working group.

12 LIEUTENANT COLONEL JONES: I think it's  
13 apropos that this was presented here. I can tell  
14 you from the data that we looked at in our work  
15 group that diabetes is the eighth leading cause of  
16 medical discharge in the Navy. I can't tell you  
17 what it is for the Army because I don't have that.  
18 But it does show up. And it's several percent.  
19 It's over 2 percent of the discharges. So diabetes

1 alone is --

2           AUDIENCE MEMBER: How much of that is type  
3 1 and how much of that is type 2?

4           LIEUTENANT COLONEL JONES: Well, I would  
5 suspect that most of it is type 2.

6           DR. HANSEN: Yeah, almost none of it would  
7 be type 1 because they would already be on insulin.  
8 And I'm told yesterday that they won't be admitted  
9 to the military if they're on insulin.

10           AUDIENCE MEMBER: If they have it, I mean,  
11 we have a lot of people --

12           DR. KULLER: A lot of people get insulin  
13 dependent military in the military.

14           DR. HANSEN: It's very rare, very rare, for  
15 an adult to get insulin dependent diabetes. But  
16 there is a lot of misnomerling. I want to clear this  
17 up for everyone. There is a lot of misuse of  
18 terminology. Adults who are treated with insulin  
19 are not insulin dependent type 1 diabetics. Almost

1 very rare. I mean, it's extraordinarily rare after  
2 the age of 18 to get type 1 diabetes.

3           It's type 2 that can come on early. And  
4 that may need insulin treatment. But it's very  
5 clearly diagnostically differentiable. But you  
6 can't differentiate upon whether they are or are not  
7 treated by insulin. That's not the issue.

8           All type 1s are treated with insulin, must  
9 be treated with insulin or will die, will die  
10 immediately. Type 2s, even those on insulin will  
11 not die immediately if taken off insulin. So it's a  
12 different disease and very rarely will a type 1  
13 happen after age 18. So you can be certain that  
14 most, almost all of the diabetes that comes on is  
15 type 2.

16           AUDIENCE MEMBER: I'd like to disagree,  
17 because as an internist at the Naval Hospital Great  
18 Lakes, I do at least two physical evaluation boards  
19 per year on new onset type 1 diabetics for active

1 duty.

2 DR. HANSEN: How old?

3 AUDIENCE MEMBER: They range anywhere from  
4 like 18 to the oldest one that I've done was in  
5 their 30s.

6 DR. HANSEN: I only can say to you that  
7 it's highly unlikely. But I won't say it's not  
8 true. It is highly unlikely. You cannot diagnose  
9 it on the basis of ketosis. You can only diagnose  
10 type 1 if you did antibody studies. If you did  
11 those, I will take it. But if you didn't, I  
12 wouldn't take it. I would say it's a type 2. But  
13 nevertheless it doesn't really matter. The point is  
14 that it's extraordinarily rare. It's  
15 extraordinarily rare. And I would doubt that a 30-  
16 year-old. But it's possible. I mean, there are a  
17 few. You're talking about the extreme tail of the  
18 diagnostic, though. A 30-year-old is almost  
19 certain, almost certain, 98 percent at least, would

1 be type 2 diabetics at age 30 onset.

2           AUDIENCE MEMBER: There are several of us  
3 in the Navy preventive medicine that would like to  
4 see the percent of fat in the Navy diet reduced.  
5 And unfortunately in discussing that with the  
6 dietary people in the Navy who are involved in  
7 changing the diet, we're somewhat hampered by the  
8 fact that national bodies like the American Heart  
9 Association are still recommending a diet that is 30  
10 percent calories from fat. I'd like to see it down  
11 more toward 20. But perhaps we could bring this as  
12 a problem statement to the AFEB and get an opinion  
13 as to what the military diet ought to be in terms of  
14 calories from fat.

15           And certainly now aboard ship where on the  
16 larger ships the students are 24 hours a day, if one  
17 eats multiple servings of hamburgers and french  
18 fries which are served 24 hours a day, their diet is  
19 far in excess of 30 percent.

1           I was wondering in terms of your research  
2 there, when you're changing the diet of the monkeys,  
3 is it actually reducing portions, say, relative  
4 percentage of fat; or are you actually trying to  
5 modify the content of the diet?

6           DR. HANSEN: This study only modified  
7 calories. It kept composition constant and low fat.  
8 So we did not modify the fat content, per se. The  
9 fat content in the human diet contributes  
10 substantially from a palatability standpoint, so  
11 that it may contribute to overeating from the  
12 standpoint that it's highly palatable. But calories  
13 are calories. So it's the calories that are taken  
14 in that ultimately make the difference.

15           And I think an evaluation of the optimal  
16 issues -- there are many issues relating to the  
17 fats. There is the saturated fat issue. There is a  
18 trans-fatty acid fat issue. There is the tropical  
19 fat issue. And the total quantity. And I think

1 examination of that in terms of recommendations for  
2 military food, you know, would be very good.

3 DR. KULLER: I don't think that's the  
4 issue, though. I think that there is a problem. I  
5 mean, I think that the prevention of weight gain,  
6 especially in young adults, is a critical variable.  
7 And I think that it's -- again, it's a process and  
8 outcome measure. If you focus the process on food  
9 preparation, you get into big trouble. If you focus  
10 the outcome variable -- and that is, you say that  
11 you don't want the military -- people in the  
12 military to gain weight, and we've all suffered  
13 through this. Once you've gained weight, trying to  
14 treat obesity is phenomenally difficult.

15 DR. HANSEN: That's right.

16 DR. KULLER: We're doing an obesity  
17 prevention trial, long-term trial now in women. And  
18 it's feasible to do that and you get better results  
19 than you do the other way, which we've also done in

1 trying to do trials of long-term weight loss because  
2 you get a short-term effect and then as basic  
3 metabolic rate goes down, your metabolism goes down  
4 and people have to eat less and less and less. And  
5 basically it becomes a hopeless situation.

6           So the goal really is the prevention of  
7 weight gain. And the approach there is basically,  
8 as was just pointed out in the military, is scales.  
9 It's nothing to do with the diet so much, but it's  
10 the issue of basically establishing a protocol which  
11 includes both increasing energy expenditure, as Dr.  
12 Fletcher talked about yesterday, and modifying food  
13 intake. And since fat calories are obviously much  
14 more caloric than are -- than are protein or  
15 carbohydrate calories, you do better in many ways by  
16 reducing fat calories.

17           But, in essence, people could reduce  
18 carbohydrate calories -- reduce a lot more of the  
19 caloric density and the diet becomes a little crazy.

1           But I think the problem becomes that if one  
2 focuses on the process of preparing the food, which  
3 is what we all like to do and which most people do,  
4 rather than the outcome variable, which is  
5 relatively simple which basically changes the  
6 standards, unfortunately the previous standards that  
7 were set up in the United States allowed people  
8 basically to go from a body mass index of about 21  
9 to about 28 as they got older, because it was like  
10 the old concept of blood sugar, that as you got  
11 older, your blood sugar and your blood pressure  
12 should go up, which it should. You should also die  
13 as you get to be about 60.

14           But, I mean, the reality is those concepts  
15 don't make any sense any more. So, really, I think  
16 that the focus should really be here on the  
17 prevention of weight gain in the military along with  
18 -- in other words, along with the standards that are  
19 set for being able to do exercise, to be able to

1 pass a fitness test. One of the standards perhaps  
2 should be or maintained, is maintaining a weight  
3 standard, which should probably be the weight  
4 standard for people who are 21 or 22 years of age  
5 ideal, and not allow the standard to gradually drift  
6 upward which is what happens right now as people get  
7 older.

8           Because once you gain weight, it's  
9 hopeless. I mean, for all of us who have gained  
10 weight and lived through that and lived through the  
11 concept that -- and a whole concept when we realized  
12 that what's happened to us is based on tuberculosis.  
13 Almost the whole concept of diet in the past in the  
14 United States was based on the concept that if you  
15 ate more protein and you ate more fat, you wouldn't  
16 get infectious diseases, you wouldn't get  
17 tuberculosis. So the old concept was really good  
18 nutrition meant a lot of nutrition. And that's  
19 still true.

1           I mean, I still go to meetings and  
2 everybody looks at this pyramid and says, all you do  
3 is tell people eat a lot of fruit and vegetables and  
4 they'll be fine. And, of course, they eat a lot of  
5 fruit and vegetables on top of the ice cream and on  
6 top of the -- we all do that.

7           DR. HANSEN: I think both issues are  
8 important. And looking at the diet can help to  
9 facilitate maintaining the body weight. And I would  
10 make one comment just to erase 20 percent from your  
11 vocabulary. Any study that's ever been on 20  
12 percent fat diets does not produce palatable diets  
13 sufficient for young men to live on for good and  
14 like it. So, you know, it's one thing if you put  
15 them in a submarine for a little bit and they have  
16 no choice. But you have to be careful.

17          DR. ASCHER: This point is very interesting  
18 in terms of what exists in the military and which  
19 you can charge the data today to bring back to you,

1 which is the famous weight control program. Now,  
2 there are weight standards in the military. You  
3 have to meet them and maintain them. But as Lou  
4 very clearly stated, it's the problem of the 35 and  
5 40-year-olds who stay within the standard and who  
6 gain the 15 pounds. They go get weighed. And the  
7 guy says, you're okay. You can get that data. You  
8 can show what is the rate of increase -- every  
9 single person has in their record somewhere their  
10 weight over time.

11 All you had to do if you made the standard,  
12 instead of exceeding the overall number, the 28,  
13 whatever it is, that you cannot gain X amount of  
14 pounds within a period against your original  
15 standard. They'll kick people out for being one  
16 pound over the standard. They should be able to  
17 kick people out or in some way make them reduce  
18 weight on the same basis. It's an existing program  
19 that has teeth. It's incredible.

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1           AUDIENCE MEMBER: This could go on forever.

2    At the military nutrition division up in Usaria,  
3 we've put a lot of money into diet and do many  
4 modifications. In one word, we need to get out of  
5 that business. Because the bottom line is the  
6 people at Ft. Lee said, our customers do not want  
7 it.

8           What happened is you allow Burger King and  
9 everything else to come onto the post. And when it  
10 gets around pay day, they're going to eat in the  
11 mess hall. Other than that, you're dealing with  
12 kids that -- we're fighting society here and their  
13 concept of how they're going to eat and advertising.  
14 It's a losing battle. It came earlier. And it's  
15 education. We've got to educate people and  
16 constantly bathe them in the proper education. And  
17 that's where we're going to start sinking our money  
18 into.

19           The menu modification, forget it. Because

1 the customers want it and Ft. Lee will buy it.

2 DR. KULLER: You see, but the point  
3 -- we've got to finish in a minute. But the point  
4 that's mentioned here is to the person in saying to  
5 that person, you can't gain above a certain amount  
6 of weight. Otherwise -- like it's exercise. Now,  
7 that person can go out and eat all they want at  
8 Burger King and other places, if they can maintain  
9 that weight by basically increasing their energy  
10 expenditure or by cutting back at other times. But  
11 if they're going to gain 15 or 20 pounds, then  
12 basically they -- we'd like to change their dietary  
13 behavior later on. That will happen. But that's  
14 society. And that's a huge problem.

15 All it's saying here is that if you set a  
16 standard, much like you set an exercise standard and  
17 you say to people, you've got to pass the exercise  
18 test, likewise if you monitor their weight gain,  
19 which is the key, and say, look, you can't gain X

1 more weight, it's like a boxer. If you're a boxer  
2 and you're in a certain weight class, you know, you  
3 can eat a lot. But if you go above that weight  
4 class, you're out of business.

5           And it's basically the same concept. If  
6 you enter the military at such and such a weight  
7 standard, presuming you're not under weight, you  
8 have to maintain within that range the weight  
9 standard. You can't basically gain. But it's  
10 weight gain that is the adverse effect on health,  
11 reality wise it's really not the basal weight in any  
12 way -- except for very fat people -- but it's the  
13 weight gain that occurs post-adolescence, which  
14 wipes you out.

15           And that leads to injury. It leads to lack  
16 of functionability. It leads to high morbidity and  
17 disability costs.

18           DR. PARKINSON: Just to say, this area for  
19 obvious reasons is one of the most contentious,

1 scientific and politically in DOD. There have been,  
2 as best I know -- I know colleagues here have read a  
3 draft of the revised DOD fitness and weight  
4 directive floating around the Pentagon for at least  
5 two years and still floating around somewhere. It  
6 be the opportunity now for that thing to become a  
7 little more codified, to run it through the AFEB  
8 just, you know, in an informal way for comment about  
9 what might an alternative approach.

10           Let me just say we've got into the external  
11 validity issue over here, which -- in terms of will  
12 sit fly on the outside.

13           And to a society that's used to seeing the  
14 metropolitan life tables or some variation of that,  
15 saying, hold it. If we're going to the same thing  
16 with fitness, why shouldn't my standard be age  
17 adjusted and sex adjusted and red hair adjusted, for  
18 whatever. I mean, that's the ethic that we're up  
19 against.

1           And I think this is the time to engage this  
2 issue scientifically. It's militarily relevant.  
3 There's not a better body, I don't think, than the  
4 AFEB to do it, and to let us work it through the  
5 policy channels to see if we could do it. Because  
6 it's -- this has only been around for 50 years. The  
7 science is -- it may be clearer now than it was, but  
8 I'm not -- I'm still not --

9           DR. HANSEN: It's improving.

10          DR. PARKINSON: It's improving. But we  
11 need a solid scientific background to stand on to go  
12 away from something that looks radically different  
13 but currently exists for the typical adjusted  
14 weight.

15          DR. HANSEN: And I would go back to the  
16 comment made earlier that this whole issue could be  
17 better mined in the existing databases to understand  
18 the contributions of the weight gain to the various  
19 outcome measures that will be in your medical

1 records.

2 DR. PARKINSON: And what we're up against  
3 also is that the reality is like, hold a minute. If  
4 you want to apply the standard, we're going to have  
5 a service that looks a lot like the Marine Corps,  
6 physiological. The Marine Corps has basically said  
7 that. They've said, here is the percent body fat.  
8 It is not what the Army, Navy and Air Force is.  
9 It's not meant to fall. And, by the way, like it,  
10 leave it and get out. The Marines are able to get  
11 away with it because they're the Marines.

12 DR. KULLER: But let me say again -- we  
13 have to go on. But let me express again, so we  
14 don't miss the point. And that is, the point that  
15 it's not forcing everybody to look the same, which  
16 the Marines may try. It's basically to prevent  
17 weight gain. If you have somebody who enters the  
18 military and may be five or ten pounds over weight.  
19 Okay. That person can still -- you don't have to

1 drive that person down to the .9 level because it  
2 may be beneficial.

3           But you really are doing is preventing that  
4 person from gaining weight. So basically all you're  
5 doing is saying to somebody, we don't want you to  
6 gain weight. If you win that battle, I guarantee  
7 you'll win the battle. It's not a matter of making  
8 everybody look exactly the same and everybody look  
9 like they're ten pounds under weight and emaciated.  
10 That would be a disaster. Because there is a big  
11 genetic component and otherwise you get into  
12 terrible trouble.

13           But the reality is, just say, look, we just  
14 don't want you to gain more than ten pounds over the  
15 next X years. And you can't gain more than five  
16 pounds in any one year.

17           DR. ARDAY: What about the body builder  
18 that puts on ten or fifteen?

19           DR. HANSEN: Can I just --

1           AUDIENCE MEMBER: One thing that's very  
2 important, I think, is to be sure that when you're  
3 looking at your instruction, that you truly are  
4 talking about weight control and not appearance. In  
5 the Marine Corps order, the Marine Corps order is  
6 tied to a weight control program. When you read the  
7 objective, it says nothing about weight control. It  
8 talks about appearance. It says nothing about  
9 weight control. The title of the order is, "Weight  
10 Control Program." So you have to be very careful  
11 when you're putting out something to make sure that  
12 your objective is written and what you're trying to  
13 do is weight control and not appearance control.

14           AUDIENCE MEMBER: That's right. I work  
15 with the special operations guys. And constantly  
16 you go to these camps and you end up with these guys  
17 like that, necks like this. And you carry 80 pounds  
18 for hours. And he is constantly getting bombarded  
19 into the fat control program. They're on them all

1 of the time. It's appearance. It's performance  
2 that we need to key in on.

3 DR. BROOME: Could I just make a process  
4 suggestion, reinforce what Barbara was saying. I  
5 think it would be very useful for the Board to  
6 address this issue. But I think in order to do  
7 that, to have one of the preventive medicine groups  
8 or an appropriate body look at the database on  
9 weight gain and the database on health outcomes.  
10 Isn't that what you're seeking?

11 DR. HANSEN: Exactly. Exactly.

12 DR. BROOME: And that we would then have  
13 the data to make a responsible recommendation on  
14 possible weight gain standards.

15 DR. HANSEN: And look at the disability and  
16 discharge data.

17 DR. KULLER: We have to go on. I'm sorry.  
18 We have to go to next presentation.

19 LIEUTENANT COLONEL JONES: Could I make a

1 brief comment going back for a minute or 30 seconds  
2 to the report on injuries? I would like to bring  
3 attention to the fact that Dr. Hansen has put a lot  
4 of energy into the injury work group. And without  
5 her co-chairmanship, it wouldn't have been as  
6 directed and focused.

7           I would also like to say that Dr. Perotta  
8 very early on perceived this problem with injuries  
9 as important. And his encouragement has kept me  
10 driving it.

11           But I also want to second what Dr. Hansen  
12 said, and that is, that we put together a panel of  
13 experts in epidemiology of injuries who have devoted  
14 a tremendous amount of energy to the most active  
15 work group I have ever seen in terms of the  
16 discussion and the productivity of it.

17           And I think we really need to capitalize on  
18 the expertise that they've developed. And I want to  
19 thank Dr. Hansen in particular and Dr. Perotta for

1 their contribution. It's been tremendously  
2 personally rewarding for me.

3 (Applause.)

4 DR. KULLER: Thank you. Dr. Ljaamo is  
5 going to present now some existing data on  
6 hypothermia.

7 DR. LJAAMO: I'm from USARIEM up in Natick,  
8 Massachusetts. And I'm actually an alumni of the  
9 thermo-physiology of medicine division. Currently  
10 I'm in the military nutrition division working with  
11 Colonel Shippee.

12 First of all, I'd like to thank Colonel  
13 O'Donnell for the invitation to come here and speak  
14 before everybody. Any epidemiologist with 100 bucks  
15 in his pocket and go visit the pump where John Snow  
16 took the handle off and make that epidemiological  
17 pilgrimage, but very few people get to address this  
18 Board here. And I'm really honored to be here and  
19 have a chance to present some topics from USARIEM.

1           I would also like to thank Jean Ward for  
2 her coordination in getting up here.

3           What I am basically going to present during  
4 the time that I'm here is a brief overview of some  
5 of the things that research that goes on in the area  
6 of thermo-physiology up at Natick, Massachusetts,  
7 followed by a description of the investigating  
8 officer's report of the four ranger training deaths  
9 at Eglin Air Force Base on the 15th and 16th of  
10 February, 1995, in order to put into perspective the  
11 standards that currently exist and are being fine-  
12 tuned for emerging standards to prevent hypothermia.

13           And then briefly address some medical  
14 issues surrounding that, at which point in time I  
15 will hand the discussion to Colonel Shippee who will  
16 discuss further aspects of ranger training issues,  
17 notably nutritional aspects which have a great  
18 impact -- basically dealing on the opposite end of  
19 the nutritional spectrum, namely, calorie deficits

1 and what that may have to do with the military  
2 performance.

3           It's really kind of a fortuitous set-up  
4 that we get to follow Dr. Hansen in this  
5 presentation here talking about surveillance systems  
6 for injury and military nutrition issues.

7           Among the types of research that the  
8 Research Institute on Environmental Medicine  
9 conducts are laboratory experimental studies,  
10 primarily on humans. And these are conducted  
11 primarily by the thermophysiology division there.  
12 And then there are field epidemiological studies  
13 which are conducted primarily by the nutritional  
14 division, which is the main reason that I have moved  
15 over to work with them.

16           Some of the facilities that we have for  
17 looking at problems related to exposure to  
18 environmental extremes include an altitude chamber  
19 capable of simulating 9,000 meters and temperatures

1 from minus 32 degrees centigrade to 43 degrees  
2 centigrade.

3           We have a field laboratory for altitude  
4 study on the top of Pike's Peak which is at 4,300  
5 meters.

6           We have three small environmental chambers  
7 capable of simulating temperature conditions between  
8 minus 10 degrees celsius and 50 degrees celsius.

9           A water emersion facility capable of  
10 controlling the water temperature within .5 degrees  
11 celsius, from 5 degrees celsius to 45 degrees  
12 celsius.

13           And then we have unique laboratories of  
14 massive dual climatic chambers which contain both a  
15 tropical side and an arctic side, capable of  
16 simulating temperatures from minus 57 degrees  
17 celsius to 74 degrees celsius, at wind speeds up to  
18 40 miles per hour, with precipitation in either the  
19 form of rain or snow up to four inches of moisture

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1 per hour.

2           And finally I'd be remiss if I didn't  
3 mention some USARIEM products, among which are  
4 products that are for professional journals, books  
5 written for professionals such as this group here,  
6 technical guides for medical officers on cold  
7 exposures, which have been provided to Ms. Ward for  
8 the files of the AFEB, as well as to Ms. Mullen.

9           Briefly, to go over some of the recent  
10 research studies and accomplishments that have gone  
11 on. In the area of cold research, it would be  
12 interesting to note in view of some of the previous  
13 presentations, that they have done research which  
14 has shown that physical training activity,  
15 regardless of the type and the conditions, does  
16 improve the ability of a person to vaso constrict  
17 during cold stress and therefore preserve core body  
18 temperature and prevent hyperthermia.

19           This was an interesting study here

1 describing the adverse effects of alcohol  
2 consumption or thermo regulation, wherein the  
3 primary adverse effect of alcohol on thermo  
4 regulation was shown to be related to the way that  
5 alcohol drives down the blood glucose levels. And  
6 by driving the glucose levels down, you impair the  
7 individuals ability to shiver, to produce heat. And  
8 that is the way people lose heat when they're under  
9 the influence of alcohol.

10           The cold vaso response is not in any way  
11 significantly affected by the so-called vaso dilator  
12 response of alcohol. The cold response to vaso  
13 constrict far overpowers the vaso dilatory effects  
14 of alcohol consumption.

15           This study here was something that Colonel  
16 Jones helped me conduct during the period I was a  
17 resident and educated me well into the problems of  
18 doing retrospective studies, collecting data on  
19 injuries without cause codes, and has basically

1 driven me in a direction to collaborate with NRHC  
2 down in San Diego on a research surveillance system  
3 which collects injury along with cause codes which  
4 will be -- which we are using currently in the  
5 special forces studies that we do and we will be  
6 using the ranger studies. And I'll talk more about  
7 that towards the end of the talk.

8           There is a lot of talk out in the field  
9 that the M-40 mask worn in cold weather induces  
10 frost bite of the face. There are no documented  
11 instances of this. It's currently one of the field  
12 acceptability rumor sort of things, but we do plan  
13 to formally study that issue.

14           And pertinent certainly to the ranger  
15 studies, we'll be looking at a formal study to  
16 examine the effect of sleep loss on the  
17 thermoregulation in the cold. Sleep loss, of  
18 course, does set off the diurnal cycles and does  
19 have a tendency to have people maintain a slightly

1 lower core body temperature.

2           I'd like to shift now to talk about events  
3 that occurred in class 395 at Eglin Air Force Base  
4 in the Florida Ranger Camp.

5           Now, for most people, when we think of  
6 numbers associated with bad luck, we think of the  
7 number 13. But when it comes to ranger training,  
8 for some reason, the number 9 keeps coming up.

9           In 1977, on day nine of ranger training up  
10 of the Florida phase of ranger training, three  
11 students -- two Americans and one Panamanian -- died  
12 of hypothermia in the swamps at Eglin Air Force  
13 Base.

14           Nine years later, on day nine of training,  
15 in the winter phase in the swamps at Eglin Air Force  
16 Base, an entire company became hypothermic. There  
17 were no deaths, but they basically were found the  
18 next morning clinging to trees and sleeping the  
19 branches, all hypothermic and it resulted in a

1 number of prolonged in-patient hospitalization  
2 stays.

3           Those two events drove the ranger training  
4 battalion down there in conjunction with Murry  
5 Hamlet, who was then the director of the cold  
6 division at USARIEM, to devise some acceptable  
7 emersion tables. I'll discuss those a little bit  
8 later in the talk, but basically the rangers  
9 proposed some standards. And they were looked at in  
10 conjunction with some of the medical models that we  
11 have in the medical biophysics monitoring modeling  
12 division at USARIEM. And they came up with a number  
13 of safety factors and there it all in. And there's  
14 a copy of that table, which again we'll look at here  
15 in a short time.

16           But basically any time the water or the air  
17 temperature is below 50 degrees, they don't go in.  
18 And if it's above, being rangers, they do. And then  
19 they're allowed to be in for varying amounts of

1 time, depending on how deep they anticipate that the  
2 water depth will be.

3           Nine years following that event, on day  
4 nine of training, at Eglin Air Force Base on the  
5 15th and 16th of February, four soldiers died of  
6 hypothermia in the swamps.

7           Class 395 began the winter course on the  
8 28th of November. And by the early part of  
9 February, 102 students had completed the Ft.  
10 Benning, the desert phase and the mountain phase of  
11 ranger school and moved on to Eglin Air Force Base  
12 and were in the process of a field training  
13 exercise.

14           The events surrounding the deaths of the  
15 ranger students was extensively investigated by  
16 Brigadier General Mayer who is the former ranger  
17 training brigade commander and is currently the  
18 Deputy Commandant of the infantry center and school.  
19 And his 42-page report which came out over the

1 Internet is again provided to Jean Ward for the  
2 records of the Board and in full for Ms. Mullen.  
3 Excerpts of that are found in the hand-out that is  
4 provided to everybody.

5           And I have essentially distilled down the  
6 events of that day into a time line to help us put a  
7 little bit of analysis of what went on or what is  
8 potentially modifiable into that.

9           There are a couple of typos on this that  
10 I'll mention right now. Critical decision point  
11 number 8 should occur at 0230 rather than at 2400.  
12 And the lost student was found at 7500 meters from  
13 the high ground, not 7.5 meters.

14           The events surrounding day nine of training  
15 began at 0630 in the morning when the primary  
16 instructor, a captain, who was in charge of the  
17 overall instruction down there briefed the battalion  
18 commander, the battalion executive officer, who had  
19 been on site for two days in his new job.

1           The battalion S3 and the command sergeant  
2 major on the environmental conditions existing at  
3 the camp at that time with the water being at about  
4 50 degrees celsius, with the swamp waters being a  
5 little high, that he estimated based on his previous  
6 walks to be at about mid-calf height.

7           And on the planned swamp route, which was  
8 to be a relatively easy training experience, to  
9 involve about an 8 kilometer move down the Yellow  
10 River from Metts Landing to a debarkation site, a  
11 short, quick and simple move through rather shallow  
12 swamp waters and then coming up on land and doing  
13 some ambushes and assault movements. No river  
14 crossings or anything like that were at all  
15 anticipated at this time.

16           The battalion commander accepted this  
17 information and this plan as presented. And his  
18 acceptance of that, knowing that the environmental  
19 conditions were tenuous, was listed by the

1 investigating officer as the first critical decision  
2 point.

3           Interestingly enough, after that in-  
4 briefing, then 12 fresh ranger instructors who were  
5 going to walk the students through this exercise  
6 arrived at camp and were out-briefed by -- back-  
7 briefed by the ranger instructors who had been there  
8 for the previous day.

9           At about between the period of time of  
10 11:30 in the morning and at about 1300, company B, C  
11 and A load up into Zodiac boats at Metts Landing and  
12 depart on down the river.

13           At about 1310 after the primary instructor  
14 observed this departure, he wandered on down to a  
15 high point and observed that the river level had  
16 increased from 12 to 18 inches over his previous  
17 day's noting of river levels. But he discussed it  
18 with the assistant primary instructor, who is a  
19 Sergeant First Class down there, and they considered

1 that the swamp was okay to continue the swamp move  
2 as planned and didn't feel it was necessary to  
3 report their findings to the battalion commander or  
4 to the platoons as they saw them. And the  
5 investigating officer lists this as the second  
6 critical decision point of the day.

7           As the students proceeded down the river,  
8 company C which had departed first at 1430, the  
9 student platoon leader missed his designated landing  
10 point. And the platoon leader walker, the senior  
11 ranger instructor in charge, allowed him to miss  
12 that point. It's the philosophy of the Sixth Ranger  
13 Training Brigade to allow these kind of errors to  
14 occur in this last and final phase of ranger  
15 training in order to evaluate student navigation  
16 abilities and leadership abilities and the ability  
17 to essentially assess what's going on and make  
18 appropriate decisions.

19           So they continued two kilometers further on

1 downstream before making a landing.

2           This decision was relayed to the primary  
3 instructor and he okayed that decision. The result  
4 of that decision, however, was that when the landing  
5 was made by company C and B, they landed at a point  
6 where no ranger instructor had ever walked through  
7 the swamp before, and there was no experience  
8 whatsoever of anybody in what they were going to  
9 encounter as they moved through the swamp to the  
10 land objective that they were going to get to  
11 -- essentially, literally moving in unchartered  
12 waters.

13           The investigating officer lists this as the  
14 third critical decision point.

15           Now, interestingly enough, at about this  
16 point in time, about 1600 hours, company -- the  
17 platoon leader walker, senior ranger instructor for  
18 company A, makes an assessment of their landing  
19 point when they get to it and decides that it's too

1 deep to get off there. And so he proceeds on to a  
2 dry landing point at Mason's Landing and debarks the  
3 students there.

4           His assessment of the Yellow River was that  
5 it looked exactly like it did one year prior when  
6 Hurricane Albert was in that area. And that it was  
7 far -- that the water was far too deep for moving  
8 students through. So he decides to move his  
9 students across the land with no swamp crossing, but  
10 also decides not to inform anybody else of that  
11 plan. Or none -- I take that back. He does not  
12 relay that to the other platoon leaders, but he does  
13 relay that decision to the primary instructor, who  
14 does not then further relay it.

15           At about 1650, after about 15 minutes in  
16 the water for company C and 10 minutes in the water  
17 for company B, both of the platoon leader walkers  
18 radio back to the primary instructor that the water  
19 in the swamp is considerably deeper than what they

1 had expected, with it going to chest level and neck  
2 level on some of the students at that time.

3           The primary instructor acknowledges receipt  
4 of that message and does not indicate any plan to  
5 have the student turn around and go back to the  
6 landing point, but decides to continue on with the  
7 assumption that the water will get shallower, even  
8 though nobody had ever been in those waters at that  
9 point before.

10           The investigating officer lists that as  
11 being the fourth critical decision points.

12           By 1700 or about one hour in the water, the  
13 ranger instructors note that two students are  
14 showing initial signs of hypothermia and begin plans  
15 to radio for a medevac, which is in fact  
16 accomplished at 1730.

17           Also at that point in time, company B and C  
18 have reached a river obstacle. They reached a crane  
19 branch and they're going to have to do a rope bridge

1 cross. That's something they were not prepared to  
2 do. The rope to build the bridge was at the bottom  
3 of one of the rucksacks rather than being coiled on  
4 the top, as would be normally the procedure if a  
5 river cross was anticipated. But since that was not  
6 part of the plan, it was at the bottom of a  
7 rucksack. It took a lot of time to get that out.

8           Company B had its work vests on which were  
9 like life preservers that aid in flotation. Company  
10 C did not, so they had to take some extra time out  
11 to put their work vests on at this point.

12           They notified the primary instructor that  
13 they were going to construct a rope bridge. He  
14 acknowledges that plan and they continue and go  
15 ahead and call in a medevac.

16           The medevac when it arrives takes one  
17 entire hour to load up the students to get out of  
18 there. And there is some experiential issues going  
19 on when conducting a medevac, both from the medical

1 personnel as well as from the ranger side, that  
2 caused this delay. Because the helicopter hovers  
3 for an entire hour, by the time it gets to the  
4 hospital to bring the students in, the fuel is so  
5 low that the pilot determines he can't fly until he  
6 refuels. But there is no refueling at that point.  
7 So there is no medevac available until 2100 hours  
8 later that evening by helicopter.

9           Up until this point, there had been a  
10 number of sentinel events which have been somewhat  
11 missed in making decisions about whether the  
12 students should stay in the water. These have been  
13 pointed out as critical decision points 1 through 5  
14 thus far in what's seen here.

15           In discussing these events with Dr. Hamlet,  
16 who is still considered by the field to be the  
17 leading expert in clinical issues involving  
18 hypothermia for the Army and has the confidence of  
19 the investigating officer, his remark which I will

1 say that I agree with, having experience in working  
2 with special operation forces, was that probably the  
3 ultimate critical decision point that was missed was  
4 to get everybody -- was in failing to recognize that  
5 everybody needed to get out of the water when these  
6 first couple of cases of hypothermia occurred at  
7 that point. And this has to do with the ranger mind  
8 set.

9           By this point in time, rangers have been  
10 trained to march on bloody stumps to get to any  
11 objective they're assigned to get to without  
12 complaining. And if any of them complained, you can  
13 bet that everybody or that all of them are feeling  
14 something. And the failure to recognize when you  
15 had two cases of people that needed to be medevac'd  
16 that there wasn't going to be some more problem, Dr.  
17 Hamlet believes, and I would concur, it was probably  
18 a major oversight in the thinking on the part of the  
19 ranger instructors at that point in time.

1           The river -- the bridge crossing then goes  
2 ahead and occurs. By 1930, more students need to be  
3 medevac'd, but the company B ranger platoon leader  
4 walker had heard the radio talk going on about the  
5 helicopter being out of fuel. So he knows that  
6 there is no helicopter available. So he does not  
7 call for a medevac at that time. So the PI back on  
8 land does not know that a medevac is needed until  
9 2100 when they actually call for one again. So not  
10 even a ground evacuation is started until that time.

11           And investigating officer lists that as  
12 critical decision point number 7 in what goes on.

13           As an aside, the first students that are  
14 medevac'd for hyperthermia at that event all do  
15 well. All of them are rewarmed and they leave the  
16 hospital, the clinic, the next morning with no  
17 residual problems.

18           By 2100, students are still in the water.  
19 They're having trouble getting out of the water,

1 getting across the bridge. A medevac is requested  
2 again. This time -- by this point in time, the  
3 helicopter has been refueled. It comes back out.  
4 Again, it takes an hour to medevac the two that they  
5 can get out of there. There is difficulty listed in  
6 the report in managing stretchers and in locating  
7 students in the dark at this time, signally  
8 properly.

9           And the battalion is aware of these  
10 problems and the leadership starts to mobilize all  
11 available camp personnel to help in getting students  
12 out of the water. Mind you, the students have been  
13 in the water -- the emersion standards said they  
14 could be in for three hours. By 1900, company C has  
15 already reached that standard. By 2000, company B  
16 had reached that standard. Most of them are still  
17 in the water here at 2100 trying to get to land.

18           These two students are medevac'd at that  
19 point in time. One of them, despite extensive

1 efforts to rewarm him, including perineal lavage and  
2 the investigation reports shows that all of the  
3 right steps in hyperthermia matters were taken,  
4 eventually goes on to be pronounced dead. And  
5 another one is in intensive care for about four days  
6 and then survives.

7           More students need to evac'd after this,  
8 but the helicopter had been grounded by fog, so a  
9 ground evacuation attempt is made. There were no  
10 planned ground evacuation sites in lines of  
11 evacuation at that point in time. The students are  
12 dragged for an hour up to high ground to where an  
13 ambulance can get to them. And then finally reach  
14 the hospital point at approximately two and a half  
15 hours later. It's 0130. And two hours the two  
16 students that are medevac'd are pronounced dead from  
17 hyperthermia.

18           By midnight, all students, except one which  
19 had become lost in this timeframe here, have been

1 located and finally reach the high ground. And the  
2 battalion commander calls for trucks to send the  
3 students back to the camp. At that point in time,  
4 the battalion commander, however, did not get  
5 notification in and around this point of time here  
6 that company A was relatively fresh and dry and was  
7 able to assist in the search. So they are not  
8 utilized in that search, and that's listed as one of  
9 the critical decision points.

10           The battalion commander is concerned for  
11 the safety of the ranger instructors at this point  
12 in time who are also hyperthermia. So he delays the  
13 search at 0230 and not at 2400 and sends the ranger  
14 instructors back to camp to get dry clothes on and  
15 to rewarm before reconducting the search in full at  
16 530 in the morning. That's listed as the eighth  
17 critical decision point.

18           Finally at 0730 in the morning, the student  
19 that was lost at this point in time is found 75

1 meters from the shore. He's taken away to the  
2 hospital and is pronounced dead at 0830 in the  
3 morning.

4           Now, there are a number of issues related  
5 to what went on that are addressed by the report.  
6 The critical decision points that are listed by the  
7 investigating officer basically described errors in  
8 command and control and judgements which were made  
9 by the ranger instructors.

10           An additional point that brings bearing out  
11 before this committee here is that one of the really  
12 negative adverse impacts of the down-sizing that's  
13 occurred in the service is that it's been  
14 universally applied to all units, regardless of  
15 their particular kind of mission. And has caused  
16 massive turn-over and shortages of personnel, such  
17 that in the period of a year preceding when this  
18 exercise occurred, over 42 percent of the ranger  
19 instructors had been rotated and were brand new and

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1 had never had the experience of this walk in the  
2 winter.

3           The officer strength was down to eight in  
4 the battalion from an authorization of 11. And  
5 there was no sign that that was ever going to come  
6 up.

7           The ranger training battalion commander had  
8 been on post in his slot for about seven months.  
9 The ranger brigade commander had been in his slot  
10 since the 24th of July. The battalion operations  
11 officer had been there since the end of December.  
12 The first brigade command inspection in several  
13 years was conducted in early January. And the  
14 executive officer was assigned to the battalion two  
15 days before the fatalities occurred on that  
16 exercise.

17           As we think about things that could  
18 potentially be done to save lives where students are  
19 a great hazard to death due to training injuries,

1 some thinking about -- maybe some special  
2 consideration for personnel rotation policies in  
3 places where experience is critical might be given.  
4 Certainly I don't think anybody in this room would  
5 want to have a hot gall bladder taken out by a  
6 surgical intern. Well, I would venture to say that  
7 probably none of us would want to entrust our sons  
8 to conditions of this hazard when Army personnel  
9 policies have forced a lot of inexperience to be on  
10 the ground at that particular time.

11           Among the medical issues that we might want  
12 to address regarding these events are certainly the  
13 emersion standards. Now, I did not reproduce it as  
14 an overhead, because it's a rather complicated thing  
15 with fine print and courier type, but everybody has  
16 a sheet that looks like this someplace in their  
17 hand-outs that contains the emersion tables used by  
18 the rangers for what they allow.

19           Again, as I've mentioned, when the air or

1 water temperature is below 50 degrees, they don't go  
2 in.

3           Above 50 degrees, they're allowed to be  
4 exposed not higher than waist level for not over  
5 three hours. And that is essentially the standard  
6 that they were working with.

7           Now, again, those standards came out of a  
8 situation where, after some fatalities and near  
9 fatalities occurred, the rangers proposed some  
10 standards for themselves, ran it back some people at  
11 USARIEM. And they worked it with some fudge factors  
12 similar to those which are used in environmental  
13 medicine issues of safety factor calculations. And  
14 came up with the standards which are contained  
15 within the current ranger emersion table standards.

16           And those are in large part consistent with  
17 and based on some standard curves for allowable  
18 emersion. These standard curves which are shown  
19 here are for totally emersed. They are not -- you

1 know -- we don't have separate curves at this point  
2 in time for emersion of just up to the knee level or  
3 just up to the calf level or the waist level and how  
4 much time is allowed there. But certainly these  
5 curves indicate that the standards that exist are  
6 legitimate at this time, if perhaps in need of some  
7 degree of fine tuning.

8           This dashed line here and this dashed line  
9 here are consistent with the current Navy standards  
10 for emersion. Anything below the line of safe is  
11 where no fatalities are anticipated. Anywhere  
12 between the red and the green dashed line is where  
13 up to 50 percent mortality would be expected from  
14 the effects of both drowning and hyperthermia. And  
15 anything above the red line is where 100 percent  
16 mortality would be expected.

17           This line here is an estimation based on  
18 dock out data, where dealing with the idea of  
19 mortality based on hyperthermia alone.

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1 DR. HANSEN: Did body mass enter into that  
2 equation at all?

3 DR. LJAAMO: That's a good question. This  
4 wide marginal range is essentially what deals with  
5 that issue of body mass. But I'll get to that issue  
6 in just a minute here.

7 DR. SHIPPEE: But it doesn't speak to  
8 nutritionist things.

9 DR. LJAAMO: And that's -- I'm leading  
10 right up to that now. Now, when we talk about  
11 survival in the cold, the human organism is much  
12 more better adapted to survive in the heat than it  
13 is in the cold. We have much better intrinsic  
14 defense mechanisms for surviving the heat than the  
15 cold.

16 We essentially -- peripherally vasa  
17 constrict and attempt to produce increased metabolic  
18 heat through voluntary physical activity and  
19 shivering from a genesis.

1           The ability of these soldiers to do this  
2 for any sustained period of time, given their  
3 nutritional state where they are intentionally food  
4 deprived as part of their training process and  
5 basically do that from an average of about 14-15  
6 percent body fat to 6 percent body fat at this point  
7 in time in training, this ability is in question at  
8 this point in time.

9           The primary means of defense of the human  
10 organism against the cold is behavioral. You want  
11 to get out of the cold. And when it's cold, you put  
12 on a coat or something like that. But as I  
13 mentioned before, because of the mindset of the  
14 ranger at this point in time, the students are  
15 basically relying on the instructors for what  
16 they're expected to do. And they know that rangers  
17 don't whine. So the behavioral defense mechanism  
18 that would normally be acting in these guys  
19 essentially is subverted.

1           So we're somewhat left to dealing with  
2 issues of keeping the instructors aware of what's  
3 going on and what's safe, and then trying to keep  
4 the status of the organism in a state where it can  
5 hopefully defend off the effects of the cold.

6           As brought up by Dr. Hansen appropriately,  
7 body habit has an immense effect on the ability to  
8 defend against the cold in an organism. Here is  
9 where people start ranger training at about four  
10 millimeters of subcutaneous body fat thickness, 16  
11 percent body fat. And where they are at the Florida  
12 phase down around 6 percent and 1 millimeter of  
13 subcutaneous body fat thickness.

14           Plans from -- I'll discuss plans on the  
15 thermophysiology side of what we're going to think  
16 about doing to help out the rangers from a medical  
17 point of view on these points, and then Colonel  
18 Shippee will discuss the nutritional aspects and  
19 field study aspects.

1           We are -- in fact, in helping them  
2 interpret thermo modeling at this point in time in  
3 conjunction with the defense, civil and military  
4 institute of environmental medicine in Canada, Peter  
5 Tikuisis is up there as well as Dr. Toner at Queens  
6 College, who are both noted experts in environmental  
7 medical monitoring for cold emersion exposure. If  
8 requested, we can certainly provide some training  
9 for the ranger instructors, as well as some  
10 assistance in reviewing current guidelines and SOPs.

11           There is a plan physiological assessment of  
12 cold tolerance abilities of ranger students at this  
13 -- at the completion of ranger training, which is  
14 outlined in everybody's hand-outs in a one-page  
15 outline of study protocol, where we attempt -- we're  
16 hoping to address exactly the issue of, can students  
17 who have just gone down from 16 percent body fat to  
18 6 percent body fat be expected to react according to  
19 the model tables that are proposed by biomedical

1 modeling by doing a little laboratory experiment  
2 using NAMRI chambers down there at that point in  
3 time.

4           And as I alluded to earlier, we have  
5 collaborated with the Naval Health Research  
6 Institute in a research surveillance system. We  
7 will be following all morbidity that occurs to all  
8 ranger students with cause codes, following their  
9 heights and weights as they go through the various  
10 phases, so that we can study events as they occur  
11 down there in a reasonable manner, as well as to  
12 validate any interventions, whether they be  
13 doctoral, administrative or nutritional and the  
14 potential impact on improving the survivability of  
15 the ranger students.

16           At this point in time, I'd like to turn the  
17 presentation over to Colonel Shippee who will speak  
18 in greater detail on ranger training and some of the  
19 studies that he has done extensively on ranger

1 training.

2 DR. SHIPPEE: Given the time, this will be  
3 rapid fire, which I can do well as you'll see. The  
4 data that I'm going to present is low on hard data,  
5 great on generalities.

6 My training is in nutrition, particularly  
7 how nutrition interacts with the immune system. I  
8 did eight years down at the Army's burn center as  
9 pretty much a post-doc, where I got a good  
10 appreciation how nutrition impacts and how critical  
11 it is for recovery from a trauma issue. But I think  
12 more important I got a good feel for what nutrition  
13 as a preventive medicine plays, because one of the  
14 critical indicators of recovering from trauma or a  
15 burn injury is how the nutritional status of the  
16 person when they came in. And that is, I think,  
17 forced my focus in my research. And I think my goal  
18 now is to how could we through nutritional  
19 supplements give the soldier the best immune system

1 that he can have when he goes into combat.

2           What I'm going to show you now is  
3 specifically what we do with the rangers. But on a  
4 broader term, I want you to look at the paradigms of  
5 what we're developing here, how important this is  
6 for us to start looking at the impact of stress and  
7 how nutrition plays in that to enhance the state of  
8 immune response.

9           Now, since -- I came on board in '92. The  
10 '91 was a very fortuitous event for us. In '90 and  
11 '89 -- I think '89 or '90, they had a wicked  
12 outbreak of streptococcal pneumonia in ranger school  
13 and that prompted them to bring in nutritionists  
14 epidemiology teams to look at what was going on and  
15 the severity of that training.

16           Now, let me say this from the outset.  
17 Ranger school has a tremendous safety record. There  
18 is a cost risk benefit going on here. Before you  
19 criticize the cadre too strongly, they're the guys

1 responsible for preparing these folks to go to  
2 combat. All right.

3           Now, we've been criticized at USARIEM. And  
4 I've done some personal soul searching. That we did  
5 not drive home our data stronger to them. And I've  
6 come up with an analogy for particularly Dr. Dunn  
7 located near the camp who has been calling us  
8 frequently that he is going to call his Congressman.  
9 Is that -- he is a chiropractor. And I said, you  
10 have people that smoke? Yes. You tell them to stop  
11 smoking. Yes, I do do that. Do they? No. They  
12 probably don't until they have emphysema.

13           Well, the ranger schools are suffering from  
14 that emphysema now. Now they listen a little bit  
15 more. All right.

16           As it turns out, I sat with Colonel Jackman  
17 the day before the incident showing him some of the  
18 data we've been -- that we've been getting out of  
19 the special forces camp and suggesting to him some

1 studies that they do. To first attack this question  
2 of how low does he want to go on body weight and  
3 fat. In other words, he wants sleep restriction,  
4 psychological stress and he wants food restriction  
5 as a stressor. They feel they need to teach the  
6 soldier, the small unit leader, how far he can push  
7 himself and his men under the stress of sleep, food  
8 and psychological stress.

9           The question is: How much food deprivation  
10 do you want?

11           My argument has been, if you've got a guy  
12 putting out 4,000 calories a day and he is eating  
13 one MRE a day, 1300 calories. You bring the next  
14 group through who put out 4,000 calories a day, give  
15 him two MREs, 2200. That guy feels as sleep -- as  
16 food deprived as the guy before him. So where do we  
17 balance that at?

18           In the meeting that we had with him on the  
19 18th prompted by what happened in February, answers

1 to that question and we're going to look at some  
2 further things.

3           But there is another issue here. And that  
4 is, where does stress and nutrition play in the  
5 immune response. And this offers us a very  
6 important paradigm to start looking at these things.

7           Now, the difference between we call ranger  
8 1 and ranger 2 was in '92 I got involved. We went  
9 to them and said, one MRE a day during your field  
10 training exercise is too low. And I'll show you the  
11 data from that. We suggest you at least boost it up  
12 to 15 percent. So ranger 2 is the same as ranger 1,  
13 except we went in and the only intervention here was  
14 we increased the caloric intake by 15 percent.

15           Now, there is a problem here because they  
16 swapped phases on us. When we go to the open  
17 literature, it causes a lot of problems. But I'll  
18 go into that a little bit later.

19           Then Colonel -- now General Mayer -- but

1 then Colonel Mayer goes up the road and tells the  
2 people to switch special forces, what we're up to.  
3 And they ask us to come in and look at the 21-day  
4 special forces assessment course. We were surprised  
5 to see in this course where they feed their folks  
6 three times a day, that they were immuno-suppressed.  
7 And that has led into a research agreement with  
8 Ross Pharmaceuticals.

9           And I've gone in. We've done a glutamine  
10 intervention in that class. We've now just got down  
11 with some fascinating data on antioxidants and  
12 enhancing immune suppression in these guys in that  
13 21-day course. We've done some work with the cadre  
14 members from the rangers. We are now getting ready  
15 to do in September a second antioxidant study with  
16 the special forces. And I'll talk a little bit at  
17 the end about what we're going to do when the  
18 rangers come up in January.

19           You don't do these things alone. Over the

1 last three or four years, we've collaborated with  
2 RARE. Most immunology came from Dr. Kramer's lab,  
3 Jim Kramer out of Beltsville, although we now do  
4 immunology in our own labs similar to what he's been  
5 doing. Pennington Biomedical Center has a huge  
6 grant that does most of our clinical chemistries.  
7 And I've mentioned that we've gotten into a  
8 corporate research agreement with Ross  
9 Pharmaceuticals who constructs all of our products  
10 and were using them for supplementations.

11           Let me give you a quick overview of ranger  
12 school as it existed in '91 and '92. They've now  
13 gone to a three-phase course. Then it was a four-  
14 phase. Folks start out at Ft. Benning, spend two  
15 weeks in Ft. Benning.

16           Then they went up to Ft. Bliss in a desert,  
17 arid environment for two weeks.

18           They go from that right up to Delanaca,  
19 Georgia, the Great Smoky Mountains. Camp Merrill is

1 nestled up in the mountains, to the mountain  
2 training.

3           Then they head down to Camp Broder for two  
4 weeks in the swamps. You come in and you see this  
5 sign, warning, alligators. And these guys spend the  
6 next two weeks up to their neck in water.

7           Now, every phase at that time was made up  
8 in two weeks. The first week is classroom phase,  
9 they call it. But then they had classrooms out in  
10 the mountains, maybe out in the mountains doing  
11 repelling. So it's not necessarily didactic sitting  
12 in a classroom. And most of it in fact is not.

13           The second phase, basically seven to ten  
14 days, is a field training exercise. And that's when  
15 during the classroom phase they feed them three  
16 meals a day. During that seven day, ten day field  
17 training exercise, at each second week of each phase  
18 is when they put in the sleep and the food  
19 deprivation.

1           In '91, the policy then was to feed  
2 -- during the summer months, one MRE, meal ready to  
3 eat, a day, which is 1350 calories. You can't see  
4 this too well, but along the theme of this immuno-  
5 suppression, you know, there is a lot of  
6 similarities between our guys and the lead athletes.  
7 Well, there is a lot of differences, too. And I  
8 think one of the main things you've got to think  
9 about is our folks walk around with open wounds.  
10 They've got abrasions, cuts, bee stings. They're  
11 always -- after the second week of ranger school,  
12 these guys wear a lot of moleskins and things to  
13 cover up these open wounds.

14           This is a typical -- this is the end of '91  
15 and this is a ranger doing some of our performance  
16 tests. And, as you see some of the data on the  
17 intake, you'll validate this skeletal form.

18           Just to look at the nutrition, you've got  
19 to be careful when you look at nutrition statistics

1 coming out of special operations forces, because  
2 there is a certain amount of contrivity here. This  
3 is a right of passage. You know, we were criticized  
4 going in first by the hard core rangers. And you  
5 can hear it when you go down at the camps. Not at  
6 the cadre, but the older sergeants. Yeah, you're in  
7 here making things easier. I did it this way. They  
8 do it. So there is that mindset there. All right.

9

10           Basically we've got about the nutrition  
11 rate. But what was of interest to us is how much of  
12 that is attributable to medical.

13           Now, we've got to be careful with the  
14 medical, because there are a lot of guys who drop  
15 that were sick. They didn't -- they got dropped out  
16 because of academics and performance, but they were  
17 sick. We don't pick them up because they probably  
18 don't show up at the clinic a lot of times.

19           Now, the take-home message here is here is

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1 infection rate in ranger 1. Now we go back in a  
2 year later and we give them 15 percent more  
3 calories. And it's I think an impressive look at  
4 how we lowered the infection rate. But obviously  
5 that may be the particular pathogens or whatever  
6 went around. So it's difficult because you go to  
7 the open literature and you go, wait a minute,  
8 here's your control group or whatever. Now you go in  
9 the next year and you do another study.

10           However, the immune responses that we look  
11 at and some other data will tell you just this  
12 modest increase in caloric intervention, 15 percent  
13 across the board, had a significant impact on a lot  
14 of areas. This is a graph. Now, I've got some  
15 hand-outs of all of these slides for those of you  
16 who care to look at these in a little more detail.

17           This is the energy expenditure. And we use  
18 double label water, a subset of ten. Any time you  
19 work with these school situations, you are never

1 know who is going to quit on you. So you've got to  
2 do a lot more to get a little bit of data at the  
3 end. You can imagine what happens when the  
4 immunologists go through it, because they can't  
5 freeze cells and do a proliferation study after the  
6 study. So we have to do -- we recruit 100-150 guys.  
7 They end up with 40.

8           So this is the sub-group of ten folks using  
9 double label water. We dosed them at the beginning  
10 of each phase. These energy expenditures will reach  
11 up to 5,000 in ranger 1. And this is a classroom  
12 phase where they're feeding their guys up to 6,000  
13 calories. Hauling that body mass up and down the  
14 mountains in Delanaca.

15           This is the intake data from the studies.  
16 You can see that we did successfully somewhat,  
17 ranger 2, raised the caloric intake across the  
18 board. But probably the more revealing data is the  
19 energy balance. Any time you get below this line,

1 we're dealing with a negative energy balance. And  
2 looking at this and looking at the slide, the guy  
3 lifting the power, you can kind of put the two  
4 together.

5           Now, these are frequency slides. This is  
6 the distribution of a percent body weight loss from  
7 the initial weight that the guy first entered.

8           Now, this is just the finishers. All  
9 right. We can criticize it with throwing the baby  
10 out with the bath water, but we do not have enough  
11 money, time and energy or resources to follow folks  
12 that are trends. So we're looking at people who  
13 managed to finish the course.

14           Now, the other thing I want to -- there is  
15 two things about the data, as you look at the ranger  
16 data and the SF data. One, we're always talking  
17 means. But you've got folks that follow either side  
18 of that mean. The other thing is we talk about  
19 normal, base line values. Our folks, when they come

1 into these courses, are not normal, base line  
2 values. They're usually training very hard before  
3 they come. You can see the lactate level.

4 I can show you a number of parameters where  
5 I fall outside of the normal values on a lot of  
6 chemistries and immunology. So I speak to that as  
7 base line. And a lot of times we deal in percentage  
8 changes because of that reason.

9 But the mean here was 14 percent body  
10 weight loss over eight weeks of training. All  
11 right.

12 And this is where we turned to them and  
13 said, we think your target should be 10 percent. We  
14 want you to set this at 10 percent. For a healthy,  
15 young male, 10 percent is probably where you'd like  
16 to be. And to do that, we think -- well, we showed  
17 them the calculations. You'd have to give 15  
18 percent more calories.

19 Now, again, this doesn't speak to these

1 guys that lost 20 percent. But then again -- and  
2 I'll show you some body fat, some guys who start low  
3 and do very well. Fifteen percent more calories  
4 across the board. We almost hit our target. We  
5 come up with about 12 or 11 percent body weight  
6 loss.

7           Now, this is where it gets interesting.  
8 Here is a distribution of body fat. This is done on  
9 density. This isn't done by field expedient  
10 methods. This is done by density, which debatably  
11 is as good as emersion.

12           These folks start at 14 percent body fat,  
13 which is not high fat by anybody's standards.  
14 That's why I say we're not dealing with normal  
15 folks.

16           Now, look at this. We've got one guy that  
17 starts at 5 percent body fat and manages to finish  
18 that course. So, to try to set standards, you've  
19 got to be this minimum before you start really

1 doesn't answer the question, either.

2           At the end of course, the group ended up  
3 almost 19 guys out of this 50, I think it was, ended  
4 up with 5 percent body fat. I don't imagine you can  
5 drag yourself. That's probably the cell walls left  
6 there.

7           Yes.

8           DR. PARKINSON: So what you're saying is  
9 that body fat goes down to 6 percent?

10          DR. SHIPPEE: Yes. More like 5 to 6  
11 percent when they finish, these guys that finish the  
12 course.

13          DR. PARKINSON: I guess the question is, is  
14 that percentage of body fat, they would be deployed  
15 for the next six months, full fresh, fully trained  
16 and ready, and they will be able to perform at that  
17 percent of body fat?

18          DR. SHIPPEE: No. I mean, this?

19          DR. PARKINSON: All I'm saying is if the

1 notion is at the end of their training, you want  
2 them to be full functional and they emerge at 5  
3 percent body fat -- I don't know.

4 DR. SHIPPEE: Now we're into this  
5 philosophical area. Okay. Let me stop here a  
6 minute. In the meeting on the 18th where we sat  
7 with Colonel Jackman and his staff, late in the  
8 afternoon Colonel Jackman -- we were starting to  
9 question these sort of things. Okay. And Colonel  
10 Jackman got up and said, let me tell you something.  
11 There is two tragedies that happened in February.  
12 One, I lost four guys under my watch. And the  
13 second one is that I saw seven military careers  
14 vaporize before my eyes. Seven guys lost. That's  
15 it. They won't hold a command again.

16 And he said, so I've thrown out all of the  
17 paradigms. All of the paradigms, this is the way we  
18 used to do it does not sit with me any more. I'm  
19 starting over. I'm taking a look at these types of

1 questions.

2           So I back up to how I started. They've got  
3 emphysema now. You need to stop smoking. Okay.  
4 Let's say, do you really need to go this low to have  
5 that guy learn how far he could push himself and his  
6 men through the training. So you're right.

7           DR. HANSEN: I'm sorry. I have to leave  
8 for the airport, but I have to make a comment just  
9 from a Board member. I really think this needs a  
10 heavy hand in reevaluation, not just what you said  
11 so far. This is extraordinarily bad. I cannot  
12 emphasize it enough. This is bad for the  
13 individual. You have no idea what the permanent  
14 consequences may be of delipidization to 4 percent.  
15 Seven is the lower limit of normal.

16           I can only say this. I think this needs  
17 outside evaluation.

18           DR. SHIPPEE: You do know that the national  
19 -- I know you know the National Academy of Science

1 has a board that reviewed all of this data. And  
2 you've read that report. I know you have.

3 DR. HANSEN: I have. And there is just no  
4 doubt that you can produce stress without produce  
5 this.

6 DR. SHIPPEE: That's right.

7 DR. HANSEN: So, amen. Carry on.

8 DR. SHIPPEE: It was a pleasure listening  
9 to you talk, by the way. I'd like to know if you've  
10 done some immune responses on those monkeys.

11 This is the second study. The group starts  
12 out at about 14 percent. And we did less of a  
13 percent body fat. They finish at about 7 or 6. But  
14 we still feel at that time that that was too low.

15 This is body weight loss. I'm going to go  
16 through these rather rapidly because you could grab  
17 those and look them over yourself. I'll stop at  
18 some points I want to make out.

19 We did something different in the second

1 study. We went to look at one of these refeeding  
2 points. So we did like an internal control here.  
3 What happens when you give a guy a seven-day  
4 refeeding at the end of the stress. All right.  
5 Now, I'm going to show you some things that  
6 responded and some things that didn't, in what I  
7 think may be a message there.

8 AUDIENCE MEMBER: What's a refeeding?

9 DR. SHIPPEE: Okay. Here -- after they go  
10 in the desert, that's seven days in the field  
11 training exercise on one or one and a half MREs a  
12 day. Then they go to the next phase. That first  
13 week, they're eating two meals in the food dining  
14 facility and one meal of field ration. Okay. So  
15 refeeding.

16 The testosterone levels are ranging 1.  
17 This is a castration level of testosterone. You'll  
18 notice that -- we can go to the next slide. Here is  
19 a range of 2. Notice that this is just seven days

1 of refeeding and we get a response. This is  
2 testosterone. This is serum cortisol. Again,  
3 ditched out. He would have to show why. But  
4 refeedings look normal. And then it's elevated in  
5 the end of the last two phases. We have a whole  
6 battery of endocrine data on this. It's all in the  
7 tech report if you care to read through it. Carl  
8 Frieda now at Headquarters is the endocrinologist  
9 that we used at that time.

10           We have some -- quite a bit of side kind of  
11 data, but I want to show you the isle 6. Isle 6  
12 from ranger 2. Elevated and then mid-mountain, does  
13 not -- although it's not statistically significant,  
14 the pattern is even if he's refeeding, he's still  
15 coming on down. But if we go and culture the cells,  
16 and take the isle 6 out of the culture, again they  
17 culture feed him a little bit. They come up to  
18 normal.

19           There is a student who used to work with us

1 and we've got a problem with the units on this  
2 scale. But the relationship is there. And there is  
3 some other things that speak to this, also.

4           Here, the way we are defining immuno-  
5 suppression, and we've been taken to task on this.  
6 But given the resource we had available, we take  
7 whole blood. We transport it back to the lab. We  
8 put it in culture with RPMI media and we stimulate  
9 it with PHA. And then after three days or two days,  
10 we add tritiathiamine. A day after that, which is  
11 three days total in culture, we look at how much hot  
12 tritiathiamine is incorporated into the cells. The  
13 higher the corporation, the higher the  
14 proliferation, so the better the response.

15           So this is a slide of ranger 1. And ranger  
16 2, we gave him more calories. The degree of the  
17 guy's response differs from his base line value.  
18 And you can see the caloric intervention did -- was  
19 beneficial to the immune response based on this in

1 vitro assuage. But still, according to the folks  
2 that work with this all of the time and based on  
3 some work I've done in burn units, it's clinically  
4 significant.

5           In other words, this says these guys are  
6 more prone to infection than when they started the  
7 course.

8           What I don't have here is this mountain  
9 phase where we did the feeding. And they're still  
10 suppressed. There is not much of an effect here to  
11 the feeding to the proliferation response. But if  
12 you look at the cholestometry data looking at the  
13 subsets when you refeed, total T cells, T-helpers,  
14 T-suppressers do respond during that short term  
15 feeding phase. Yet the ability to proliferate did  
16 not.

17           So that's where we stood with the data. It  
18 was all reviewed by National Academy of Sciences.  
19 We went to the rangers and said, look, this is too

1 low. And what you're sitting on is -- literally they  
2 were sitting on a time bomb. There was no buffer  
3 for error. And what happened -- what Sven just  
4 showed you, what happened to those guys is a  
5 commander control issue. And he went into the  
6 various subtleties of that commander control. But  
7 these guys hit that jungle with 7 percent body fat.  
8 Their testosterone levels were low. Their  
9 cortisols are high. Their glucose is probably low.  
10 They couldn't mount a shivering spot. So they have  
11 no buffer to cover them.

12           So how do you go to the tables and pull  
13 that out, because there is nothing built in there  
14 for malnutrition.

15           DR. LJAAMO: Colonel Shippee.

16           DR. SHIPPEE: Yes.

17           DR. LJAAMO: I'd like to -- one point I  
18 sort of forgot, but also sort of ties in with this  
19 is the core body temperatures of the guy who did die

1 in this incident were at about 85-87 degrees.  
2 That's moderate hypothermia. And Dr. Hamlet  
3 believes that these people should have survived, but  
4 that they didn't because they looked more like  
5 people who might have come out of death camps or  
6 something like that and didn't have -- had these  
7 -- they literally didn't have a buffer. They didn't  
8 have certain things and were not -- and therefore,  
9 they were not revivable. And, you know, that's  
10 another nutritional aspect of this that Dr. Hamlet  
11 wanted me to bring up.

12           Also, while I've got the mike here, for the  
13 record, as a good epidemiologist, I'd be lax if I  
14 also did not point out that the denominator in all  
15 of this which was shown on one of the charts that I  
16 threw up there is that they train 3,000 students per  
17 year there. And we need to keep that in mind as we  
18 look at the record that is actually, as Colonel  
19 Shippee said, fairly safe.

1 DR. SHIPPEE: The Tikuisis model has people  
2 of 7 to 6 percent body into it. But there is a big  
3 difference between 6-7 percent body fat, say, a  
4 well-fed competitive bicyclist to a ranger in the  
5 swamps, psychologically sleep deprived and food  
6 deprived. And that's one of things that I want to  
7 address.

8 So now when the rangers showed up the 18th  
9 to go over all of the data and look at where we were  
10 going to go, I took all of the energy output and the  
11 intake data. And I tried to model it for a three-  
12 phase course, because we had never looked at three-  
13 phase. A lot of changes have already taken place  
14 down there to prevent that tragedy from happening  
15 again.

16 So I took the energy expansure and  
17 predicted what it would be for a -- now they've gone  
18 to a thinning phase, basically 21 days per phase.  
19 And, again, the first half is classroom, second half

1 field training exercise. And as they'll go on, the  
2 mountain phase and then the swamps. They've done  
3 away with their desert training. The course is  
4 still going to be 60 days long.

5           And this slide got messed up. You don't  
6 have it in front of you, but the color isn't right.  
7 Something happened.

8           Take ranger 1, you know, I applied the  
9 energy output and energy intake data that we got and  
10 applied it to the three phase. I predicted that the  
11 guys would lose 18 percent of their body weight and  
12 they lost 14.

13           Now, if you look at ranger 2, we gave him  
14 15 percent more calories. The weight loss would be  
15 the yellow or the blue bar. All right. And that  
16 one I predicted 11. We saw 12.

17           Now, if they just went to two MREs a day  
18 during that field training exercise, the weight loss  
19 would be 9 percent, closer to the 10 that we say

1 they need to be targeting minimum. Now, that's the  
2 mean, too. And that would be the green line here.

3           Now, if they went to three, that's 3900  
4 calories a day. They would have a 1 percent body  
5 weight loss.

6           So as a starting off point -- and this  
7 speaks to some other issues, too, that I wanted them  
8 to be -- from a nutritionist point of view. Here  
9 are some options. You could look at tapering into  
10 the food restriction. If you want severe food  
11 restriction, then why don't you move into it slowly.  
12 The guy down here is really going to feel seven  
13 days of one MRE if that's what you want to do, as  
14 long as you've kept his body fat up and kept -- you  
15 know -- kept his normal endocrine patterns up until  
16 you get to that point.

17           The other thing you might want to address  
18 is feed him the fuel he needs. Maybe this is more  
19 complicated. But I wanted to show them that there

1 are some other nutrition options here open to you.

2           Feed him fat, at least. You can use fat.

3 Feed him carbohydrates when he needs carbohydrates

4 during this. So from that, it gave us kind of a

5 jumping off point where we wanted to go. And then

6 the end result, Colonel Jackman said, bottom line.

7 What's the minimum?

8           I said, the minimum is two MREs a day, but

9 preferably I'd like you to go to LUR, the new freeze  
10 dried ration, which is the old Vietnam ration, which

11 two of those would give you around 2700, 2800

12 calories a day. And in fact that's what they're

13 going to do.

14           So he said, the paradigm is out the window.

15 I'm going to take your advice. And I'm not going

16 to go below two MREs a day. And I'm going to try to

17 the LUR, bottom line, that's it.

18           Now, that speaks to a summer course. A

19 winter course is a little bit different. They

1 usually give them -- they say, we give them a little  
2 more food. Well, I need to know how much more you  
3 give them. Now, there is another problem. There is  
4 another problem. And I have spoken to this before,  
5 but not as strongly. At that time, I was a major to  
6 a full colonel. But now I can say this. And I  
7 spent some time in these camps and I know what goes  
8 on and I know the mindset. What you put out is  
9 policy. What happens in the field on the line is  
10 different. And this happens on the line units, not  
11 especially in the training, either. The guys get  
12 out in the field. All right. You're behind  
13 schedule. You didn't meet the point. You missed  
14 your drop-off point. Let's go. Let's hump.

15           And the all right is his mind is, I'll make  
16 up the difference at the other end. You know, a day  
17 and a half later, I'll give them six rations rather  
18 three. That don't get it. You know, that's why we  
19 tried to tell them.

1           Down at the line units and the infantry  
2 units and now in special ops, you run into the other  
3 problem where you give a guy three MREs a day. He  
4 breaks them open. He dumps them on the ground. He  
5 takes out the things he wants to eat. That -- we  
6 tried -- again, I speak to the education issue.  
7 You've got to get down there and tell them that when  
8 I tell you there is 5500 milligrams of sodium in  
9 that ration, that's if you eat the whole ration, not  
10 if you eat all of the candy bars. So there is an  
11 education process that's got to go on here and we're  
12 finally getting home to these folks.

13           So this is a rather complicated fix that we  
14 didn't go to, but it speaks to some research issues  
15 that I think we want to get to.

16           Now, this comes to the end. Words from my  
17 sponsor or my own agenda, if I will. I'll put it  
18 out like that. That's fulfilling the total caloric  
19 requirements.

1           Let me tell you what goes on briefly at the  
2 SFAS camps. Twenty-one days. The guys walk 150  
3 miles carrying at least 45 pounds on their back, if  
4 not more. They are fed three times a day. They're  
5 given three MREs a day the first 11 days. They're  
6 given a morning ration and two MREs the second.  
7 They take in about 4,000 calories. They're  
8 expending 5500. You probably can't eat more than  
9 three MREs a day. Their immune response is still  
10 suppressed. So there is another issue here.

11           How do we sustain immune response under  
12 caloric deprivation. And that probably speaks to a  
13 combat situation where your tactical situation, the  
14 stress of the combat, you're not taking in enough to  
15 meet your requirements.

16           Working with these has its restraints.  
17 Moreover, but it has its benefits.

18           Now, when I first did the slide, the  
19 student who spelled this one highly mutilated it.

1           They're highly motivated. I never have  
2 trouble recruiting folks at these camps. These guys  
3 will walk the extra mile for you. The tasks are  
4 military relevant. And the Army sticks to strict  
5 adherent standards. Where else could you go and  
6 find 150 young guys, healthy guys, doing the same  
7 tasks and look at a model of suppression. And  
8 that's why Ross Labs is interested, too. You can't.  
9       Because most of our data comes out of trauma  
10 patients, burn patients, or whatever. We have an  
11 extremely important paradigm here. And we're  
12 fortunate to have it. It's a shaky thing. We could  
13 be turned down any minute. But we've got their  
14 attention now. We've made some mistakes. We've  
15 learned a lot, too. So that's where we're headed.

16           Now, the ranger study that I'm proposing  
17 and the cold folks are proposing is going to start  
18 off in January, the 8th of January. We're looking  
19 at the winter class. I've got a lot of battery of

1 immunology tests we're going to do, blood tests,  
2 body comp. At the end, we're going to try to get 10  
3 guys to volunteer to sit at 50 degrees C in a cold  
4 room down at the Navy labs down in Pensacola. And  
5 look at how do their responses agree with the  
6 model's.

7           And then we're going to refeed them for a  
8 couple of days and put them back in.

9           Now, speaking from a -- I wish that Barbara  
10 had stayed, because we do have some fascinating  
11 recovery data that's in the technical report. The  
12 first thing I'll tell you that I picked these guys  
13 after ranger 2 five months later at the airport and  
14 they looked like woodchucks. I mean, they were just  
15 -- I didn't recognize them. And they tell me they  
16 cannot go by a candy machine. They don't have the  
17 energy after six -- five or six months. They didn't  
18 have the energy they had. And they can't stop  
19 eating. They overshoot. The Minnesota starvation

1 study showed that same phenomenon.

2           That is the quick pass. There is a lot  
3 there. If you'd like, give me your name and  
4 address. I'll send you the tech report as soon as  
5 they come out. All of the data is in there.

6           (Applause.)

7           DR. KULLER: Thank you. That was very,  
8 very good. Unfortunately, because of the time, most  
9 of us are going to have to leave. But I think that  
10 was an extremely good report, very worthwhile. I  
11 think there are concerns, as Barbara pointed out, of  
12 the Board and obviously your own concerns about  
13 what's going on down there and the type of training  
14 and the food deprivation. And certainly it's got to  
15 change. I mean, I think also the rationale for  
16 what's being done in relationship to what they  
17 expect is kind of critical.

18           DR. SHIPPEE: Well, they lose their  
19 institutional memory. And that's why you see this

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1 periodic thing. And I think that's the goal of us  
2 folks in the medical field to keep that in.

3 DR. KULLER: And I think the Board would be  
4 very willing, as Barbara noted, the Board will  
5 support you in the sense of making this very plain  
6 to others that something has to be done here,  
7 because there is a potential for a catastrophe  
8 again.

9 LIEUTENANT COLONEL JONES: I think that  
10 there is an element as an epidemiologic board that  
11 we need to stress about this tragedy that has yet  
12 been unmeasured in any of the reports. And that is,  
13 these weren't just four individual deaths. But if  
14 we really look at it, was four deaths in two of the  
15 three companies which was only about 66 men. So we  
16 have four percent (sic) of 66 men. That's 7 percent  
17 of those units died in this episode. Three others  
18 were hospitalized. That means 11 percent died or  
19 were hospitalized.

1           And if we measure it in those kinds of  
2 terms and rates, which we don't traditionally do and  
3 we don't report it in ways we can go back and look  
4 at that, then we can't see that the effect on the  
5 unit -- you know, 11 percent were dead or in a  
6 hospital and there were many more treated.

7           And we really need to get those statistics  
8 out there, because commanders respond to those kind  
9 of things. When they see that I can lose over 10  
10 percent of my men in the space of a few hours. And  
11 you lose more of that because of the people having  
12 to take them out and others who presumably were  
13 incapacitated anyway. I think we need to emphasize  
14 that when they report these things, they need to  
15 give us some rates.

16           DR. SHIPPEE: One other thing. I'm a  
17 convert in epidemiology. I now see what the  
18 epidemiology data can give me on my side. And  
19 that's why what Sven is up to with the Navy is so

1 important to me. By the end of this year we will  
2 have that epidemiology software in every clinic in  
3 the ranger camps and in the SCFS. Think of how  
4 powerful that is when you put a year's worth of  
5 morbidity data and go into a product and feed it for  
6 a year and show 50 percent of this was antibiotics,  
7 50 percent less cellulitis. That's a powerful  
8 quality.

9 DR. LJAAMO: We'll be doing our field study  
10 down there in January this year. And if the Board  
11 would like, we'd be happy to come back and do some  
12 further feedback at a later meeting if there is any  
13 interest in that. Thank you again for having us.

14 DR. KULLER: Thank you very much.

15 (Brief recess.)

16 DR. SCHAFFNER: They are a screen each and  
17 we should be able to take a look at them. They are  
18 respectively the meningococcal recommendations, the  
19 varicella recommendations, and something Cladd wrote

1 on the issue of the executive secretary, a general  
2 statement that we would circulate and that Lou is  
3 then going to send to the group.

4 I'm going to start with the varicella  
5 because it is a single page. And as I say, if  
6 anybody can see it -- you might want to get up a  
7 little closer. This is after our meeting last  
8 night.

9 You notice the Parkinson paragraph at the  
10 end.

11 Okay. Varicella represents a limited, but  
12 potentially disruptive infection in recruit  
13 populations. In the face of background immunity of  
14 greater than 90 percent, universal immunization of  
15 recruits is not recommended.

16 To determine the proper role of the newly  
17 licensed varicella vaccine in military setting, the  
18 Board recommends the following:

19 1) An uncontrolled pilot project should be

1 conducted to assess the preventive effectiveness of  
2 serologic screening of all recruits for varicella  
3 antibody followed by immunization of non-immunes  
4 towards the standard two-dose regimen.

5           Reliability of a history of chicken pox  
6 should be determined in this study with the goal of  
7 possibly lessening the need for serologic testing in  
8 the future. Results of this study will allow  
9 development of a consistent service-wide policy for  
10 the use of varicella vaccine.

11           DR. PARKINSON: Just a question I have. Is  
12 there any reason to believe that studies already in  
13 the literature -- which I think there is some good  
14 ones about the validity of self reported chicken pox  
15 history would be any different?

16           AUDIENCE MEMBER: The Navy study of the  
17 grades, like it did a few years ago, asked that  
18 question in particular of the varicella vaccine.

19           DR. ASCHER: And?

1           AUDIENCE MEMBER: It was -- I don't  
2 remember the percentage, but it was a relatively  
3 good --

4           DR. ASCHER: Recall. The recall was good.

5           AUDIENCE MEMBER: For varicella. Not for  
6 rubella.

7           DR. BAYER: I think the number was 75  
8 percent.

9           DR. ASCHER: Yeah, that's what most people  
10 say, yeah.

11          DR. BAYER: That was correct.

12          AUDIENCE MEMBER: I guess of those who say  
13 they've had chicken pox, I'm sure that over some  
14 percentage of over 90 percent. Of those who say  
15 they haven't or they don't know, about 75 percent.

16          DR. ASCHER: Right. For an overall 91  
17 percent. So the question is, you could change this  
18 to not test the ones who have a positive history.  
19 On the other hand, it seems more easy operationally

1 to do everybody for a while and then make the  
2 change-over based on such a study. And it's not  
3 that much more expensive, as we've heard several  
4 times.

5 AUDIENCE MEMBER: And I think if we're  
6 going to do the study of the vaccine, it's  
7 relatively easy to ask that question and then -- you  
8 know -- look at it. It can be added to a study.

9 DR. ASCHER: Any other? Does that convey  
10 the sense of the meeting last night reasonably well?

11 DR. PARKINSON: This is just a note that  
12 speaks strictly to recruits. It doesn't speak to  
13 officer populations, which I think would be  
14 consistent with some of our feeling it's not proper.

15 DR. ASCHER: Right.

16 DR. PARKINSON: And other things  
17 accompanied by AICP guidelines.

18 DR. SCHAFFNER: AICP. That's what we said  
19 last night.

1 AUDIENCE MEMBER: Is there a number two?

2 COLONEL O'DONNELL: No, that's a little  
3 weird, but Jean will clean that up. I understand  
4 the other one has. Meningococcal recommendation is  
5 also one screen. It doesn't look like it, but it  
6 just goes off the bottom of the line.

7 DR. SCHAFFNER: Meningococcal disease  
8 continues to be a problem in the military setting,  
9 such as basic training. The current vaccine  
10 formulation will provide significant protection  
11 against sera groups A, C, Y and W 135. Protections  
12 continue to occur after the widespread use of the  
13 vaccine.

14 The duration of vaccine used for protection  
15 is not well known, but may be very long. And  
16 frequent boosters may not be required.

17 In the face of these uncertainties, the  
18 Board makes the following recommendations:

19 1) All meningococcal isolates should be

1 grouped in group B organisms typed by a referenced  
2 laboratory to assess the current prevalence of  
3 strains in the military population. B type  
4 information may be useful if group B OMP vaccine  
5 becomes an option. The vaccine history of  
6 individuals with meningococcal disease should be  
7 determined.

8           2) A longitudinal study of antibodies  
9 resistance for three to ten years should be  
10 conducted using samples from the DOD serum  
11 depository. The effects of current booster regimens  
12 should be assessed in a separate post-vaccine study.

13           The results of these studies will allow us  
14 to recommend optimal vaccine formulations and  
15 booster intervals. In the meantime, a consistent  
16 service wide policy of the five-year booster  
17 interval is reasonable.

18           DR. PARKINSON: Thank you for the last  
19 sentence.

1 COLONEL O'DONNELL: Now, that's a booster.  
2 That's a booster for people who are deployed to a  
3 high risk area. It's not a routine booster.

4 DR. ASCHER: No, following the normal  
5 procedure.

6 DR. SCHAFFNER: So you can add a little --

7 DR. ASCHER: Well, what do you want? It  
8 makes a difference.

9 DR. SCHAFFNER: So it might be you want to  
10 add something to the interval. Dr. O'Donnell?

11 COLONEL O'DONNELL: Well, I would say  
12 probably a booster for --

13 DR. ASCHER: For affected -- for  
14 appropriate groups.

15 DR. SCHAFFNER: Among troops.

16 COLONEL O'DONNELL: Among troops deploying  
17 to operational areas of high endonicity, something  
18 like that.

19 DR. PARKINSON: Fortunately I think the

1 defacto on that becomes anybody that's --

2 COLONEL O'DONNELL: Going outside of the  
3 country.

4 DR. PARKINSON: -- to get a five-year  
5 booster.

6 DR. POTTER: Does this mean that we need to  
7 institute a meningococcal vaccine at officer  
8 accession points, which hasn't been done yet?

9 COLONEL O'DONNELL: No. No.

10 DR. ASCHER: It's our experience in the  
11 Board that if we get more specific, the services do  
12 their own things anyway. And they'll have their own  
13 variations. So if we get more specific, it doesn't  
14 really help.

15 DR. SCHAFFNER: We talked about that.

16 DR. ASCHER: Yeah. And we're trying to be  
17 very general.

18 DR. PEROTTA: Who is going to do the study?

19 DR. SCHAFFNER: Didn't say.

1 DR. ASCHER: Varicella?

2 DR. PEROTTA: No, number two, the  
3 longitudinal study. I mean, maybe that doesn't need  
4 to be part of this.

5 COLONEL O'DONNELL: Well, that's the next  
6 one.

7 DR. PARKINSON: Who owns the serum? I  
8 mean, part of this is how the -- I mean, this is  
9 what we talked about. Pat Kellum, for example, is  
10 basically saying this is one of the areas that they  
11 want to use the serum depository for. How do we  
12 access that? Which one of the services have done  
13 it?

14 COLONEL O'DONNELL: And that's something  
15 for the next one, which is Claire's view of the  
16 executive secretary. And you might say that it's  
17 for the executive secretary to figure that out.

18 DR. SCHAFFNER: The AFEB considers  
19 recruitment and appointment of an executive

1 secretary for the Board to be a matter --

2           Executive secretary in addition to  
3 providing institutional continuity and  
4 administrative to the Board should play an active  
5 role in:

6           1) Developing the agenda for the Board  
7 based on -- there's a word there -- priorities,  
8 questions from the services, issues raised by Board  
9 members and his or her professional judgement.

10           2) Working with preventive medicine  
11 officers of all of the services to identify  
12 appropriate staff presentations, analyses, and  
13 define research to address issues before the Board.  
14 The executive secretary should also work with the  
15 services to obtain follow-up information on relevant  
16 Board recommendations.

17           The candidate needs good management skills  
18 and knowledge of the services, should have some  
19 measure of scientific credibility. Most

1 importantly, he or she should have the ability to  
2 work with others constructively and to be able to  
3 recognize opportunities for the Board to contribute  
4 to improving medical readiness. Although it is  
5 desirable to rotate services, this criterion should  
6 not override the above considerations.

7           Although the position should be modified in  
8 suitable time, if done well, the incumbent may be  
9 able to undertake other functions to strengthen the  
10 position. For example, an advisor on difficult  
11 scientific issues to the Assistant Secretary of  
12 Defense.

13           DR. ASCHER: This would come from Lou to  
14 Dr. Joseph as a letter and not so much as a -- I  
15 thought that was pretty neat. Do people have any  
16 comments?

17           COLONEL O'DONNELL: Jean, since you'll be  
18 working for this person? How does this sound?

19           MS. WARD: It rotates to the next person in

1 the Army.

2 DR. ASCHER: We don't necessarily feel  
3 that's it.

4 MS. WARD: Oh, is that right?

5 COLONEL O'DONNELL: That's part of our  
6 point. It would be too bad if we had excellent  
7 classes, excellent folks in the Navy and the Air  
8 Force and nobody good in the Army. And it had to be  
9 the Army. That's nobody as good -- nobody as good.  
10 (Whereupon, at 1:00 p.m., the meeting was  
11 concluded.)

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