ARMED FORCES EPIDEMIOLOGICAL BOARD

DAY ONE

The Hope Hotel and Conference Center
Building 823, Area A

Air Force Research Laboratory

Wright-Patterson Air Force Base

Dayton, Ohio

Tuesday, June 21, 2005

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Alexandria, VA 22314
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1 PRESENT:

2 BOARD MEMBERS:

3 David Atkins, M.D.
4 Dan German Blazer, II, M.D., M.P.H., Ph.D.
5 Barnett L. Cline, M.D., M.P.H., Ph.D.
6 Jean Lois Forster, Ph.D., M.P.H.
7 Gregory C. Gray, M.D., M.P.H.
8 William E. Halperin, M.D., M.P.H.
9 Wayne M. Lednar, M.D.
10 Grace K. LeMasters, Ph.D.
11 John Glen Morris Jr., M.D., M.P.H.&T.M.
12 Michael N. Oxman, M.D.
13 Michael D. Parkinson, M.D., M.P.H.
14 Kevin Patrick, M.D., M.S.
15 Gregory A. Poland, M.D. (President)
16 Roger William Sherwin, M.D.
17
18 Roger L. Gibson, Colonel USAF, B.S.C., [AFEB
19 Executive Secretary]

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

2 DR. POLAND: Well, good morning,

3 everybody and welcome to this meeting of the Armed

4 Forces Epidemiological Board. We have a number of

5 important topics in our agenda today, so we'll get

6 started.

7 Ms. Embrey, would you please call the

8 meeting to order?

9 MS. EMBREY: Thank you, Dr. Poland. As

10 the Designated Federal Official for the Armed

11 Forces Epidemiological Board, a Federal Advisory

12 Committee to the Secretary of Defense, which also

13 serves as a continuing scientific advisory body to

14 the Assistant Secretary of Defense for Health

15 Affairs and the Surgeons General of the Military

16 Departments, I hereby call this meeting to order.
17 Colonel Riddle, where are you? I want
18 to thank you very much for your willingness to
19 host this meeting and the outstanding support that
20 you and your staff have provided to the AFEB.
21 Thank you.
22 DR. POLAND: Thank you, Ms. Embrey. I

1 did want to make a few comments, being that this
2 is my first meeting as the Board President. It's
3 said that the greatest gift is the gift of
4 service. And I want to thank you all for giving
5 me a way to serve.
6 My first term with this Board was in the
7 early 1990s. I've been privileged to serve on and
8 off since then. It may be of interest that over
9 the years, there have been several recurring
10 themes: Chlamydia screening; tri-service
11 coordination of policies and practices; medical
12 counter-measures to biologic threat; health
13 promotion and inter-service coordination of
14 transcended programs sensors and databases. The
15 same issues in many respects that we face today.
16 Sadly, at one point, few questions of
17 interest or substance were coming to the Board.
18 The Services were bypassing the AFEB. The Office

19 of the Assistant Secretary for Health Affairs
20 ignored the AFEB and members stopped coming. This
21 resulted in a two-day retreat, interestingly
22 enough, at the United States Air Force Academy,

1 where we'll be at our next meeting, called and run
2 by the then-ASD for Health Affairs, Steven Joseph.
3 This resulted in a vital rejuvenation of
4 the Board and its activities. So I feel like I've
5 seen the Board at its low point, and now in the
6 last few years under Ms. Embrey, Colonel Gibson
7 and Steve Ostroff's leadership, its high point.
8 I think the lesson learned is that the
9 key to our effectiveness has clearly been the
10 attendance and active involvement of the ASD
11 Health Affairs Office, and I want to thank
12 Ms. Embrey for her interest and her attendance at
13 the meetings, a proactive Exec Sec, and Roger
14 deserves a lot of thanks for that, and an active
15 and engaged Board of members.
16 I'm fortunate to inherit all three from
17 Steve Ostroff and count on all three continuing.
18 I'm humbled to be chosen by you to serve
19 as the Board President, and more than a bit
20 anxious that your many votes of confidence will be
21 well-placed. I do want you to know that I take
22 this position seriously and personally.

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Otherwise, I would have slept better last night.

As many of you know, I'm from a Marine Corps family and I'm proud of that fact. Ninety years after the end of the Civil War, a very green Navy Lieutenant brought me into this world in Quantico, Virginia. I grew up understanding and respecting the Marine Corps and all of those Servicemembers who ensure our freedom and our safety.

My brother, as one example, just got back from a deployment in Africa in October. He was asked and agreed to stay past the 30 years on one condition, that he be deployed immediately to Southwest Asia. He believes passionately in the mission and the meaning of sacrifice for your country, and so do I and I know you do, too.

Let me tell you what burns within me and drives me every moment that I serve on this Board. After he volunteered for yet another war, my brother called me and, knowing what we do on this Board, asked me to be sure "we got it right and did everything we could to protect him and his

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men". And I intend to do that.

Nothing so clearly focuses my attention, and I hope yours, God with us, we will execute our duties to the best of our abilities as we protect the warfighters and all of the men and women who protect us. I'm nearly done, don't worry. So thank you for this honor. Please help me with your ideas and thoughts. I have some ways in which I'd like to change in minor ways the functioning of the Board. With your guidance and advice, I think we'll do it right. And let's always keep before us our mission to serve those who serve us. So thank you.

With that, maybe we could go around the table and introduce ourselves and I'll start with Ms. Embrey.

MS. EMBREY: I'm Ellen Embrey. I work for the Department of Defense. I'm the designated Federal Official for this Board.

DR. SHERWIN: I'm Roger Sherwin. I retired from Tulane School of Public Health and Tropical Medicine nearly two years ago. I'm a

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cardiovascular epidemiologist.

2 DR. LeMASTERS: Grace LeMasters. I'm an
3 epidemiologist, Occupational and Environmental
4 epidemiologist at the University of Cincinnati
5 College of Medicine, Department of Environmental
6 Health.
7 DR. FORSTER: I'm Jean Forster. I'm a
8 professor in the School of Public Health at the
9 University of Minnesota in the Division of
10 Epidemiology and Community Health.
11 DR. GARDNER: Pierce Gardner, a
12 professor of medicine at Stoney Brook Medical
13 School, and a consultant for the Fogarty
14 International Center at the National Institutes of
15 Health.
16 DR. PARKINSON: Mike Parkinson, good
17 morning. I'm the Chief Health and Medical Officer
18 of Lumenos, which is a national consumer-driven
19 health plan, formerly Chief of Programs and
20 Services in the U.S. Air Force. Retired about
21 four years ago.
22 DR. GRAY: Good morning. I'm Greg Gray,

1 Professor and Director of the Center for Emerging
2 Infectious Diseases at the University of Iowa.
3 DR. HALPERIN: Bill Halperin. I'm a
4 physician and epidemiologist, Chair of the

5 Department of Preventive Medicine at the New
6 Jersey Medical School of the University of
7 Medicine and Dentistry of New Jersey, and also the
8 Associate Dean of the School of Public Health at
9 the same university.
10 LTC RUSCIO: Good morning, I'm
11 Lieutenant Colonel Bruce Ruscio, an OSD Health
12 Affairs in Military Public Health.
13 COL UNDERWOOD: Good morning, Paula
14 Underwood. I'm the Deputy Functional Proponent
15 for Preventive Medicine at the Office of the Army
16 Surgeon General.
17 COL WHITE: David White, British Liaison
18 Officer.
19 MAJ SPELLMAN: Steve Spellman,
20 representing Mr. Wolfe from the Assistant
21 Secretary of the Army for Installation and the
22 Environment.

1 LCDR LUKE: Lieutenant Commander Luke.
2 I'm at the Bureau of Medicine/Surgery Population
3 Health and Pre-Support Branch.
4 MAJ KILIAN: Major Dennis Kilian,
5 Protection Officer, J4 of the Joint Staff.
6 CDR CARPENTER: Good morning. Commander
7 David Carpenter. I'm the Canadian Preventive
8 Medicine Officer, and my office is at the Canadian

9 Embassy in Washington, D.C.
10 CDR McMILLAN: David McMillan, the
11 Preventive Medicine Officer at Headquarters,
12 Marine Corps.
13 LTC SNEDECOR: Mike Snedecor, Preventive
14 Medicine at the Air Force.
15 CDR LUDWIG: I am Sharon Ludwig. I am
16 currently the Chief of Health Systems Management
17 at Coast Guard Headquarters, with also continued
18 duties as the Preventive Medicine Officer for the
19 Coast Guard.
20 DR. PATRICK: Kevin Patrick, Professor
21 of Family and Preventive Medicine at University of
22 California, San Diego.

1 DR. OXMAN: Mike Oxman, an infectious
2 disease doc and professor of medicine and
3 pathology at the University of California, San
4 Diego, and staff physician, infectious diseases at
5 the VA Medical Center in San Diego.
6 DR. LEDNAR: I'm Wayne Lednar, the
7 Corporate Medical Director for Eastman Kodak.
8 DR. ATKINS: David Atkins, Chief Medical
9 Officer at the Agency for Health Care Research and
10 Quality in Rockville, Maryland.
11 DR. CLINE: Barney Cline, Professor

12 Emeritus of Tropical Medicine, Tulane University.
13 DR. CATTANI: Jackie Cattani. I'm
14 Professor of Public Health and Director of the
15 Center for Biological Defense at the University of
16 South Florida in Tampa.
17 COL RIDDLE: I'm Rick Riddle, and I'm
18 the Division Chief for the Biosciences and
19 Protection Division here at the Human
20 Effectiveness Directorate at Air Force Research
21 Laboratories, Wright-Patterson.
22 COL GIBSON: Roger Gibson, Executive

1 Secretary, AFEB.
2 DR. POLAND: Greg Poland, Professor of
3 Medicine at Mayo Clinic. I did want to point out
4 two things, for those of you that don't know.
5 Colonel Riddle was the previous Exec Sec of this
6 committee, so it's great to have him back. And
7 also wanted to just take a moment and recognize
8 Mike Oxman, who just published an impressive,
9 because I just finished reviewing it all, study on
10 herpes zoster shingle vaccines in the New England
11 Journal. So congratulations, Mike.
12 DR. OXMAN: I think the important fact
13 about that is that there are fifty authors, and
14 that still isn't enough.
15 DR. POLAND: Maybe we could start with

Commander Ryan and work our way through, too.

(The audience members introduced themselves.)

DR. POLAND: Thank you all. And again, thank you, Colonel Riddle, an old friend of the Board, its staff and the Air Force Research Laboratory for hosting this meeting of the AFEB.

Colonel Gibson has some administrative remarks before we start our morning session.

COL GIBSON: I also want to thank Dr. Riddle, and particularly Ms. Connie LaPage on his staff at AFRL/HEP for helping set up this meeting. Also, I want to thank the Hope Hotel staff who were extremely helpful in coordinating the reservations and putting together this room. They did a great job for us. That's Katie Faatz helped us with setting up the conference and Liza Crews-Carlile for the room reservations.

I also want to thank Monique Love, who assumed Ms. Faatz's responsibilities -- she just left her position here -- for helping coordinate us for this week. Also thanks to Ms. Bennett and Ms. Triplett for their efforts and hard work in putting together the agenda, putting together all of the details for this meeting and to Ms. Ward,

19 who helps with the travel vouchers, et cetera.
20 Through the Uniformed Health Sciences
21 University we get 8 CME credits for this meeting.
22 To receive the credits, you need to sign the

1 physicians' attendance roster, preferably today,
2 and then complete the evaluation form at the end
3 of the meeting and hand it in.
4 I want to inform you that this meeting
5 is being transcribed. Before speaking, please
6 state your name so the transcriber can track who
7 said what. The meeting transcripts will be
8 available on the AFEB website in a few weeks. As
9 soon as the transcriber gets them back, we post
10 them. And the slides should be up as
11 early -- we've got all of the slides now, so we
12 should be able to get them up as soon as late next
13 week.
14 Also, please sign the attendance roster
15 outside on the table, if you haven't done so
16 already.
17 I want to remind everybody tonight
18 you're invited to eat with us at Carver's Steaks
19 and Chops. We'll be leaving the hotel lobby at
20 6:45 for dinner. It's open to all attendees, and
21 let Severine and Karen know if you plan on
22 attending so we can get a count. If you can raise

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your hands right now, that would be very helpful.

For this meeting, refreshments are available, light refreshments, both for this morning's session and the afternoon session. We also have a catered lunch for the Board members, the Preventive Medicine Officers and the speakers, in this room.

For the rest of you, there's a restaurant called Packy's which is just right down the hall, and there's about 20 other restaurants in the neighborhood that are real close, and Severine and Karen have a sheet, handout, that has the names of those if you want to go there. But Packy's is very close and it should work out.

Restrooms are right outside the back door here. Telephones, there's lots of -- about six telephones out there for local calls, and there's a pay phone just down the hall if you need it.

There's a small change to the agenda tomorrow. We're going to start -- light refreshments, coffee, et cetera, will be here at

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7:45. Because we leave for the bus tour -- we leave on the bus for the tour of AFRL at 8:15.

And finally, the next meeting of the AFEB is scheduled for the 20th and the 21st of September. That's the third Tuesday and Wednesday of September. It's going to be at the Air Force Academy in Colorado Springs. The agenda for that meeting will be research. The keynote speaker will be Dr. Bob Foster from R&D at DoD. And it looks like we'll either have a tour of NORAD or the Academy as part of that meeting.

That's all I have.

DR. POLAND: We'll get started then with our first speaker, who is Colonel Riddle, who wanted to take a few minutes to welcome the Board to Wright-Patterson Air Force Base.

COL RIDDLE: Well, it's certainly our privilege and honor to host the Armed Forces Epidemiological Board here at Wright-Patterson, the absolute center of the universe and all activity.

Wright-Patterson is a fantastic place to

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live, and while you're here, I hope you have a

chance to visit the National Air Force Museum and kind of enjoy some of the activities. And hopefully we'll have a good tour for you tomorrow within Human Effectiveness.

Ms. Embrey, Dr. Poland, Members of the Board, on behalf of Dr. Hendrick Ruck, our Director within the Human Effectiveness Directorate, and General Lamy, the Commander of the Air Force Research Laboratory, you know, it's my pleasure and privilege to give you a little bit of an overview of Human Effectiveness, and certainly if there's anything that we can do to support you while you're here, just let me know, or any member of my staff, and we'll certainly be glad to do that.

What I want to do this morning is just give you a little overview of the mission and organization of the Human Effectiveness Directorate and a little bit on our technology focus areas.

Human Effectiveness is one of the ten

technical directorates within the Air Force Research Laboratory. AFRL has about 12,000 employees with about a $2 billion budget. And one of those TDs is Human Effectiveness, really

5 focusing on human performance and the human
6 interface and the human, really, as the ultimate
7 weapon system for the Department of Defense.
8 Our vision is really unequalled decision
9 effectiveness through Airmen awareness and
10 performance, anticipate the side and act. And we
11 feel very serious in addressing what we think is
12 the most critical Air Force resource, and that
13 really is that human weapons system.
14 If you listen to General Jumper, one
15 of the most important things that we're dealing
16 with now is looking at the Air Operations Center
17 really as the ultimate weapon system in the Air
18 Force. We had a visit to AFSOC a few weeks ago,
19 and it was encouraging that they were actually
20 developing a capabilities document focusing on the
21 Airman Warrior and what's needed for that Airman
22 Warrior. So it's, as most, moves slowly but we're

1 really excited and have a bright future I think
2 for what we can do.
3 What we're looking at is revolutionary
4 human cognition and survival. Our mission areas
5 are there on the slide. But we have, within HE,
6 three major divisions, four divisions overall
7 along with the support. Actually, most of the
8 individuals within the Human Effectiveness

9 Directorate are not here at Wright-Patterson. We
10 have operations out at Mesa and at Brook City
11 Base.
12 And so this is the Mesa Research Site
13 out in Mesa, Arizona. Brook City Base down in San
14 Antonio, Texas, here at Wright-Patterson Air Force
15 Base, and I have a small contingent of individuals
16 at Aberdeen Proving Ground. But about 60 percent
17 of the folks are actually at these two sites. And
18 if you're familiar with the recent recommendations
19 of BRAC, probably the biggest impact within the
20 research laboratory is with the Human
21 Effectiveness Directorate, with the consolidation
22 of both of these remote sites or groups of

1 individuals here at Wright-Patterson Air Force
2 Base.
3 Now, this is the AFRL Human
4 Effectiveness organization. As I stated, our
5 Director is Dr. Hendrick Ruck. The divisions that
6 we have are warfighter readiness and research,
7 which is the group of individuals out at Mesa,
8 Arizona. Our warfighter interface division here
9 at Wright-Pat. A directorate of energy, bios
10 effects, which is down at Brook City Base.
11 Associated with them is a Naval Health Research

12 Center Detachment and an Army Medical Research
13 Detachment.
14 Within the biosciences and protection
15 division, which I lead here, we have five
16 branches, also a Naval Health Research Center
17 Detachment, and we have Army Medical Research
18 support for our vivarium that we have here at
19 Wright-Pat. And then our financial management and
20 our integration and operations.
21 If we looked at the work force within
22 the Human Effectiveness Directorate, a little over

1 1,200 individuals. We have about $100 million
2 budget within HE, and actually bring in about
3 another $100 million of outside. The work force
4 is not quite 50 percent contract and 50 percent
5 government civilian, enlisted and officer.
6 One thing to point out on the government
7 civilian side, most of our scientists and
8 engineers fall under a civilian employment
9 program, the Lab Demo Program, which is one of the
10 most versatile and responsive, I think, employment
11 programs that was instituted a few years ago which
12 focuses on contributions as opposed to
13 performance.
14 And I think it's a really good program
15 for the lab and a really good program for the

16 individuals assigned. If we looked at resources,
17 we have on the civilian side, over here, you know,
18 government versus our military. And then if we
19 look at the overall education level as far as
20 bachelor's, master's, Ph.D. and then MDDVM, we
21 have quite a diverse but certainly a very highly
22 educated work force within Human Effectiveness.

1 If we look at the specialties that we
2 have, kind of the academic domains within the
3 Directorate, you'll see anywhere -- you know,
4 behavioral sciences, math, computer sciences,
5 physical sciences, medical health, veterinarians,
6 Ph.D., pharmacologists, physicians. So it is a
7 very, very diverse work force as far as the
8 academic specialties within the lab.
9 The collaborations in leverage is very
10 important and -- you know, really strategic
11 collaborations are built over a number of years,
12 and that is a way forwards for so much of the work
13 that we do. We have over a hundred collaborations
14 with government and other agencies. Thirty active
15 programs with industry and academia. That
16 includes both with the large contractors, profit
17 and non-profit: Batelle, Lockheed Martin, General
18 Dynamics. Also, we work very closely with

19 industry and a lot of our work that you'll see in
20 the bio-mechanics database and in our
21 bio-mechanics branch associated with information
22 that we collect from the NASCAR and the race car

1 industry and working with other components of the
2 automobile industry and the transportation
3 organizations.
4 These are kind of the technologies and
5 we'll show a little video on each one of these at
6 the end of the brief. But really out at Mesa, if
7 you look at their core technology area is Train as
8 We Fight, they have some of the latest
9 state-of-the-art video capabilities in the
10 trainers. And some of the comments of some of the
11 warriors coming back out of Iraq at the initiation
12 of the air war was literally they had flown those
13 missions before because of the detail and the
14 specificity that they are able to train with in
15 the simulators and the capability that they have.
16 They have trainers and work very closely
17 with Sony and have some of the absolute
18 state-of-the-art pixel resolution that's out
19 there.
20 Decision effectiveness is really the
21 man/machine interface looking at how to reduce the
22 information portrayal and decisions into the

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single digit as far as decision-making. And, you know, to work the man/machine interface.

Immunity from threat, really looking at our group and the Directed Energy Bio Effects, physical and toxic stressors and biotechnology and counterproliferation.

The transformational technology within the group, biotechnology is a focus area where Dr. Ruck has put some additional resources and dollars trying to look at the military specific niche within biotechnology. You'll see a little bit of that within our laboratory tomorrow. But both in the biomarkers, understanding cellular dynamics in engineering and cellular processes, and also bio-sensors and working agent neutralization.

Another area where Dr. Ruck has offered some incentive programs in the cognitive area, both in the battle space awareness, information effectiveness and DMO or distributed mission operations. One of the unique things about Dr. Ruck is he believes in, you know, delegating

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decision, likes to see competition within the laboratory, and as long as you provide, you know, an environment to where you reduce the bureaucratic barriers and give individuals an opportunity really to pursue their science and engineering dreams and the capabilities needed, that things in the lab will do well.

And he offers several incentive programs to do that. Director's funds, young investigator's funds, to where even within the laboratory with a percentage of the monies that we have available, people can, in essence, respond to his broad agency announcements and put good ideas in for funding and be fairly flexible, which is somewhat different than what you normally see in a government lab.

Collaborations in leverage, very important for us. Just within our group, we have close to 30 CRADAs, educational partnership agreements and collaborations with industry, non-profits and academia. University of Cincinnati, Genomics Research Institute, is one

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that we're particularly proud of and partner with

them in any variety of opportunities. The UDRI, the University of Dayton Research Institute here, in partnerships going after a variety of opportunities, both NIH and NSF grant opportunities.

Our scientists within the lab serve as associate professors and actually do the completion of the lab work for a lot of Ph.D. students, both in our lab and at the local universities, Wright State and UDRI.

So strategic partnerships and the collaborations are very effective and really allow us to leverage our capabilities.

In summary, you know, it's really looking at the Air Force and looking at the Airmen and the battlefield Airmen and focusing on performance. Looking at the needed capabilities that are required to enhance our war fighting capability and working very closely with the end users to meet those requirements. And, you know, the bottom line is really how do we unleash that

power of human performance through technology.

And what we have are three little videos that we'll take a look.

(Videos played)

5 COL RIDDLE: That's the Mesa simulator
6 facilities out in Mesa, Arizona.
7 (Video continues)
8 COL RIDDLE: And that's our Decision
9 Effectiveness Branch here at Wright-Pat.
10 (Video continues)
11 COL RIDDLE: So that's what I have. If
12 you have any questions? I know I didn't do the
13 group justice, but HE is a very broad organization
14 with multiple research thrusts and, you know, I
15 think an important component with the Air Force
16 Research Laboratory.
17 DR. POLAND: Thank you, Colonel Riddle.
18 On behalf of the entire Board and the Office of
19 the Assistant Secretary of Defense for Health
20 Affairs, we'd like to present you with a
21 certificate of appreciation and an AFEB coin.
22 (Presentation to Colonel Riddle.)

1 DR. POLAND: Our next speaker this
2 morning is Lieutenant Colonel Bruce Ruscio,
3 Program Director for Military Public Health at the
4 Office of the Assistant Secretary of Defense,
5 Health Affairs. He will present the question to
6 the Board regarding the use of adverse childhood
7 events surveys as a population health metric
8 within DoD. His slides are in Tab 2. You'll also

9 find a copy of the Health Affairs question in a CD
10 in the back of your book with an extensive number
11 of articles on ACEs.
12 LTC RUSCIO: Dr. Poland, Ms. Embrey,
13 Colonel Gibson and Board Members and Guests, thank
14 you and good morning. Thank you for the
15 opportunity to present the question to the Board
16 on behalf of Dr. Winkenwerder.
17 What I'll do is make a presentation to
18 the Board, and I know you're going to hear from
19 some experts, but this question --
20 Dr. Winkenwerder and some of his staff made some
21 visits to the Center for Disease Control a while
22 back, and they heard some presentations on an

1 Adverse Childhood Event study and research and
2 came back, and I got a note on my desk to look at
3 this and pursue this and with the good rolodex
4 that Colonel Gibson provided, I restyled and
5 reaching out -- we're reaching out to talk to the
6 experts to help us look at the Adverse Childhood
7 Event as a population health metric.
8 Next slide, please.
9 You will hear from Dr. Shanta Dube about
10 the specifics of the Adverse Childhood Event work
11 being done at CDC, but in a nutshell, it's over a

12 decade-long effort, and the study assesses the
13 impact of traumatic childhood events on a wide
14 variety of health behaviors and outcomes in
15 adults. It's an effort being worked with CDC and
16 Kaiser Permanente. Next slide, please.
17 So following the discussion that
18 Dr. Winkenwerder had, and then my discussion with
19 some of the presenters that you're going to hear
20 today, it looks like that there's a potential
21 public health metric may provide some better
22 understanding of possible risk behaviors and

1 individual medical problems and intervention
2 opportunities for the Department of Defense.
3 But as in any metric survey, careful
4 consideration must be given before entering or
5 implementing any new screening device. The Board
6 in February of 2004, evaluating some other work,
7 offered to the Department of Defense that you
8 would be interested in reviewing other comments,
9 other proposed metrics and providing comments and
10 feedback on those proposed metrics. So that's why
11 we're here today, to ask you to provide some
12 comments and have some specific questions to the
13 Board.
14 Next slide, please.
15 Those questions are essentially listed

16 here and provided in a letter to the Board. The
17 Adverse Childhood Event work may provide -- may be
18 a good metric, population metric, for our
19 population. This work is a cross-sectional to
20 date. There's not a lot of information on the
21 prospective aspect of the ACE. So I'd like to
22 have you look at the bulk of the ACE research to

1 date and provide some feedback on that. And if
2 the Board considers that the ACE is a useful
3 metric that DoD could use, when does the Board
4 consider that it would be a good time to assess
5 the metric and the DoD, military personnel.
6 And then, finally, to provide
7 recommendations regarding further evaluations and
8 further research that may need to be conducted
9 concerning implementing the ACE in the DoD
10 population.
11 Dr. Poland, if there's any questions.
12 DR. POLAND: Questions from the Board
13 members?
14 DR. SHERWIN: Colonel Ruscio, what was
15 the initiating reason for beginning the study?
16 Was there any type of event that occurred or what
17 were the original questions I guess I'd like to
18 know.

19 COL RUSCIO: The original questions with
20 the ACE or the original questions presented to the
21 Board?
22 DR. SHERWIN: No, the original questions

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1 for initiating the study of the ACE.
2 COL RUSCIO: Dr. Dube will talk about
3 that. She's going to follow me. She's from CDC
4 and she's going to present that information.
5 DR. SHERWIN: Okay, thank you.
6 DR. POLAND: Any other questions? Thank
7 you.
8 COL RUSCIO: Thank you.
9 DR. POLAND: The next speaker will
10 provide that background on ACE. Mrs. Shanta Dube
11 is from the National Center for Chronic Disease
12 Prevention and Health Promotion at CDC. She'll
13 present the development of the ACE and ongoing
14 research.
15 Mrs. Dube, welcome and thank you for
16 taking the time to come and brief us on ACE.
17 Mrs. Dube's slides are also in Tab 2.
18 MS. DUBE: Good morning. And thank you
19 very much for inviting me to present our study.
20 And I'd like to answer your question
21 before I proceed with the study or the
22 presentation.

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1 Back in I think it was 2001, Rob
2 Anda and Vincent Pollette who are the
3 authors of the study, had been in touch with
4 Charles Hoge regarding attrition in the
5 military. And the data analysis of the study has
6 shown that Adverse Childhood Experiences are
7 strongly associated with suicide attempts, and to
8 our best knowledge that suicide wasn't a health
9 issue in the military and a problem with the sex
10 attrition, one of the problems with sex attrition.
11 So things basically started at that
12 point where Dr. Charles Hoge, Rob Anda and Vincent
13 Pollete and the rest of the ACE group held some
14 preliminary discussions about including ACE
15 questions. And then my understanding is that
16 Charles Hoge had information coming out in draft
17 and then as a pilot and got some data.
18 Unfortunately, I don't have those slides here
19 today.
20 And then, again, Dr. Winkenwerder came
21 to the CDC where a presentation on the ACE study
22 was given to him at that time. So that's

35

1 basically the history of how that came to be.
2 I'm going to be presenting data from the
3 Adverse Childhood Experiences Study today.
4 Next slide, please.
5 The ACE study is one of the largest
6 studies of its kind to examine the health and
7 social consequences of early adverse experiences.
8 It was conducted among adult HMO members out of
9 San Diego, Kaiser Permanente, Department of
10 Preventive Medicine. We had over 17,000
11 respondents and cohorts.
12 The Adverse Childhood Experiences
13 occurred basically in childhood such as abuse,
14 neglect, growing up with severe family
15 dysfunction, witnessing domestic violence, growing
16 up with substance abuse in parents and growing up
17 with mental illness in the home, parental
18 separation and divorce.
19 Next slide, please.
20 The ACE study design is actually a
21 retrospective cohort design. It was conducted in
22 two waves. The first wave was conducted between

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1 August 1995 and March 1996. And the second wave

2 was conducted between June and October of 1997.
3 We had an overall response rate of 68 percent.
4 Actually, we are right now in the prospective arm,
5 the phase of the prospective arm where we will be
6 examining the impact of Adverse Childhood
7 Experiences and health care utilization.
8 So while this is a record of cohort
9 design, there was a prospective arm that was
10 designed in this particular epidemiological study.
11 Next slide, please.
12 As I mentioned, the study compilation
13 was drawn out of Kaiser Permanente in San Diego,
14 California. The patients made an appointment to
15 get an overall health assessment in the health
16 appraisal center in the Department of Preventive
17 Medicine. Upon making their appointments for the
18 health assessment, they are sent a health
19 appraisal questionnaire which was a medical
20 assessment, a review of systems conducted as a
21 routine part of the clinical examination there.
22 Two weeks after -- they go for the

1 physical and then two weeks after their visit they
2 were sent the FHH, which is the Family Health
3 History, which contains questions about their
4 early childhood experiences and health procedures

5 that may have commenced in adolescence and their
6 current health status as adults.
7 Next slide.
8 This is a conceptual framework for the
9 ACE study. With respect to the problems of
10 epidemiology, for the past -- when the
11 epidemiological condition occurred, the research
12 in this area has consistently shown that health
13 risk behaviors lead to chronic disease, death and
14 disability. However, the scientific aspect was
15 what leads to the adoption of health risk
16 behaviors. And that was one of the goals of this
17 study, was conforming underlying risk factors for
18 risk behaviors that lead to chronic diseases.
19 Next slide, please.
20 In this particular cohort, which is
21 about 17,000 HMO's, adult HMO members, the mean
22 age was 57 years. Fifty-four percent comprised

1 women. And it was a fairly educated population,
2 with close to 40 percent graduating from college.
3 Next slide, please.
4 And it was a predominately white
5 population, 75 percent reported their being white,
6 followed by Hispanic, 11 percent.
7 One of the issues with retrospective
8 reports of Adverse Childhood Experiences is that

9 they are retrospective. It's that recall may be
10 an issue because of the time lapse between
11 childhood and adult life span. And also the
12 variability of response due to the sensitive
13 nature of the questions. In addition, there have
14 been studies that have shown that early trauma
15 leads to problems with memory.
16 So we had the opportunity to look at the
17 test, re-test reliability on 600 respondents who
18 inadvertently were sent the questionnaire twice.
19 Next slide, please.
20 Over 50,000 patients go through the
21 health appraisal plan in a year and so there is a
22 possibility of some individuals would be asked the

1 question twice. And I apologize about this slide
2 being so busy, but I thought it was very
3 important. You need to see the items that were
4 included in the FHH to establish Adverse Childhood
5 Experiences. And alongside I have presented the
6 Kappas to estimate the test, re-test
7 reliability. We use the Kappas, which is
8 adjusted for chance response of it being the same
9 at both time periods. And the average time period
10 between both questionnaires is about 20 months.
11 And we find that basically the Kappas fell

12 in the range of .4 and higher, which is in the
13 good to excellent range.
14 Next slide, please. This is under the
15 family exposure. And then we also calculated the
16 rate of Kappas which were calculated and found
17 also that they were in the good to excellent
18 range. Yes?
19 DR. OXMAN: Would it be fair to say --
20 from these definitions it sounds like the focus is
21 really on aggressive, assaultive behaviors as
22 opposed to neglect. For example, where a family

1 member may be out of the picture, just away, and,
2 therefore, not supportive.
3 MS. DUBE: That is correct. Most of the
4 exposures that we examine -- and let me just --
5 and I'm going to talk about the two ways in a
6 minute, but most of the exposures are looking at
7 overt abuse and violence in the family. But in
8 relation to we did add questions to the FHH that
9 examined physical and emotional neglect. That was
10 not part of the first wave but it was part of the
11 second wave. So we went in just to calculate the
12 Kappas, the test, re- test reliability
13 but we were able to establish prevalence for
14 reports of neglect. And that's in the next slide
15 actually. Next slide.

16 So here are the prevalence we found for
17 each exposure of adverse childhood experience.
18 Among forms of abuse, physical was the most
19 prominent, close to 30 percent reporting that form
20 of abuse. And among the household exposure,
21 substance abuse was most commonly reported at
22 close to 27 percent reporting that on family

1 dysfunction.
2 And I should say that substance abuse,
3 the definition is living with a household member
4 abusing alcohol or illicit drugs. And as I just
5 mentioned, in Wave II we were able to assess
6 neglect, emotional and physical, and those are the
7 prevalence estimates that were found for emotional
8 and physical neglect. Next slide, please.
9 Because our study has not only found
10 that Adverse Childhood Experiences are common, but
11 we also have found that there's a very high
12 probability that given exposure to one form of
13 adverse childhood experience, that there would be
14 a high probability that this may lead to another.
15 We've created and entered the count of the total
16 number of Adverse Childhood Experiences, what we
17 call the ACE score and it's to really look at the
18 cumulative impact of the total number of ACEs one

19 is to report on multiple health actions and
20 behaviors.
21 And as you can see, we find again that
22 ACEs very common, with 64 percent reporting more

1 than one, close to 40 percent reporting two or
2 more. Next slide.
3 And to further see the alpha
4 co-occurrence, we examined the relationship
5 between growing up with parental alcohol abuse and
6 other forms of Adverse Childhood Experiences. And
7 part of the reason for this is because we found
8 that among the family service, growing up with
9 substance abuse was the most frequently reported
10 thing.
11 The next few slides I'm going to show
12 the relationship between parental alcohol abuse
13 and each form of adverse childhood experience. We
14 had the opportunity to look at alcohol abuse among
15 father only, mother only and both parents. And
16 the prevalence of reporting one parent abusing
17 alcohol was close to a quarter of the population.
18 Next slide.
19 Just to orient you to the figure, on the
20 Y axis is the percent, the X axis is each form of
21 abuse and neglect. And each bar graph represents
22 a history of alcohol abuse, parental alcohol

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abuse. There's neither, father, mother or both. And as you can see -- and you see the prevalence and they are representative if you take the prevalence ratios of the relative risk.

And as you can see, as the number of -- the number of parents, meaning both, if the person is exposed to both parents abusing alcohol, there's a high prevalence or a high probability of experiencing other forms of abuse in his life.

Next slide.

We find the same type of relationship between history of parental alcohol abuse and severe family dysfunction. Okay, next slide.

And with respect to the distribution, on the high end of the ACE score, close to 40 percent report growing up with at least one parent who is abusing alcohol. And basically these slides are showing that the Adverse Childhood Experiences are highly interrelated, especially in relationship to growing up with substance abuse. And the substance abuse in the family is a highly prevalent childhood exposure. Next slide.

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1 We also had the opportunity to look at
2 the relationship between Adverse Childhood
3 Experiences and some health behaviors and outcomes
4 in adolescence. In my understanding, this is an
5 important issue in the military because the new
6 recruits are usually around 18 years, if I'm
7 correct. So they're in their late adolescence.
8 And the models that we have seen have shown that
9 Adverse Childhood Experiences lead to early
10 initiation of multiple behaviors, including
11 sexual, sexual risk behaviors, substance abuse and
12 suicide attempts and I'm going to show those
13 slides. Next slide.
14 And of course these all look repetitive,
15 they all look the same. But here is to show that
16 Adverse Childhood Experiences increase the
17 likelihood, in a cumulative manner, the multiple
18 outcomes. Here we find that regular smoking by
19 age 14 is increased, when we use the ACE score as
20 the cumulative impact. Next slide.
21 And we find a similar relationship
22 between age of initiation, early age of initiation

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1 of illicit drugs, 15 to 18 years.

2 Next slide.
3 And the suicide attempt, there is close
4 to a 15 fold increase at the high end of the ACE
5 score compared to experiencing no ACEs.
6 Next slide.
7 And with respect to some of the outcomes
8 during adulthood, we looked at adult alcohol
9 problems. And in this cohort we find that 10
10 percent reported problems with alcohol; 6 percent
11 self-reported alcoholism, and 18 percent reported
12 that they ever married an alcoholic. And that's
13 an important one to consider because of the
14 inter-generational aspect of ACEs.
15 I just showed you the slide of these
16 respondents who grew up with parental alcohol
17 abuse, they also had a high probability of
18 experiencing ACEs. But these respondents are also
19 likely to marry, as I show in the next slide, were
20 more likely to marry an alcoholic if they had been
21 exposed to ACEs. Which has implications for the
22 next generation. Next slide, please.

1 In the next few slides, I'll show the
2 relationship between self-reported alcohol
3 problems and each ACE and its self-reported
4 alcohol problems. And the outcomes we looked at

5 were self-reported alcoholism and marrying an
6 alcoholic and the relationships are similar but
7 obviously for time I can't show all the slides.
8 Here you see for each form of abuse, the
9 probability of reported alcohol problems
10 increases, about a two-fold increase. Next slide.
11 And the same is found for because of
12 family dysfunction. The category of family
13 dysfunction. Next slide. Now, here you see
14 exposure to parental alcoholism with respect to
15 self-reported alcoholism.
16 We've stratified five parental
17 alcoholism and looked at the relationship between
18 an ACE score and self-reported alcoholism amongst
19 the cohorts. And while the absolute risk is
20 higher for those who reported parental alcoholism,
21 the relative risks are the same. That is, it
22 doesn't matter if -- obviously if you're exposed

1 to some alcoholism, the absolute risk is higher,
2 but the relative risk is the same if you aren't
3 exposed to parental alcoholism. Meaning that
4 ACEs, independent of parental alcoholism, increase
5 the likelihood of alcoholism later in life.
6 Next slide.
7 We also looked at suicide attempts and
8 we assessed suicide attempts with the question and

9 affirmative response, Have you ever attempted to
10 commit suicide? In our cohort, we found that four
11 percent reported attempting suicide. And women
12 were more likely than men to report this. This is
13 in line with other population based settings. And
14 we also found an inverse relationship between the
15 prevalence of suicide attempts and an increase in
16 education. This is also in line with other
17 population based studies. Next slide.
18 And again, these slides are showing the
19 relationship between each form of abuse and
20 suicide attempts. And they are representative of
21 the relative risk. Next slide please.
22 And we find the same increased risk for

1 each form of family dysfunction. Next slide. And
2 then of course the strong close relationship
3 between the ACE score and ever attempting suicide.
4 With a 35-fold increase at the high end
5 of the ACE score. Next slide, please.
6 In Wave 2 in the health appraisal
7 questionnaire, we added two questions that were
8 able to capture and assess the risks of being
9 either a victim of intimate partner violence or
10 perpetrating intimate partner violence. And I say
11 this because they are one item questions and it

12 just stated an idea of if these individuals were
13 exposed to intimate partner violence in their
14 current relationship.
15 The questions were: "Has your partner
16 ever threatened, pushed or shoved you?" Five
17 percent of the women were at risk for IPV
18 victimization and 4.3 percent of the men were at
19 risk of perpetrating IPV. Next slide.
20 We then examined exposure to sexual
21 abuse, severity of sexual abuse and the
22 relationship of being at risk for IPV. And the

1 women -- women who we classified as victimized by
2 IPV, there is a two-fold interchange with no
3 matter what form of severity of child sexual
4 abuse. Next slide.
5 But for men who were classified as
6 perpetrators in this particular study, we find
7 that there's a three-fold increased likelihood
8 that they would perpetrate IPV if they had been
9 exposed to sexual abuse before 12 years of age and
10 it involved intercourse. Next slide.
11 In this cohort, because it's the ACE
12 study, we were able to look at Adverse Childhood
13 Experiences in relationship to four different
14 birth cohorts. And the objective of this was to
15 look at -- to see if the relationships were

16 consistent no matter when the individuals were
17 born in the past century. Next slide, please.
18 And in the next three slides I'm going
19 to present specific outcomes. In this particular
20 one we looked the relationship between the ACE
21 score and self-reported alcoholism by birth
22 cohort. And I would like to move -- the Y axis is

1 the prevalence and the X axis is the ACE score.
2 And each line represents each birth cohort. And
3 I'd like you to pay attention to the increase in
4 the lines as far as the prevalence increases for
5 each birth cohort. The absolute differences will
6 be observed due to the different social and
7 secular trends in the particular behavior. But
8 what is important to note is that the relative
9 increases are the same for each birth cohort.
10 Next slide.
11 Then we also looked at this for
12 depressed affect. And again, the similar
13 relationship. That is, as the ACE score
14 increases, so does the prevalence of depressed
15 affect for each birth cohort. Next slide. And
16 the same relationship for attempting suicide.
17 Next slide.
18 I wasn't able to present all the

19 findings from our study. I believe there is a
20 list of our publications, but we found that
21 Adverse Childhood Experiences increased the risk
22 of multiple public health problems that are

1 priority. Current smoking, male involvement in
2 teen pregnancy were found to be associated with
3 Adverse Childhood Experiences.
4 STD, unintended pregnancy and adolescent
5 pregnancy, adult depression and obesity.
6 Next slide.
7 So in summary, we find that Adverse
8 Childhood Experiences are common and they're
9 highly interrelated. We found consistent strong
10 graded relationships between the ACE score and
11 adolescent risk behavior and adult risk behavior.
12 And we find that these graded relationships are
13 consistent despite when individuals were born and
14 the social and secular trends that may have
15 affected these behaviors and outcomes.
16 And, as I mentioned, ACEs increase
17 numerous behaviors and outcomes that are public
18 health priorities. Next slide.
19 The direction, at least of the ACE group
20 right now, is to continue working on examining the
21 data and working to record primary prevention,
22 that is, prevention of child maltreatment. And

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also secondary prevention, identifying receiving children in adolescence who have been exposed to abuse and neglect and traumatic experiences.

Next slide.

But also now our work has been more collaborative as we are moving to work with the DoD on this issue. However, we understand that because the DoD has a different population with a lot of issues involved with asking types of sensitive questions, that we need to work with you and understand how feasible it is to ask these types of questions amongst the military population. And, you know, subsequently develop ACE mechanisms for the DoD population.

Thank you.

DR. POLAND: Thank you, Mrs. Dube, that was a very nice briefing. You've got some extraordinarily interesting data. And I know you can't present everything, but have you looked at all, and I'm sure you probably have, at any major findings that would be based either on race, education level, gender? I mean separating out

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the data that way.

MS. DUBE: We haven't separated the data out that way. I should have said when I presented the graph with the prevalence, they were representative of the progressive models where we adjusted for education and race. But, you know, future studies could break it apart if this is something that would be -- you know, is interested in looking at. But in general, with respect to the demographics, they're included in the models and there aren't --

DR. POLAND: What about in the quotation of mortality, particularly early mortality.

MS. DUBE: I think we're in the phase of the prospective arm and we will be doing a national death index to look at mortality. This is a huge undertaking project. And we are going to be looking at that, probably next year.

DR. POLAND: Okay. Wayne.

DR. LEDNAR: Just a follow-up to Dr. Poland's question. Where in an interrologic sense, for cause, the logistic progression might

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not have identified differences among either

2 socio-economic or race ethnic groups, the question
3 still remains primarily is: If we were to do
4 something about it, if we were to intervene in the
5 cultural competency sense, it would seem as though
6 the intervention would not be a one-size fits all.
7 And I wonder if you have any data that suggests,
8 given these observations, what one might do in in
9 a cultural competency context.
10 MS. DUBE: Understood. Well, we don't
11 have data right now on intervention, per se, which
12 is this epidemiological study using the cohorts.
13 But your question about cultural competency is a
14 very important one. And, you know, right now one
15 of the questions is -- that we have in our group
16 is, well, once we've screened for it, what do you
17 do? You know, what can we do about it? I think a
18 lot more exploration as far as physicians'
19 attitudes about asking about these questions, you
20 know, for DoD the feasibility of asking them that
21 in the military population. A lot more
22 exploration and research needs to be done as yet.

1 And I don't have a clear cut answer for you on
2 that.
3 DR. HALPERIN: Bill Halperin. Clearly
4 some very interesting and powerful associations,

5 and clearly, we'd all be interested in primary
6 prevention of these events in children. But my
7 suspicion that will -- we're interested here is in
8 their predicted value to figure out who should be
9 enrolled, if you will, in the military versus who
10 should be screened out. And so the question gets
11 to be predicted value, both positive and negative,
12 based on these associations at the various ACE
13 scores.
14 I'd be a little worried at the beginning
15 because you seemed to show an association. Very
16 few people have an ACE score of zero. As the ACE
17 scores mount, 1, 2, 3, 4, the risk goes higher and
18 higher and higher, suggesting that possibly like
19 prostate cancer, there is no score above which and
20 below which there is risk or isn't risk, but
21 rather a continuum. That would present real
22 difficulties I would imagine to the military in

1 rejecting five percent, 20 percent, 50 percent, 70
2 percent of potential recruits.
3 So what is the predicted value, positive
4 and negative here, of the scores?
5 MS. DUBE: I'm sorry, can you repeat
6 your question, Bill. I'm sorry?
7 DR. HALPERIN: Sure. What's the
8 predicted value, let's say of a score of 0, 1, 2,

9 3, 4, 5, 7, compared to something lower as far as
10 what percent of positives would really have a
11 subsequent problem versus would be false positives
12 and would be just fine soldiers. And the opposite
13 of that, what's the predicted value negative of
14 those who are felt to have a low enough score to
15 be admitted, how many would --
16 MS. DUBE: I'm not sure I really
17 understand your question. I think -- especially
18 as it applies to the military, because it sounds
19 like your question is regarding screening out
20 military personnel.
21 DR. POLAND: Actually, let me ask
22 Colonel Ruscio to make a comment on that, if you

1 would.
2 COL RUSCIO: Yes, sir, thank you.
3 Actually the goal would not necessarily be used
4 for screening in or screening out. But as a
5 survey instrument once they're military members to
6 use to identify intervention opportunities for
7 these individuals. So not as a screening tool.
8 DR. POLAND: Sort of a secondary
9 prevention.
10 COL RUSCIO: Correct, yes.
11 DR. POLAND: Yeah.

12 MS. DUBE: And I'd like to go back to
13 your question in terms of intervention. I think
14 it just came to me. One of the things that, you
15 know, definitely speaks out of this data is while
16 I know we try to use primary prevention and that's
17 what we're -- our goal is primary prevention of
18 child maltreatment, you know, we found that maybe
19 secondary treatment that leads to the primary
20 prevention. And what I mean is, for example,
21 parents who are abusing substances or parents with
22 mental illness, getting them the treatment they

1 need. While that is cursory treatment, maybe for
2 the primary prevention of treatment. I don't know
3 if you follow that train of logic, but that is --
4 DR. POLAND: Dr. Sherwin?
5 DR. SHERWIN: Very nice presentation.
6 But I am made a little nervous on your summary
7 slide. It said exposure to ACEs increases
8 numerous behaviors and outcomes for the public
9 health priorities. "Increases" is a causal word
10 and admitting Dr. Halperin's point that the
11 primary interest here is prediction, I think
12 that's a leap of faith which is to get one to
13 provide the data and could probably only be shown
14 by intervention studies, which would be very
15 difficult. But some, at least, of these behaviors

16 have a genetic component which would be a
17 confounder as far as the association is concerned.
18 MS. DUBE: Well, that is a good -- yes,
19 of course there are genetic and environmental
20 interactions. We are not able to capture the
21 genetic interactions except by certain statistical
22 analysis such as, for instance, stratifying by

1 parental alcohol abuse. Which there is a
2 substantial amount of literature on that alcohol
3 does have a genetic component. But in our data,
4 we're able to show independence of parental
5 alcoholism and ACEs will increase the risk for
6 these outcomes.
7 DR. SHERWIN: I'm still nervous about
8 that --
9 MS. DUBE: No, I understand.
10 DR. POLAND: I think the point being you
11 might have been more reassured by seeing an
12 associated risk --
13 DR. SHERWIN: Yes.
14 DR. POLAND: Or may be associated with.
15 MS. DUBE: Actually, you're talking
16 about the language --
17 DR. SHERWIN: I think the HRC experience
18 has taught us lessons about drawing causal

19 inferences from observational data.
20 MAJ KILIAN: Major Kilian from Joint
21 Staff. One thing about the intimate partner
22 violence aspect. That question can lead me to the

1 initiation of the Lautenberg Amendment in
2 Servicemembers, which would -- it's not breaking
3 ways the Army and Marine Corps are having
4 significant recruiting issues and the Lautenberg
5 Amendment prohibits Servicemembers who have any
6 history of family violence as an adult from having
7 a weapon. Ironically is a positive thing if
8 you're actually being shot out, being able to
9 initiate violence. There's a little irony in that
10 I understand.
11 But, you know, if we look at five
12 percent of the women having had their weapons
13 removed from their hands and four and a half
14 percent of the men, that's a pretty significant
15 number these days with all that's going on.
16 MS. DUBE: The questions regarding risk
17 for IPV is merely to screen to see if these
18 individuals were exposed to intimate partner
19 violence. Again, I -- you know, I'm not a -- I'm
20 not completely familiar with the military and I
21 understand a lot of these questions are sensitive
22 and this whole project is challenging just in and

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of itself because of the topic area. And a lot of the facts that we're bringing up I'm sure are issues that need to be addressed fully and explored. Because the whole -- the weapon carrying and -- I can say that the data shows that, you know, Adverse Childhood Experiences are common.

They're common in the study population. And there is reason to believe that it's applicable in other populations, including the military and other civilian populations. But I think one of the things that we're going to try to do is figure out how ACEs could potentially be measured. And if it's accessible in the military population.

I think it's -- I understand that -- I'm learning more and more how sensitive it is and how challenging it may be. But I think we -- you know, you start with ground 1, ground zero, and figure out if it's feasible and get, you know, the perceptions and attitudes from military personnel on being asked these types of questions. You need

those related to intimate partner violence because it may raise the issue about, well, what if I'm carrying a weapon or issues like that. Your question somewhat -- I can't give you a specific answer on that.

COL GIBSON: This is Colonel Gibson, let me jump in. I think that Dr. Engel and Dr. Ryan will expound upon your point. So that's good.

DR. POLAND: Dr. Lednar?

DR. LEDNAR: I think what would be helpful going forward for this group in thinking what the potential value of adding this to information gathered at the lab or somewhere else, would be to look at how much the history of childhood exposure adds to information collected concurrently in going forward. And I don't know if it's possible in your data to look at that.

So rather than controlling just for race and socio-economic status, but controlling for current -- what's known about current behaviors. Is there additional added value of knowing about this past childhood exposure that would improve

your ability to predict who's at risk? Because,

2 obviously, by the time someone is 18 and enrolled
3 in the military, you have a sense of their risk
4 pattern and trajectory. Some of which has been
5 shaped by this childhood stuff, which we can't
6 intervene.
7 So if we're thinking about our real goal
8 is to identify some high risk groups who might be
9 candidates for some kind of secondary
10 intervention, the question is can we identify
11 those with what information we already have about
12 their risk behaviors at age 18? And it may be
13 that we don't get reliable information on that
14 because folks don't really want to admit alcohol
15 problems or whatever when they're trying to get
16 into the military. And maybe this is a way of
17 kind of getting a more reliable predictor.
18 But it may also be that we can already
19 get a pretty good handle on who's at risk without
20 this. And I think that's just a question for
21 what's the added value of adding more information
22 about this and then what are the trade-offs in

1 terms of the sensitivities of collecting it? So
2 it's obviously a very interesting data in the
3 associations you measure. But in terms of
4 thinking for this purposes, the value and adding

5 it to what's currently collected. If your data
6 can look at that. Can they?
7 In the study, did they collect
8 information on -- because I think actually the
9 average age -- they were really in sort of late
10 middle age, right?
11 MS. DUBE: Correct.
12 DR. LEDNAR: Okay, so I guess you
13 wouldn't be able to look at -- you wouldn't have
14 information on what they were -- what their risk
15 behaviors were earlier in life?
16 MS. DUBE: Well, yes, we did look at
17 their adolescent risk behaviors, which is a -- I
18 only showed a few of the outcomes we looked at,
19 which was illicit drug use and smoking and these
20 types of things. We have looked at alcohol use,
21 early initiation of alcohol and early sexual
22 behavior, sexual intercourse.

1 In terms of your question, if I'm
2 understanding it correctly, as I say, we're just
3 now getting into the prospective arm of the study.
4 Because we do have enough time to look at
5 incidents now. And without going into too much
6 detail because we are in the preparing the -- we
7 have looked at COPD, the relationship between ACEs
8 and COPD. Controlling the multiple factors, you

9 know, risk factors that are -- have been shown to
10 be related to COPD, and we're finding that even
11 controlling variables like early initiation of
12 smoking, current smoking, ACEs have an impact on
13 COPD incidents.
14 So, you know, I think in terms of your
15 question, we do have data that looks at the
16 participants' behaviors in adolescence and in
17 adulthood. We can -- you know, we can look at the
18 relationship between ACEs and their current health
19 status. Is that basically --
20 DR.LEDNAR: Well, actually, the
21 prospective arm, what are the age of the people in
22 the prospective arm?

1 MS. DUBE: The prospective arm is the
2 same cohort --
3 DR. LEDNAR: I see.
4 MS. DUBE: So 56, 57.
5 DR. LEDNAR: Well, I guess just to
6 close, I think if we wanted to think of piloting
7 this in the military, I think what we would want
8 to look at is collecting the current information
9 we collect in prospective recruits and then
10 collecting this additional information and then
11 weeding out what the added value is of the ACE

12 elements relative to what you could predict from
13 the information that's already collected. So it's
14 something we probably couldn't answer except by
15 some kind of pilot.
16 DR. MORRIS: That's a good point, David.
17 You know, it sounds like the answers to your
18 question surely are going to come from this
19 prospective study. Are there younger folks in the
20 Kaiser cohort? I mean you said the average age is
21 56, but what's the -- by sort of decade. The
22 prospective arm.

1 MS. DUBE: The prospective arm, we
2 have -- I'll have to get back to you on that.
3 Because we have -- we do have a certain percent as
4 I recall, but it isn't a high percent. And so I
5 think pretty much -- the ACE structure is pretty
6 much the same for each cohort. Obviously, there
7 is -- I'll have to get back to you on that one.
8 DR. MORRIS: Because I just wondered
9 whether there could be some sort of exploratory
10 assessment of that in the younger folks. And it's
11 an impressive body of work. Among other things,
12 we were happy in our journal to publish one of the
13 first -- Journal of Preventive Medicine, to
14 publish one of the first papers from that.
15 It is provocative, but again, it's all

16 associated -- and I'm concerned about a couple
17 things. One is the two-thirds response rate,
18 effectively. And then also what's really, really
19 important are the validity, not the reliability
20 but the actual validity. And I'm wondering what
21 work is being done right now to look at
22 non-respondents and then to also tease out issues

1 with respect to the validity of the questions that
2 were asked.
3 MS. DUBE: Are you talking about even
4 the ACE studies?
5 DR. MORRIS: Yes. Either at the core
6 location or are there other spinoff studies being
7 spawned because that may well be an issue that we
8 would need to address here if we really talk about
9 applying these questions in our population,
10 presumably one would have a hundred percent
11 response rates and we would end up getting maybe a
12 very different picture. Although, again, maybe
13 Meg would end up commenting on this or elsewhere,
14 but I'm just wondering about the underlying
15 validity of the answers.
16 MS. DUBE: Obviously we will not be able
17 to capture the validity of the questions. At the
18 test, we test reliability which meant to look at

19 the consistency over time since we did have all
20 the information.
21 With respect to validity, there are have
22 been issues around -- most cases of child abuse

1 are not substantiated and they're substantiated
2 once they get to the -- you know, social worker
3 and up the chain. But it is -- because a lot of
4 our studies are retrospective in nature, we do
5 rely on recall and remembering things in
6 childhood.
7 As far as spinoffs from this -- we did
8 look in the first wave, we did look at
9 non-respondent versus respondent. We did have
10 that information. And we found that there were
11 virtually no differences. The non-respondents did
12 tend to be slightly younger. But it was
13 particularly significant. And with respect
14 to -- with respect to spinoffs from the study, I'm
15 not aware. There are some studies that have
16 designs that look at substantiating cases and then
17 follow them up. But they have some methodological
18 issues as well with their design.
19 COL UNDERWOOD: Thank you for the
20 presentation. Paula Underwood. My question has
21 to do with we know that in sociopathic behavior
22 there are some associations with bed wetting,

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1 starting fires and abusing animals. Did you ask
2 any sort of questions like this with regard to
3 adolescent behavior?
4 MS. DUBE: No, no, and that's a very
5 good point. I didn't -- we didn't ask any -- we
6 didn't ask any questions about those types of
7 behaviors in adolescence. The study was meant to
8 capture really those behaviors that are
9 significantly related to health.
10 DR. PARKINSON: Mike Parkinson. Thanks
11 again. I've got a couple of -- just a high level
12 question and a comment. One is, what has Kaiser
13 done with this information? You know, 20,000
14 people, ten years, and when they identified these,
15 what has been their follow-ups or their
16 interventions or their plan?
17 MS. DUBE: Kaiser used this information
18 to inform their health appraisal center as part of
19 their Department of Preventive Medicine and to
20 help the staff there better address the issues.
21 They are still implementing the HAQ which has, you
22 know, specific questions about early childhood

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1 experiences. As well as training or educating,
2 rather, the clinicians to work in the clinic to
3 better address these questions on orientations.
4 And once a patient has been, you know,
5 identified as having achieved this exposure to
6 violence and abuse, they are referred for -- they
7 have a Positive Choice Wellness Center.
8 They're referred there for either
9 counseling -- many of the patients who are found
10 to have other health related problems or
11 behavioral health problems, such as obesity,
12 alcohol use, they're referring to -- and smoking,
13 they have smoking cessation programs at the
14 Positive Choice Wellness Center. And the Positive
15 Choice Wellness Center takes a different approach
16 to risk abatement. As it is directed to their
17 emotional health, not just about educating them,
18 it's really about addressing the early
19 childhood --
20 DR. PARKINSON: So in hearing what
21 you've said, is that there is somewhere a clinical
22 criteria or cut point I imagine established for

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1 somebody with one versus four versus seven ACE --

2 I mean if there's any documentation or any
3 expression of what that -- in other words, we've
4 got a screening tool, we've got an aggregate
5 score, we've got some type of -- it sounds like
6 dichotomous reaction to -- I think it would be
7 very useful for us to see --
8 MS. DUBE: Understood.
9 DR. PARKINSON: How their
10 forward-thinking, prevention, health-oriented HMO
11 has used this information.
12 MS. DUBE: No, they aren't using as a
13 score per se. Maybe that was the question
14 earlier. They have some questions on this HAQ and
15 the clinicians also may interview the patient.
16 Especially if the patient presents with particular
17 problems, being overweight, smoking. They may
18 be --
19 DR. PARKINSON: In the context of a
20 traditional health risk appraisal and this is kind
21 of in there. Okay, the second issue is, I
22 couldn't get any record calculations and I don't

1 trust my numbers any more as a epidemiologist, but
2 it seems to me that there is something like an
3 alcohol attributable ACE factor in here that would
4 be very useful to know. Of the seven domains that

5 you've got, clearly both the test, re-test
6 reliability, I agree with Kevin, is the validity
7 is the big issue, it's the 8,000 pound gorilla in
8 the room.
9 But the highest Kappas, if it's agreed
10 that Kappa is important at all, are around that,
11 yeah, I really did have a problem drinker, my dad
12 really was an alcoholic. And if that tracks
13 across most of the important clinical other
14 things, is there a simple question around parental
15 alcohol use or abuse either with one parent or two
16 parents. Because there you see a relative risk of
17 five to six fold for some of these behaviors. It
18 might be useful for us to think about an abstract
19 of a very simple one or two questions that gets to
20 most of what this suggests is useful.
21 Now, we'll leave aside whether or not
22 you should ever screen if you don't know an

1 effective intervention, but that's another whole
2 thing. But then all through in this body of data
3 something could be very useful in terms of a
4 parental alcohol abuse thing that might be useful,
5 and you could probably express it as an alcohol
6 question attributable to something or other.
7 And then finally, just a comment. And,
8 you know, those two methodologic issues aside, is

9 do you have an effective intervention which is E,
10 and the second is, you know, which of all of this
11 is attributable to one behavior might be useful.
12 Now, the military culture and I think
13 back to, you know, as much as we talk about
14 population and data, we are anecdotal driven
15 creatures and I think back to that scene with
16 Richard Gere in an Officer and a Gentleman when
17 the NCO is pointing a finger in his chest and
18 says, Yeah, so your mom is a drunk and your dad's
19 got problems, get over it, you know, you're here
20 to be -- it's a story the military can remake a
21 lot.
22 And while I'm quite -- I would believe

1 that the prevalence of these behaviors is very
2 high and much higher than this population. Don't
3 we try and say, and when we go to recruit training
4 and it wasn't too long ago we were just in
5 Lackland and San Antonio, these kids remake
6 themselves. And a lot of these things -- they're
7 living their lives through the eyes of an NCO who
8 says, no, these behaviors are not compatible with
9 military fitness and performance and weapon
10 systems.
11 So that's just another piece. We have

12 to look at it through the eye of starting over,
13 which is what a lot of people come to the military
14 for. They come out of these varied backgrounds
15 which we know are rife in our society,
16 unfortunately. And so we have to just put that
17 into the, so what, get over it. It's On Golden
18 Pond, you know, Henry Fonda, you didn't love me
19 and that's okay. And I'm not a hard, fill in the
20 blank, type. But, you know, that's kind of where
21 we're going here a little bit. As opposed to the
22 other end -- and by the way, I would like to just

1 dispel in this audience, because actually military
2 suicide rates are lower than the civilian sector,
3 both age, demographically, SES adjusted, because
4 of all the programs that we have.
5 So we can't really go into this saying
6 that it's really clearly for the suicide issue
7 because it's not been shown to be that in military
8 cohorts. So it -- those are just my two questions
9 and a comment. If we had information on the other
10 two questions, it would be very useful I think to
11 better look at this issue.
12 MS. DUBE: You brought a lot of
13 interesting points there. I don't have to touch
14 on the starting over with ACE backgrounds. See,
15 that's something I'm -- I just conceptually did

16 not know that more recruits come to be able to
17 leave their ACE backgrounds. I mean in terms of
18 if you just think of intervention, you know, at
19 that point maybe -- I just don't know enough about
20 the military to know what's do-able and what's
21 not. But, you know, it provides maybe somehow a
22 safer environment for them. I mean it's safer,

1 but then I think about how -- where leaders are --
2 you know, it's hard for me to -- I could tell you
3 how to get into the --
4 DR. PARKINSON: Please don't take it way
5 back to your colleagues at Atlanta that the role
6 of the military is taking kids out of their ACE
7 backgrounds. I mean, I --
8 MS. DUBE: No, no, no, no.
9 DR. PARKINSON: I think we know that,
10 you know, that the -- to me one of the most -- you
11 know, the role models for ACE challenged people is
12 a guy named Bill Clinton, you know.
13 And as we get into this a little bit,
14 it's like, okay, how do you take these types of
15 things in terms of a culture that has to say it's
16 about you, it's about your performance and we're
17 going to support you to do that going forward;
18 rather than, you know, those things. And it's

19 just a balance, that's all. Something that we
20 have to struggle with.
21 DR. POLAND: One more comment here and
22 then we have to take a break.

1 COL GIBSON: We're putting Shanta in a
2 bit of a precarious position here. We've got Meg
3 Ryan and Chuck Engel coming up after her that will
4 really be able to get into the military
5 implications of this, they have a much broader
6 background in the military component. So thank
7 you very much. I did have one very, very small
8 question. You showed in your ACE no group, you
9 showed a suicide attempt rate prevalence of about
10 2 percent. How does that compare with other
11 instruments, other measurements of suicide
12 attempts in the general population for these age
13 groups?
14 MS. DUBE: Okay. Are you talking about
15 in the birth cohort?
16 COL GIBSON: Actually it was one of your
17 bigger slides here. It said -- I just was looking
18 at the ACE note. It would -- your slides aren't
19 numbered, so I can't tell, but it's a childhood
20 exposure to abuse, prevalence of suicide attempts
21 and ACE yes, ACE no. And in your ACE no group,
22 your prevalence of suicide attempts is about --

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MS. DUBE: Oh,I see, I see. Right.

COL GIBSON: How does that compare with other studies of suicide attempt prevalence in the civilian population?

MS. DUBE: It does compare to other populations in the study that have looked at abuse. And a lot of the other studies that have looked at the relationship between abuse and suicide, have focused on one or two forms of abuse. And I think one of the new things about this study is we look at a broad range of topics. But in general, we look at physical or sexual abuse, our prevalence are comparable to theirs, to those populations --

COL GIBSON: Well, it just points out, again, that the rates of suicide, as Dr. Parkinson mentioned, suicide attempts in the military are even lower --

MS. DUBE: Are lower, yeah. That's great to hear.

DR. POLAND: Okay, thank you. I've got 10:00. Let's take a 15-minute break and we'll

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1 reconvene at 10:15.
2 (Recess)
3 DR. POLAND: Our next speaker is
4 Commander Ryan, who is familiar, I think, to
5 everybody on the board. Commander Ryan is the
6 director of the DOD Deployment Health Research
7 Center in San Diego, California.
8 As part of the Center's ongoing
9 research, particularly as related to the Recruit
10 Assessment Program or you have heard it referred
11 to as the RAP, Commander Ryan has experience
12 administering ACE-like questions to DOD military
13 service members. The slides for the presentation
14 I think have been handed out and everybody has
15 those.
16 Welcome, Dr. Ryan.
17 CDR RYAN: Thank you, sir. It's always
18 a privilege to present to the Armed Forces
19 Epidemiological Board.
20 I do want to first credit my
21 co-presenters, if you will, co-authors, Dr. Young
22 and Christina Spooner, who worked with me and

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1 helped me put together this kind of challenging

2 presentation.
3 I want to express first that I have a
4 certain level of discomfort with the presentation
5 because I'm presenting other people's work and a
6 lot of work has been done on adverse childhood
7 experiences in the military, actually more than I
8 even knew when I started to put this together.
9 So I am presenting other people's work
10 and I can't do it justice. I felt for Ms. Dube,
11 who was trying to condense a large body of work
12 into a presentation. I am going to actually try
13 to present five large bodies of work into an even
14 shorter presentation, so I'm really not going to
15 do it justice to.
16 This is not just an acknowledge slide,
17 but also sort of a contents slide. So please bear
18 with me because it does get confusing because
19 there are five different things that I would like
20 to present.
21 One was a 1991 study of Air Force
22 recruits, so it's pretty far back there, from some

1 folks out of San Francisco. Then in 1995, the
2 Army did a study which was not in recruits and
3 people here may be familiar with it because the
4 lead author, Dr. Rosen, was at Walter Reed,

5 actually at WRAIR and now with the Department of
6 Justice. She did an impressive study, not with
7 recruits but with some active duty people
8 mid-career.
9 Then there's a body of work that was
10 initiated at Naval Health Research Center in
11 conjunction with Northern Illinois University,
12 funded by the Navy's Familiar Advocacy Program.
13 The Familiar Advocacy Program is a program that
14 deals with family dysfunction in the military.
15 That was initiated in 1996.
16 Then there is the Navy SHIP studies,
17 SHIP being Sailors' Health Inventory Project, sort
18 of the prototype to RAP. We have talked about
19 that with the Board before. That's an ongoing
20 tool, not a screening tool, just a baseline health
21 data instrument being given to all recruits at
22 Great Lakes since late 1995. It was worked on,

1 obviously, at Great Lakes, but also data analyzed
2 by Naval Health Research Center by my colleagues
3 there.
4 Then finally, the RAP or Recruit
5 Assessment Program work that Dr. Sylvia Young
6 leads at Naval Health Research Center, that's a
7 body of data that's just on Marine recruits in San
8 Diego. But, of course, RAP is transitioning to

9 DOD-wise use and it will be called something
10 different. It will be called HART-A.
11 But this pilot work is RAP since 2001.
12 Now, I think that I'm asked to present
13 because I have some reasonable close involvement
14 with the last two bodies of work and some very
15 peripheral involvement with this study. This is
16 just history to me, so again, I can't do justice
17 to it all. I guess that's my explanation for why
18 I was asked to present and also because maybe it
19 was hard to get somebody to present this
20 challenging work. Next slide.
21 I'm going to try to answer these couple
22 of questions. Maybe the CDC and Ms. Dube will

1 forgive us for stealing the acronym ACE. ACE
2 probably pertains particularly to that study in
3 Kaiser Permanente, but I'm going to take the
4 liberty to use it here for adverse childhood
5 experiences.
6 So what's been done with ACE in the
7 military? The studies, the methods, instruments,
8 I will try to give you a view of in those five
9 bodies of work. It is really quite different.
10 Then, in a general sense, what's been
11 found in the prevalence of ACE-related histories?

12 So, that's really just the basic, how much of a
13 problem do we have? Then this I cannot do justice
14 to here, but I don't think that we fully explored
15 it. What outcomes have been evaluated in
16 relationship to ACE histories. So especially
17 things like military performance and attrition,
18 and I will show you briefly what's been done, but
19 again, I won't be able to give you the whole
20 picture, but I do have more information I can give
21 you in a sidebar if we need to.
22 This is the first study that I'm going

1 to talk about. It is 1991. It is truly a study
2 of Air Force recruits, almost 29,000 recruits at
3 Lakeland Air Force Base, 1991-1992. It's a study
4 that leveraged an existing tool. The tool was
5 called the history opinion inventory. Those in
6 the military may know that this evolved into the
7 NAFMET and the BEST program.
8 This is truly not a consent-driven
9 instrument; this was given to all recruits. What
10 it was supposed to do is identify the "High risk
11 individuals who may have difficulty adapting to
12 the military" and referred them to further
13 evaluation.
14 So there were psychologists in basic
15 training who used the data from the HOI and its

16 evolution to BEST and NAFMET and tried to help
17 kids who seemed to have problems. The fifty-item
18 instrument had one ACE-related question which was
19 a yes/no question "I believe I have been sexually
20 abused." So it's not specific to childhood and it
21 doesn't give you any LeiKhard scale and it
22 doesn't put it in the context of other childhood

1 events, just that one question.
2 So these researchers said, well, what
3 can we do with that information? What did they
4 find? They found that 1.5 percent of men and 15
5 percent of women responded yes to that question.
6 Then they linked that to attrition. So overall
7 attrition in basic training at the time, and
8 that's interesting, was five percent.
9 It has been different since that time.
10 This is the '91-'92 timeframe. Attrition from
11 basic training in the Air Force, that is in the
12 first six weeks of service in the Air Force, and
13 that attrition was higher in the men who reported
14 being victims of sexual abuse and higher in women
15 who reported being victims of sexual abuse. It
16 was actually over three-fold higher in male
17 victims.
18 Interestingly, these researchers

19 connected it to other first year outcomes. So
20 among the recruits who did not attrite at basic
21 training, how did they do later? They said those
22 who endorsed that question, history of sexual

1 abuse and completed basic training, performed
2 similarly.
3 There were not statistically significant
4 differences in how they performed with regard to
5 graduation rate from advanced schools, eligibility
6 for promotion, drug and substance abuse reports in
7 the military and misconduct reports.
8 So that's just the first year in the
9 military, just Air Force, just that single
10 question on sexual abuse. Okay, that was the
11 first one.
12 The second one I'm going to talk about
13 is this 1995 work. This is Dr. Rosen's work out
14 of WRAIR. She studied Army personnel who were
15 either combat support or service support in three
16 major bases. It's not a large group, 1300, almost
17 1400 people that she surveyed. This was given
18 with consent and there's a response issue because
19 only one-third participated. She only had a
20 one-third response rate.
21 The question was focused on unit
22 cohesion and soldier well-being in gender-mixed

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1 units. Perhaps that was the issue at the time.
2 There were several questions on psychological
3 symptoms and ACE. Next.
4 So instead of the single question, "Were
5 you ever sexually abused?" there is a lot more
6 detail now. So there are 30 questions, 30 items
7 in this childhood trauma questionnaire which is
8 broken down in a little bit of the sample there to
9 show you they are really getting at the specific
10 questions there. There are 30 items.
11 Then there were separate questions on
12 childhood physical abuse that didn't ask for an
13 endorsement of those things, but asked about
14 injuries, in a sense more objective evidence of
15 childhood physical abuse.
16 Then there were questions on childhood
17 sexual abuse that asked for experiences before age
18 18 that might have included intercourse, touching,
19 grabbing, kissing, exhibiting body parts, taking
20 nude photographs, oral sex or sodomy. So we are
21 getting at the very detailed histories in this set
22 of instruments that were given to these, again,

about 1400 Army personnel at mid-career.

So what did they find? Much higher prevalence of problems, almost two-thirds of women and 56 percent of men reported a history of any form of abuse in childhood. CPA, I'm using an acronym now, that's childhood physical abuse, 50 percent of men and about 48 percent of women reported physical abuse.

For sexual abuse, it was 17 percent of men and 51 percent of women. But again, it depends how you ask it. That's the overall using any of the items on their instruments. It would get 51 percent of women, but it's 28 percent of women on the childhood trauma questionnaire, 49 percent of women on the childhood sexual abuse questions, and so together, 51 percent using any criteria for sexual abuse.

So it depends how you define it within those question realms. This is the concomitant history of both physical abuse, 11 percent of men and about one-third of women.

So again, trying to keep a little bit of

this in context, this is not Air Force recruits;

2 these are Army mid-career. But also the questions
3 are being asked in a much different way. That's
4 why the prevalence numbers are so different than
5 the original slide.
6 What did they look at in terms of
7 outcomes? Again, I'm not giving all the odds
8 ratios, but I'll show you some of this work.
9 On the same instrument they are asking
10 about psychological symptoms. Emotional neglect
11 was associated with obsessive symptoms. Childhood
12 physical abuse was associated with somatization
13 and phobic anxiety. Dr. Rosen describes
14 negative gender-related personality
15 characteristics like negative masculinity, she
16 calls it, and negative femininity; negative
17 masculinity being aggressive traits and negative
18 femininity being subordination traits.
19 Childhood physical abuse was associated
20 with negative masculinity and childhood sexual
21 abuse associated with negative femininity,
22 actually, both in men and women.

1 Adaptation to military life, perhaps the
2 most interesting thing for the military is that
3 those who reported the history of childhood
4 emotional neglect also reported on the instrument

5 lower unit cohesion and lower confidence in
6 leaders.
7 So again, just because it is the same
8 survey instrument doesn't mean they are washing
9 out or anything. It's just what they are
10 reporting on that instrument.
11 Then this is also very work-related to
12 the military, both sexual -- and she has a
13 definition for physical/emotional abuse which is
14 slightly different than either physical or
15 emotion, but again that's getting into the details
16 that are hard to explain all here.
17 But those kinds of abuse during
18 childhood were associated with the unwanted sexual
19 experiences and sexual harassment in the
20 workplace, again by self report on the same
21 instrument.
22 These are the references for this body

1 of work, again 1996 Army Mid-Career folks with a
2 one-third response to a survey. This is the third
3 set of information I'll give you.
4 Again, it's a study. I'm calling it the
5 Navy Family Advocacy Study because that was the
6 sponsor of it. But this was Dr. Merrill and
7 Dr. Milner, Merrill at NHRC and Dr. Milner at
8 Northern Illinois University, working at Great

9 Lakes in '96-'97. They surveyed 1100 recruits,
10 almost half men, half women. That's over-sampling
11 the women, of course, because women only represent
12 about 15 percent of the recruit population.
13 So they selected out, tried to get more
14 women. They asked particular units to respond. I
15 don't have a response rate to this, but I will
16 tell you that it was extremely high for the units
17 invited. So I think this response rate approaches
18 80 to 90 percent for the invited units.
19 That's not all recruits training in that
20 period, there were just certain platoons invited
21 to participate. Actually, they are called
22 divisions at Great Lakes. They were invited to

1 participate.
2 Those who were invited, though, were
3 randomized to anonymous or confidential
4 conditions. Confidential folks provided their
5 Social Security numbers and anonymous people did
6 not. So among these half and half were anonymous
7 and confidential. The ones who were confidential
8 had the opportunity to get questionnaires six
9 months, one year and two years later. So it is
10 intended to be a prospective follow-up.
11 This set of instruments given was

12 extremely long. I told you about Dr. Rosen's set
13 that included 30 items and a CPQ and a bunch of
14 questions on child sexual abuse, a bunch of
15 questions on physical abuse. This was even
16 longer. This was three hours. There are 600
17 domains, but with a lot of sub-domains. I could
18 have brought you the sample instruments. They are
19 really quite weighty. Next, please.
20 It begins with some simple things like
21 self-defined abuse. "Do you think you were
22 physically abused, sexually abused or verbally

1 abused before you were 18?" We'll get back to the
2 self-defined because Dr. Merrill uses that as one
3 of the outcomes in contrast to what he calls
4 behaviorally defined.
5 But behaviorally defined physical abuse
6 used a much larger instrument. So its modified
7 conflict tactic scale, parent-child version, had
8 19 items on conflict resolution techniques used by
9 parents during your worst year of life before you
10 were 18.
11 It included questions that got at
12 physical abuse in a way that you didn't have to
13 define it as being physical abuse but just
14 describe what was going on in your family before
15 18.

16 Then childhood sexual abuse questions,
17 I'm giving you a sample here and they get quite
18 graphic. These researchers felt like they needed
19 to get quite detailed to really get at the issues.
20 But they are really a lengthy set of questions.
21 Here's the example: Before 18, did a
22 male or female family member have oral, anal or

1 vaginal intercourse with any amount of penetration
2 or insert a finger or object in your anus or
3 vagina or ever kiss you in a sexual way or touch
4 body in a sexual way or make you touch their
5 sexual parts, but you did not have oral, anal or
6 vaginal intercourse? This is given on a grid with
7 family members on one side and frequency on the
8 other side and it's really quite lengthy. The
9 questions go on and on.
10 Then the questions ask about non-family
11 members who may have been more than five years
12 older than you, than the respondent at the time.
13 I want to be respectful to Dr. Merrill's
14 work. I'm not trying to paint it as anything less
15 than the ambitious work that it was. But it
16 really was special. It is unique, given with
17 consent to this group of recruits at Great Lakes.
18 It is not something that has ever been proposed as

19 a screening tool by any means for recruits. So
20 this is really quite a lengthy instrument.
21 I would also tell you that this was done
22 in the early years when I was at Great Lakes, so I

1 actually remember it. I remember it only by
2 reputation because there was -- I'm being candid
3 with the Board -- but there was a feeling among
4 the drill instructors that women recruits that
5 went into the room and took the three-hour
6 instrument came out crying.
7 That was not perceived as a very
8 positive thing by drill instructors, to have their
9 female recruits go in as motivated young recruits
10 and come out in tears saying I want to go home,
11 I'm upset, I can't handle it, all these awful
12 things I've been reminded of or asked to describe
13 or something.
14 So it was really a very challenging
15 study that was done over this finite period of
16 time at Great Lakes. Going on, the sexual
17 experience survey, it assessed female
18 victimization or perpetration of sexual assault or
19 rape. A sample question, and I'm giving you this
20 sample question on purpose, there are sample
21 questions that are perhaps more obviously
22 aggressive behavior for rape, but I'm giving you

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this on purpose.

This is a question for men. Have you made a female have sexual intercourse, putting all or part of your penis in her vagina even if you didn't ejaculate or come by giving her alcohol or drugs or getting her high or drunk? It's a problematic question. It's quite a long question, as the instrument is, but it obviously may be the legal definition of rape, but we know that it could be interpreted differently. So this has been a critique and a challenge that this group has received, using this question as one of the definitions of rape, being a victim or perpetrator of rape.

You can imagine that endorsing this question might be different for different people in terms of this issue of made a female by giving her alcohol or drugs.

Respondents were asked to indicate their experiences in childhood, at least from 14 to 18 and then after their 18th birthday. Then another set of items on the same set of instruments

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included the child abuse potential inventory, 160 items. This is an instrument used in other studies in the civilian world.

It has a set of questions that get at risk for perpetrating child physical abuse. You can imagine that these are strongly associated with the risk factor inventory. Children should never disobey. Spanking that only bruises a child is okay. Sometimes I feel like I lose control of myself. This is an 160-item inventory for risk for being a perpetrator in the future of child abuse.

Then there are psychological questions, a trauma symptom inventory which is 100 items. People are asked to talk about symptoms and behaviors, including using sex to get love or attention within the past six months.

There is the Los Angeles symptom checklist with items and 3 subscales. It's an instrument to indicate PTSD. So with all that, three hours of instruments and 11,000 people, half men, half women, half confidential, half

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anonymous, what did they find?

2 Thirty-one to thirty-six percent
3 reported some self-defined -- remember that was
4 the simple set of questions -- self-defined
5 childhood abuse and it was more women than men.
6 There's a range here, this 41 to 46
7 percent and to 26 percent, that's the difference
8 between confidential and anonymous, with anonymous
9 always being the higher number. This range shows
10 you confidential 31 percent and anonymous 36
11 percent.
12 Then in terms of behaviorally-defined
13 abuse, any behaviorally-defined abuse, the
14 prevalence is much higher. So approaching
15 two-thirds of women, and then half of men have
16 seen past abuse. Now, remember, that's not too
17 different, actually, despite the weight of this
18 instrument. That's not too different than what
19 the Army found in their 1995 study. So we're
20 really kind of on the same prevalence numbers.
21 It's actually not very different than
22 what Kaiser found in overall prevalence of abuse.

1 Again, I presented that one question because this
2 is published material, but it has been critiqued
3 in terms of the definition of rape.
4 So using the behaviorally-defined sexual

5 assault measure, 27 percent of women would report
6 being victims of rape; just about the same number
7 having attempted rape and about half the women
8 having been victims of coercive sexual
9 experiences.
10 Again, 10 percent of men reported
11 committing rape. They were not asked did you
12 commit rape. They were asked questions like that
13 set that I showed you. Seven percent attempting
14 rape and 30 percent practicing some form of
15 coercive sexual behavior in the past.
16 Remember, this is all prior to
17 enlistment. This is an enlistment study that was
18 done. So in linking to outcomes, so to speak, but
19 we are not quite at outcomes, but just using the
20 same instrument, women who were child sexual abuse
21 victims had more lifetime sex partners. They were
22 five times more likely to report adult rape than

1 non-victims. Remember, because they asked the
2 question before age 18 and after age 18.
3 Male victims of both childhood physical
4 abuse and sexual abuse, they were victims of both,
5 were four to six times more likely to report that
6 positive answers that would make them perpetrators
7 of rape, again all prior to enlistment.
8 There was that potential for child abuse

9 inventory, the 160 items. So male and female
10 victims of childhood sexual abuse scored higher on
11 the child abuse potential inventory.
12 Interestingly, the researchers found
13 childhood sexual abuse as the only independent
14 predictor, not the physical abuse or the other
15 kinds of abuse, but just childhood sexual abuse.
16 Then attrition, the military outcome of
17 concern, of course. They looked at attrition,
18 Dr. Merrill's group did, in the first four years
19 of service. Now that's important to remember
20 because the feelings of whether we want attrition
21 or don't want attrition, we would all argue that
22 the earliest attrition in general is costly to the

1 military, although the Marines would argue that
2 they certainly need a certain amount of early
3 attrition and that it's not desirable, actually,
4 for Marines to all be in for 20 years, for sure.
5 So four years in an interesting
6 definition to use, but they did find that only the
7 childhood sexual abuse history was associated with
8 attrition in the first four years of service.
9 All the forms of childhood abuse were
10 associated with alcohol problems in the first four
11 years of service. These were referral to alcohol

12 services in the first four years. Then there's
13 this psychological adjustment. That's on the same
14 set of instruments that childhood sexual abuse in
15 women was associated with lower scores.
16 Finally, PTSD, using the same
17 instrument, 15 percent of respondents met the
18 criteria for PTSD upon entry and sexual abuse was
19 associated with PTSD in women whereas physical
20 abuse was associated with PTSD symptoms in men
21 upon enlistment and that the PTSD symptoms
22 themselves were associated with more health care

1 use in the first two years of service.
2 These are some selected references from
3 Dr. Merrill's work. It's a large body of work.
4 It's a challenging study in many ways. It was a
5 unique study in many ways. So I'm not sure that
6 it's completely applicable to what we are talking
7 about when we talk about general instruments that
8 might be used in the military. But I think it is
9 important history for us to have as we talk about
10 these issues.
11 SHIP is the Sailor's Health Inventory
12 Project or Program. That's, again, a precursor of
13 RAP, so I'm talking about something now entirely
14 different. But it is in the same setting, Navy
15 recruits at Great Lakes beginning in late 1995.

16 To date, more than 400,000 recruits have completed
17 a SHIP. It's a baseline health inventory that
18 they complete.
19 Did you ever have asthma, hepatitis,
20 allergy to penicillin, et cetera. So there's 191
21 items, most of them yes/no items, on this history
22 list that includes things like smoking and alcohol

1 as well.
2 There's one ACE-related item and it's
3 just a yes/no item. It's preceded at the top of a
4 column with, "Have you ever had" and then there's
5 a long laundry list of things. One of the laundry
6 list is history of physical, emotional or sexual
7 abuse. It's one question. So have you ever had a
8 history of physical, emotional or sexual abuse?
9 It's a little bit like the way the HOI
10 was with the Air Force recruits, there being that
11 single yes or no question. But it's a little
12 broader because it's asking more than sexual
13 abuse. So what do you find when you look at these
14 large numbers of recruits at Great Lakes? Three
15 percent overall, but there is a big difference,
16 male and female. So ten percent of women endorse
17 that question yes and two percent of men.
18 Remember, women make up 15 percent of the boot

19 camp. That's why it's three percent overall.
20 Those reporting abuse were also more
21 likely on the SHIP instrument to say that they are
22 smokers, and I'm citing the question as directly

1 as I can, "Problems with alcohol or drug use."
2 That's a single question. Depression, anxiety or
3 phobia?
4 Past attempted suicides? SHIP asks
5 about suicide, interestingly enough. It asks have
6 you ever attempted suicide, yes or no? The
7 prevalence of response to that question among the
8 people who were victims who also report the victim
9 question, that's not unlike what Kaiser found,
10 actually, in terms of the relative numbers of
11 people who report past attempted suicide among
12 victims.
13 Even though, again, that SHIP instrument
14 is not finding a large number of victims, it's
15 only finding ten percent women and two percent of
16 men who self-report themselves as victims, whereas
17 other instruments would report much higher
18 prevalence, the relative association with suicide
19 is actually about the same as what Kaiser would
20 find.
21 So what else was history of abuse
22 associated with? Certainly with first year

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attrition, this is Jerry Larson's work. He did some nice work with factor analysis on this as well as multi-variable models and an odds ratio of about 1.3, but especially attrition for behavioral or administrative problems as opposed to attrition for medical problems.

Attrition is a difficult thing to define because we know it's multi-factorial, but those are the odds ratios that he found that were significant.

This is actually a study that I worked on on career and family dysfunction. We linked the SHIP instrument to family advocacy reports in the first year of service.

Now, that's a pretty short period of time to have a family advocacy report. That means being reported to the folks who would intervene because there's some family dysfunction that's been recognized.

So we went to that as well as referrals to alcohol programs and did not find a multi-variable model, did not find an association

between history of abuse and referrals to the problem groups within the first year of service in Navy recruits. It's a pretty robust sample. The problem is it's a pretty short period to look for the outcome, to look just in the first year.

Finally, remember, Great Lakes. Great Lakes did that really problematic three-hour instrument that was a study. Then they had this ongoing work with the SHIP where you can actually compare the two instruments to some extent.

So if you used the FAP, which means the Family Advocacy Program, if you say that the study definitions for ACE problems are considered the better measures of victimization, if you are finding those high prevalence rates, how well would the SHIP question perform?

It would have a very low sensitivity, as you might imagine, 9 to 16 percent, but specificity pretty high. Specificity is probably not 100 percent because the SHIP question isn't specific to childhood, so that's probably one of the reasons why it's not even closer to 100

percent. But high specificity, low sensitivity

2 are picking up true ACE victims.
3 Here the lower sensitivity is associated
4 with the behaviorally defined FAP measures which
5 are the very high prevalence FAP measures, so, of
6 course, SHIP picks those up to a lesser degree.
7 Finally, the recruit assessment program
8 works. It's been done out in San Diego with the
9 Marine Corps recruit depot. So we are asked to
10 pilot test this instrument, to get baseline data
11 on all recruits, to take something like SHIP and
12 bring it to the next generation, for instance you
13 will, standardize the questions better, see if we
14 can make a instrument that was acceptable, brief
15 enough to be done in boot camp, acceptable
16 DOD-wide.
17 We started working on this in June 2001
18 and 66,000 male -- and it is important, this is
19 just men -- male Marines have taken the
20 instrument. The original RAP survey instrument
21 included ACE questions, seven questions that were
22 ACE-like with yes/no responses. The instrument

1 was revised in 2002 and it was revised actually
2 with input from Dr. Zander and Dr. Fellitti
3 from CDC.
4 So the questions currently on the RAP

5 instrument are much like the questions that Kaiser
6 studies asked that Mr. Bajes presented. So we
7 have some comparable data or data that you can at
8 least compare side by side here.
9 I'm going to show you data on the 48,600
10 recruits who completed the RAP instrument with
11 those expanded questions next. They were not
12 really very burdensome questions. It is not at
13 all the like the -- it's not as brief as a simple
14 yes/no low sensitivity question. But it's not a
15 three-hour instrument, either.
16 Six questions are specific to ACE
17 histories. There are one or two others that are
18 related, but six are very specific. This is the
19 definition of physical neglect in the current
20 instrument. These scores on the Leikard scale
21 would be the definition of physical neglect,
22 saying never to less than often true of "there was

1 someone to take care of you and protect you."
2 Emotional neglect was: "You felt
3 loved." This is all prefaced with: "Growing up
4 before you were 17 years old you felt." Again,
5 then there's six questions.
6 Then this is the definition of emotional
7 abuse: "How often did a parent or adult in your
8 home swear at, insult or put you down?" So the

9 "often" and "very often" is the definition there.
10 And then childhood physical abuse, this
11 is actually the same question that you just saw
12 presented in Ms. Dube's work and endorsing that
13 with the frequency of often or very often is the
14 definition of physical abuse.
15 I want to point out, too, there's five
16 percent mission throughout. I think that's
17 important. I left that on there on purpose
18 because the RAP instrument, although everybody
19 gets one, they don't have to endorse all the
20 questions. So there's five percent missing pretty
21 much throughout on this set of questions.
22 Being a witness to domestic violence as

1 opposed to a victim of is the same question, but
2 at each other in the home or not directed at the
3 child in the home. Again, it's supposed to be
4 bolded. I don't know if you can see it. That's
5 the endorsement rate of what would qualify as
6 being in that ACE setting.
7 Child sexual abuse is the single
8 question: "How often did an adult ever touch you
9 sexually or try to make you touch them sexually?"
10 It's a lot less graphic, maybe not so specific,
11 but it's a simpler question than we have perhaps

12 seen before. It's not quite as simple as the
13 question on HOI or SHIP, but anything above
14 "never" is a definition of childhood sexual abuse.
15 This overall percentage here among these
16 male Marines is consistent with some of the other
17 work that we have already seen for that prevalence
18 if you add those up. Again, I point out about the
19 five percent missing. That might be important.
20 So overall we find in RAP almost a third
21 of male Marine Corps recruits reported some
22 history of adverse childhood experiences as

1 defined here.
2 Then remember Ms. Dube's score of one
3 through seven. Here we've got six items, so one,
4 two, three and four are endorsing, having a
5 definition where you would endorse more than one
6 kind of ACE history is presented that way.
7 This is also similar to the Kaiser work,
8 to overall prevalence. So there's a lot of
9 overlap in having an ACE history.
10 Looking at just some simple unadjusted
11 analyses within the RAP survey, the ACE histories
12 are associated with we have a little question set
13 on "Why did you join the military" which is an
14 interesting set of questions.
15 They are more likely to endorse "wanting

16 to leave problems at home" and more likely to
17 anticipate a 20-year career in the military. It's
18 really consistent with what Dr. Parkinson said
19 about perhaps what's going on with recruits.
20 This may be obvious, too, "less likely
21 to have been raised in a two-parent home." Now,
22 we have some ongoing work, some protocols in

1 progress that, again, I can't do justice to.
2 Dr. Young has actually got a manuscript under
3 review now on ACE questions related to underage
4 problem alcohol use in male Marine Corps recruits.
5 That is a multi-variable in my office suggesting
6 for other factors and how that's related to
7 underage drinking.
8 We are beginning to look at ACE in
9 relation to where it is given. This is an
10 important methodological question as we talk about
11 the evolution of RAP because RAP is moving from
12 basic training to MEPS, to the Medical Entrance
13 Processing Stations, not to be a screening tool,
14 but to be done after people are accepted into the
15 military and are getting their baseline electronic
16 medical records set with a set of medical history
17 questions, if you will.
18 The HART-A is the name of the

19 instrument that will be given at MEPS. We will
20 assess how the questions perform, if you will,
21 between the basic training center and MEPS for
22 male Marines going to San Diego because we'll have

1 that test-retest, if you will, on a large number
2 over the next few months.
3 Finally, this is a protocol that we're
4 just getting into. I think it's an important one.
5 The history of ACE and subsequent PTSD in male
6 Marine Corps deployers who are returning from OIF
7 and OEF.
8 So we didn't ask for that to happen, but
9 we have deployed a large number of these Marines
10 who have taken the RAP questionnaire in San Diego
11 and we do know that there's a certain prevalence
12 of PTSD problems in the deployers.
13 I think actually one of the hypothesis
14 here is that the endorsement of ACE, although it
15 may be a risk factor for PTSD, may actually be a
16 marker of resilience as well. So I really
17 wouldn't begin with an assumption that it's
18 necessarily a risk factor for PTSD.
19 I think it's possible that the survivors
20 of ACE problems who've made it through training,
21 who've done well in boot camp, who've gotten to
22 deployment and gotten home may actually look like

the resilient ones who don't develop PTSD.

Again, it's part of the set of hypothesis. But we won't know until we explore it. I think it's very important to do. So we're just beginning that one.

Next, trying to sum it up, the challenging thing that again, I'm not extremely comfortable with, but I think we can say this: ACE histories are fairly common in young adults joining the military and actually although Colonel Gibson and I were just talking about it, you know, we begin with the assumption that people join the military because they have these situations.

I'm really fascinated to look at the Kaiser data because we're not that much different in terms of overall prevalence. It may not be, but that's possibly a mid- to high socio-economic status group of people in southern California and these are recruits from all over the country and the overall prevalence of ACE problems is not so different, again, depending on how you ask because if you ask it too simplistically you don't get a

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lot of endorsement on those questions.

If you ask it in a very, very detailed way, actually, I would argue you don't get a lot of extra endorsement on the question. I think you can ask it in a basic six question way like the CDC has proposed and get some reasonable data and that ACE histories are related to pre-military risk factors that might be expected -- the CDC found -- smoking and alcohol and not growing up in a two-parent home and things that we might expect for overall health behavior risk factors asked at the same time.

In terms of outcomes, ACE histories are fairly consistently associated with early attrition. So again, we saw that in a number of studies, but a little different way in each one. I think we can safely say they are fairly associated with early attrition.

But the relationship to later military performance, I would call unclear at this point. We have some indication that there may be problems there and some indication that there actually was

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not an association with problems.

Remember the very first study I showed you, the ACE histories were not associated with washing out later in careers and that we didn't find it associated with family advocacy program referral, although that may be counterintuitive as well.

Again, I really want to almost apologize at the same time as I give credit to the people who have done all this work. These, again, are the five studies we've talked about.

The RAP and the future HART-A work, there's a large number of people involved in that and I should just add and the AFEB.

I've got some backup slides is there are any questions, but I think I'll stop there.

DR. POLAND: Thank you, Commander Ryan. I can only imagine how much time it took to pull all that together. You did a wonderful job.

Maybe we can have some questions.

CDR LUDWIG: This is Sharon Ludwig. Thanks, Meg, for a fascinating review of a lot of

material.

I was wondering if you are familiar in any of these studies or others with questions about having been in a foster home or being

5 adopted, especially past the period of infancy, is
6 asked either as an adverse childhood event itself
7 or as something that might be associated with
8 adverse childhood events and also if you are
9 familiar with what the prevalence is of adopted or
10 foster children, what it is in the population?
11 CDR RYAN: We've got a little bit of
12 data. I've never heard it defined as an ACE
13 itself, being adopted or in foster care, but the
14 RAP, male Marines in San Diego, does ask about
15 being adopted and what home you were raised in.
16 There is an association, and we could
17 give you the exact numbers. It's not a high
18 number. I think it's on the order of two percent
19 who report that they were adopted.
20 CDR LUKE: Commander Ryan, Lieutenant
21 Commander Luke. Could you indicate what the
22 attrition rate is in the first year normally?

1 CDR RYAN: It depends what service that
2 you are asking about and it depends what year
3 because things have changed.
4 In general, well, basic training
5 attrition has been at about the 10 percent mark.
6 The first year of service approaches the 15
7 percent mark. Then it's much higher if you use
8 the definition to go out three or four years.

9 Some people would still call that
10 attrition, but it's probably just getting out a
11 little bit early, rather than true attrition.
12 CDR LUKE: With an odds ratio of 1.3, is
13 it reasonable to assume that an intervention might
14 have a great of effect?
15 CDR RYAN: I don't know. Intervention
16 is a tough thing. You can intervene, but you
17 can't change the history of the event. You can
18 intervene and try to keep them in more.
19 The Marines, and I would defer to
20 Commander McMillan, would argue you don't want to
21 keep in all the people who really, really want to
22 get out. If they are not motivated and they have

1 decided they have made a mistake, it's not in the
2 military's best interest to keep them.
3 I will tell you this about intervention.
4 Dr. Merrill's study, remember it's a really
5 challenging study that I want to be respectful to
6 even though it's loaded with challenges, they were
7 funded by the Family Advocacy Program to look at
8 intervention.
9 They looked at an educational tool. It
10 was a sit down and learn instrument that took an
11 hour, an hour presentation, if you will, a little

12 training module on appropriate feelings about
13 sexual abuse, if you will. I'm phrasing it badly,
14 but it had to do with dispelling myths about rape,
15 date rape and so on.
16 They administered this to a limited
17 number of recruits in about the 1997 timeframe.
18 They did a before and after test of how people
19 answered the correct questions and found that
20 immediately after getting the program people
21 responded more correctly. So they would argue
22 that, yeah, that works.

1 Of course, they know better than to say
2 that works because it changed attitudes or
3 behaviors, because it prevents problems or
4 attrition or other problems.
5 I really don't think that any of us
6 really know that such an intervention, if
7 developed, would work to the ends that we want and
8 perhaps even defining those ends may be difficult
9 because attrition is not simple.
10 DR. POLAND: Dr. Patrick.
11 DR. PATRICK: Meg, very impressive.
12 It's always wonderful to see sort of the history
13 of research and see it evolve over time. That's
14 quite impressive.
15 Is there any qualitative research on

16 this? These are all surveys and what not. Is
17 anybody taking subsets of these and doing more in
18 depth qualitative analyses?
19 CDR RYAN: Like?
20 DR. PATRICK: Qualitative
21 anthropological, I mean deeper interview-based
22 research. If I'm not mistaken, all of these are

1 based upon itemized surveys administered in a
2 population level.
3 I mean, this is an area that is just
4 ripe for qualitative research as well. You know,
5 Dan Blazer isn't here and there are other folks.
6 But I'm just wondering, did you find anything
7 there? You mentioned apparently a pilot
8 intervention, the thing that you just described a
9 minute ago.
10 CDR RYAN: I think in Dr. Merrill's
11 work, there was some initial testing with people
12 that were more qualitative than just item
13 endorsing sets. But I think they were trying to
14 just hone their question sets more than do
15 qualitative research. I think it's as you see it,
16 sir. I'm not sure that there's more.
17 DR. PATRICK: As a follow up, I would
18 just put a placeholder then on the table that this

19 is an area in which qualitative research would
20 probably inform, not only the content of some of
21 the questions that we are talking about, but my
22 sense is also the uses to which this would be put

1 at every level, from the recruit all the way up to
2 individuals who were in positions to place these
3 warfighters in situations to find out what they
4 think the value of this might be. Again, I think
5 again there are wide open opportunities here.
6 DR. POLAND: Ms. Embrey.
7 MS. EMBREY: I know that Dr. Chu has
8 responsibility across the spectrum. He has Family
9 Support Programs under his umbrella as well as
10 health issues. There has been some fairly
11 significant reviews of domestic violence in the
12 department, sexual assault in the department and
13 some other issues associated with violence and
14 victimization within our own force.
15 There are now ongoing several
16 research -- I don't think it's questionnaires; I
17 think it's outright research -- of people who have
18 been engaging in these violent behaviors through
19 the system of courts and courts martialing and
20 they are engaging in research on their prior ACE
21 history and other issues. They are finding a high
22 correlation.

I don't have the data there, but I do know that DMDC is engaged in a number of those kinds of analyses.

DR. PATRICK: That's great to know because I think it would be really informative as we are studying this question as a board to have reports from those studies as well.

This is clearly an area in which mixed methods research can inform what's going on, not only in the questionnaires and observational issues, but anything that we can talk about relative to any interventional work.

MS. EMBREY: The problem is low conviction rates, very small sample of people we can actually attribute an outcome and a history. So it's a very small sample.

CDR RYAN: Can I add an anecdote to that? Again with these small samples, I actually wondered as I was reviewing the history if any of the ones that make the news like the D.C. snipers and the people who were implicated in the Abu Ghraib Prison, remember, there's a lot of --

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what's it called -- for illness, where we had poor leadership, when they are making their defense in court, did any of them use ACE as a defense?

I did not find any evidence of that in the most well publicized cases. I'm just wondering myself since, you know, people will pull out anything they can for defense, if anybody had done that before. I haven't found that. Seem to know the life history of, you know, the D.C. snipers and the Abu Ghraib guards and some others, but I haven't seen ACE yet implicated in a legal defense.

DR. POLAND: One or two more brief questions. Dr. Parkinson.

DR. PARKINSON: A phenomenal job. Again, I don't mean to pile on, but yeoman's work there. I don't even know what a yeoman is and I was in the Navy. It just comes off the tongue, whatever that thing is.

To get a little bit at this non-response issue because the five percent non-response on one level is low, but if it happens to be, as one

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might suspect, that the people feel very

2 uncomfortable talking about this early in their
3 career in the military, even after they have been
4 recruits and they really want to make it, that
5 could lead to the broad conclusion that the
6 prevalence seems to be about the same as the
7 Kaiser study to be very, very different.
8 Just to benchmark that a little bit, is
9 there a way of looking at the five percent who are
10 non-responders in terms of the outcomes to see
11 whether or not they are reflective of the other 95
12 percent proportion as a whole or are they more
13 reflective of that one and a half to two percent
14 that have got the higher attrition rate than the
15 higher? It might just be a surrogate way of
16 getting into the representativeness of that group.
17 I don't know.
18 CDR RYAN: A great question. We'll look
19 at that when we look at PTSD. I'm not sure that
20 Dr. Young looked at the non-responders with
21 alcohol. But it can be done. It easily can be
22 done. Just because they didn't respond to that on

1 the question doesn't mean we don't know who they
2 are. So we can link it outcomes.
3 DR. PARKINSON: The second piece to
4 follow on with Kevin, it might be very useful for

5 us to have a brief overview of the current status
6 of the Family Advocacy Programs.
7 I can tell you that there are both
8 active and passive routes to referral.
9 Understanding and codifying those four or five
10 routes, whatever they are, and then
11 saying -- again, we're getting back to saying if
12 we're going to screen we have to have something to
13 do with people who come up positive.
14 The potential for a militarily friendly
15 referral route that goes from a high score on a
16 RAPS, I mean, I was relieved to see those six
17 questions which I think are very balanced and it
18 almost appeared to be like they are creeping up on
19 something, heaven forbid, like a standardized
20 question in a small set. But it might just be
21 interesting to see how people go from that to
22 something else, even if you could. I'm not even

1 sure you can. It's just a thought.
2 The action arm of many of these is not
3 the medical system. It happens to be the coping
4 and resiliency award which you use which is key to
5 this.
6 DR. POLAND: Okay. Thank you, Commander
7 Ryan. Our final presenter on the ACE issue is
8 also familiar to the Board. Colonel Chuck Engel

is the Director of the Deployment Health Clinical Center. He is also leading a DOD/CDC technical advisory board looking at this issue of ACE.

I believe we have your slides.

LTC ENGEL: I passed out copies of my slides this morning.

It's my honor to once again present to the Armed Forces Epidemiologic Board. I appreciate the opportunity.

What I'd like to speak to you a little bit about today is an effort to try to understand this issue in a more global way and to move in some fashion to do what you all are charged with doing in an ultimate way, which is to review the

current state of evidence as it relates to ACES in the military and to understand better from a policy perspective how this could or should be translated into real life pragmatic decisions, decisions either to initiate ACE surveillance within a military setting or to initiate more research to cover some gaps in the scientific literature or both.

Particularly, we were interested in looking at the ethical side of this, sort of ethical and forensic side of measuring ACE in the

12 military.

13 You know, we are an employer. We are

14 also a government agency which makes us different

15 from Kaiser, which makes us different from the

16 setting in which a lot of research on ACE has been

17 done.

18 It is certainly quite possible and

19 probable in the way that a lot of the health

20 surveillance has been framed. But the data won't

21 be confidential per se that it will be put into a

22 medical record subject to all the limitations and

1 confidentiality. That may change reporting.

2 So there's a lot of nuances to this

3 question as I can tell from the questions that the

4 Board has put forward to the various presenters,

5 they, I think appreciate quite well.

6 So let me offer some introductory

7 lead-in to what our plan is and what we are

8 calling the collaborative adverse childhood

9 experiences study, collaborative because it's

10 involving multiple agencies, most immediately DOD

11 and CDC.

12 These are the questions for the Board

13 which I won't belabor. You've already seen them.

14 But I thought it would be a good starting place.

15 I'll offer some background. I'll offer after the

16 background the objective of our collaborative
17 study and then where we go from here.
18 I'd like to start out with just some of
19 the promises of ACE surveillance. If we could do
20 this, if we could pull this off in a way, there
21 may be distinct advantages for the Department of
22 Defense.

1 Certainly there have been efforts, since
2 at least in my military experience 1997, to do
3 general medical as well as mental health
4 surveillance. ACE falls sort of within what one
5 might define as mental health surveillance.
6 There has been, as you have heard, a
7 robust cross-sectional and some limited
8 longitudinal studies in civilian and military
9 samples that have identified pretty robust
10 associations between retrospective reports of
11 adverse childhood experiences with all the
12 potential biases therein and various subjective
13 and some objective measures of general mental
14 health and health behaviors.
15 So if the military -- and this sort of
16 presupposes that an intervention is known -- if
17 the military could predict who would develop
18 psychological or physical illness due to ACEs then

19 certainly military personnel and commanders could
20 benefit. In a conflict situation we may be able
21 to, if you will, select out vulnerable individuals
22 before that situation or learn more about how to

1 better prepare those with these sorts of past
2 experiences so that they perform better under
3 fire. And it may have distinct benefits for
4 society even after people leave the military in
5 that they may experience fewer health problems and
6 so on.
7 As you have touched on here, you know,
8 there are a number of nuances to this. I would
9 sort of start out with the general perspective
10 that calls for widespread mental health screening
11 which are not a new phenomenon. They date back at
12 least to the Second World War where there was an
13 ambitious effort to do screening at entry in new
14 recruits.
15 It was ultimately determined to be a
16 major failure. I would say it was a major failure
17 in a practical sense. It was also a major failure
18 in a political sense.
19 In a practical sense, we rejected, prior
20 to their entry into service, a record proportion
21 of potential new recruits on the basis of mental
22 health selection factors. It was the single

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biggest reason why people were rejected from military service.

Subsequently, a lot of those folks, you know, when there became a little bit of a political uprising against the use of mental health selection factors, many who were rejected were subsequently reenlisted. Actually, most of them performed satisfactorily in the military.

The program was stopped, I say, under some political fire in late World War II by Marshall in the U.S. and Churchill actually in Great Britain. I'm a psychiatrist and am sort of sensitive to the fact that it earned psychiatry a real black mark. It was sort of considered a lot of charlatans and a good example of what can happen if you turn a bunch of psychiatrists loose on a problem.

So it's a problem. This idea of mental health screening, it has held out promise that has captured the imagination for a long time. That promise has not been easily realized.

There has been some work recently

published in JAMA by Rona and Hiames and Simon Westley from the public health literature on screening, you know, bringing that to a military context. I would hope that this article has been disseminated to the Board at some point because I think it's a fine piece of work that's highly relevant to the work that you do.

They identified some conditions under which screening tools should be sort of considered ready for use. Arguably, these are relatively high test conditions, but sort of behind the reasoning for high test conditions is the idea that screening can do harm if we go into it without a full understanding of what we can gain and what it will cost to do this sort of work.

First of all, it should identify, and I'm sure this is not new for public health scientists in the room, but the condition should be an important one. Here I'm talking about conditions broadly if we apply the term conditions to someone who has a reported history of ACEs.

I think based on a lot of the data that

you have seen today it would be a hard argument to

2 make that ACEs are not important. Item two, I
3 think, is pretty problematic, I think, in the ACEs
4 area. Screening tests should be clinically,
5 socially and ethically acceptable. I think
6 there's a lot we don't know or understand about
7 how society would view screening for ACEs on the
8 part of the military.
9 There's a lot we don't know about how
10 family members would view the screening of their
11 loved ones for ACEs. There's a lot we don't know
12 about what the service members themselves think
13 about being screened for this sort of thing,
14 especially in a pre-employment setting.
15 Certainly, as an investigator early in
16 my career I was involved, many of you are aware
17 that I have been interested in
18 medically-unexplained symptoms as sort of my
19 central career interest. Early in my career I did
20 research in chronic pelvic pain and I did research
21 in irritable bowel, both of which have been shown
22 to be associated with adverse childhood

1 experiences.
2 In one case we used an antidepressant in
3 chronic pelvic pain patients to intervene. We
4 were unsuccessful. The study was negative.

5 Probably one of the biggest lessons for me out of
6 all this is that people who have these kinds of
7 childhood experiences present with a complex
8 network of life problems that certainly are not
9 easily remediable with a pill. Solutions are not
10 going to be easy in a military context either and
11 are probably going to require multi-modal,
12 multi-disciplinary types of interventions which
13 will not be inexpensive to administer.
14 So the second is they should be
15 ethically acceptable. The third is they should be
16 simple precise and validated. We have seen some
17 preliminary work in this area.
18 High quality research evidence should
19 demonstrate the effectiveness of screening in
20 reducing psychiatric morbidity, overall medical
21 morbidity. The Wesley criteria were really based
22 on looking at psychiatric illness, so I'm using

1 the exact verbiage that he used.
2 We certainly could argue that we have a
3 good sense that what we are measuring is probably
4 the people who have experienced these types of
5 experiences. But we really haven't begun to
6 understand whether actually measuring these and
7 then linking them to an intervention has any
8 impact on reducing health morbidity in this

9 population. So it's a huge area where we need to
10 learn more.
11 Adequate staffing and facilities for all
12 aspects of psychological screening programs are
13 critical was the fifth. Benefits of the screening
14 program should outweigh the potential harms. This
15 is something where we still have a lot to learn.
16 The available alternative approach should be
17 considered. I think the Wesley point there is
18 that this should not be an excuse. Because we
19 don't have high test information it shouldn't be
20 an excuse for inaction. We should look at what we
21 can do if screening is not the right thing to do.
22 So I would like to use this as sort of a

1 springboard for further discussion here.
2 I think that perhaps my first bullet is
3 a bit strong, maybe a little harsh in saying
4 there's essentially no longitudinal studies
5 completed. You have heard some preliminary
6 longitudinal studies and those longitudinal
7 studies typically have not shown as impressive a
8 relationship between ACEs and health outcomes as
9 the robust associations that we've seen in
10 cross-sectional work.
11 I think another scientific gap is that

12 even in those cross-sections who report adverse
13 childhood experiences that the majority of people
14 go on to do okay. That has important
15 implications. One of which, from just a research
16 standpoint is what are the resilience factors that
17 we don't really understand at this point? What
18 are the things that cause most people to do okay
19 but a greater subset than usual to do poorly?
20 Then, thirdly, as already noted, there
21 really is almost no clinical interventions that
22 have been identified to reduce ACE-related

1 morbidity.
2 In primary care, where I have focused a
3 lot of my own work, there's a real reluctance
4 among primary care providers to screen for ACEs.
5 This is a clinical setting where arguably they can
6 do something fairly immediately.
7 A big part of that reluctance, in my
8 experience, is they don't know what to do for
9 these folks. It's not like screening for
10 depression where you can apply an antidepressant,
11 you know.
12 Again, intervention is decidedly more
13 complex than it is even for depression which is
14 complicated enough for most primary care providers.
15 There are methodological challenges

16 which through some of your questions today I won't
17 belabor because it's clear that you appreciate
18 them. There's certainly potential bias for
19 retrospective self-reporting.
20 There's one study which is not about
21 ACEs but always stands out in my mind in this
22 respect. It relates to the first Gulf war. It

1 was done by Southwick at Yale looking at
2 people's retrospective reports of their combat
3 experiences and the relationship to PTSD. In a
4 longitudinal study they essentially found reports
5 of combat experiences varied substantially over
6 waves of the study for the same individual. It
7 varied in direct relationship to their PTSD
8 symptomology. So if they had lots of PTSD, they
9 had lots of combat experience. If they had
10 relatively little PTSD, they were reporting less
11 combat experience within the same individual over
12 time. So this captures some of the challenges
13 here.
14 Actuarial predictions that would be
15 based on this data are likely to misclassify lots
16 of folks because most of them do find even in
17 those strata that have these kinds of experiences.
18 I think something that's real important

19 is before a group like AFEB can come to
20 clear-cut answers in this we have to know what we
21 are really talking about in terms of the utility
22 of this data. Are we talking about entering it

1 into a medical record? Are we talking about
2 selecting people out? Are we talking about
3 designing interventions for vulnerable groups?
4 That will affect, certainly, whether it's
5 acceptable for respondents to provide these sorts
6 of information to their employer, to the
7 government, to the military.
8 It will also affect the validity of the
9 responses that they provide. All of us who
10 provide care within the military are familiar with
11 filling out forms where people, up until they
12 leave the military, report perfect health and then
13 when they leave the military they report a laundry
14 list of problems.
15 There's every reason to expect that
16 these challenges will be similar in this kind of a
17 problem.
18 So on the ethical uncertainties, I'm not
19 an ethicist and we're going to be bringing that
20 expertise into our collaborative study. But I
21 would just like to bring a couple of ethical
22 perspectives to the table to sort of remind us

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that this can be viewed dramatically differently if viewed through different lenses.

From one perspective, it could be argued that the government has a responsibility to ensure that excessively vulnerable people are not sent to war. This seems to me, when I talk to people in the VA this is something that carries the day with them because they are used to seeing people who went to the war who arguably were vulnerable in advance and haven't done well over the long haul.

There's another perspective which says that, you know, it's all about the pursuit of happiness. I want a career in the military, you know, if my chances are still good of doing well, even though I have these kinds of experiences, what right do you have of getting in my way?

I think these are sort of perspectives that we're likely to hear from people and from family members who would like for their sons and daughters to have the opportunity to serve their country in the military.

ACE questions also have the potential, I

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1 think, because there's substantially greater
2 reporting in women than in men, I think it has the
3 potential to be seen as unfair to women. There
4 may be other demographic groups in which it could
5 be considered unfair. So these need to be brought
6 to the table and factored in.
7 On the alternative approaches side of
8 things, one could argue there are public health
9 information campaigns that could be mounted
10 without knowing anything about the individual
11 status of people with regard to ACEs.
12 These are arguably less costly than
13 trying to do more individual level or clinical, if
14 you will, interventions for subgroups of people
15 who report these.
16 So there are options. I think another
17 option really is to do more careful study. These
18 are not mutually exclusive to going forward with
19 some screening. In fact, some screening is going
20 forward in the upcoming iteration of the RAP, but
21 it's fairly modest. I can provide those questions
22 to you.

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1 But, you know, we need to do some

2 research in the subgroups that I have listed here,
3 at least to understand better and based on my
4 earlier comment we could add women and some other
5 demographic groups to that to understand how
6 acceptable this sort of screening is to them when
7 it's being done by their government, by their
8 military, by their employer.
9 We need to do more longitudinal studies
10 and I think that a huge gap is this area of
11 intervention studies. These are all alternative
12 ways forward to mounting a premature and
13 potentially, I would argue, harmful program before
14 its time.
15 So what harm? I've opened up that box.
16 Well, one, in our setting there is certainly the
17 potential to stigmatize. If we're not going to
18 select out, which obviously selecting out can
19 change people's lives for a long time and their
20 productivity in society.
21 But even if we're going to intervene
22 after they're in, depending on what that

1 intervention is, it could label them to casual
2 observers as problem folks. It could change their
3 own self-identity as problem folks. It could
4 change, perhaps similarly to the vignette that we

5 heard presented earlier about the person who goes
6 in a motivated recruit and comes out tearful and
7 wanting to go home. It could change somebody from
8 a high-function individual who sees themselves as
9 resilient in spite of their problems in the past
10 into someone who needs assistance.
11 We have the potential to reject sound
12 motivated military personnel. There is the
13 potential to unjustly misclassify. I would say
14 probably in accordance with World War II
15 experience if we don't do this very carefully we
16 have the potential to lose the public confidence
17 in our capacity to handle such a sensitive issue
18 well and competently.
19 It may be a long time as a psychiatrist
20 and an epidemiologist, it may be a long time
21 before we can get back to the table to try and do
22 some of this. It has been from World War II to

1 now. I would hate to see that gap happen again.
2 So all this is, believe it or not, a
3 lead-in to the ACE surveillance in the military.
4 Just a little bit about how this came about, I
5 think that's already been provided, so I won't go
6 into too much detail about that.
7 The Assistant Secretary of Defense
8 became interested in this issue as it related to

9 the force after talking with people at CDC and
10 learning about the work that's being done there in
11 this area; seeing some of the pilot data that's
12 been generated out of the military, and
13 considering the potential promises.
14 But at the same time, there are these
15 uncertainties and the potential for harm. So
16 where do we go from here?
17 In the collaborative study that we are
18 starting, you know, we were essentially handed
19 some funding to address this issue. In discussing
20 it with a lot of people it was felt, you know, we
21 could go forward and do another cross-sectional
22 study with the funding that we had available to us

1 and added to the other cross-sectional studies and
2 say we were done. But that really wouldn't move
3 us any further from where we are today.
4 What we wanted to do, after some
5 discussions, was provide a balanced, multi-agency
6 and maximally evidence-based appraisal of the use
7 of ACE surveillance as a U.S. force health
8 protection tool.
9 Components of CACES is to conduct an
10 expert review panel that will assess issues and
11 questions raised by doing the practical matter of

12 ACE surveillance within the military to initiate
13 some targeted empirical studies in which actually
14 we welcome the idea of some qualitative research.
15 That's where we are starting with CDC to
16 look at the acceptability of these questions in
17 various subgroups, and then to pull together the
18 wealth of information that has already been
19 obtained about the occurrence of ACEs in military
20 populations. A lot of that work or the bulk of
21 that work is being done by RAR or groups that are
22 in close affiliation with them.

1 So those are sort of the three main
2 parts of our study. The expert review panel, we
3 are still in the process of identifying members
4 for that. The general principle that's being
5 brought to the table is that we would like for
6 this to have multi-agency as well as civilian
7 representation and multi-disciplinary expertise
8 because it really touches on a number of fields
9 such as those listed here.
10 So the deliverables related to the
11 project as we see it today, one is that we would
12 provide a review of existing literature with
13 emphasis on available longitudinal studies because
14 the whole idea of this sort of surveillance is to
15 be able to predict and to develop an ethical and

16 forensic framework from which to consider a
17 surveillance within the military, and to prepare a
18 preliminary report for the Office of Assistant
19 Secretary of Defense for Health Affairs, as well
20 as peer reviewed publications related to efforts
21 one and two.
22 We are currently assembling a literature

1 database. I think you were provided with CDs that
2 contained the bulk of the literature that we had
3 identified at the time that those were
4 disseminated.
5 We are approaching potential members of
6 the panel, initiating preliminary qualitative
7 studies with Shanta Dube's group at CDC. The
8 expert review panel, we are looking at an October
9 meeting with final reports of the whole effort due
10 in June of 2006.
11 Questions?
12 DR. LeMASTERS: I have a couple of
13 questions. I was looking at the RAP and
14 the six questions that are on the RAP that have
15 been given to all the recruits.
16 Many of these recruits have gone to Iraq
17 and I would think that there would be a tremendous
18 amount of data with which one could decide if any

19 of these questions are predictive of success or
20 wash-out or, you know, psychiatric problems once
21 you determine what the exact outcome of
22 dysfunction would be.

1 I think you do already have a
2 prospective study in progress that you could rely
3 on.
4 My second question, and I'll just put
5 them both out, is that given the Jones, et al.,
6 2003 study where you stated many rejected were
7 later reenlisted and most made satisfactory
8 soldiers. I was just wondering if there is a way
9 to get to that data of those that did not make
10 satisfactory soldiers and what would have been
11 those predictive variables for those that didn't
12 do well.
13 LTC ENGEL: I don't know the answer to
14 that. Edgar Jones is part of the Simon Wesley
15 group in the U.K. Theirs is sort of a somewhat
16 narrative historical review.
17 So you know, to what extent they have
18 access to the actually data is the question. That
19 data would be U.K. data. That's not to say that
20 it isn't important, but I agree that that's an
21 important question.
22 I would agree with you that there are

sort of ongoing, they are not organized studies necessarily at this point, but given all the data collection that has been initiated through the Department of Defense through linking some databases and looking prospectively at functioning in various ways that, you know, it does afford an opportunity to learn in step-wise fashion the magnitude of the problem.

It still doesn't, however, get us to what do we do about it. Again, that's not to minimize the importance or that, not to say we shouldn't do it, because we should. But the part that we wanted to do was to try to provide some circumspect, organized overview of this area so that we could identify targets of where we could go.

That sort of suggestion is a very good one, but the concern is that this assumes a life of its own and can get ahead of us if we don't consider it in circumspect fashion.

DR. LeMASTERS: But just on the other hand, just as a follow-up to that, you know, this

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is surveillance data, and you know I just have this bone to pick that if we don't use the surveillance data that we are collecting for some predictive purpose which would be, you know, what would be able to be done with these data, that we shouldn't be collecting it.

LTC ENGEL: Yes. I would differ with you slightly. This is not surveillance data. What this is is an effort to pilot a surveillance program.

So there is no overall coordinated surveillance program in place right now. That's part of what precipitated this discussion to begin with, that the services needed to get together and develop a tool that would be implemented across all services at the time that new recruits came in that could be used to predict how they would do and to design programs to assist them, those who were in need.

But these are all pilot efforts, fairly preliminary at this point, done in selected subgroups, for instance, you know, the NHRC

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efforts with the RAP that only involved male

2 Marines and there have been some Army efforts at
3 Fort Jackson.
4 So I would argue it's still preliminary.
5 I'm not arguing against doing these things. If I
6 could use the term "no-brainer," it's definitely a
7 "no-brainer" to do these sorts of studies, but I
8 think that also there needs to be, you know, some
9 caution in thinking through and not being casual
10 about asking what are ultimately pretty sensitive
11 questions that can be interpreted in a lot of
12 different ways by a lot of different people.
13 DR. POLAND: We're running behind. I'll
14 ask for one more comment from Dr. Halperin. Then
15 we will be spending a fair amount of time on this
16 in our executive session this afternoon, too.
17 DR. HALPERIN: I think it is a
18 no-brainer that you ought to go ahead with this.
19 It's vitally important to reflect on it before
20 it's implemented.
21 I think that, just a suggestion, but you
22 ought to take some a-priori decisions that have

1 been made off the table and actually look at them.
2 For example, in comparison with screening in the
3 occupational arena where we are really doing
4 placement exams, not exams to see whether somebody

5 is going to get a job, the placement exams.
6 In the military you have the option of
7 essentially using the screening for either
8 rejecting somebody for the military or you can use
9 it for screening and placement or you can use it
10 for screening, placement and counseling.
11 You ought to look hard and fast to see
12 whether the assumption that counseling does any
13 good is a valid assumption or not. If it's not
14 then you might be stuck with the idea that the
15 only way you can use this data is actually for
16 accepting or rejecting somebody from the military.
17 That brings me to the recommendation
18 that on your list of expertise you ought to
19 include in there the legal because you know you
20 really have to confront the idea that if you
21 accept somebody that you think is highly prone
22 toward a repeated illegal event for which you have

1 no intervention, whether that's really somebody
2 you want in the military to begin with. So legal
3 is an issue.
4 Then public policy ought to be an
5 expertise because you may have to deal with the
6 consequences of having somebody for whom you can't
7 intervene who may be the cause of a big to-do.
8 Then the question is why in the world did you

9 allow this to go on. So a public policy
10 perspective is valuable.
11 The last is that there's a history of
12 this. Rona's article is almost verbatim an
13 article by David Savitz and Walter B. Holland
14 from the 1960s. There the issue was the ethics of
15 screening in the general population.
16 What Rona has done, and actually
17 colleagues and I did it in NIOSH in the '80s, it
18 was to ask the question, are there differences
19 between screening in the general population versus
20 the occupational population. Now you have
21 narrowed it to the military occupation. That's a
22 very valuable going to do.

1 But the effort is to identify what
2 things are different. So for example, in the
3 general population you can't screen if there's no
4 benefit to the individual. You can do that in the
5 occupational arena because it's of benefit to
6 colleagues.
7 You have a really different one having
8 to do with the benefit to the individual versus
9 the adverse consequences of that individual on
10 either his or her colleagues or combatants that
11 they are dealing with.

12 So all of these things, I think, you
13 really ought to go at in a very large way. But
14 take the assumptions that it's got to be placement
15 or it's got to be related to intervention off the
16 table and ask the question whether there are more
17 dramatic things that you might be doing with this
18 data if you find that it's predictive at all.
19 Sorry for the long monologue, but this
20 is a big can of worms with lots and lots of
21 aspects to it.
22 DR. MORRIS: Other question-based banks,

1 places like BRFSS or NHANES are they moving to
2 incorporate some of these questions into their --
3 this is relevant to the general population
4 question. I'm following up a bit.
5 MS. DUBE: Our group in the A Study
6 Group at CDC, we are right now in the initial
7 phases of putting together questions that we could
8 potentially put into the BRFSS as a module. We
9 are in the very early stages of it because we are
10 just now discussing it. We haven't gone forward
11 with it. But we will be looking to do that.
12 DR. MORRIS: How about the more
13 intensive settings in which questions are asked?
14 The BRFSS sometimes tends to skip across the
15 surfaces of things with very brief, short

16 questions. I am wondering, how about NHaNES
17 or others?
18 MS. DUBE: No, not Ed Hanes.
19 DR. POLAND: Okay. We have one more
20 presentation this morning. As you know, the Board
21 has tried to ensure that we're kept apprised of
22 DOD activities in all of the areas that we have to

1 advise on. That includes disease control and
2 maintenance, health promotion and maintenance and
3 occupational and environmental health.
4 We've spent a fair amount of time on
5 infectious diseases in the past. With the
6 speakers today we have, starting with Dr. Gary
7 Bratt, who's a research fellow at the U.S. Army
8 Center for Health Promotion and Preventive
9 Medicine a series of excellent briefings that will
10 help bring us up to speed on what DoD is doing in
11 occupational and environmental health, both in
12 garrison and in the deployed setting.
13 Slides for this set of briefings are in
14 Tab 4. Dr. Bratt will update us on the activities
15 of the Joint Environmental Surveillance Working
16 Group.
17 DR. BRATT: Thank you, Dr. Poland,
18 Ms. Embrey, Colonel Gibson and board members.

19 Thank you very much for having me here.
20 Dr. Heller, who is the current chair of
21 the Environmental Surveillance Working Group,
22 sends his regrets. He could not be here because

1 he had a conflict.
2 Today we'll talk just a little bit about
3 the background mission, membership objectives,
4 subgroups and some of the activities that are
5 going on with the Joint Environmental Surveillance
6 Working Group, or the JESWG for short.
7 The JESWG was formed at the direction of
8 the Joint Preventive Medicine Policy Group in
9 October of 1997. Now the Joint Preventive
10 Medicine Policy Group is a body of physicians and
11 because many of the environmental issues were
12 coming up they thought it best to create a
13 subgroup or a working group to address primarily
14 environmental surveillance issues, and so they
15 created this.
16 It was originally chartered through
17 FY99, with the option to continue and did a pretty
18 good job, but they saw they needed more focus from
19 primarily the occupational surveillance or the
20 occupational environmental surveillance issues.
21 They were getting bigger and the Joint
22 Preventive Medicine Policy Group had more of a

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clinical focus. So it was tossed out that maybe the JESWG should realign.

Now, Ms. Embrey's group for a number of years has been very supportive of this, of the Joint Environmental Surveillance Working Group. It was thrown out as an alternative as why not fall under her group? She was also trying to pull in other aspects of force health protection so they were segmented.

It sounded like a good idea. A proposal was submitted through the Joint Preventive Medicine Policy Group up through Ms. Embrey's group and the charter was signed on 27 December 2004.

Now the JESWG is really the primary advocacy group of OEHS. It is tri-service. It has representation from the Marines, the Navy, the Air Force and the Army. It provides a focus for the OEHS priority issues and actions.

We're trying to get it because it is really the only joint kind of body so that if issues come up related to OEHS, we'll then refer

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1 them to this group rather than the services
2 individually.
3 On the next slide, the third bullet
4 really is that as a forum it has been really very,
5 very important because if you can think of
6 something that's going on that may help you in
7 occupational and environmental health surveillance
8 as far as a project or a model or something, it
9 probably is going on. We try and pull in from all
10 of the services to give the group members, you
11 know, an idea of what's going on because there is
12 so much going on and it is not often integrated.
13 So one of the things that the body tries to do is
14 to make folks aware that we are doing similar
15 things, let's pull them together.
16 The current executive membership,
17 basically, the three health surveillance centers,
18 Army Center for Health Promotion and Preventive
19 Medicine, Air Force Institute for Operational
20 Health, and Navy Environmental Health Center and
21 then a Joint Staff Surgeon representative and then
22 representatives from the Surgeon Generals.

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1 These are just some over the years that

I have been involved in, some of the participants. We can see we have the military participants from the United States forces. We have our allied forces, Canada and the United Kingdom have been involved and other federal agencies have been involved.

Some of the objectives are that we are to review joint deployment occupational and environmental health surveillance programs and policies. A lot of this is ongoing activities.

They develop white papers and documents on selected joint deployment issues.

They advise the Deputy Assistant Secretary of Defense on forced health protection and readiness and joint deployment OEHS issues; recommend uniform joint policy on deployment and recommended joint doctrine and training to satisfy deployment OEHS needs; manpower and equipment needs to satisfy deployment OEHS needs.

That's a lot on their plate. Part is because no other single group was looking at these

issues. Research priorities relevant to the military deployment OEHS. Then the intelligence aspect is always critical as far as doing the work in OEHS and preventive medicine.

5 Information and coordination exchange;
6 review and update annual the JESWG recommendations
7 and provide a representative to the Joint
8 Preventive Medicine Policy Group.
9 We link with the other of the Joint
10 Preventive Medicine Policy Group and the
11 Occupational Medicine Group because there are a
12 lot of issues that come up that require physician
13 input. And we have physicians who do sit on the
14 JESWG also.
15 Because of the number of activities and
16 items the JESWG was responsible for they looked at
17 creating initially three subgroups. They started
18 out as kind of a task force getting together, but
19 a lot of these issues carried on over the years,
20 so we created the Joint Medical Field Water
21 Subgroup and the Preventive Medicine Equipment
22 Subgroup, and the Tri-Service Lab Subgroup.

1 The Field Water Subgroup was chartered
2 21 April 2005, after the JESWG charter was signed.
3 This group specifically looks at field drinking
4 water issues affecting deployed forces.
5 The Preventive Medicine Equipment Group
6 looks at equipment, sets, kits and outfits and
7 tries to identify any items, commercial,
8 off-the-shelf items that could be brought in or

9 researched that may be required in order to field
10 some of these items.
11 The Tri-Service Lab Subgroup was made up
12 primarily of the laboratory members of the Army,
13 Navy and the Air Force to look at lab issues
14 affecting the health of deployed forces and
15 recommended solutions.
16 Also, they found out as they were
17 working together is that they were doing a lot of
18 similar things but with no integration. So they
19 have set out a course of action really to pull the
20 laboratories within the services doing things a
21 whole lot more jointly.
22 So regardless that, for example, if

1 somebody was deployed and needed a sample
2 analyzed, they could go to a website or something
3 and find out who could do it the quickest and get
4 the results back to me.
5 Activities that are ongoing, there are a
6 number of members of the JESWG that are currently
7 participating in the Joint Forces Command Joint
8 Health Service Intelligence Preventive Medicine in
9 process team in providing input.
10 This is an effort that is, I guess,
11 again initiated by Joint Forces Command and

12 Ms. Embrey's group to pull together a lot of force
13 health protection initiatives from a joint
14 perspective.
15 The JESWG developed a U.S. central
16 command OEHS campaign plan in the early years. It
17 was used as a model. What should be captured and
18 collected and sent back to data repositories
19 within the CHPPM, or the Center for Health
20 Promotion and Preventive Medicine.
21 We developed a JESWG website that's on
22 the DENIX DoD site. That "URL" down there will

1 get you to that website. All the quarterly
2 meetings are posted for not only the plenary
3 group, but also the subgroups.
4 They developed the preventive medicine
5 OEHS capabilities catalog, the template, and then
6 filled it in with the deployable units and what
7 capabilities they had so that medical planners
8 could look at it because we are all different. We
9 all have preventive medicine type units, but they
10 all do different things.
11 For example, the Army and the Marines,
12 they work on an area-wide basis and are all over
13 the place, where the Air Force, once they get in
14 and established, they are almost in a similar
15 garrison atmosphere as they were back in the

16 States.

17 Strategic action plans developed to look

18 at in the years in what should they do, what needs

19 to be done, try to get some timelines on there as

20 kind of a blueprint.

21 They provided service input into the

22 DoDI 6490.3 which is basically the health

1 surveillance deployment instruction. I think

2 that's in its final staffing.

3 They did an Operation Iraqi Freedom

4 lessons learned survey in 2003 and looked

5 deployment OEHS gap analysis, again looking at the

6 kind of units. The Army had done gap analysis and

7 what they were short based on the OEHS

8 requirements from a capabilities perspective and

9 then provided that to the other services so that

10 they could take a look at it as a comparison to

11 what they may have.

12 Then also a surveillance policy

13 requirements review which was done as a part of

14 that.

15 The OEHS white paper in 2002 was kind of

16 the JESWG's vision of where OEHS should be or the

17 services should be in the future. It touted a lot

18 of joint efforts. It was kind of used as a

19 document as the Joint Preventive Medicine Policy
20 Group accepted that as a visionary statement and
21 forwarded that up to the Deployment Health
22 Surveillance Directorate and Force Health

1 Protection and Readiness. They incorporated some
2 of their elements into the business plan which
3 there it gets in some of the ideas trained to
4 actually bring them to fruition.
5 The four sub-bullets there, you can see
6 them as continued to make improvements over the
7 years. Are we perfect? No. Is it getting
8 better, yes.
9 Next slide please.
10 The second bullet, the ASTM, that's
11 American Society for Testing Materials, Deployment
12 Health Site Assessment Standard. We were all
13 doing the surveys, base site assessments,
14 differently. There were also site assessments
15 that were being done by the engineers. The
16 engineers kind of look at what the pollution is
17 doing to the environment, whereas from the health
18 perspective we look at what may be the pollution
19 that's at a site, what's it doing to the people,
20 not necessarily what's it doing to the
21 environment.
22 That provides a kind of template so that

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everybody is working off the same sheet of music and doing things the same way. As I understand it, we were getting hit because the Army would do it one way, the Air Force would do it one way and folks were getting confused as to why weren't we all addressing similar items. So this was published and it's working well. We already talked about the subgroups.

Some of the activities that the Joint Medical Field Water Subgroup is working on is it initiated a revision to TB MED 577 which is basically all of the technical guidance that pertains to deployed field drinking water quality.

The questions came up: What were some of the contaminants of concern. This came up, I think, from the laboratory. The laboratory asked this group to look at it and say what are the primary contaminants we need to be able to analyze for so that we can see what capabilities exist and what are lacking.

Then also the emergency individual water treatment device test protocol. For years as long

as I can remember -- I retired from the military in 1995 -- is the handheld water purification devices from some that are sized like this to others that you can carry around is that our forces, whether they are infantry, airborne, special operations, they see something that can make them water in areas where they may not be able to get water into.

It's all well and good, but nobody has ever taken a close look other than what were they tested against other than the manufacturer saying that this will do this, this and this.

So they are working on a protocol that in trying to find testing capability within the services to possibly evaluate these devices before they get on board.

I'll use another. The NBC Board, Nuclear Biological Chemical Board, they are basically -- if you want to buy a piece of equipment that has anything to do with NBC, it's got to be on their approved list. They have done this for years.

For these kinds of things in the

2 preventive medicine area, it's not necessarily the
3 case. So we are trying to get some criteria
4 established such that maybe the JESWG in the
5 future is that body that has an approved list that
6 says "If you get these you're okay."
7 Some of these devices are pretty good.
8 Some of them, you know, they take too long to just
9 give you a little bit of water. Oftentimes the
10 folks in the field don't really realize that.
11 Next slide, please.
12 Tri-Service Laboratory Sub Group. As I
13 said earlier, they found out that they were doing
14 a lot of things that they could be working
15 together with in the past. That's changing.
16 Laboratory Capabilities Compendium.
17 They are working on that right now. They met with
18 EPA because they did a compendium for their own
19 laboratories, both EPA and contractor, in trying
20 to find out what response perspective what
21 capabilities did they have.
22 This group took that database already

1 developed and is making some modifications. They
2 are going to use it initially with the three
3 health surveillance center laboratories. Then
4 maybe it could be used for expanded.

Another thing, too, in this is that again there's a lot of laboratory response networks or databases and all that. If you look at it from a broad perspective, actually all could be integrated. We have not done that right now. In the future, they will all come together, but right now many databases are being developed that are similar in nature to this, developed for different purposes.

DOEHRS IH Integration of Laboratory Analytical Methods and Electronic Data Quality. Now the DOEHRS is the Defense Occupational and Environmental Health Readiness System. I guess before the JESWG got involved it was just the occupational one. But the JESWG went down and talked to those people and said you need to have the "E" in there because that's going out there.

A lot of the data elements that we

require, you either have them in there or we should be able to add those functional requirements to this database. That is being done.

The Electronic Data Delivery Standard Format is again trying to get everything so that if the laboratory at Aberdeen Proving Ground sends out data results or the Brooks City Air Base or

9 Norfolk, they send out results to folks in the
10 field that everything is in a similar format.
11 Next slide, please.
12 The Joint Preventive Medicine Equipment
13 Sub Group. They actually combine another group
14 that was primarily working on focusing on hapsites
15 and HazMatID pieces of equipment.
16 That was something that the Navy and the
17 Air Force were heavily involved in because they
18 don't have as much as a mobility problem as the
19 Army Preventive Medicine Units had because these
20 devices are not little and they all add to weight
21 cube in trying to move on the deployment fields.
22 They did develop a basic course for

1 this. The chemical school was very interested.
2 They held one earlier this year with the Navy,
3 Marine Corps and Canadian forces attending.
4 They are also developing a website on
5 the Navy occupational medicine web to look at
6 proficiency analytical testing from a field
7 perspective and establishing a hapsite
8 troubleshooting database.
9 There are other issues coming up, so
10 they will probably be looking in the future other
11 areas outside of this primarily chemical and some

12 biological equipment. Next slide, please.
13 Some of our issues, and many of them not
14 new and oftentimes it's hard to get the priority
15 to get some of these things fixed. OEHS
16 information management, reporting -- we are trying
17 to go electronic on it, as everybody is trying to
18 do.
19 But with the military specifically we
20 often have times in deployed and in austere
21 locations in finding bandwidth in order to get
22 something from over there to back over here.

1 So they are currently using, if you
2 can get it by those information, OEHS-related
3 information by e-mail, by hard copy, they are
4 trying to get that reported, trying to get it
5 instituted in everybody's military mind and
6 culture that if it has something to do with OEHS
7 make sure, you know, that first of all that our
8 operation plans and our operation orders contain
9 that that needs to be done, but also how can we
10 keep track of what we're getting.
11 We may think we're getting a lot of
12 stuff on reports, on data, but it may only be 50
13 percent, 75 percent because we really don't know
14 what we're getting because we may think we're
15 getting a lot of stuff on reports, on data, but it

16 may only be 50 percent, 75 percent, because we
17 really don't know how much is generated.
18 Archiving, currently anything that comes
19 in that has to do with occupational environmental
20 health surveillance is archived on the data
21 repository. Ultimately this data repository will
22 integrate into the DOEHRS IH and then also the

1 TMIPJ or the Theater Medical Information Program
2 Joint.
3 Members of the group met with members of
4 this group, I want to say within the last two or
5 three weeks, to talk about this. We have been
6 trying to get folks to come to the JESWG and tell
7 us about it. Then they came to us and said could
8 we meet.
9 I think it's going to be very positive
10 because they are committing themselves to make
11 sure that if the functional requirements are not
12 in TMIPJ or DOEHRS that they are going to push to
13 get it in there.
14 Declassification. That's almost
15 anything, and rightfully so, that is done from a
16 military perspective in a deployed setting is
17 classified. A lot of the information that we
18 have, if you take bits and pieces, it's not

19 classified. But if you put those pieces together
20 and then put them into a report or something, then
21 you've got something that the enemy could use for
22 something that you didn't think that they might

1 want to use.
2 That is an issue, but it makes it very
3 hard back here then to work with classified data
4 because you have to take many extra precautions.
5 Again, Ms. Embrey's group is working at the higher
6 levels in working on trying to address these
7 issues.
8 Tracking personnel, and the next one,
9 linking exposures for locations and personnel is
10 that it's very hard to track on a day-to-day basis
11 where are the groups of people, more or less where
12 are individuals. Not only that, but in a real
13 time perspective.
14 Right now it's again, and sometimes the
15 folks come up who say that well, we don't have
16 that in place now. Again, Ms. Embrey's group is
17 working with the Defense Manpower Data Center and
18 other groups in trying to see how can we do this?
19 Can we do it all at once now? No. But
20 we need to, just because we can't do it now, we
21 can't sit around and wait for another five years
22 to be able to do this because we are getting asked

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questions on a daily basis.

Then medical record standardization of occupational exposures. Clinical data always finds its way into the individual's medical records. Oftentimes, exposure data does not. Then, if it's not captured anywhere, where does it go when often times we don't know.

We are trying to work, in fact, Dr. Colleen Weiss of the JESWG is working with the Occupational Medicine Group. We have established some criteria of what could be put in.

Now, some of the policy clearly says, and it's really clear on the civilian side, not necessarily so clear on the military side, that some of this data should be in there. Sometimes it's well, it should only be something that's really significant.

Unfortunately, in the long term it is that oftentimes no exposures to chemicals or biologicals, that documented if more important than an acute exposure. So the Services are doing it like the Air Force. Like I said earlier, they

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work from deployed air bases. They have a relatively confined area where they can assess the site. They know who the people are there. They can put together a summary risk assessment, which they do, and put that into every individual's medical record when they redeploy back to the States.

The Army used that in an over-printed SF Standard Form 600. The Army tried doing the same thing at Schweinfurt, which is a very large base where a lot of the Services are. Next slide, please. Now, a lot of these, we've already discussed. Next slide, please.

Dr. Heller is the current chair of the JESWG. That will probably be changing sometime this summer when another service will pick up that slack. We are trying now to rotate, under the new charter, to rotate the chair to each of the Services. Then Captain Rudolph is the NEHC rep. Colonel Jeter, Air Combat Command, and Major Kilian sits over here as our Joint Staff Surgeon rep.

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That's all I have. There was a lot

2 there.
3 DR. POLAND: Thank you. We have time
4 for maybe a question or two before lunch.
5 Colonel Gibson.
6 COL GIBSON: Interesting. Obviously
7 very, very busy. You talked about an equipment
8 subgroup. We've seen policies on DU and other
9 biomarkers.
10 Last year, I believe it was last year,
11 I'm losing track of time, but we had a fairly
12 significant problem with eosinophilic pneumonia
13 over in the Gulf. One of the things that stymied
14 that epigone was the clinical laboratory
15 specimens, the lack therefore, inability to do the
16 culture work, to identify what was going on
17 acutely with those folks.
18 Then you talk also about the medical
19 standardization of environmental exposure
20 documentation.
21 My question to you is: Does JESWG feel
22 as though they have a dog in the fight with

1 respect to clinical specimen collection and
2 laboratory capabilities in the deployed setting?
3 DR. BRATT: Yes. I think it's something
4 we probably haven't wrestled with, because of some

5 of the other areas. But a lot of the laboratory
6 capability, when you talk about some of the
7 biologicals and that, is it actually does rest in
8 the clinical site.
9 It's come up. I mean, even like if you
10 look at most of the health surveillance centers
11 right now, do they really have a biological
12 capability? No, not really. They have even
13 questions that themselves, you know, well, do we
14 do that?
15 I think that's an area where probably
16 we'll have to reach out to some of these other
17 groups on a clinical side. Again, oftentimes they
18 look at, you know, well, there is no relationship
19 to what another group may be doing.
20 In all my years, as I've gotten older
21 and all that, I've found that everything relates.
22 If I was smart enough to think of something in

1 order to fix the problem, it's already been fixed.
2 I just don't know who did it and where they are
3 at.
4 It's very difficult, and I guess part of
5 this stuff and especially anything that's related
6 to NBC and anything that's on environmental and
7 occupational exposures is that there's a lot more
8 interest today because we have a lot fewer battle

9 injuries than we do have disease and non-battle
10 injuries.
11 It will get better, but there are some
12 areas that if we latch on to it and sometimes like
13 a pit bull, try to grab ahold of it and try to
14 wrestle it to the ground, is that we may not have
15 enough weight behind us. There are probably some
16 areas that never really approach the AFEB and
17 these kinds of things, but there may be something
18 in the future where this body could weigh in on
19 something.
20 DR. POLAND: We have a couple more
21 questions. First, Dr. Lednar and then
22 Dr. Patrick.

1 DR. LEDNAR: Wayne Lednar. You
2 described a really extensive portfolio of
3 activities. I have a question about focus and the
4 future. Do the groups that you described and
5 summarized their activities also ever look at
6 their agenda on what could be the potential
7 warfighting initiatives of the future in the
8 scenarios that the U.S. government sees as
9 potential so that we not only learn from our
10 experience in those combat situations we have
11 already been in, but can think about how those

12 lessons would leverage to perhaps new and
13 different challenges in the future, given the
14 potential warfighting scenarios that we might end
15 up being in. That's the first question.
16 The second is, is there anything about
17 all this activity that relates to homeland
18 security?
19 DR. BRATT: Well, to answer the second
20 question first, because I think it's easier to
21 answer, it is that homeland security or homeland
22 defense from a military perspective is really

1 another deployment. There are some issues as far
2 as some of the laws and some of the standards that
3 may apply during a deployment within the U.S.
4 Essentially, the way the military is
5 trained to look, to go back to the first one, it
6 used to be we'd look at things from a threat-based
7 perspective. Is it okay? Who are we going to
8 fight? Where are we going to fight and what do we
9 need? That's pretty expensive when all the
10 Services were doing their own thing.
11 Actually, what Ms. Embrey and her group
12 has pushed with joint forces coming is the
13 development of a joint integrated concept for
14 force health protection.
15 That's basically looking at kind of the

16 capabilities and all of the different operating
17 concepts that the military has from a joint
18 perspective and how does it fit in.
19 So everything is capability. We don't
20 care who we're fight or necessarily how they're
21 going to fight -- well, I won't say how they're
22 going to fight -- or where we're going to fight.

1 We're looking at what's the capabilities that we
2 need to handle almost anything.
3 Because just as you brought it up, we
4 don't know. You know, historically, where did we
5 tend to fight the last war? We do it all the
6 time. Things are totally changed now. You know
7 from an op-tempo standpoint folks are everywhere
8 for long durations, for short durations and we
9 just don't know what's going on.
10 So for the long term we try to have the
11 capabilities so that we're flexible. The keys are
12 really that we're flexible, we're scalable, we can
13 build up, we can shrink down and we can take
14 whatever capability that we thought we needed and
15 identify it and then looking at different
16 scenarios. The scenarios actually come into the
17 Joint Forces Command areas where we did a
18 missionary analysis or functional area analysis.

19 Then they are currently in the process of doing a
20 functional needs analysis.
21 So trying to identify those area that we
22 need in doctrine, training, organization,

1 leadership development, material development and
2 personnel as far as skill sets and the types of
3 personnel.
4 So I think the Services as a whole have
5 really changed the way that they look and tried to
6 address the future.
7 DR. POLAND: Let's keep moving.
8 Dr. Patrick.
9 DR. PATRICK: This question pertains to
10 water. That is, the field water, I assume the
11 gist of what I heard you talk about was more the
12 quality of the water the character of the water.
13 We had a meeting a while back, three or
14 four meetings ago, where there was a real question
15 about whether there was both sufficient water and
16 whether the temperature of the water that was
17 available was appropriate in OIF, I think.
18 Is it your group's responsibility to
19 also assure that a fairly fundamental and basic
20 question, and this came up in the context, I
21 think, of the cluster of cases of pneumonia, if I
22 recall correctly and there was concerns about

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hydration issues and what not and the portability and palatability of the water.

DR. BRATT: I'd have to say there might be some involvement with the group, but as far as the production and the distribution of water, it really falls under the Army Logistics. Army Logistics is the executive agent for that. They have a group they call the Joint Water Resources Management Action Group which members of the JESWG are also involved in some of that, not as members of the JESWG, but they are both on the JESWG in this group.

The current issue that the Army is wrestling with right now is bottled water. Right now if you look at, I think what I'm trying to remember and I may not be exact, but it was like 60 percent of the airlift capacity was being used up because we were transporting bottled water. That's ridiculous.

It has gotten worse over the years. We have sufficient ROWPU, Reverse Osmosis Water Purification Units, within the Army, both active

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and reserves. And within the Marine Corps and the Air Force it is to produce an adequate amount of water.

The temperature and taste sometimes is an issue. I can only go from my own -- you know, initially I was a combat infantryman in Vietnam. Some of the stuff that we drank over there didn't smell very good, didn't taste very good and all that, but it was all we had and fortunately, we didn't get sick.

We want to try and avoid those things in the future, but somehow we've got a mindset that the solution to the water problem is bottled water and it's not. You know, we need to minimize footprints, whether it's logistics -- we've got to really cut down on logistics tail.

DR. POLAND: I think we're going to have to keep moving. I think you answered his question. Dr. Cattani, and then Dr. Oxman, and if we can have short questions and short answers, we'll make it on time.

DR. CATTANI: Well, this is a short

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question. It goes back to your previous question

on homeland defense. I was curious as to why NORTHCOM wasn't represented and all the rest of the commands were there.

DR. BRATT: They are. I said that it wasn't an all-inclusive list. That was one I missed, yes, because Colonel Chewlick from NORTHCOM has been involved with the JESWG for a number of years.

DR. POLAND: Dr. Oxman.

DR. OXMAN: This is probably naïve and undiplomatic, but are the tri-service groups like the laboratory subgroup, do they have sufficient clout to bring the three services together and to have an integrated result?

DR. BRATT: As far as the laboratory?

DR. OXMAN: Well, just the tri-service subgroups that are important.

DR. BRATT: Well, they are doing a pretty good job right now in an operational level.

DR. OXMAN: So you have sufficient clout?

SPEAKER: No.

DR. POLAND: There's the answer. Major Kilian, did you have a question?

MAJ KILIAN: Sir, I was just going to

5 give a point of clarification. It was Deputy
6 Secretary of Defense, Dr. Wolfowitz, who directed
7 Joint Forces Command to do the integrated concept
8 thing with the medical where it would be scalable,
9 tailorable, inter-operable, and then afterwards he
10 said interchangeable. That had some services do
11 cheetah flips.
12 DR. POLAND: Okay, thank you for that
13 clarification.
14 Mr. Bratt, thank you for your
15 presentation. We're going to break for lunch and
16 we'll reconvene at 1:30.
17 (Whereupon, at approximately 12:35
18 p.m., a luncheon recess was taken.)
19 * * * * *
20
21
22

1 A F T E R N O O N S E S S I O N
2 (1:30 p.m.)
3 DR. POLAND: I just want to remind you
4 as we start out that the meetings are being
5 transcribed, so speak into the mike as we go
6 forward. Don't forget to use your name.
7 Welcome, Dr. Morris.
8 DR. MORRIS: Before we get started with

9 our presentation, we do want to take a moment to
10 recognize one of our own. Dr. David Atkins will
11 be retiring from the Board after his term of
12 service. Dr. Atkins has also chaired the Health
13 Promotion Subcommittee and has done, I'll use that
14 same word, yeoman's service. I'm not exactly sure
15 what a yeoman is either. It sounds like a lot of
16 work, whatever that job is.
17 So David, could we have you come up?
18 We'd like to present you with a plaque and a coin.
19 Well, Dr. Atkins, we have an AFEB coin for you as
20 well as a certificate from the Office of the
21 Secretary of Defense.
22 "I present this certificate of

1 appreciation for the exceptionally meritorious
2 service and outstanding contribution as a member
3 of the Air Force Epidemiological Board."
4 MS. EMBREY: Also, Dr. Atkins, with
5 deepest appreciation for your outstanding
6 contributions as a member of the Air Force
7 Epidemiological Board and as Chairman of the
8 Subcommittee on Health Promotion and Maintenance
9 from August 2001 to August 2005.
10 Thank you so much.
11 (Applause)

12 DR. ATKINS: While I was observing that,
13 it seems in some ways not a lot has changed since
14 I first joined the Board, since I remember. We
15 were discussing Chlamydia and Commander Ryan was
16 giving a tour de force presentation and Greg
17 Poland was the hardest working member of the
18 Board. So we're back where we started.
19 But I just want to thank everybody for
20 the opportunity to serve on the Board. Although
21 my father was a Marine in the South Pacific, I
22 don't consider myself coming from a military

1 family.
2 It has been a truly eye-opening
3 experience to see the dedication of everybody
4 involved in this from the staff at the AFEB, from
5 the chairs that I have served with, and from
6 Colonel Diniega and Colonel Riddle and Colonel
7 Gibson and especially just the commitment and
8 devotion of all the medical officers in all the
9 Services, the commitment to science, but
10 especially commitment to doing the right thing for
11 all the servicemen and women. That has been a
12 great source of pride as a fellow government
13 worker, to be involved with all of you.
14 Thanks.
15 (Applause)

16 DR. POLAND: Thank you again, David.
17 God speed on whatever you do next.
18 Continuing with the theme of
19 environmental and occupational health, we will
20 start out afternoon with LTC Michael Meier. LTC
21 Meier has with him Mr. Monk, who will provide a
22 demonstration of the defense occupational and

1 environmental health readiness system after CDR
2 Meier's presentation.
3 The slides for this presentation is
4 found at tab five in the notebook.
5 LCDR MEIER: Sir, I would like to kind
6 of introduce the topic, but I will let Mr. Monk go
7 first with kind of an overview of DOEHRS. His
8 slides might be second in your tab five. My
9 slides might be first in your tab five because it
10 does a better job of giving an overview.
11 When Colonel Gibson asked me to come do
12 this, it was with the spin of what is DOEHRS and
13 how is it going to be helpful, not only to the
14 people that are putting the data in, but how can
15 it be helpful for a clinician? How can it be
16 helpful for an epidemiologist?
17 Those are the kinds of things that I'm
18 going to cover. After talking more with Colonel

19 Gibson, we decided that it might be worthwhile
20 having an overview of DOEHRS-IH and DOEHRS-HC. So
21 I asked the folks at RITPO, Resource Information
22 Technical Program Office, to see if someone could

1 do that because I'm not a user of DOEHRS, and they
2 ponied up Mr. Monk. So I appreciate that.
3 DR. POLAND: That will be fine. Just
4 for the Board, the first presentation then will
5 actually be more than halfway through tab five.
6 It is labeled page 6.
7 LCDR MEIER: I'll let Mr. Monk introduce
8 himself.
9 MR. MONK: Good afternoon, everyone. As
10 the commander said, my name is Bill Monk. I'm
11 representing RITPO today. My background is I'm a
12 former military audiologist, a civilian at the
13 Army Center for Health Promotion and Preventive
14 Medicine the last 19 years as the health systems
15 information manager. So I have a little bit of
16 background in audiology and the development of the
17 DOEHRS-HC system.
18 I am not an industrial hygienist, so I
19 will walk you through the demo of that
20 application. If we get into the details of the
21 application and I can't answer those questions, I
22 will certainly get those answers for you.

What I'd like to do is start with just an overview. Again, DOEHRS is one of the projects within the Resource Information Technology Program Office which is a program office under the MHS-IMIT Program.

Next slide, please. What I'll cover is, as you can see there, I'll go through the overview, the current applications and their functionality. I'll talk a little bit about the DOEHRS-IH, and the schedule, its status and then a brief conclusion.

DOEHRS-HC obviously is the hearing conservation application that is currently deployed in DoD.

Next slide, please. DOEHRS-HC, as you can see, a tri-service noise exposure surveillance and management system that electronically captures, analyzes, maintains and stores hearing test results throughout DoD for the exposed military personnel and civilian personnel exposed to hazardous noise.

Next slide, please. What it does is it

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really provides a complete hearing loss traceability for all the active duty, reserve, guard and civilian personnel. You can document who's at risk, who is impaired, who has a hearing loss, who is starting to get a significant hearing loss from exposure to noise and then if they do have a significant hearing loss, are they deployable based on their hearing status? It can provide reports with regard to that information.

Basically, it consists of a commercial off-the-shelf audiometer that you will see stacked there on the left side of that picture, along with a government off-the-shelf developed software application. The audiometer is Benson Medical CCA. It basically automates the hearing test, performance objective calculations; i.e., is there a significant threshold shift based on both DoD guidelines and OSHA guidelines. It interprets those, makes a recommendation, tells the audiometric tech does this person need to be referred for follow-up testing or not and monitors that progress throughout the follow-up program.

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Next slide, please. Value to the

2 system, obviously early detection of hearing loss
3 helps them prevent future hearing loss and
4 maintain auditory readiness. It's a user friendly
5 product. No matter where you go in DoD and you
6 are in a hearing conservation program, this is the
7 application that you will be tested on.
8 It's scalable, it's in hospitals. You
9 will see that on the next slide. And it is
10 portable, so we can run it off a laptop.
11 We first deployed that in 1999 and
12 currently over 700 sites with 1600 users. You can
13 see the breakout from hospital and fixed
14 facilities, all the way down to shipboard, mobile
15 health vans, battalion aid stations, some basic
16 training sites in the Navy and in the Army and
17 some other government agencies such as NASA and
18 NSA.
19 The data flow really is at the
20 installation level. The audiometric technician
21 who is trained and has to be recertified every
22 five years conducts the hearing test. It's stored

1 locally. They print it out on their 2215 and
2 their 2216, whichever they are coming in for.
3 They also document hearing protective
4 devices on that form. They wear double

5 protection. It documents their baseline hearing
6 test when they come in and every year there is an
7 annual hearing test that they are required to get
8 based on their exposure.
9 Those records are then transmitted up to
10 the DOEHRS data repository which currently is
11 located at CHPPM where the Services and
12 headquarters can get access to that data. It's
13 controlled by the Services.
14 Each service has a rep that you have to
15 go to to get access to that database. You get a
16 password and a user ID. Then there are reports
17 that are continually being developed identified by
18 the users. Probably every other month now there's
19 a configuration control board that
20 identifies the priorities for what reports they
21 want developed next.
22 That's where we are at right now. There

1 are some reports out there. Basically, they break
2 them into program participation, program
3 effectiveness, and compliance, how many people are
4 supposed to be showing up by unit, by major
5 command, by installation, by job code; how many
6 people are getting an STS. Is there a problem out
7 there? That's the kind of information they can
8 use to go back out to the field and say, well,

there's four people in this welding shop or on this aircraft carrier that are getting a hearing loss.

What's going on here? Either they are not wearing their hearing protection, it's inappropriate hearing protection or engineering controls are there but they are not being used, things like that that they can tell.

But those reports are available, it's a web-based application. At the end of the presentation, I'll give you the websites for that. I can certainly give you the POCs that can issue or approve passwords for the Services, Army, Navy and Air Force, to get access to the data.

Right now they are also able to go to the database from the installation level, say there's somebody that comes in for the hearing test or they know who's coming in and they don't have an electronic copy of their record because they have come from another installation.

They can go in and download that information from the corporate database and data repository to their local site and have that information available for that upcoming test.

Right now you can see it has over 12

12 million audiometric test records. Now, a lot of
13 that comes from some of the Legacy systems that
14 were out there. The Army had a big Legacy system
15 that was maintained at Fort Detrick. The Air
16 Force had a system as well. The Navy had a little
17 bit of an electronic database, but most of theirs
18 were paper-based and they are getting into the
19 system now.
20 They send their data up on a weekly, on
21 a monthly basis. We push out software over the
22 web and it's a fairly mature system right now for

1 the DoD stakeholders with regard to hearing
2 conservation.
3 Next slide, please. So in conclusion
4 with DOEHRS-HC, it protects the hearing; it helps
5 DoD meet their goal of reducing hearing loss by
6 providing that data so the decision-makers can see
7 where they need to focus on the program.
8 It supports the deployment readiness.
9 Do they have a significant hearing loss in the
10 Army? That would be in H-3 plus. Are they
11 deployable; are they not deployable? They can
12 provide that information.
13 It allows them to meet the ever-changing
14 OSHA requirements. There's one now that they are
15 wrestling with with regard to significant

16 threshold shifts by individual ears and individual
17 frequencies that DoD has something a little bit
18 different and they are looking at that now.
19 It helps reduce compensation costs
20 because the earlier you identify the hearing loss,
21 the earlier you can get out there, provide the
22 education and training to the soldiers, to the

1 airmen in the field about the proper use of
2 hearing protection and how to protect their
3 hearing.
4 Next slide, please. That's DOEHRS-HC
5 does anybody have any questions on that now? Do
6 you want to take those now before I get into IH?
7 DR. POLAND: Dr. Lednar.
8 DR. LEDNAR: Just a question of
9 cachement. Does DOEHRS-HC include in-theater
10 ground combat noise exposure testing?
11 MR. MONK: There are some DOEHRS-HC
12 units in some of the deployed environments, not
13 all of them. If there's a combat support
14 hospital, for example, I know there's one over
15 there, there's three or four of them that they
16 have there now.
17 After Gulf War I in 1991, we sent over
18 five or six mobile test vehicles that they were

19 able to use to conduct hearing tests on those
20 folks redeploying back to the States. But it
21 really depends on what medical capability they
22 have there and do they have the units to do the

1 testing. It's very portable.
2 DR. LEDNAR: One of the challenges, and
3 I'm looking at Bill Halperin as I say this, in the
4 civilian setting, where exposures may be typically
5 on an eight-hour basis five days a week, and
6 therefore exposure levels are kind of set with
7 that kind of exposure reality in mind, in theater
8 it may be seven days a week, 16 hours a day at
9 noise hazardous levels.
10 So clearly the potential for exposure is
11 potentially much higher and therefore the whole
12 approach to engineering, if possible, is really a
13 challenge.
14 MR. MUNDY: Absolutely.
15 DR. LEDNAR: Colonel Gibson, a couple of
16 quick questions. You mentioned that you have
17 deployed HC to basic training sites with the
18 overlay of hearing testing at MEPS. What are you
19 doing there? Is that a job specific testing?
20 MR. MONK: Again, I don't know the
21 current status of that, but historically what
22 we've tried to do is we've tried to get the MEPS

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to use the system in the past. To my knowledge we've never been able to get them to buy into using it. I can't tell you why. We used to train their folks on using whatever system they were using, but I don't think they're using them at the MEP stations at this point in time.

But I would have to go back to the HC folks and get you some more specifics on that, sir.

DR. LEDNAR: So you're saying we're using them at basic training as a way of capturing baseline audiograms and because of the comments you just made about MEPS being somewhat resistant to it.

COL GIBSON: That's correct, sir. You get the MEPS exams and I think some of the argument was they were not actually on active duty yet as they went through MEPS. I really don't know the details behind it, but we get it as early as we can in the soldier or airman's career to get that baseline audiometric test so we have something to compare it to throughout their

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career.

DR. LEDNAR: The other comment had to do with the saving of taxpayers dollars. How long have you been running HC?

COL GIBSON: The DoD system has been out there since 1999. The services had their own separate systems going back to the '80s.

DR. LEDNAR: Have there been any attempts to measure reductions or changes in disability compensation associated with hearing loss among service members since DOEHRS has been applied?

MR. MONK: Honestly, I'm not sure, sir. I could find that out for you if you want.

DR. LEDNAR: Okay. The assumption is that if you do a better job we should reduce those hearing loss compensations, but that's been very, very resistant to change.

MR. MONK: Right, and there's a lot of other things that I think go along with that. I mean there has been a significant reduction in the number of military audiologists as well that

really made a big impact in making that program

work. But I can get that information for you, sir.

MS. EMBREY: It says deployed environment, but I look on the list and I assume that the National Guard and Reserve sites are there where they are mobilized in each of the States and territories. Is that correct?

MR. MONK: That's correct.

MS. EMBREY: So there obviously isn't an operational deployment of this application?

MR. MONK: I think there are some in Saudi Arabia at this point. I can find out exactly where they are. There are some operational sites that have this in a deployed environment. I think in the slides, really, deployed means implemented, sent out, not really in a deployed theater environment.

MS. EMBREY: Okay. Thank you.

MR. MONK: You're welcome. Next slide, please. What I'm going to talk about now is the status of the DOEHRS-IH application. This has

been something that has been under development for way, way too long a time period.

We are very, very close right now and I'll talk a little bit about that. Let me tell

5 you about the system and then I'll show you the
6 schedule about where we are with that.
7 Next slide, overview. What DOEHRS-IH is
8 going to be is a tri-service web-based application
9 to be used initially in the garrison environment
10 for collecting industrial hygiene and occupational
11 exposure data.
12 The big thing with DOEHRS-IH is that it
13 is the result of a business process re-engineering
14 effort from the DoD Industrial Hygiene Working
15 Group that standardized their business practice
16 and came up with what they called the DoD
17 Assessment Model.
18 The DOEHRS application is built on
19 implementing that exposure assessment model. It
20 replaces fragmented systems within the Army, Navy
21 and Air Force and it really standardizes across
22 DoD the process of evaluating a workplace.

1 Next slide, please. The main purposes
2 are, once it gets to an deployed environment, is
3 to assist the operational command with risk
4 management. The initial build is really for the
5 garrison support. There are some deployment
6 capabilities in it with regard to base camp
7 assessments, some entomology surveys, air, water
8 and soil type surveys as well.

9 As Dr. Bratt said earlier, back in
10 the -- gosh, how long has it been; I can't
11 remember -- back four, five, or six years ago the
12 IH work group went to the JESWG and said, look, we
13 are not all that different in exposure, let's try
14 to come up with a model and at least a system that
15 we can use as a baseline for use both in garrison
16 and in deployed environment.
17
18
19
20
21 That's happened over time. There will
22 have to be some changes made to the application to

1 really make the DOEHRS-IH application work in a
2 deployed environment because they don't follow
3 that process model exactly as they do in the
4 garrison environment.
5 But it doesn't change the data elements
6 that will be captured. It just kind of changes
7 the way they go about capturing it. So those are
8 some of the things that TMIPJ will have to look at
9 as they move forward getting the DOEHRS-IH
10 application.
11 But the basis it's going to provide,
12 that lifelong exposure record in a data repository

13 so we have that information.

14 Next slide, please. It's mobile.

15 There's a web-based piece. There's a mobile

16 piece, installation to installation. The concept

17 is it's web-based.

18 You have the ability to go out to the

19 field and collect information instead of using a

20 paper and pad to collect the information. There

21 will be a transactional server located at San

22 Antonio and the mobile piece will sync up to that

1 once they get back to their workplace and the data

2 will then be stored on the transactional server.

3 Next slide, please. Here is some of the

4 functionality. I won't read it to you, but

5 basically it's going to capture what it needs to

6 capture based on the input from the functional

7 work groups. It has been a very, very active user

8 group within DoD from the industrial hygiene

9 community.

10 There has been a representative from the

11 JESWG on that work group. They have identified

12 requirements and they work very, very closely with

13 the developer in joint application sessions to

14 make sure what the requirement is is understood by

15 the developer and actually developed the way they

need to use it when it hits the street.

Next slide, please. This is the exposure assessment model. It's really an eight-step model that starts on the left side there where they really define the scope, kind of like your Franklin Planner. You put in the people that work for you. You put in your equipment.

You put in your customers and then you go out and do some basic characterizations defining a SEG.

That's probably the biggest change here for the DoD Industrial Hygiene Community. It's call a Similar Exposure Group where they group people together that have either similar exposures, work on similar processes, have similar job functions and do an assessment on a percentage of those individuals and assign that hazard and risk to all those people with those similar jobs.

I think that's the biggest change, definitely for the Army and for the Navy. It just kind of works through the process itself. It's very cyclical. They go back and reevaluate it, prioritize what they need to do each year. You will see that in a master schedule when I put the screen up.

Eventually, what will happen is the data stored in the transactional server will be sent to

20 the corporate data repository where they will be
21 able to pull information out at the DoD, at the
22 MACOM level, at the service level and really look

1 at exposures and look at different things that are
2 happening.
3 Right now that's not going to be
4 available with the first deployment of DOEHRS-IH.
5 Right now that's scheduled to be funded in FY09,
6 the development of the corporate reports.
7 Next slide, please. This is pretty
8 busy, but basically within the acquisition world
9 there are a tremendous amount of hoops you have to
10 jump through to get approval to send a system out
11 to the field.
12 Right now we are in the process of going
13 through what's called system qualification test.
14 That's done in a controlled environment in a
15 laboratory by an independent test agency, which is
16 JDIC, conducting it for this project, along
17 with two functional users from each service that
18 are run through the system and say does it do what
19 it really needs to do? It has to get a positive
20 score from the SQT. They have to say, yes, it
21 meets what we need.
22 Then it goes up to Dr. Winkenwerder for

approval for limited deployment. Right now we're looking for limited deployment to start sometime in the August timeframe, pending a successful system qualification test.

Next slide, please. The two test sites for the Army are the Madigan Army Medical Center in Rock Island Arsenal. You can see the Navy sites. The Air Force is going to deploy to two of their National Guard sites. They have probably the most robust Legacy system out there now. The first version of DOEHRS-IH will not meet all of their requirements that their Legacy system does.

So they will use it at the guard sites that don't have that system to test it so we can test it and get their input. But the next version that goes out will have more of the capability to address some of the current capabilities in the Legacy system and the Air Force will then start to make that transition to DOEHRS-IH as their IH application.

TMIP is waiting for us to get a positive

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1 SQT test, which hopefully will happen sometime in
2 July. We will turn that version of the software
3 over to TMIP for them to look at.
4 What they are trying to do now, the
5 DoD-IH Working Group working with the JESWG is
6 trying to come up with a prioritized list of
7 functionality that they both agree to that will be
8 developed as the next version or developed as part
9 of TMIP-J. TMIP-J has a very short window to get
10 that developed to be able to meet their Block 2,
11 Release 2 schedule, which is why we are turning it
12 over in July. We'll have to see what happens
13 here.
14 I think the approach is going to be,
15 it's my understanding that TMIP does not develop
16 software; they integrate software. The funds will
17 go to whichever program office develops the
18 software for IH. It will go to RITPO. They will
19 develop it for TMIP and turn it back over to them
20 for integrating into their suite of products.
21 Next slide, please. Again, in
22 conclusion, that kind of covers DOEHRS-IH. It's

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1 been a long time. We've had, obviously, some

2 challenges with regard to contracts and with
3 regard to funding.
4 But actually, the SQT starts today.
5 We're training the users and the testers today and
6 tomorrow and then for the next two weeks they will
7 be locked in a room doing system qualification
8 tests. We're not allowed in the room when they do
9 it. We can go in and say hello in the morning and
10 just do an introduction. But we're not allowed in
11 there while they are doing that testing. We'll
12 get reports on a daily basis, I'm sure.
13 The services and the reps that are there
14 are very, very excited. They wanted it years ago.
15 They know it's not the 100 percent solution. They
16 want something out there now and they want to
17 build on it. They're kind of following the same
18 path that we did with DOEHRS-HC.
19 We put it out there in '99 and now it's
20 a mature system and it meets their needs. It's in
21 sustainment and it's moving forward.
22 So with that, that really concludes my

1 portion of it. I'll take some questions on
2 DOEHRS-IH and CDR Meier will talk. Then I will
3 open up the application and kind of walk you
4 through some of the screens after that.
5 DR. POLAND: Dr. LeMasters and then

Dr. Parkinson.

DR. LeMASTERS: Grace LeMasters. I was just sitting here linking your first talk about hearing with your second talk about IH. As you are probably aware, combined effects to noise and solvents and fuels has a synergistic effect on hearing loss.

Therefore, given that literature, my question is how will the person in the field gather data such as noise, but will there be like a menu? Is this person in fuel maintenance? Is this person in the jet maintenance where solvent is used?

Is there a check-off list? Because normally people might not think hearing, solvents, fuels and noise.

MR. MONK: My understanding is that what

will happen is that there are a tremendous amount of pick lists within the DOEHRS-IH application that the industrial hygienist has to quantify the workplace, be it noise, be it solvent. It all gets stored in the industrial hygiene database.

Right now, what they are doing with HC just because historically they know what jobs are noise hazardous, they are testing these folks

9 based on that, not necessarily based on that they
10 know that that person's TWA is 95 DBA but they
11 know that that job is at that level. So
12 eventually it will all come together and the
13 health care provider will have that information.
14 I may defer to the doc here to answer
15 some of that and gratefully back away from the
16 podium.
17 LCDR MEIER: I think that's my
18 impression, is that that's not really the job of
19 the industrial hygienist to put all that together,
20 but it is the job of the occupational medicine
21 provider to put that together to have the clinical
22 picture of examining the patient and the exposure

1 information that's provided by the industrial
2 hygienist.
3 I don't know that I would necessarily
4 expect the industrial hygienist to put those
5 things together, but I would expect the audiology
6 "doc"to put these things together. He can only
7 put that together if he has the information. This
8 is the piece that allows access to that
9 information.
10 It doesn't necessarily yet push that
11 information onto the page that the audiology "doc" is
12 looking for, but it makes the information

13 available more readily than it is today. I'll get
14 into that in my talk.
15 Does that address your question, ma'am?
16 DR. LeMASTERS: Mostly. My concern is
17 that we know that solvents and fuels independently
18 can cause hearing loss. We know that noise can
19 independently.
20 LCDR MEIER: Is there a synergistic
21 effect?
22 DR. LeMASTERS: Well, we know there is a

1 synergistic effect. But would someone be
2 collecting that fuels and solvent information or
3 if you are thinking of hearing would they be
4 collecting all the exposures out in the field?
5 LCDR MEIER: They would be collecting
6 the same exposures that they do today. I don't
7 think DOEHRS-IH affects what samples the
8 industrial hygienist will take. So if they are
9 taking those samples today, they will continue to
10 take those samples tomorrow, but they will be
11 entering that data into an electronic repository
12 such that it's not a report on a shelf; it's an
13 electronic repository that people can suck data
14 out of.
15 DR. POLAND: Dr. Parkinson.

16 DR. PARKINSON: Thanks for the overview.
17 A couple of things. The board developed what I
18 thought was a very useful grid when we were asked
19 to respond to the question about serum and
20 biological specimen collection.
21 The reason we're doing this is because
22 of discrete types of exposures, some known and

1 some yet to be determined. But they fall into
2 groups, as you know, biological, chemical,
3 radiation, environmental, you know, those four or
4 five groups.
5 It might be useful for the Board to sit
6 down with that grid and begin to say, okay, if
7 that's the end stage of what we want to do to
8 monitor biological specimens, how do we ensure for
9 everyone of those five exposure boxes. This
10 system is online worldwide, transportable, good
11 information in less than four years.
12 With all due respect to your first verb,
13 you are not deploying. You are pilot testing it
14 in three sites this year. Full deployment will
15 happen FY09 if everything goes during this current
16 timeline.
17 So I'll tell you as a veteran of the
18 first Persian Gulf in 1990, when we promised 15
19 years ago that we would have exposures next to

20 assessment in long term surveillance with biologic
21 assessments as necessary, the pieces are still not
22 together.

1 I know, Ms. Embrey, probably the
2 pressure you are getting. So what we might be
3 able to do is to help understand at a much more
4 granular level, not today, but for executive
5 session, maybe to think is this an area that the
6 Board's better understanding and scrutiny of time
7 lines and budgeting and programming might give
8 utility to the department.
9 Because absent that type of scrutiny --
10 and I recall both the adeno-virus and the RAP
11 examples, I think four years is probably -- this
12 has been a 15-year timeline already from my
13 experience -- another four years to kind of get it
14 all integrated, because you've got to have the
15 DOEHRS-IH. You've got to have TMIP. You've got
16 to have CHCSII. Then you have to have the ability
17 to say did Sgt. Smith five years ago have
18 exposure that explains this strange polymorphism
19 in his genome.
20 That's where we started, a little bit.
21 We've got the building blocks, but we don't have a
22 single map.

COL GIBSON: Your explanation of DOEHRS-IH was very good. I appreciate that very much. The component that I think about and I've been thinking about for quite some time on this as I watched DOEHRS evolve over the last several years is the population-based assessments associated with this.

Collapsing exposure groups into these categories is a very good step, but I'm still concerned about what you were talking about, Dr. Meier, and what Dr. Parkinson talked about, that one individual from a clinical standpoint relating his exposure clinically.

I have been interested in what about this entire exposure group and let's look at this disease outcome in a population and go back to DOEHRS, go back to the industrial hygiene data to see if we haven't been missing something over the years that these data could really help us with.

Population base, is that component robust? Are we going to be able to tie the CHCS data back into DOEHRS to be able to do

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1 population-based assessments from an occupational
2 health standpoint?
3 LCDR MEIER: I think yes, sir. The
4 difference might be: "do we have that all in one
5 system that you log into once and you have all
6 that data at your fingertips in that one
7 application?"
8 I think down the road that might be the
9 reality in the near terms. Once DOEHRS hits the
10 street and once all of the industrial hygienists
11 are classifying populations similarly, then we
12 should be able to -- although it might be in
13 different systems -- right now it might be the ADM
14 model of CHCSI that we have to get the outcome
15 data from and DOEHRS-IH that we get the exposure
16 data from.
17 An epidemiologist can suck data from two
18 different systems and make those exposure outcome
19 associations and relationships. So I don't think
20 we're going to get very quickly to one system that
21 has everything. But I think the information will
22 exist. It will rely on epidemiologists being

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1 familiar with what systems are out there and what

2 data is in each system and some savvy
3 epidemiologist to put it all together.
4 I think it will be a while before we are
5 able to push a canned report out that says Sgt.
6 Snuffy was exposed to ethyl methyl-badstuff in the
7 desert and has some "bad-oma" in his head and
8 it's because of that. I think it will be a very
9 long time before we have a canned report that can
10 do that and analyze that data automatically.
11 We're going to rely on some gumshoe epidemiology
12 until then.
13 DR. POLAND: Dr. Lednar had a comment.
14 We might ask him to comment on how this plays out
15 in the private sector because I suspect you do
16 have some comprehensive systems that you use and
17 have to be facile with.
18 DR. LEDNAR: Let me start, you give us
19 more credit than we deserve. Actually, thinking
20 about as we in the civilian setting have thought
21 about the term "hearing conservation" and clearly
22 as a program, perhaps with a goal to protect and

1 conserve hearing, noise induced hearing loss is
2 clearly a major one.
3 What I head in DOEHRS-HC was a
4 noice-induced hearing loss mechanism.
5 Dr. LeMasters, I think, asked about

6 another aspect of hearing conservation. That is
7 workplace exposure to solvents and its independent
8 and maybe synergistic contribution to hearing
9 loss.
10 I would offer a third. That is personal
11 cigarette smoking.
12 So if our goal is to conserve hearing
13 it's important, but not enough, to understand
14 noise. Perhaps it's what you described as the
15 role of the occupational physician in scanning
16 across all of these databases to make an
17 assessment of did we really protect the hearing at
18 a population level and can we recognize factors at
19 the individual patient level?
20 Another one of the experiences we had in
21 the civilian setting, and I notice that your
22 fielded sites include MTFs, hospital-based

1 audiologist looking for pathology use these tools
2 differently than workplace hearing conservation
3 audiologists do.
4 So you have to be really careful that
5 whatever kind of software you are using is staying
6 true to the purpose that you field at it. But you
7 really have to integrate industrial hygiene,
8 audiology, occupational medicine together before

9 you've got the system where you want it.
10 LCDR MEIER: You're still going to have
11 to have warm bodies taking histories and doing
12 physical exams.
13 DR. LEDNAR: Absolutely.
14 LCDR MEIER: The machine is not going to
15 do all the work for you, but it should give the
16 warm body access to the information on which they
17 can make a meaningful decision.
18 DR. LEDNAR: And the importance of
19 solvents, just to come back to that, I think is
20 increasing in importance as a consequence of the
21 very good work of engineering down hazardous
22 levels of noise. So the success of improving the

1 workplace condition for noise has reduced that
2 contribution making more possible other factors.
3 In our population, about 25 percent of
4 our workforce smokes. So it's not trivial as a
5 contribution, but clearly solvents are another
6 important factor to understand.
7 LCDR MEIER: In response to Colonel
8 Gibson's question earlier, I think one of the
9 audiologists at Navy Environmental Health Center
10 has sucked DOEHRS-HC disability out and looked at
11 hearing loss disability in the Navy and Marine
12 Corps. I'd have to get him in touch with you for

13 more details on that.

14 But I think it has been looked at. I

15 can't quote any of the results of that because I

16 don't have them up here.

17 If you are ready to move on, sir, I can

18 move on to my presentation and then the demo. If

19 it's okay with everybody else, I'd like to leave

20 the lights on. I think after lunch and in the

21 afternoon -- can you all see? My slides pretty

22 much all look like that with text about that big.

1 If you want to turn them down, that's fine with

2 me.

3 So I'm LTC Mike Meier. I did a general

4 surgery internship. I have been with the Marine

5 Corps helicopter squadron deployed aboard the WASP

6 when they had a TB outbreak to the Med.

7 I have been stationed in Rota, Spain

8 with an EP-3 squadron and deployed with them to

9 South America and across the Mediterranean. I did

10 my occupational medicine at USUHS and I'm in my

11 utilization tour now at Branch Clinic at Indian

12 Head.

13 I am the clinic director at Indian Head,

14 one hat. I'm the occupational medicine physician

15 at Indian Head, another hat. I'm the chair of the

16 occupational IPT Which is a TMA-IM department
17 integrated product team that validates
18 requirements for programs like this, another hat.
19 Then I'm also the chair of the Navy's
20 Medical Matrix Committee, which I'll describe a
21 little bit in my presentation. So I'm
22 multi-hatting here, which might be part of the

1 problem with why it has taken 15 years to arrive
2 at this. It's that this is a product of
3 multiple -- good people working on it, but
4 part-time jobs of those people.
5 Colonel Gibson asked me to cover the
6 clinician's aspect and epidemiologist's aspect of
7 these occupational information systems and how
8 they could be used by public health practitioners,
9 epidemiologists and clinicians.
10 As far as I know there's no industrial
11 hygienists on the AFEB, but there probably are
12 some occupational medicine physicians and
13 environmental health specialists and things like
14 that and certainly preventive medicine folks.
15 I must admit I'm not able to know what
16 you guys want to hear from me today, so I'm going
17 to talk about what I know, so I figure I can't go
18 wrong with that. If your questions come up, I'll
19 do my best to answer those. So hopefully, my

20 comments will stimulate some discussion.

21 Next slide, please. The only reason I

22 bring this up is when I was doing my objectives

1 for the CME credit for this, CHCSII and clinical

2 business practice is my passion, so I put that as

3 one of the objectives but Colonel Gibson informed

4 me that this board might have heard quite a bit

5 about CHCSII lately and might not want to hear

6 more about that today. So I can talk about it,

7 but I'm not planning on talking about it very

8 much.

9 I wanted to kind of break things down

10 for you and give you my perspective as a clinical

11 occupational medicine specialist on how I see my

12 world and then you will see how these systems can

13 play into my world as a clinician.

14 An occupational medicine doc focuses on

15 surveillance, which I interpret as "Is the

16 workplace making the worker unhealthy?" I'm

17 testing things to see if the worker is being made

18 unhealthy by their employment; certification,

19 which is different from surveillance, and that

20 looks at "Is any particular worker able to do

21 their job safely? Do they meet the physical and

22 medical requirements to do that job safety?"

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1 There's injury and illness care when
2 safety precautions fail, people get hurt or they
3 get sick and the occupational medicine physician
4 will take care of that illness or injury and do
5 what they can to get that person back to work on a
6 light duty status or back to a full duty status,
7 which is the eventual goal.
8 And managing some of the components of
9 workers' compensation, appropriate claims, not
10 appropriate claims and getting people back to work
11 and off of the workers' compensation roles so that
12 we can save taxpayer dollars.
13 Then, kind of moving from top to bottom,
14 these are kind of like clinical to administrative
15 roles. Although that's not one of my hats now, I
16 think each occupational medicine physician is
17 certainly trained to do epidemiology and research.
18 It's a matter of how they set up their clinical
19 practice as to how much time they have to do that
20 kind of thing. I'll touch on that a little bit
21 later.
22 Next slide, please. I'd kind of like to

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1 run through the life cycle of an occupational
2 medicine clinical encounter for those of you who
3 either haven't ever done this or haven't done it
4 in a while.
5 Basically, the industrial hygienist,
6 their job is to identify hazardous work places and
7 identify hazardous work tasks. That's really what
8 they are supposed to do.
9 They can do that by identifying similar
10 groups that do that task, but they are not really
11 supposed to go out there and identify an
12 individual that does that task. They are supposed
13 to identify that the task is hazardous or the
14 workplace is hazardous.
15 Then they are supposed to recommend
16 controls to the worker's supervisor. So that the
17 employee's supervisor that they are making
18 recommendations to, ultimately, the CO of the base
19 or the CO of that particular employee, so they can
20 recommend engineering controls, administrative
21 controls and make recommendations for personal
22 protective equipment.

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1 The industrial hygienist can also

2 recommend hazard based medical surveillance. So
3 those things are just recommendations. They are
4 recommendations for the supervisor to take. So
5 the supervisor, and again, that is the supervisor
6 of the civilian employee. That's the supervisor
7 of the soldier, sailor, airman or Marine who
8 basically is a delegate of the commanding officer
9 of that unit.
10 The supervisor is responsible for
11 providing a safe and healthful workplace for that
12 particular employee. So it's the supervisor's job
13 to take the industrial hygienist's recommendation
14 and say "This task is hazardous. I've got Joe,
15 Tim and Betty doing that task. Those people,
16 those individuals, need to be enrolled in medical
17 surveillance and be monitored for unhealth based
18 on those exposures.
19 Then it's the supervisor's job to
20 enforce those recommendations and execute those
21 programs and it's their job to enroll individuals,
22 not populations, into appropriate medical

1 surveillance and certification programs.
2 The unit safety department will assist
3 the supervisor in this effort.
4 Next slide, please. Then the role of
5 the occupational medicine physician, which we have

6 touched on a little bit already this afternoon, is
7 to examine an individual employee.
8 Based on that examination they will
9 document in the medical record currently a paper
10 medical record, soon to be an electronic medical
11 record. They will document the events of that
12 clinical encounter. The occupational medicine doc
13 will also make a recommendation to the supervisor,
14 a recommendation to the supervisor whether that
15 particular employee is medically qualified or is
16 not medically qualified to do that particular job
17 or task.
18 The oc doc can also make recommendations
19 to the supervisor about what restrictions any
20 particular employee should be on or what
21 limitations they should be enforcing.
22 Also, each oc doc should be looking out

1 for detecting trends in populations. If you
2 notice that all the welders are having a
3 particular illness or all of the aircraft handlers
4 are having threshold shifts on their audiograms,
5 then your obligation as the oc doc is to report
6 that to the safety department, certainly to the
7 employee that they've got a hearing loss; but
8 report that up so that interventions can be

9 accomplished and health preserved, basically.
10 Next slide, please. So the current
11 technology is again, talking about what I know,
12 Navy industrial hygiene and occupational medicine,
13 the industrial hygienist writes a written report
14 that goes on a shelf, gets distributed to
15 supervisors, safety departments, occupational
16 health clinics and sits on the shelf at the
17 industrial hygiene office as well. You rely on
18 people to read through that survey to gain
19 information from it.
20 So there's an interpretation issue
21 there. You are relying on supervisors to be
22 interpreting those data that are in the industrial

1 hygiene survey.
2 This was brought up earlier today:
3 Individual sampling data is supposed to be
4 recorded on a SF-600 and placed in the paper,
5 Medical Record, so that that is presumably some
6 exposure data on an individual.
7 Only when the sample was done on an
8 individual person does that make it to an
9 individual's medical record. Otherwise, if it's
10 not on an individual or if it doesn't make it to
11 the SF-600, then that data should be in the
12 report, but again, that's a paper document that's

13 on a shelf somewhere. It might also be captured
14 in some databases.
15 But these are locally maintained
16 databases or maybe service-specific databases
17 where you are relying on industrial hygienists to
18 populate fields that go to their service specific
19 environmental health center or CHPPM or the Air
20 Force equivalent of those.
21 Then the enrollment of individuals into
22 specific medical surveillance programs might also

1 be recorded in a service specific database. In
2 the Navy that's PC Matrix that can do that. But
3 that's a home-grown service- specific program that
4 is kind of on its last legs with funding.
5 The Command for Naval Installations,
6 CNI, has recently adopted another program called
7 ESAMS. It's a program that is web-based and can
8 track training enrollment into surveillance
9 programs, currency of medical surveillance exams
10 and things like that. So there are some systems
11 out there, but again, we are national on the under
12 the enterprise yet. We are still in the service-
13 specific world.
14 Next slide, please. So in the
15 occupational medical clinical business, walking

16 you through an encounter, once we've identified
17 that an individual needs to be in a medical
18 surveillance program and they get to the clinic,
19 then we use things like PC Matrix in the Navy.
20 I'm not exactly sure how the Army
21 accomplishes an occupational medicine clinical
22 encounter, but in the Navy you use PC Matrix.

1 It's a peer-reviewed system that identifies which
2 history components you should be asking each
3 person based on what stressor they have. What
4 physical exam components do you need to be
5 examining? What lab tests? What X-rays? What
6 other tests do you need to be doing and then you
7 can render an opinion based on that examination.
8 Where do you document this encounter?
9 On an SF-600 or I use "Provider Gooey" at my
10 clinic at Indian Head. I also use PC Matrix which
11 spits out an SF-600. In the future I anticipate
12 using CHCSII to document that clinical encounter.
13 That's really what CHCSII is good at, is
14 documenting a clinical encounter. It's not the
15 end all and be all to solve all of the mysteries
16 of military health. It's a documentation tool to
17 create an electronic medical record and I think
18 that's one thing that it can do well.
19 Each clinician would want to take credit

20 for the work that they are doing and that's a big
21 push, at least in the Navy and I'm assuming
22 everywhere else where you want to take credit for

1 the procedures that you do, the for examinations
2 that you do and in the civilian world you'd want
3 to get paid for that. In the military world you
4 want to just be given credit for the work that you
5 are doing.
6 Then, right now if you want to give
7 feedback to the safety office, you can only give
8 feedback to the industrial hygienist. If you want
9 to give feedback to the supervisor you are doing
10 it on a piece of paper, a dispensary permit, a
11 physician's written opinion.
12 You might have a local database that can
13 communicate with all those folks and you've always
14 got the phone and e-mail. So that's current
15 technology.
16 Next slide, please. A little bit about
17 current and future technology. I talked about
18 DOEHRS-HC, a system where audiologists and
19 audiometric technicians will be inputting data
20 into the system. But clinicians, also
21 audiologists and technicians, epidemiologists can
22 be using the data that is output from that system.

DOEHRS industrial hygiene, DOEHRS-IH, you'll have industrial hygienists mainly putting in information there, environmental health officers, the Air Force BEEs and various occupational and environmental folks putting data in and similar populations using that data.

DOEHRS data repository is basically just where all the data sits and where you would suck the data out of.

CHCSII, like I said, is a clinical encounter documentation tool. I think that's how it can best be used in creating the electronic medical record.

If there's interest and time I can show you occupational medicine templates to conduct an occupational medicine clinical encounter. If there's not interest or time during the meeting, I can do it after the meeting if there's interest.

Eventually, there should be some interface -- and I use the term interface versus integration a little bit loosely and I get a smile from Major Spellman over here.

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1 Basically, when you are talking about
2 commingling DOEHRS data into CHCSII there's a big
3 difference between making DOEHRS a part of CHCSII
4 and just giving the CHCSII user access to the data
5 that's in the DOEHRS data repository.
6 I think there's a money issue there and
7 a complexity of programming issue there. We don't
8 need to make things harder than they already are.
9 Next slide, please. So for DOEHRS-HC
10 the benefits to the clinician which we have gone
11 over a lot of these, so I won't spend too much
12 time on them, you've got a standardized, typed
13 archived DD-2215 and 2216 that you can get to any
14 time that you want. Anybody else can get to it
15 also, that has the appropriate access.
16 It will calculate whether there's a
17 threshold shift or not. So in the world where you
18 might have nurse-practitioners, GMOs, family
19 practitioners doing occupational health, you might
20 be at a base where there is not a board certified
21 occupational medicine physician doing the
22 occupational health work there.

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1 So you can help them do a better job by

2 having some things automatically calculated,
3 threshold shifts, recommendations for referral to
4 occupational medicine, recommendation for referral
5 to an audiologist and things like that. So you
6 can really help those folks that might not be as
7 well trained to do that job. You can help them do
8 a good job.
9 We have already used it at Indian Head
10 where the employee gets an audiogram. They need
11 to be referred to the audiologist. Boom, the
12 audiologist can already pull up that data, just
13 like Mr. Monk was saying. They can review that
14 audiogram, make a decision whether they need to
15 see that patient or not. If they do see the
16 patient and they repeat another audiogram, boom,
17 we can see that in our record and we have almost
18 instantaneous exchange of information.
19 Benefits of DOEHRS-HC to the
20 epidemiologist or the researcher, you can pick
21 out, based on how you slice and dice the data, you
22 can pick out individuals or populations with

1 threshold shift. You can pick out individuals or
2 populations with compensable hearing loss.
3 You can pick out individuals or
4 populations with compensable hearing loss and you
5 can see what impact your hearing conservation

6 program is having. Like I said, Commander Robig
7 at NEHC has done a little bit of that work.
8 Next slide, please. DOEHRS-IH has some
9 benefits for the industrial hygienist. Basically,
10 it helps them write a better report. It doesn't
11 write the report for them, but it helps them write
12 a better report by keeping them on task, keeping
13 them on target, giving them an archivable,
14 retrievable data repository that they can go back
15 to and support the recommendations that they are
16 writing in their report.
17 Even if you don't have your tablet PC in
18 the desert with rounds going downrange, you can
19 still do stubby pencil industrial hygiene, but now
20 you have a place to put that data electronically.
21 So this might not go to the war with the
22 industrial hygienist in the field-deployable

1 preventive medicine unit, but they will have
2 access to this in the field and eventually that
3 data will make it back to the repository so that
4 downrange or later in time I'll be able to see
5 that Sgt Snuffy had exposure XYZ in the field at
6 this particular time.
7 It gives the industrial hygienist an
8 opportunity to make recommendations. It gives

9 them the opportunity to assign similar exposure
10 groups and it gives them some reference data. You
11 might see this in the demo where they can look up
12 NIOSH standards, OSHA standards, ASHRI
13 recommendations, National Fire Protection
14 Association things with hazardous chemicals,
15 recommendations from vendors, MSDS sheets. You
16 have access to these via links within DOEHRS-IH so
17 you almost have your industrial hygiene library in
18 the tablet PC as long as you are hooked up to the
19 web.
20 Next slide, please. The benefits of
21 DOEHRS-IH for the clinician, when I'm assessing an
22 individual with an environmental or occupational

1 stressor, I can use this industrial hygiene data.
2 This gets to what we were talking about earlier.
3 I can use the data from DOEHRS-DR data
4 from the industrial hygienist, and I can put that
5 together with my biologic monitoring data, my
6 blood, urine samples that I'm taking. I can put
7 that together with my history, whether that's a
8 face-to-face history or whether that's a
9 pre-deployment questionnaire or a post-deployment
10 questionnaire where the employee, the soldier,
11 sailor, airman or Marine are saying, yes, I was
12 exposed to bad stuff when I was over there. I can

13 put that together with my physical examination.
14 Then, that's when you need the warm body
15 to kind of put all this data together. Two goals
16 would be to develop the correct diagnosis and
17 treatment plan for that individual and the other
18 goal is to prevent future illness and injury in
19 similar populations.
20 Next slide, please. So I think most of
21 the reason why you all are here today, the
22 benefits to the epidemiologist and the researcher

1 of DOEHRS-IH as mentioned earlier, whether it
2 exists or not, the capability, I think DMDC data,
3 if it's available and unclassified and a whole
4 bunch of other things, should be able to identify
5 where a unit is at a particular time in space,
6 maybe even where an individual is.
7 You are making a lot of presumptions
8 about whether that individual was with that unit
9 in that country at that time. But you should be
10 able to link that data with the industrial hygiene
11 data, which would be exposure data. Then, like I
12 said earlier, maybe from a different system, but
13 you should be able to get to post-deployments
14 questionnaire data for outcomes.
15 ICD-9 and CPT procedure codes within

16 CHCSI or II, SITR SADR information and stuff
17 like that, you can get medical boards information,
18 disability codes, death certificates.
19 There's a whole slew of outcome data
20 which you should now be able to link to, exposure
21 data from DOEHRS- IH and DMDC data so that you can
22 say that a particular individual was potentially

1 exposed with the goal of making associations
2 between exposure and outcome.
3 So when I have my EPI hat on, I like
4 to use data that already exists in a database out
5 there, secondary data analysis. That's what I
6 like to do. I think secondary data analysis will
7 be more meaningful if the system is set up so that
8 the person entering the data, if that system is
9 useful to that person you are going to get better
10 data in and you are going to be able to use more
11 meaningful data on the outflow end of it.
12 Next slide, please. One or two slides
13 about CHCSII and occupational medicine clinical
14 business practices.
15 I mentioned before the Medical Matrix
16 Committee which is a group within the Navy with
17 Army and Air Force representation that has
18 developed a matrix of history questions, exam
19 components and tests that are stressor specific.

20 This matrix has become the basis for a set of
21 about 120 CHCSII enterprise level and
22 counter-templates to accomplish occupational

1 medicine and clinical business.
2 I can show that to you, but I don't
3 think there's time today. If there's interest,
4 I'll be glad to show anybody that's interested
5 later.
6 What that gives you is you can assess
7 multiple stressors at one encounter. It allows
8 you to ask multiple questions that are stressor
9 specific and you can merge those together and
10 eliminate duplication.
11 So you have the person come in once a
12 year instead of four or five times a year. They
13 might be in the Hearing Conservation Program and
14 they might be in the Respiratory Protection
15 Program.
16 They might be exposed to nitroglycerin.
17 They might be an explosive handler or a vehicle
18 operator. They might need a DOT license
19 certification. You can accomplish all those
20 things in one encounter by making efficient your
21 clinical encounter and asking those questions once
22 a year instead of five times a year.

1 You can have standardized documentation
2 which will help the epidemiologist down the road
3 so that you can presumably suck out data. Tell me
4 all the people that complained of headache and if
5 you have other data, headache and exposure to
6 solvents, or whatever.
7 So if you're coding in your clinical
8 encounter, the Medical term for headache under
9 history for that particular employee in that
10 particular occupational medicine encounter, then
11 down the road an epidemiologist should be able to
12 look at all the people that complained of headache
13 and tease that, whether it's related to an
14 exposure or not.
15 Again, on the productivity end you
16 should have improved coding of your ICD-9
17 evaluation and management codes and CPT coding
18 because that's part of the application.
19 Next slide, please. I think I've
20 mentioned this. Basically, instead of necessarily
21 making it a part of CHCSII, I think it would be
22 good enough to have appropriate role-based access

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1 to the information that's in the DOEHRS database.
2 Next slide, please. So the future of
3 this, what I think we need to be working on, now
4 that the application is about to hit the streets,
5 there will be certainly training about how to use
6 the application, but I think there will probably
7 also need to be training within the industrial
8 hygiene and occupational health community about
9 how best to load this data so that we are calling
10 apples and we are classifying populations
11 similarly.
12 You'll also want a robust reporting
13 capability. Is it going to be good enough that a
14 knowledgeable person can go in and suck data out
15 or do we need to have some canned reports? I
16 think it's in the pipeline to have some canned
17 reports, but you're still going to need people who
18 are familiar with the data system that can know
19 what questions to ask so that they know what data
20 to pull out of the repository.
21 So the reporting back to the line
22 commander should give them some readiness

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1 information. Do I have a deployable force? What

2 percentage of my force is deployable, and things
3 like that.
4 Up the medical chain of command you are
5 going to be looking at effectiveness. Is my
6 occupational health program doing what it's
7 supposed to do? Is it keeping workers healthy?
8 Epidemiologists are going to be looking
9 for exposure and outcome associations with the
10 effort of prevention.
11 Then the data quality piece is going to
12 have similar SEGs, similar processes, calling
13 similar things similarly.
14 How are we going to classify commands?
15 Is it going to be by UWIK? Is it going to be
16 by base? Is it going to be by mailing address?
17 Are we going to be using the GPS system to say I'm
18 an industrial hygienist and I'm taking a sample at
19 this location right now and that quantifies where
20 the potential exposure was.
21 Next slide, please. Thank you for
22 tolerating that. Hopefully this is not an adverse

1 conference experience.
2 DR. POLAND: Questions? Dr. LeMasters,
3 please, first one.
4 DR. LeMASTERS: Well, it looks like a
5 great system that's been needed for a long time

6 and it's certainly going to make analyzing data a
7 lot easier down the road.
8 I have just a couple of issues or
9 questions. I'll just put those out.
10 Is it only IH sampling data that are
11 going to go into the file? The reason I ask that
12 is because as we know, IHs are few and far
13 between. They do the sampling when there is an
14 out-of-compliance issue or a mandatory sampling
15 and may not do sampling for such routine things as
16 when they are doing jet engine maintenance.
17 The second question: So if there was a
18 check list of everything that person has contact
19 with, not just the specific IH data, I think long
20 term it would be more useful.
21 Then the other thing, you mentioned that
22 once a person gets into the surveillance program

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1 there is a matrix, a test they do. My question
2 was, is there a matrix to determine who should be
3 enrolled in what program? For example, like an
4 algorithm?
5 LCDR MEIER: Do you mean how does the
6 industrial hygienist make the recommendation about
7 what surveillance program to put them in?
8 DR. LeMASTERS: Or occupational

9 medicine. I'm thinking that if there was an
10 overall global matrix saying if you do this and
11 this, then you should be in this program and that
12 program automatically.
13 LCDR MEIER: It's not purely sampling
14 driven, if that's what you're asking.
15 DR. LeMASTERS: Well, not sampling, but
16 I'm thinking more job task, job activity, that if
17 you do these jobs then this and this and this is
18 your surveillance.
19 LCDR MEIER: That's getting very close
20 to the similar exposure group. When you identify
21 that an explosive handler is in a similar exposure
22 group, some explosive handlers handle

1 nitroglycerin; some don't.
2 So it won't be able to be just as broad
3 as "All explosive handlers need to be in
4 nitroglycerin surveillance." You will have to
5 drill down a little bit. There's an explosive
6 handler who handles nitroglycerin. There are
7 painters, but there are painters that have various
8 chemicals in their paint, isocyanates or whatever,
9 that put them at different risk from the painters
10 that have different chemicals in their paint.
11 So that's what I'm getting at in the
12 appropriateness of the classification of the

13 similar exposure group. It might take some
14 training of industrial hygienists to say here's
15 how you need to classify these similar exposure
16 groups. It needs to be specific to a level so
17 that we still maintain a concept of a population
18 of painters that have isocyanates in their paint.
19 I'm not sure I answered your question
20 though.
21 DR. POLAND: Dr. Parkinson, and then
22 Dr. Halperin.

1 DR. PARKINSON: Michael, I enjoyed your
2 presentation because it was very functionally
3 focused. Let's take away all the systems,
4 although you had a lot of systems in there. But
5 imagine if we had a functional timeline for DoD,
6 for the Board to help review and work with.
7 You are at the "as is" for a very
8 forward leaning occupational medicine physician.
9 Near term, long term, to have those functions,
10 maybe that's a way for us to think. When will we
11 have total force protection, health surveillance
12 to do those five scenarios? And what does now,
13 six months, two years look like?
14 Then, you know, if we had to say as part
15 of the public good what in there can we accelerate

16 to make sure that functionality occurs on those
17 timelines or maybe even sooner than 09? Because
18 realistically, the last scenario you had to do
19 those five things -- I don't know what slide it
20 was -- that's 010 vision and we are 05. and
21 that's 010 smoothly.
22 So again, I'm just trying to frame in my

1 own mind if really we had a functional timetable
2 for total force protection so if you are sitting
3 in Indian Head and someone just came back from
4 Iraq, do you really do that last slide? When can
5 you do that? That would be a good exercise,
6 perhaps, for all of us collectively to put on and
7 say it's a functional timetable.
8 Typically we do systems timetables which
9 is not really what the expectation is on Capital
10 Hill or for that matter, our own troops that we
11 need to do a good job for.
12 It was very useful for me, thank you.
13 LCDR MEIER: Thank you, sir.
14 DR. HALPERIN: A nice grid of who the
15 players are and what they can access and when it
16 would be accessible would be really helpful. It
17 was a very comprehensive presentation, but if I
18 had a quiz now I don't think I could reconstruct
19 who has access to what when.

20 That gets to, I think, some of Grace's
21 questions. I think it would also probe questions
22 like, well it's nice for epidemiologists to come

1 along after a question has been asked to analyze
2 the data, but it's usually the astute clinician,
3 not occupational physician, or the astute
4 industrial hygienist who says here's a bunch of
5 people, they all seem to have the same thing and
6 whatever. So do they have access?
7 Then it gets down to the clinician with
8 somebody with chest pain. Can they access to find
9 out that they were exposed to methylene chloride?
10 I think a nice grid of who has access to what and
11 if it's not now, when it's going to be available
12 would summarize your whole presentation and make
13 it a roadmap for us.
14 DR. POLAND: Dr. Lednar, and then
15 Dr. Oxman.
16 DR. LEDNAR: I really appreciated the
17 thought that's gone into the development of each
18 of these systems. As I was sitting there
19 listening I was thinking of some video that
20 Colonel Riddle shared with us this morning about
21 the ear warrior and the workplace demand of the
22 ear warrior.

1 It reminds me that our occupational
2 medicine colleagues in the UK have an approach
3 that may be worth us thinking about as we think of
4 systems. If the goal of the systems is to try to
5 ensure safe, healthy and mission-capable military,
6 then this thing may have a lot of relevance. That
7 is part of our job is to assess the impact of work
8 on health, which is the traditional way of
9 thinking of occupational medicine.
10 But it is also to include the impact of
11 health on work. As we think of the active force,
12 most of whom are young and healthy and as we think
13 about the combined force, National Guard, Reserve,
14 and Active component, there will be some who will
15 come to the military deployment experience with
16 chronic medical conditions.
17 When I think about processing all those
18 inputs in Colonel Riddle's video very, very fast
19 and making decisions that are going to mean
20 dropping a bomb or not, that cognitive processing
21 becomes very important.
22 So in addition to the toxicology and the

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1 musculoskeletal demands of work, we really need to
2 be thinking about things that affect the ability
3 of cognitive performance and that's where
4 depression, diabetes management, and family issues
5 start becoming mission impacting. In a lot of
6 ways that's very relevant to occupational health.
7 So just to sum it all up, there's a
8 connectedness and that's back to the medical
9 records system of the military. In addition to
10 the occupational health pieces, we also need to
11 connect back to the general medical record.
12 LCDR MEIER: Occupational health,
13 individual medical readiness, does individual
14 medical readiness capture things like depression,
15 things like adverse childhood events? Does it
16 capture things like that?
17 I think right now it doesn't. Should
18 it? That's why you guys make the big money.
19 DR. POLAND: Dr. Oxman.
20 DR. OXMAN: The intensive data input, I
21 would think that the medic in the field is going
22 to be appreciating a great deal of important data.

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1 Is that data going to be entered into the system?

LCDR MEIER: Not to my knowledge, sir. I think the data inputs are more along the vein -- I mean this was developed by industrial hygiene functional users. I think the data inputs are in that mindset.

Maybe I'm not understanding you exactly. Well, in terms of exposure, for example, won't you miss a great deal of relevant data if the people who are interacting with our troops in the field when they are not well or exposed to something don't have their data entered into the system?

LCDR MEIER: Eventually the "train like we fight; fight like we train" kind of mentality eventually, when we get to theater, should capture the clinical encounters in the field just like clinical encounters are captured at home.

So from the clinical aspect, yes, definitely the medics, the IDCs, the corpsmen, the field medical officer is going to be capturing that data in a system like CHCSII theater.

The exposure information, I would rely

on the astute corpsmen, medic, field medical officer to make an observation that, wow, it's loud here; I need to get the industrial hygienist from the FDPMU over here to sample this.

That's kind of an extreme example, but

they are going to be identifying potential exposures and they are going to get the expert on measuring that exposure to come measure that exposure.

I wouldn't expect the field corpsman to be humping in their 80-pound packs the capability of taking all this information.

DR. OXMAN: But many times long after the event somebody cottons on to the fact that something happened back there. If that data isn't entered, in a sense blindly, and isn't available, you will never be able to track it down.

LCDR MEIER: I don't think this system is going to be able to do that. I think that's going to be uncaptured data. It might forever be uncaptured data, I don't know.

MR. MONK: I think that goes to the next

step for the application, what are the functional users that are going to deploy, what are their requirements? Do they require a notebook computer? Do they require a handheld that they can actually say, yes, this happened here and capture that data.

That has to be clearly defined by the user community and brought back to say we need

9 this in there. Typically in the Army the PM units
10 assign -- and you guys help me out; it's been a
11 while -- you know, at level three they go forward
12 and collect the information and bring it back from
13 echelon one and two.
14 I don't know what the thinking is.
15 Who's going to use this system in the field?
16 They've got to figure that out. That's just my
17 personal opinion right now. If you Army guys want
18 to chime in, please do. Again, it's got to be
19 identified as a requirement for them to capture
20 that and then it's got to be turned over to the IT
21 guys to make it happen.
22 LCDR MEIER: I think there are multiple

1 scenarios there where a line commander says I want
2 to attack that hill and there's currently no enemy
3 there. It's like I send my environmental health
4 team to the area that I want to go to and say is
5 it safe for my people to camp there or live there,
6 be there for a day or a week.
7 So yes, that data would be captured and
8 that would be entered into a system like this.
9 On the other hand, you're standing here
10 and did we just get slimed with something? Did we
11 just get gassed? You might not have that data at
12 that particular moment in time and you would have

13 to rely on your response forces, some of which
14 might be industrial hygienists or environmental
15 health officers with the forward deployed unit to
16 come sample the air, water and soil at their
17 particular location.
18 But you are going to have to call them
19 in because they might not be an inherent asset
20 with the shooters in that frontline unit.
21 DR. POLAND: Colonel Riddle and then
22 Dr. Patrick.

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1 COL RIDDLE: Following up on Dr. Lednar
2 and Dr. Parkinson and looking at the battlefield
3 airmen, there is a sense of urgency. We were just
4 down at ASOG and the ASOG warriors, 25 percent
5 (inaudible) at any one point in time. Sixty-three
6 percent manned in some of the specialty career
7 fields. Seventy percent wash out in basic recruit
8 training.
9 There's a $60,000 reenlistment bonus to
10 get them to sign back up. Part of that is just
11 the magnitude of the demands on that human system,
12 on that battlefield airman, putting this picture
13 together so that you can go back and develop
14 requirements documents that can meet with new
15 technological solutions to some of the demands

16 that we're putting on these individuals.
17 We have a major initiative, the BAO tool
18 kit, the Battlefield Airman Tool Kit, which came
19 out of Secretary Roach visit following Operation
20 Anaconda where, you know, Roche visited him in the
21 hospital, what can you do for me? Well, you can
22 do something about this 170 pounds that I have to

1 carry on my back in the operational theater to get
2 my job done.
3 Then, you know, when you look at it, you
4 have 37 pounds of batteries that are seven
5 different types of batteries to meet seven
6 different demands. You know, if you put that
7 total package together so that you put a system
8 together for the warrior, but really it's being
9 able to go in and tease out the demands and
10 attacking kind of technology solutions for those
11 individuals.
12 You know, if we pay a bigger and bigger
13 bill for disability to be able to tease apart the
14 data and go on after some root cause analysis and
15 then feeding that back in to requirements
16 documents and capabilities documents so that, you
17 know, the research enterprise of the department
18 can come up with some technology solutions. The
19 deed is here today, I mean it's real.

20 LCDR MEIER: That's one of my pet
21 peeves, being careful not to saddle the medical
22 community with doing root cause analysis. You

1 need safety professionals to do that that are
2 trained to do that.
3 Now, there are a lot of mishap events
4 that are going uncaptured by the safety community
5 that are being realized by the medical community
6 but the medical community is taking just enough
7 history to make a diagnosis and treatment plan.
8 They are not getting to the root cause
9 of the mishap. I would caution anybody that
10 thinks that the medical community can get to the
11 root cause. You are going to take away from
12 medical productivity is you saddle the medical
13 folks with the job of the safety community who is
14 probably better trained to do that job and should
15 be available to do that job.
16 DR. PATRICK: My question really follows
17 up on what Rick said. That is, I'm wondering
18 what's being done to automate the sampling and the
19 data collection process. I mean what new
20 technologies are there? This actually has a
21 common theme among a few of the things.
22 Sometimes we don't get briefed enough

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about what DARPA might be doing or what other groups might be doing to actually improve the technological solutions to this, that can bundle this together and make it much more doable.

It strikes me that doing harder what we don't do well doesn't necessarily solve the problem as opposed to finding a huge technological leap that can do something in a much different way.

We've done this in wonderful ways in other domains. So I'm at a loss.

LCDR MEIER: Are you talking about something like I have my audiometer right here where I can sample noise data and I can plug it into that computer and, boom, the data is already in the system?

DR. PATRICK: I'm talking about a combined unit that not only does that but does toxins, does chemical, you name it, the whole nine yards. We saw some very exciting stuff, I think it was in San Antonio.

To get briefed a bit on that, because in

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1 part the requirements for that could be informed
2 by the type of timeline that Mike is suggesting.
3 If you really map out when, by when do we want to
4 capability and then back up, sort of reverse
5 engineer, then that could potentially accelerate
6 the investment in those technological solutions.
7 Lord know we do it in a lot of other arenas.
8 LCDR MEIER: I suspect that the
9 capabilities or the requirements already exist. I
10 may be misspeaking, but it's a money thing about
11 how quickly they are made available. It's not a
12 matter of continuing to some up with new
13 requirements.
14 It's a matter of the requirements are
15 there. If they are funded, they will be built,
16 kind of thing.
17 DR. POLAND: Ms. Embrey.
18 MS. EMBREY: I'd like to answer a little
19 bit about the question about technology and
20 bringing it to the problem. I think the theme of
21 the briefings that you have had this morning is
22 not that we are not doing it; it's that we're not

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1 able to put what we're doing together and

2 understand it as a coherent enterprise and to be
3 able to share that information in effective ways
4 that help us understand from a population health
5 perspective what we should or should not be doing.
6 Clearly, I understand that. I'm moving
7 in that direction. As a result, I sponsored a
8 ACTD, Advanced Concept Technology Development
9 Project. Basically, it's a way in which to
10 identify a problem that needs solving and getting
11 other people's money to help you do that.
12 And I recently recruited a whole bunch
13 of others and got about $60 million identified to
14 integrate environmental occupational health and
15 clinical information data that is in existence;
16 apply new technologies to capture the gaps in that
17 data in a theater environment, mine it into a
18 decision support capability that actually takes
19 that data and gives information to decision-makers
20 on how to minimize health risks to our warfighter.
21 So that is a pilot project. We just had
22 industry day last week. We had three days of

1 industry people coming in and giving us their
2 technologies about how that can be brought
3 together in a theater environment. It's a
4 demonstration project. It will be implemented in
5 PAYCOM.

Once that's demonstrated and it's being spirally developed and we will have an integrated capability for our theater to do just what I talked about, hopefully incrementally, probably by the middle of next year that we might be able to even demonstrate.

So all is not lost. Frankly, just because we can't push a button and get that information doesn't mean it's not there. It's just that it's difficult to get to.

LCDR MEIER: It's 3:00 and we didn't do the demonstration. I don't know if there's interest there.

MR. MONK: I could stay around for a while afterwards if you want and have it set up back here or I could just show you the first couple of screens.

DR. POLAND: How long would it take?

MR. MONK: About five minutes.

DR. POLAND: We'll go ahead and take a five or ten minute break here and then reconvene.

LCDR MEIER: Thank you all.

(Recess)

MR. MONK: Could we dim the lights? It will only be for five minutes. Okay, that's a

9 little bit better. Some things will be cut off on
10 the side. But basically, let me just show you a
11 couple of things.
12 In the top right you will see current
13 program office. That will list the installation
14 that you are at, either, you know, Bethesda or
15 whatever you are at, it will bring up all the
16 information for that program office.
17 On this side of the screen is kind of
18 like your Franklin Planner, a work basket, a
19 sample log. You can search by location, by shop,
20 by similar exposure group. There's your master
21 schedule that will bring up everything you have in
22 there.

1 Here's what's in your work basket now,
2 so when the IH comes in in the morning, this will
3 pop up and he'll say, well, we have to do these
4 kind of evaluations. Down here is really the
5 administration piece where you put in the
6 organizations that you serve, your customers.
7 It could be locations, your vendors for
8 equipment, your program office equipment, you
9 know, it could be your noise dosimeters, when are
10 they due for calibration, things of that nature,
11 labs that you use to send your sample data to, and
12 then there would be some notification letters

13 there.

14 The last part is the mobile

15 administration. Remember, you take this tablet

16 and then you go out to the field and when you come

17 back you have to hook it up to the local area

18 network and then you do a sync to the database and

19 it synchronizes the data and then it sends it back

20 to the transitional server. So all that data is

21 then stored in one location right now.

22 That's eventually what we'll try to do,

1 also application distribution. We can send out

2 updates to the software over the web and send it

3 out to the installations.

4 What I'm going to do now is just go to a

5 survey form just to show you one survey real

6 quick, if I can find it here. This is showing you

7 a base camp assessment. Just to give you an idea

8 of things that you can put in, it goes down to

9 contact information, description, water, soil,

10 air, hygiene devices, sanitation, there's a whole

11 lot of information that they have identified.

12 So if you see anything you want me to

13 click on, please tell me because there's a lot in

14 there.

15 (Inaudible)

16 DR. POLAND: Mr. Monk, did you hear that
17 question?
18 MR. MONK: I'm sorry. No, I didn't.
19 DR. POLAND: The question is once you
20 document that a venomous snake or something is a
21 problem, where do you document what the abatement
22 or eradication was?

1 MR. MONK: I knew you were going to ask
2 me a question I couldn't answer.
3 DR. POLAND: What about rats and mice on
4 there, too?
5 MR. MONK: I'm not quite sure where they
6 are going to document --
7 DR. MORRIS: That's really an inadequate
8 list. Maybe it can be captured elsewhere.
9 MR. MONK: Well again, remember, this is
10 a partial list of the deployment capability that's
11 not really in its first version of the software.
12 That's where the JESWG is going to have
13 to go their outstanding requirements and really
14 flush them out and work on changing this. This is
15 the first stab at it to get some things in there.
16 (inaudible) There are different ways to
17 browse by. You can browse by organization,
18 location, again, we may not have data
19 pre-identified in here. Let me browse and see if

20 we have anything. Nope.

21 LCDR MEIER: I've seen other screen

22 shots where you'll have it like an Outlook folder

1 and you'll have it by organization and then

2 multiple shops within each organization. Within

3 each shop there will be individual SEGs, similar

4 exposure groups, and then within each SEG there

5 will be individuals or individual tasks or

6 individual processes where data on which you base

7 a recommendation for a respirator can be entered

8 in here.

9 The recommendation for what type of

10 respirator should be used to protect that

11 particular employee against the hazard when they

12 are doing that particular task, can be entered in

13 here.

14 MR. MONK: Here's just a couple of names

15 of SEGs that had been pre-identified by some of

16 the development team and some of the users in the

17 JAD sessions.

18 The best way to do it would be for me to

19 walk you through each one of the steps of the

20 business process and show you how the application

21 addresses it. But that would take probably a good

22 half hour to do that.

DR. POLAND: I don't think we have time.

MR. MONK: Maybe another time.

DR. POLAND: Are there any specific questions from the Board or any specific things you would like to see are present or not present?

If not, I think we'll probably move on. Thank you.

MR. MONK: Thank you.

DR. POLAND: Next we are going to have Mr. Michael McDevitt, who will be presenting to us on the U.S. Army Health Hazard Assessment Program Speaking the Materiel Developer's Language.

With him is Ms. Nikki Jordan. Some of you might remember her. She was instrumental in helping us with the DoD-wide immunization review, who will help answer questions at the end.

The slides for this presentation will be at Tab 6. Mr. McDevitt, welcome.

MR. McDEVITT: Thank you. Thank you for the invitation.

In getting started here, I just want to let you know that what I'm going to run you

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1 through is the Army's Health Hazard Assessments
2 process overview.
3 Then I'm going to share some information
4 with you regarding the medical cost avoidance
5 model that we're currently developing.
6 Dr. Gary Bratt, who briefed earlier, is
7 actually one of the developers of that model. So
8 if you have any detailed questions concerning
9 that, my knowledge about it is very superficial
10 and the databases that went into it, Ms. Nikki
11 Jordan can answer those questions.
12 I guess the prime example of knowledge
13 is PowerPoint deep. Next slide, please.
14 I'd like to just talk about where we are
15 in the structure of things, why we're the Army's
16 Health Hazard Assessment Program. We also
17 participate in a program called Man Print which is
18 the Army's human systems integration program that
19 brings together all the other domains that you see
20 in this particular slide.
21 Our sister services such as the Navy and
22 the Air Force have something very similar and they

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1 do call it mainly human systems integration.

2 But we follow a tenet called Man Print
3 and we are one of the prime domains of Man Print.
4 Now, something I would like to share up
5 front about health hazard assessment versus safety
6 and kind of the lanes that we have, safety deals
7 mainly with mishaps, failures and those sorts of
8 things while the health hazard assessment program
9 looks at materiel systems as they are normally
10 operating.
11 So if you can envision a soldier inside
12 a tank firing a 50-caliber weapon, the weapon
13 combustion products coming off of that system
14 would be assessed by our program.
15 If the fan fails to exhaust those, then
16 the safety domain would capture that in their
17 assessment. So the differences are normal
18 operations versus failure and mishap.
19 The Army Surgeon General is a proponent
20 of the HHA Program. There are some regulations
21 that govern the program up there. We are at the
22 Army Center for Health Promotion and Preventive

1 Medicine, we are the lead agent for the HHA
2 program.
3 This is the purpose. I would like to
4 just caveat on to something that was said earlier
5 by Colonel Riddle in talking about the man-machine

6 interface and something that was also stated about
7 this could really take care of the soldiers.
8 This program is a rubber-meets-the-road
9 kind of program. So whatever we find and assess
10 and recommend to a materiel developer, that's
11 what's going to go into a soldier's hands, at
12 least regarding the health aspects.
13 So we are kind of at the interface
14 between the science and putting it in the
15 soldier's hand.
16 Next, please. These are some of the
17 specific objectives of the program. In terms of
18 enhancing readiness, which is the second bullet up
19 there, somebody a little bit earlier was alluding
20 to something that they said, you know, I forget
21 how you said it, but time versus work and then
22 work versus time or something along those lines.

1 Dr. Lednar, I think you said something
2 regarding that. I thought, well, what you are
3 talking about is really the readiness aspect. The
4 amount of time that gets lost by a unit or by the
5 military as a result of adverse health impacts,
6 clinic visits, those sorts of things, that
7 seriously impacts readiness and a commander's
8 ability to have his unit ready.

9 Reducing system design retrofits. It's
10 very expensive and costly for these materiel
11 developers to go back and try to fix something.
12 If we can give them recommendations in the process
13 of the development of a materiel system, it saves
14 a lot of time, effort and money.
15 Reducing personnel compensation costs,
16 that's something that we've come up with that I'm
17 going to try to explain a little bit more in
18 detail towards the end of the briefing.
19 Next slide, please. The Army's Health
20 Hazard Assessment Program began in the early '80s
21 when the field soldiers were noticing that they
22 were spitting up blood. So they came to the

1 Medical Research and Materiel Command and then the
2 U.S. Army Environmental Hygiene Agency, which is
3 now our organization, and said, can you help us?
4 We've got soldiers who are spitting up blood after
5 firing the M-198 Howitzer.
6 So of course, being scientists we said,
7 sure, we can help you. We'll put a longer rope on
8 it. So we backed all these guys up on this M-198
9 155mm Howitzer and all it did was slow down the
10 operational firing rate. So that really wasn't
11 the solution.
12 So we developed a formal program to look

13 at the operational types of setting that soldiers
14 will be in with this, evaluate the health hazards
15 inherent in them and then come up with what we
16 hope are usable pragmatic solutions to eliminate
17 some of those hazards.
18 Next one, please. This is kind of a
19 busy slide. This is our process in a nutshell.
20 We basically get the request for a health hazard
21 assessment through the Army Materiel Command. The
22 Army Materiel Command surgeon has an advocate

1 there for the materiel developer. In other words,
2 they can't just send an HHA to the Center for
3 Health Promotion and Preventive Medicine and say
4 we need this. Then the medical folks go, you
5 know, I've got to golf today, I can't really get
6 to this one.
7 Somebody at the AMC's office is tracking
8 these things for the materiel developer.
9 Likewise, there's somebody in the medical
10 community that can communicate some of the health
11 issues associated with what we are saying back
12 when we do deliver the assessment.
13 Once that request gets to us, it
14 hopefully includes data necessary to do the
15 assessments, whether it's noise data, chemical

16 exposure data, and I'll talk a little bit more
17 about this later and some of the responsibilities
18 of the program managers, but we take subject
19 matter experts at our center.
20 If we have a noise hazard that's
21 inherent in the system we'll get an audiologist or
22 a bioacoustical engineer. We'll get an industrial

1 hygienist. We'll get a health physicist if we've
2 got radiation exposures.
3 We assemble a team and we give them each
4 their piece. Once they get their piece, they will
5 complete their assessment against the data, return
6 it back to my office, which is a small office,
7 nine people, and then we'll put together the
8 report and send it back through the AMC's
9 surgeon's office to the materiel developer who
10 will report then during milestone decision
11 reviews.
12 Right now these are the nine hazard
13 categories that we assess. Now I've broken out
14 some sub-hazard categories under that and that's
15 going to become a little bit important later on.
16 The basic categories are acoustic
17 energy, biological substances, chemical
18 substances, radiation energy, shock trauma,
19 vibration, temperature extremes and oxygen

20 deficiency.

21 If you have any questions about anything

22 during the course of this, just let me know

1 because the dialogue is good. It keeps me from

2 feeling like I'm briefing.

3 As I mentioned earlier, we'll give a

4 piece to different programs within our center.

5 These are examples of some of the programs who

6 would get those pieces. We do have the

7 occupational and environmental medicine, well,

8 it's now called the Occupational Medicine Program.

9 They do a final review for us so that we have a

10 so-called medical blessing.

11 This is our process for doing the

12 actually assessment. Once we identify the hazards

13 inherent in a system we'll take a look at the

14 operational exposure that soldiers using the

15 system will have. That gets us to the exposure

16 assessment phase.

17 Then we'll take the data that is sent

18 with the materiel system and bounce the data off

19 accepted medical criteria and come up with our

20 recommendations and a risk assessment code.

21 Now the risk assessment code is a

22 standard risk assessment code that comes out of

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the matrix for MIL Standard 882 because usually at the materiel developer's office it's a safety person who is our advocate because we don't have the luxury of having a health person at a materiel developer's office.

So we are communicating hazards through a risk assessment code matrix that's very similar to the one coming out of MIL Standard 882. Once the RAC has designated, then we also put down recommendations. We'll assemble the report, send it back to the materiel developer who's then responsible, along with us, we hope, to do risk management, eliminate hazards based on our recommendations.

There's something at this point I just want to talk about a little bit. I'll talk more about it in detail, but just to set a foundation, risk mitigation can come in a number of different ways.

As you know, engineering solutions are much better than personal protective solutions which are much better than warnings. So there are

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1 different degrees of mitigation efforts. That
2 will become very important in our medical cost
3 avoidance model I'm going to share with you a
4 little bit later. So I'm just kind of setting a
5 foundation.
6 This is our risk assessment code matrix.
7 The lower the number and the letter, the higher
8 the risk and conversely, the higher the number on
9 the probability and severity scale and the higher
10 the letter, the lower the risk.
11 Materiel developers, of course, like to
12 see if we identify any hazards. They like to see
13 fours and fives because those get presented and
14 can be handled at a lower level than the ones and
15 twos that have to go to major milestone.
16 Yes, sir.
17 DR. LEDNAR: Is it okay to ask a
18 question along the way?
19 MR. MCDEVITT: Absolutely.
20 DR. LEDNAR: I'm wondering about the
21 hazard probabilities. Is that an attribute of the
22 materiel or is that an attribute of the work

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1 system?

MR. McDEVITT: It's really an attribute of the assessor's judgment. Probability is probably the least fixed -- I don't know what you call it -- but tenet of this particular matrix.

The severity based on the data that we get, the severity can be fixed a little bit more firm. But probability is usually just a matter of an assessor looking at those exposure scenarios that I talked about, the operational mission summary mode, how are soldiers going to be exposed? How long is he going to be in a weapons system or whatever and then applying what he feels, and it's very subjective, what he feels is going to be the probability of the occurrence of injury or illness.

DR. LEDNAR: Part of what's behind my question is if it, for example, for a tank crew, if it takes a crew of, I'll just make up a number, a crew of four to operate the system safely and you lose two of your tank crewmen, you've still got to operate, but the hazard is now different.

MR. McDEVITT: Exactly. I'm so glad you said that because it dovetails into what I said about now it falls into the safety's domain, so I don't have to answer the question. It's a mishap or a failure of the system.

I know it sounds like I am avoiding it, but it's something that we really don't even consider. We look at the system as it normally operates. Sorry I can't answer it directly, but maybe some of the safety counterparts can help out. But it's true, the risk is increased.

Next slide, please. Now, I just want to share a little bit about what we expect a materiel developer to do. One of the things that we like to see is them ask us to be a representative on their test and evaluation IPTs.

A couple of things that that does is it allows us to focus them on planning to collect data early in the acquisition process. As part of that, we already know based on predecessor systems or Legacy systems, we already know what perhaps some of these hazard categories are going to be.

The other thing that it does, if they can coordinate with us to ensure that planned data collections are representative and in the correct format, and what I mean by that is if we need chemical data, if we need noise data in an A-weighted format or if we need noise data collected according to the, you know, DA-PAM 40-501, we specifically want to communicate that

9 to them.

10 Likewise, if we're getting whole body

11 vibration data, we'd like to see that in a BCR

12 format. So we can take that, download into the

13 computer and run the assessment. We don't have to

14 worry about reformatting data, which we don't have

15 manpower to do. So that's another thing.

16 Next slide, please. When requesting the

17 HHA, we would like them to provide as much as

18 information as available. Give us operational

19 summary modes. Give us ORDs. Give us mission

20 needs statements. Give us any document that you

21 feel will help us, especially how soldiers are

22 going to operate each particular system.

1 We'd like them to request the HHA early.

2 Their business, they succeed when they keep under

3 cost and they keep within schedule. We can help

4 them do that if they give us the information that

5 we need early.

6 Once we get the information we impose a

7 limit of days on ourselves to get the HHA report

8 back to them,

9 once we have the comprehensive

10 information. I know what you are thinking.

11 Usually when you see a future slide, it's like,

12 boy, we're getting close to the end. This is like

13 really in the middle -- sorry.

14 I'm going to make a transition now to

15 some of the initiatives that I talked about early.

16 This Health Hazard Assessment reporting tool

17 that's being worked on right now, this tool

18 basically is going to be a web-based tool that is

19 going to be formatted completely so that we can

20 put in essential and minimal information, reduce

21 the actually report process time.

22 In addition to that, materiel developers

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1 and all the other assessors within the assessment

2 community who are working on this can access this

3 web-based tool and they can see where we are,

4 what's going on, what the particular hazards are

5 and if we see something that looks really way off,

6 then that can be shared in a collegial nature

7 between the other assessors.

8 We are going to be updating our

9 regulation which really is just superfluous. The

10 criteria we use to assess against for the most

11 part is ACGIH, OSHA criteria. However, sometimes

12 there really isn't appropriate criteria out there

13 to assess against, in which case we go to the

14 Medical Research and Materiel Command and ask them

15 to develop what is called a STO, a Science and

16 Technology Objective. We will define the scope of
17 that objective.
18 In this case we've got a couple called
19 head supported mass and weapon recoil energy where
20 we are asking MRMC to develop criteria for us or
21 tools to assess with.
22 Now, the last two, the transition of

1 whole body vibration and blast overpressure are
2 actually STOs that have come to fruition. We
3 have those two tools in our hands. We haven't
4 fully accepted the whole body vibration model yet,
5 but since these slides have been sent here, we
6 have accepted the blast overpressure model to our
7 center and we are using that as an assessment
8 tool.
9 Next, please. Now I want to talk just a
10 little bit about medical costs because this
11 relates directly into the title of my briefing
12 about why, you know, talking the materiel
13 developer's language.
14 Now, we feel that quantifying medical
15 costs will provide a better description of the
16 health hazard inherent in the system's materiel
17 developer. In other words, if I say you really
18 have a severe hazard here, coming from a health
19 person, the materiel developer is like, yeah,

20 okay.

21 This hazard will cost the Army in one

22 year, you know, $1 million in medical costs. All

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1 of a sudden that means something to a materiel

2 developer. We also hope that it assists in risk

3 management decisions.

4 In other words, when I spoke earlier

5 about mitigation, like engineering being a better

6 mitigation method or preferred mitigation method

7 over a warning, this countries to the materiel

8 developer in dollars the fact that an engineering

9 mitigation will reduce the medical costs much

10 greater than that warning will.

11 It provides us with leverage in talking

12 with the materiel developer to get our hazards

13 eliminated versus, maybe the safety community who

14 are saying, listen, you've got all these safety

15 hazards, but HHA is now telling me I've got these

16 health hazards in addition to that. I can avoid

17 this much in medical costs and this much in lost

18 time, which affects readiness. So that gives us a

19 little bit of a lever.

20 This is just a screen shot of the

21 database that we're working with.

22 Next one, please. Now, what we've done

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is we've taken an existing database in which we had a generic hazard, LMI, Logistics Management Institute, developed a cost-avoidance model for us in the late '90s. That model had one generic hazard inherent in it.

So for all the hazards that we inputted into the model, whether it was chemical, noise, whatever, we got one cost avoided is the risk assessment codes were similar.

The problem with that is credibility. When you take a noise hazard, steady state noise hazard, you get a really severe risk with it and then all of a sudden the model outputs the potential of one death, that's ridiculous. You get hearing loss from noise; you don't get a death incurred unless it's a blast overpressure assessment.

So we went back to LMI and asked them to take the hazard categories that we assess, that table with biological substances, et cetera, and go through that hazard category and make medical cost avoidance and outcomes for each discrete

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hazard category. That's basically the fundamental premise for where we are going to go now.

We use several different databases with which to populate this new model. You can see them up here. You are probably familiar with some of them. You may even have worked on some of them.

Next, please. This is a very busy slide, but I just wanted to give a description. I'll let you read that, what the M2 database is. This is the database that really strongly, for the most part, we are getting most of the information from regarding costs, soldier illness, injury and those sorts of things.

We use the military pay compensation schedules to come up with hourly costs that are equitable to a civilian community cost.

Next, please. Disability Data. Next, please. Veterans affairs data. The main tenet here being the active duty compensation and veterans affairs compensation. So a number of different sources went into populating this

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database.

2 Now, what we also did was we took those
3 health hazard categories, once they started
4 working with the database, inputting those costs
5 and so forth, they realized that the old health
6 hazard categories that we had no longer fit what
7 we are seeing on outcomes. So they came up with
8 some new categories.
9 The new categories are basically the
10 same as some of the old categories, plus their
11 subsets. But we are going to treat them all
12 equitable now instead of having temperature
13 extremes with hot and cold under it.
14 Now, we have cold temperature extremes
15 and heat. We've got discrete categories.
16 Now, five basic events can occur when a
17 soldier becomes ill or injured. Those include
18 actions which result in clinic costs,
19 hospitalization costs, lost time costs, disability
20 costs or fatality costs.
21 Next, please. Some of the assumptions
22 that went into the model, these are not discrete

1 parameters. They are so variable that they had to
2 make some assumptions regarding this because there
3 isn't room for variables in it.
4 We have for a long time assumed that the
5 material systems within the inventory last about

6 20 years, so those are all reporting parameters.
7 Medical costs avoided for one year, medical costs
8 avoided for the 20-year life of the system, lost
9 time for one year, lost time for 20 years.
10 The major inputs that go into it are the
11 number of materiel systems that will be fielded.
12 So you can't look at a single entity. You can't
13 say, I've got one M-1 tank and this is what we
14 assume we are going lose for one M-1 tank.
15 We have to look at the entire fleet
16 because we're really assessing a fleet of materiel
17 systems. The number of soldiers operating or
18 maintaining that system, so if you have four
19 soldiers sitting inside the M-1 tank, but you've
20 got another six that will maintain it, all those
21 potential exposures have got to be considered.
22 The system hazard category, is it

1 impulse noise? Is it steady state noise versus a
2 chemical exposure? The importance becoming steady
3 state noise, we're not going to have fatalities.
4 Chemical exposures, potential. Risk assessment
5 code and residual risk assessment code.
6 I already mentioned it twice and I don't
7 want to be redundant, but that risk assessment
8 code that we develop for a hazard, and then the

9 residual risk assessment code that we develop if a
10 materiel developer accepts and applies one of the
11 recommendations that we make, the delta between
12 those two is what's important in determining the
13 medical costs avoided.
14 It's not risk assessment code and then
15 pretend like the hazard went away, because it
16 didn't. It probably got controlled. If it got
17 eliminated we can use the total cost. But if not
18 we have to use the delta between the residual risk
19 assessment code and the current risk assessment
20 code.
21 Next, please. Now, if you think about
22 the risk matrix that I showed you previously, this

1 is just an example of what you might see in terms
2 of costs for high hazards versus low hazards or
3 when compared with low hazards.
4 Next, this is a screen shot of how the
5 medical costs would be actually calculated. It's
6 a very easy process, very user friendly instrument
7 for us. It's just simply, you know, project
8 number, the risk category, meaning noise, chemical
9 substances, the number of systems, the number of
10 people.
11 Then you put in the current unabated
12 risk and then the residual risk and the outputs,

13 as you can see, are going to be medical costs
14 avoided for one year and 20 years.
15 Now, just remember the breakdown button
16 up there because I'm going to show you a screen
17 shot of the breakdown a little later.
18 Next, please. These are the outputs.
19 They are probably better seen on the next screen.
20 The outputs are here and as you can see in this
21 column, this is the unabated. This is what you
22 might expect.

1 This is just a steady state noise hazard
2 that I just ran for a screen shot. But in this
3 entire column these attributes or qualities are
4 what you're going to get as outputs. This is the
5 actually numbers given this risk assessment code,
6 the risk assessment code of a 2C.
7 Now if hearing protection lowers that
8 risk assessment code to a 4E, these are the
9 outputs that you will get here with these being
10 the costs and of course a summary of the one year
11 and the twenty year medical costs avoided.
12 As I mentioned, to a commander lost time
13 might be the important factor to him, while to the
14 materiel developer costs are significant.
15 Next, please. Now, it does have some

16 limitations. I'll let you read these. The data
17 that went into it, this was a good first cut. We
18 know it's not 100 percent. We've got some folks
19 that have already been telling me that, you know,
20 here's what you need to do in the next go-round
21 and so forth.
22 So with documenting this whole process

1 and the medical cost avoidance model we are coming
2 up with some ideas to enhance and improve this.
3 The one I would like to talk about just
4 for a moment are hazard abatement costs. Those
5 are the costs. If a materiel developer chooses to
6 accept, say, an engineering control or maybe just
7 for example applies a fan to the turret of a
8 weapon system to exhaust weapon combustion gases.
9 One thing we don't know which would
10 really be beneficial and helpful, what is the cost
11 of that fan? What is the cost in terms of design?
12 What's the cost in terms of actually placement of
13 it, parts, materiel? Because if we know that, we
14 know the potential medical costs avoided, then we
15 can even take it further and do cost benefit
16 ratios and it would enhance our discussions with
17 material developers.
18 It would also enhance materiel
19 developer's leverage in terms of I'm going to

20 abate this one because look at the cost benefit
21 compared to -- and that's really talking materiel
22 developer's language.

1 Next one, please. These are just simply
2 restatements of what our goals are up front.
3 Again, we're trying to talk a materiel developer's
4 language, give them the attributes that are
5 important to them, schedule, work with them on
6 dollars, show them medical costs avoided.
7 It also provides a metric for us. We
8 have a little contest in the office, see who can
9 do the most medical cost avoidance in a year.
10 I've pretty much got that wrapped up.
11 Next one, please. Any questions?
12 DR. POLAND: Dr. Parkinson and then
13 Dr. Underwood.
14 DR. PARKINSON: This last section is
15 very provocative. I guess I've just got to start
16 and say I don't believe it. It's nothing
17 personal. I'm looking at Mike's MediCorps.
18 About ten years ago in the Air Force we
19 tried to build something called EPICAM, which is
20 Epidemiologically and Economically Integrated Cost
21 Assessment Model. We spent the better part of 18
22 months getting with the smartest minds in this

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country that we could find in places like Harvard and others, not that they are the smartest minds in the world.

But I guess what we found after doing a very good preliminary study was that the black box can spit out a lot of things, but when you boil it all down, how good are the data points going in which really have to come out of well-done studies to be able to give you the model estimates of what you do.

So when I looked down your list of six or eight or ten categories of exposure, some of which are very, very militarily unique, I don't know that I've got anything that even resembles a controlled randomized trial of people exposed to those versus not in terms of medical effects coming forward to model how those things come out.

I don't have the time, but I would love to be able to compare and contrast the EPICAM study in terms of why we pulled it, and the Surgeon General could not fund this because the data is not reliable enough to be credible to a

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1 wing commander. We had this issue, too. How do
2 you make health more relevant operationally and
3 crosswise.
4 And so we did that. And so the question
5 I've got is while it's a good concept, what's the
6 validity of the data inside the black box that
7 really says what are the medical effects you can
8 expect for a population of X that does these
9 various things? Is it animal models? Is it
10 published literature that you have done that may
11 not be widely available?
12 So that's the thing. I think it's a
13 good exercise. I think it's a great thing to want
14 to do, but it all depends on the quality of the
15 data that you've got that drives all of those
16 assumptions.
17 MR. MCDEVITT: Absolutely.
18 DR. PARKINSON: So I think of the
19 vulnerability here. I'd say as a colleague, I'd
20 say ouch. Because when you peel back even the
21 commercial products that were available, we peeled
22 back one layer of the analysis and it didn't hold

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1 together.

2 MR. McDEVITT: I would venture to say
3 that the credibility of the information that goes
4 into it, well, first of all, the information that
5 populates the model is based on databases such as
6 the M2 database.
7 So a lot of the costs and so forth that
8 came from that are just directly from that M2
9 database.
10 In terms of going back a step, and maybe
11 that's what you are talking about --
12 DR. PARKINSON: Response, it's the rate
13 of events given intervention versus not.
14 MR. McDEVITT: Some of the outcomes are
15 based on animal studies; some are not. For
16 example, I'll just give you one because this is
17 one that just comes to my mind. The blast
18 overpressure model that we are using to assess
19 blast overpressure was a heavily studied, probably
20 ten-year venture developed and done by the
21 Medical Research and Materiel Command with the
22 help of Titan Corporation who actually put all the

1 data together.
2 There were animal studies. Those animal
3 studies provided percent lung exposure, percent
4 any air containing organ exposure that actually
5 went into determining potential risk based upon

6 exposure to blast overpressure weight propagation.
7 So from that perspective that's probably
8 the best example I can offer you. The worst
9 example is at the other extreme.
10 Is there anything else?
11 MS. UNDERWOOD: I'm Paula Underwood.
12 Just out of curiosity, if you can put sort of a
13 round figure on it, what would be the disability
14 cost related to hearing loss in veterans?
15 MR. McDEVITT: I can't do that. I
16 really don't know. I'll be honest with you.
17 Nikki, do you have any idea?
18 Bill Monk, who briefed last worked in
19 our hearing conservation program. But I know Dr.
20 Doug Olin, who is the program manager for our
21 hearing conservation program, has done some work
22 in that area. I can certainly ask him, but we

1 don't categorize, unfortunately, and maybe it's
2 something we should be thinking about.
3 Should we take hazard categories and
4 then talk to those proponents and say, hey, look
5 at what you are doing. Can you do better or maybe
6 you are doing good.
7 MS. UNDERWOOD: Right, because one of
8 your categories, of course, was acoustic trauma.

9 So I thought that you had said that you had
10 specific costs for each of the categories.
11 MR. McDEVITT: Well, that's going to be
12 an output of the model. It is going to be an
13 output of the model, but I can't tell you right
14 now.
15 Sir, did you have a question?
16 DR. HALPERIN: (inaudible)
17 COL GIBSON: Yes, you are exactly right.
18 Bruce and I have worked with the VA on that and we
19 could actually give you a dollar figure for
20 hearing loss.
21 COL WHITE: You explained very well
22 about how you used the same language and the

1 materiel developers. But you didn't state
2 clearly; you might have implied this, as to
3 whether they were obliged to take these costs into
4 account.
5 Do the medical costs avoided count as
6 part of the whole life cost of the system and are
7 they required to show that in order to get
8 approval to go ahead in a milestone or are you
9 just encouraging them?
10 MR. McDEVITT: It's the latter of them.
11 We are encouraging.
12 However, I do want to add something to

13 what you said because the recommendations that we
14 made to a materiel developer are always optional.
15 A materiel developer can choose, if the risk
16 decision authority agrees, can choose to accept
17 the risk.
18 So if there is a risk inherent in one of
19 the hazard categories, it doesn't mean that the
20 materiel developer has to eliminate it or control
21 it any further than they already have.
22 COL WHITE: The reason I ask is because

1 in the UK we have a concept of a whole life cost
2 which implies the cost of the system and its
3 impact on all sorts of areas.
4 It's not just the cost of the widgets,
5 you know, in order to actually get acceptance.
6 MR. McDEVITT: Life cycle cost.
7 COL WHITE: You go ahead. At a
8 milestone you would have to actually show a good
9 estimate of the whole life cost. If you knew
10 there was going to be a medical cost, you would
11 have to include that.
12 MR. McDEVITT: Input it up front, I
13 agree. That's a good comment.
14 Is there anything else? Sir?
15 COL GIBSON: I have one comment. You

16 talked sort of facetiously, but you talked about
17 that's a safety community's problem when we were
18 talking about the tanks here a few minutes ago.
19 My question to you, and it's not
20 directed towards you but directed towards safety,
21 are they really doing that? Are they assessing in
22 some sort of a model like this the problems with

1 attrition related to injuries because of weapon
2 system failures and really doing it in a robust
3 way like you're talking about here?
4 MR. McDEVITT: I don't know if it's to
5 the same degree, but having worked with the safety
6 community on a number of different programs, yes,
7 they do look at that. They do look at the "what
8 ifs." They do put out preliminary hazard lists
9 that are so voluminous that it makes your head
10 spin.
11 Then they bring them down to realistic
12 lists that hopefully will reflect what the actual
13 safety risks are. But they do that. They do it
14 through root cause analysis. They do all these
15 little default diagram analysis. They do
16 different things like that that are representative
17 of those "what-ifs." So the answer is yes.
18 MS. EMBREY: I'm interested. I think
19 it's great that you do this. I think it's

20 terrible that it's an option to avoid your risk or
21 to accept the risk and to move on, recognizing, of
22 course, that these systems are lethal systems to

1 injure people, but it's not to injure the
2 operator; it's to injure our enemies.
3 MR. McDEVITT: Exactly.
4 MS. EMBREY: Or kill them. So the
5 question is, I guess the point is at what point is
6 there a requirement to not accept that risk? If
7 risk is accepted, what are the ethical responses
8 of the Department of Defense to advise the
9 operators of this equipment that there is a health
10 risk?
11 MR. McDEVITT: I guess the answer to
12 that is there are different levels of risk
13 acceptance, depending upon the severity of the
14 hazard. Low-risk hazards, of course, for the most
15 part if they get accepted that's fine because the
16 cost may be too prohibitive to eliminate those
17 when compared with the risk.
18 When you get to the higher level risks,
19 my experience, which is limited, has been that
20 risk decision authorities, milestone decision
21 authorities, are very good. They usually -- I
22 won't say never -- but they usually do not let

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even mid or especially high level risks pass through.

They will go back to the materiel developer and say fix it. That, I hope, answers both sides of your question concerning the ethical dilemma. I think these people really think about the soldiers in the materiel systems, as we are when we do the assessments as a safety community does.

As Dr. Poland said this morning, first comment, about his brother. You know, you put something in my hands that is usable and is not going to hurt me. That's what we are trying to do.

I really believe that risk decision authorities are doing that. They are not going to let these risks get through if they are that serious.

DR. POLAND: Is there anything else? Thank you very much.

Okay, we want to thank the speakers this afternoon for their superb presentations.

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(Whereupon, at approximately 4:01 p.m. the PROCEEDINGS were adjourned.)

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